unpluq

Families vs. Machines

On how a startup can improve digital wellbeing in the family life

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Strategic Product Design

Graduation Thesis
Niels Weggeman

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Families vs. Machines:

On how a startup can improve digital well-being in the family life

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Acknowledgements

Are you paying attention?

Preface

The bespoke docudrama 'The Social Dilemma' is only the most recent big attempt by the Center for Humane Technology (CHT) at drawing attention to the potentially hazardous side effects caused by the digitization developments of our society.

The CHT is a non-profit organization that originated from the 'Time-Well-Spent Movement'. It was kickstarted by Tristan Harris back in 2013 ("Who We Are", n.d.) and tries to increase worldwide awareness of the downside of contemprorary technology. Harris, a former design ethicist at Google, realized that the products being developed by big tech were increasingly capitalizing on capturing people's attention, rather than helping them spend their screen time efficiently.

In a confronting 2017 TED talk, Harris illustrates how the design decisions made by a handful engineers at companies like Google and Facebook, have grown to be capable of influencing the thoughts and actions of more than a billion people around the world every day, without their conscious consent (Harris, 2017).

How, you may wonder?

Simple: their services are free to use, but collect data from consumers and monetize by selling personalized advertisements to third parties, instead. By using machine learning algorithms to label your online behavior, a profile of you is kept and used to deduce which advertisements have the highest chance of capturing your attention – a dream come true for companies trying to up their sales by better reaching their target groups.

These highly successful business models have shown to have some disturbing side-effects. To be able to gather this data on your interests and have the opportunity of showing you their clients advertisements, they have to first convince you to spend time on their services. As Harris says, they're engaged in "a race towards the bottom of the brainstem" (Harris, 2017), trying to appeal to our primative urges to satisfy short-term needs - a bit akin to fast food.

Through increased understanding of the human psychology, the ecosystems that have been build around these services are now turning out to be able to "'hijack our minds' through ever-more sophisticated manipulation techniques". (Newton, 2018) and these persuasive technologies are being used to either:

A. Trick us into unintentionally spending much more time on these services than we initially set out to, and
B. Allow advertisers to unconsciously imprint us with marketing messages adjusted to our deduced interests.

As a consequence, we get 'nudged' towards thinking and acting differently, in ways that benefit the companies providing these services and the advertisements paying these companies, rather than helping us spend our time in ways that align with our own values and goals.

Instead of paying with money for these tools that have become so indispensable in our everyday lives, we are instead – quite literally – 'paying attention'.

The CHT is trying to convince the world that this might not be in our best interest. Instead, they call for technologies should are designed to help us increase our 'time-well-spent'.

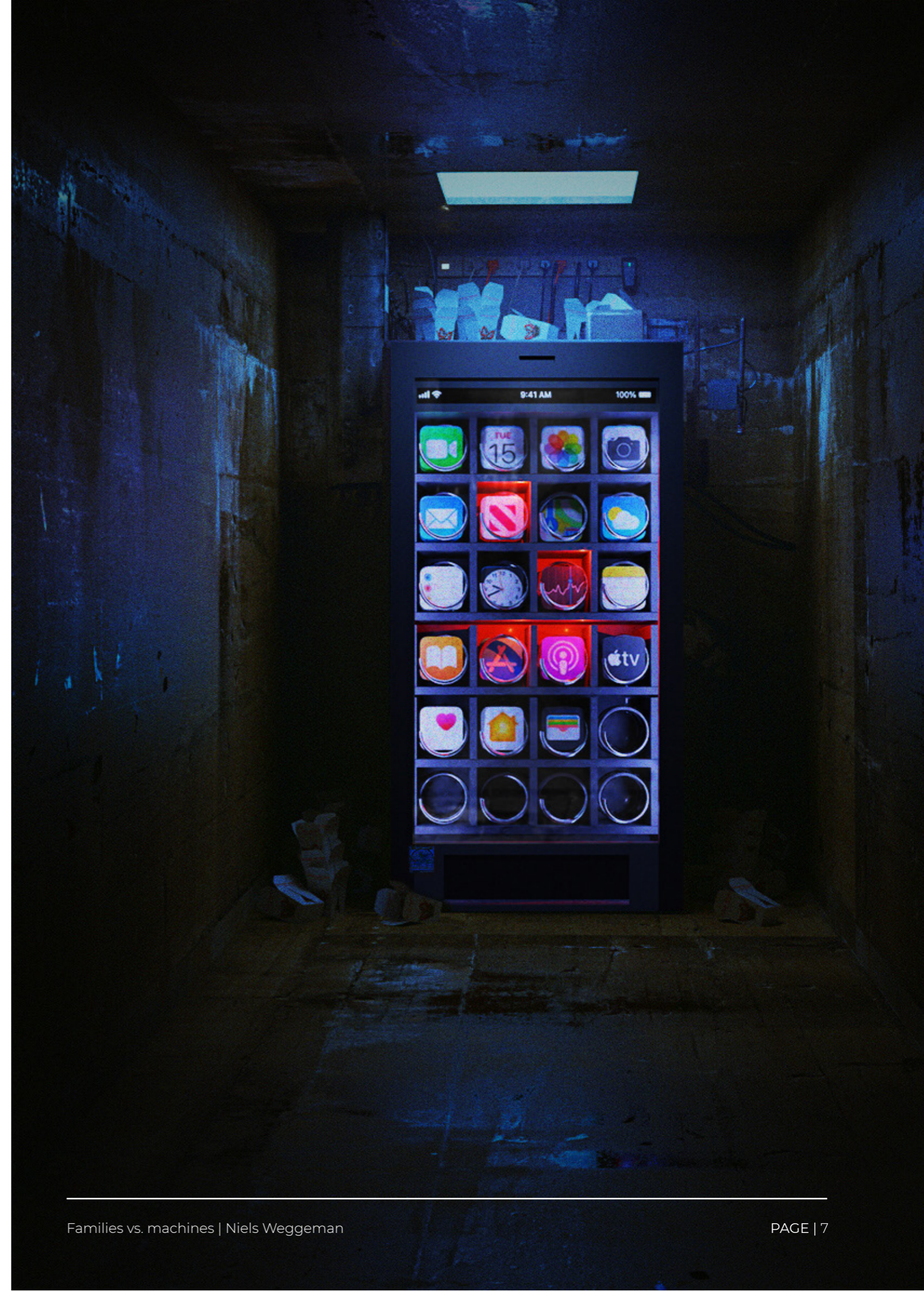That call is what this thesis intends to answer.

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Executive Summary

The goal of this project was to find a way to improve digital well-being in family life through design for the startup Unpluq.

In this thesis, the designer combined a design approach called Value Sensitive Design with the list of requirements methodology taught at Industrial Design Engineering. This resulted in a new methodology that allowed the designer to develop a concrete list of requirements and wishes for improving well-being through design.

To establish this list of requirements, the design student performed a detailed literature review on positive psychology, behavioural economics and digital parenting literature. In addition to this, he interviewed both parents and children to empathise with their worldviews. Lastly, he performed a market analysis to understand how the context and available resources could affect Unpluq's capacity to take up a role in this new market.

Based on this research, the answer found is that improving digital well-being in the family life requires the design of a choice architecture that helps parents and children take more conscious control of their time and attention (both transactional values). Doing so should allow them to spend these transactional values on activities that align with things they intrinsically value.

This choice architecture should help rearrange actors, artefacts, and stimuli within the family home environment so that time is less easily spent without intentional consent.

Based on this list of requirements, the design student initiated a design process to translate these insights into a physical design concept that Unpluq could bring to the market to help families rearrange this choice architecture.

This design process was executed by iteratively evaluating design concepts with both the client, potential end-users, experts, and professionals from different psychology and pedagogics fields.

In the end, the designer delivered a concept that stimulates reflective thinking about what users find intrinsically valuable and provides tips, tools and challenges that push them to try and change habits. This is done by focusing on conversations that help raise awareness of the critical issues and stimulating the iterative goal setting that the family should engage in to start solving these issues for themselves..

The way that time can and should be allocated for intrinsically valued activities was so unique for each individual and family that it is hard to find one solution to help everyone. Therefore, the core insight of this project for Unpluq is that if they would be interested in entering this market, their focus should be on helping families reimagine the way they use their environments within their own family homes. This should be done both individually and together through reflection and iteration and supported in that journey by scientific and expert information.

Part 01

Project Introduction

This report describes the result of more than half a year thesis for the master Strategic Product Design at the Delft University of Technology on developing a digital wellbeing strategy for the startup Unpluq.

In this first part, the introduction, I set the scene of the project by introducing the main stakekholders. I describe the scope of the project, as well as the general project aim, approach and methodology.

At the end of this part, I give a general description of the project result, and then go on to substantiate this result throughout the rest of this thesis report.

Figure A - Photo retrieved from Unpluq.com (2021)

01 Introduction

Before diving into the intricacies of this project, in this chapter the important stakeholders of this project will be introduced. I explain who the company is for whom this project is executed, I will describe the goal of the thesis and I will explain my personal motivation to take up this challenge.

The attention for the ever increasing impact of infotainment technologies on our everyday lives seems to be at an all-time high. With the Covid-19 crisis being in full swing, important elections going on in the United States and the release of the discerning documentary The Social Dilemma, 'Digital Wellbeing' as a topic is gaining more and more traction, forcing the big established infotainment providers in our society to take a stance on how we should design technology that serves mankind, rather than unintentionally leading it astray.

Unpluq, a young company that was founded by Tim Smits & Jorn Rigter back in 2019, aims to take a proactive step in the right direction by helping consumers consciously disconnect once in a while and spend their time in more meaningful ways.
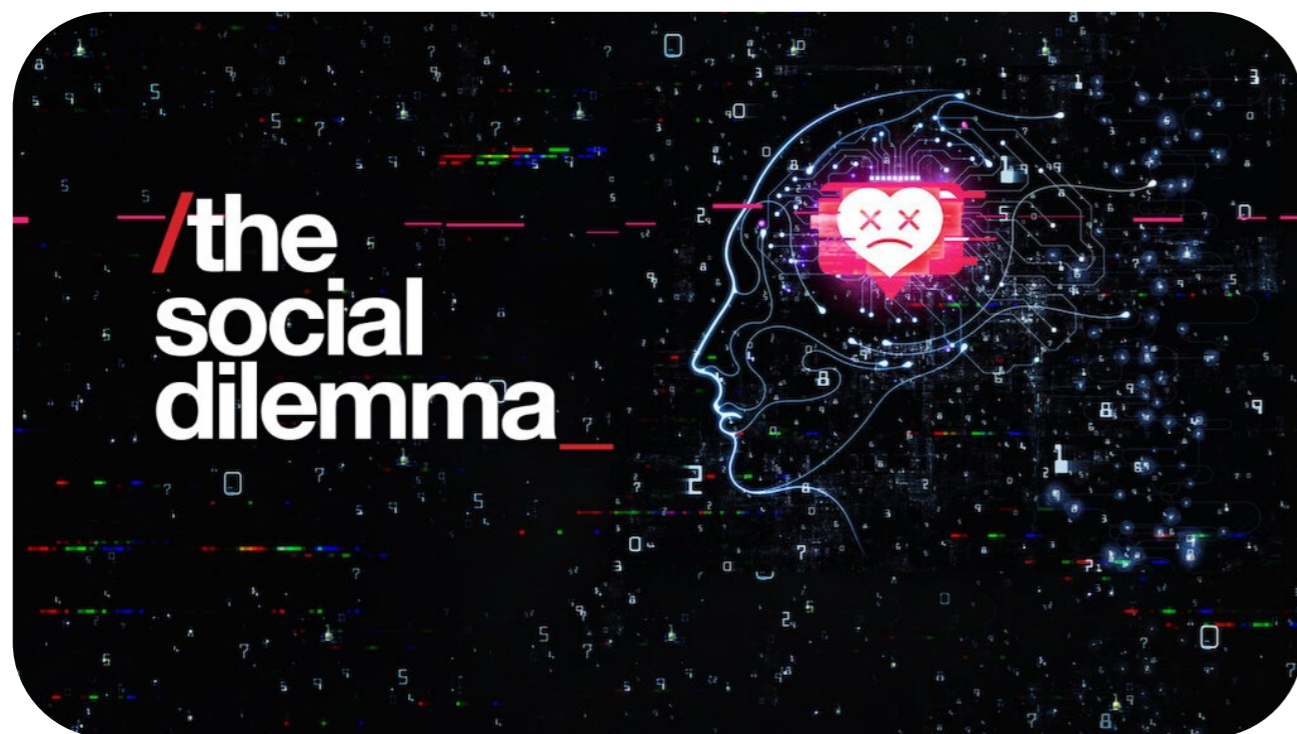
Figure 1.1 - Protional visual from The Social Dilemma, a Netflix Documentary

Focus Mode
No distracting apps & notifications

Normal Mode
Access to all your apps & notifications
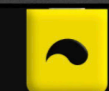
Figure 1.2 - How Unpluq's product: the Unpluq key is used.

1.1 About Unpluq

To achieve this, they developed a small USB-c stick called the Unpluq Key. This key, which fits in the charging ports of Android smartphones, intends to help avoid temptation by hiding all distracting entertainment apps when the key is unplugged, as shown in Figure 1.2. This clever software intervention decreases the temptation to get stuck in liminal moments (Eyal, 2019). Instead, it helps people more consciously decide to engage in the time-intensive temptation that smartphones can be. And, if people spend less time on their devices, the odds are that they are more likely to spend more time on the things they desire in their life.

In the last half-year, Unpluq has launched its first product to the market through crowdfunding and is currently looking to develop its product through user testing further. Currently, they have four full-time employees and are looking for investment to scale up further.

Their primary focus has been on a target group of students and millennials, who were readily available to them when they were developing their product. Although millennials struggle most with phone overuse, and 88% report signs of smartphone addiction (Hoeffnagel, 2018), they are also a group with a relatively low budget available. This makes it potentially harder and less likely to appeal to them.

Unpluq intends to, ultimately, take a leadership role in showing society the right way to go: a world in which technology again supports rather than distracts us. A noble cause. However, although their current solution is a significant first step, spending less time on your devices does, of course, not automatically equal spending your time in more meaningful ways (Bruin, 2021). Therefore, this thesis's core intention is to help conceive the next strategical step Unpluq should consider taking towards taking the market leader in digital well-being.

1.2 About this thesis

The challenge of improving digital well-being is that we are not sure how technology should help us. Like Goodyear (2018), Orben et al. (2019) & Dennis (2020) wonder: how can technology contribute to a flourishing human life?

To find an answer to this ambitious challenge, I intend to research the following three topics:

1. How do online media currently affect these target groups lives?
2. What is required for a product/service solution to help these target groups keep away from distraction?
3. What product/service solution should Unpluq implement to help it strategically increase its share in the Digital Wellbeing market?

In the process of finding an answer to these three core questions, this thesis describes what distinguishes "meaningful screen time" from "distraction", based on learnings from the psychology behind life satisfaction and subjective well-being. This knowledge helps define what (digital) activities people see as meaningful, when and why people label an activity as a distraction and how we can avoid giving in to this.

Based on these insights, the goal is to distil requirements for products that help people flourish.

Next to this, I conducted qualitative interviews to understand the aforementioned target groups' relation with online media. Based on these interviews, I uncover several tensions in which a product solution by Unpluq could contribute

to the family's well-being. Combining these learnings with literature research into digital parenting, I argue why home-bound families should be considered an attractive new consumer segment for Unpluq.

I have gathered insights on Unpluq markets position through a trend and competitor analysis to see how their current resources could best improve their strategic position in this upcoming market. Based on this research body's learning, a beautifully designed educational card deck with conversation starters is proposed as a feasible, viable and desirable first product to help Unpluq reel this new target group in.

Conclusively, I present a roadmap on how this product can help Unpluq build a digital well-being subscription model & realise its market leadership dream.

1.3 About the author

My name is Niels Weggeman, and I am a graduate student in Strategic Product Design. I have been intrigued by the concept of "time well-spent" since I saw the video "This panda is dancing" by Max Stossel back in 2016 (Stossel, 2016).

Inspired by the legacy of the Centre for Humane Technology, currently well-known for their recently released documentary 'The Social Dilemma', for years, I have been interested in how designers could contribute to developing technology that empowers rather than distracts.

Hence, I offered my services as a graduate student to Tim and Jorn because I share their vision that humanity should control the time they spend on digital devices.

Next to serving the further development of the body of thought behind Unpluq, my graduation project could serve as an opportunity to increase my understanding of the psychology that lies at the foundation of the pressing challenges posed by infotainment technologies.

For, it is a straightforward deduction that the designs for our tools shape how we think.

Even something as simple as a hammer makes your arms stronger when you use it. Then obviously, the same goes for our digital tools. ("For Technologists", n.d.)

We should be aware that it is, of course, never all bad. These infotainment technologies, amongst which smartphones, tablets, gaming consoles, (portable) computers and the online and offline services that make them appealing, have brought a lot of unprecedented possibilities into our lives.

This makes me wonder: when and where do these tools complement, and when do they cause such harm that interventions are required? Furthermore, of course, the ultimate question: how can design influence these results?

Hence; my goal for this project is:

> **To develop a viable, feasible and desirable product/service proposal with which Unpluq can help a new target group spend their time in a more meaningful way, rather than letting them get tempted and habitually distracted by their current (digital) environments.**

No time to read?

- **For a quick grasp of the content, look at the graphics and read the introductions, summaries and key take aways at the end of every chapter.**
- **To make the report more easily scannable, the important insights are also highlighted in bold within the text.**
- **The paragraphs enclosed in lightly-coloured panes contain additional or annecdotal information and can be skipped.**

- **Focus on chapters 3, 11 and 19 in particular if you are interested in the Value Sensitive Design.**
- **Chapters 3 to 10 are most relevant to answering the first research question on designing for digital well-being.**
- **Chapters 11 to 18 are most relevant to answering the second research question on developing a digital well-being concept for Unpluq.**

02 Project Scope

What is the focus of this project?

In this chapter I explain why the decision was made to scope the project down to improving digital well-being within the family life.

2.1 Develop an add-on to an Unpluq subscription model

This project aims not to improve on their current value proposition, as that will be the topic of another graduation project soon to start. Instead, this project's final concept should be a valuable add-on that the start-up can integrate into a to-be-developed subscription model. This product concept should further increase Unpluq's value proposition and make their product more effective and appealing to initial users.

2.2 Parents who are considering giving their children a first smartphone

Because Unpluq asked to explore other potentially interesting target groups, I started this project with a brief segmentation study. Initial interviews at the start of the project with employers and employees taught us that:

1. Professionals do not consider smartphone distraction to be a prominent issue on the work floor.
2. Professionals indicate that distraction occurs when their focus is interrupted due to internal roadblocks or because an external agent draws attention.
3. Professionals value their autonomy in their working style and do not seem to like the idea of employers intervening there.
4. Although distraction does not seem to be too much of an issue at work, it appears more problematic when working from home.

In total, four interns, two employees and two founders from several startups situated within Yes!Delft - the incubator in which Unpluq is currently stationed - were interviewed in person on their stances on smartphone and online media distraction. Next to this, two additional interviews with a researcher working for the Dutch Government and a high-level manager at a large Dutch bank were performed over Google Meets.

Based on insights from these preliminary interviews and data gathered, we collectively decided that families working from home would be a more appealing target group to focus on in this project than office workers. Unpluq's vision of "helping people spend their time in more meaningful ways" (Unpluq Technology, 2020) seems more applicable to people's leisure time and children are well known to have a hard time dealing with smartphone temptation.
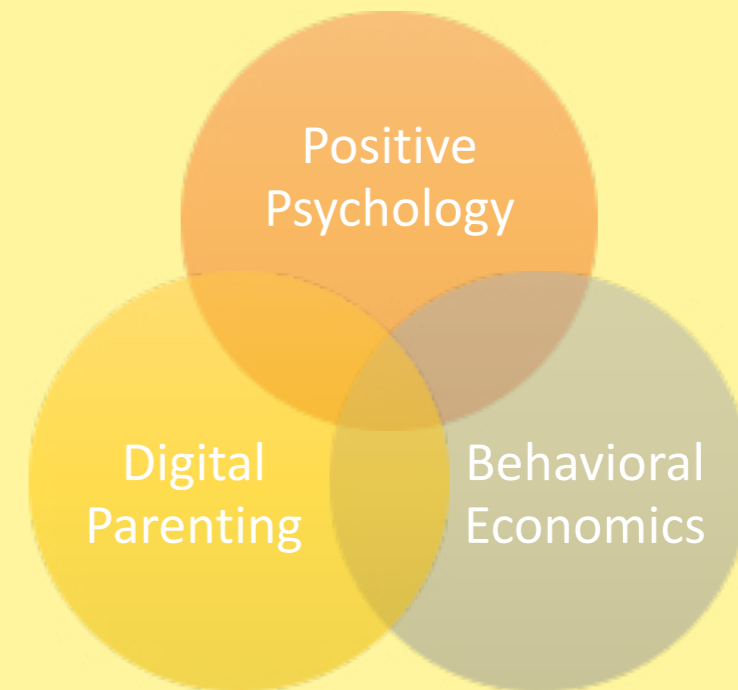
As for why I choose to focus on children who are getting access to a smartphone for the first time in their lives:

In the process of my interviews with parents from children aged 6 to 10, I learned that at that age, parents are still relatively present and observant when it comes to their child's screen activities. In the Netherlands, children generally get smartphones at the age of 9 to 12, when they first go to secondary school. Based on literature research, it turns out that when kids get their smartphone and are starting to develop their interests and lifestyle, parents start losing overview (Geurts et al., 2020). It, therefore, makes sense that with this transition, parents also need help teaching their children to develop good behavioural patterns.

2.3 Positive Psychology

From several theories in Positive Psychology that aim to explain the requirements for experiencing well-being, I adhere primarily to Self-Determination Theory (SDT) in this thesis. This theory's three psychological needs form an applicable and straightforward framework for motivation that can help explain observed psychological well-being deficits and contribute to the unearthing of design directions that can improve families' subjective well-being.

2.4 Behavioural Economics

Behavioural economics can explain why specific problems occur in the experience of digital wellbeing. Understanding this theory and how decision-making environments affect our capacity of resisting temptations to get distracted can help find points of improvement through which design can better help our target group resist distraction.

03 Project Aim & Approach

About how this project and report is structured

In this chapter, I explain the general choices that were made in setting up this design project. I address how the Strategic Product Design philosophy is embedded in the core of this work. I explain which research questions lie central to the story of this project. I also illustrate how the project approach is translated into the structure of this report and lastly, I introduce the methodological back-bone to this thesis: Value-sensitive design.

3.1 Design Philosophy

Strategic Design, the central focus point of my master's degree, stands for strategically allocating resources to the design solution that most effectively and efficiently satisfies all stakeholders desires and needs. That is exactly why I chose to study Strategic Product Design; I care about making things that work.

As taught at the Delft University of Technology, solutions that work have to be desirable, feasible and viable (Calabretta, Gemser & Karpen, 2016):

Desirability refers to whether or not the proposed solution meets the needs and wishes of all relevant stakeholders.

A product should ultimately contribute to and enhance the lives of everyone who is affected by it.

Feasibility means that a product should be makable with the resources – time, money, people, skills and technology – available in the foreseeable future. Any other solution would merely be a practice of fantasy.

Viability implies that the solution developed can realistically be assumed to be sustainably capable of achieving its set goal. It should make more profit for the organisation than it costs; it should align with the brand and be accepted or even embraced within the organisation. Meeting these requirements makes the idea most likely to be implemented.

Figure 3.1 - The domain of strategic design, inspired by Figure 0.1 from Calabretta, Gemser & Karpen (2016)

Given that all these factors depend on the stakeholders and the context in which the design will ultimately sit, design inherently is a social practice that requires eyes for all relevant aspects if the aim is to design to succeed.

Within this report, I occasionally refer back to these through core concepts of strategic design to justify why I make particular choices within the design project.

3.2 Research questions

To the right, you see the two research questions that this thesis intends to answer.

The first research question concerns designing for digital well-being in the family life and is answered in the first part of this thesis.

I approach this research question by answering the sub questions below, through studying literature, interviewing families and looking for known methodologies to design for well-being.

The second research question involves translating the insights from the research phase into a practical strategic solution that Unpluq can use to enter this new market.

I answer this research question by performing a market analysis on digital parental control products and on Unpluqs available resources. By combining these insights with what I learned from the well-being literature, I can then propose a product solution that Unpluq could bring to this parental control market.

1.

How can a setting be created in which parents and children experience more psychological wellbeing within their everyday lives?

A. What is known in the field of positive psychology on what makes activities meaningful and contributing to our wellbeing rather than detrimental and distracting?

B. How do digital products currently affect wellbeing within the family life?

C. What design strategies are currently proposed to be used to increase the experience of (digital) well-being?

2.

In what way and form should Unpluq design products for parents and children to enable them to better manage their wellbeing?

A. What products are currently available on the market to help parents improve their families digital wellbeing and how can they be improved upon?

B. How can Unpluq use their available resources to strategically appeal to this new target group?

C. What should such a product for Unpluq look like?

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3.3 Project approach

This project was approached in a way similar to well-known approaches like Vision in Product design and Reframing (Calabretta, Gemser & Karpen, 2016).

In short: the first step in the process is to analyse Unpluq's current state of affairs and use design tools and methodologies to envision a more desirable future. This vision of a better future can then be translated back into a feasible and viable implementation that makes achieving this more desirable future possible with the resources available.

More concretely, my project approach can be visualised as seen in Figure 3.2.

Starting in the bottom left corner, my project kicked off with determining the scope, intending to infer which target consumer segment my project would best target. Based on research into how the target audiences' world and worldviews compare with insights on the science of improving well-being, I distilled specific shortcomings in these target groups' current living environments.

Based on this insight, in combination with trend analysis to see how the world would develop in the coming years and a market analysis to assess the competition, I developed a vision of where the market is going in the coming years and how Unpluq can realistically play a role in this world.

I then translated that vision into concept ideas that could help solve the observed and predicted problems.

Finally, I iteratively developed the first version of those ideas through prototyping and validating the results with stakeholders to see if this could meet the found requirements.
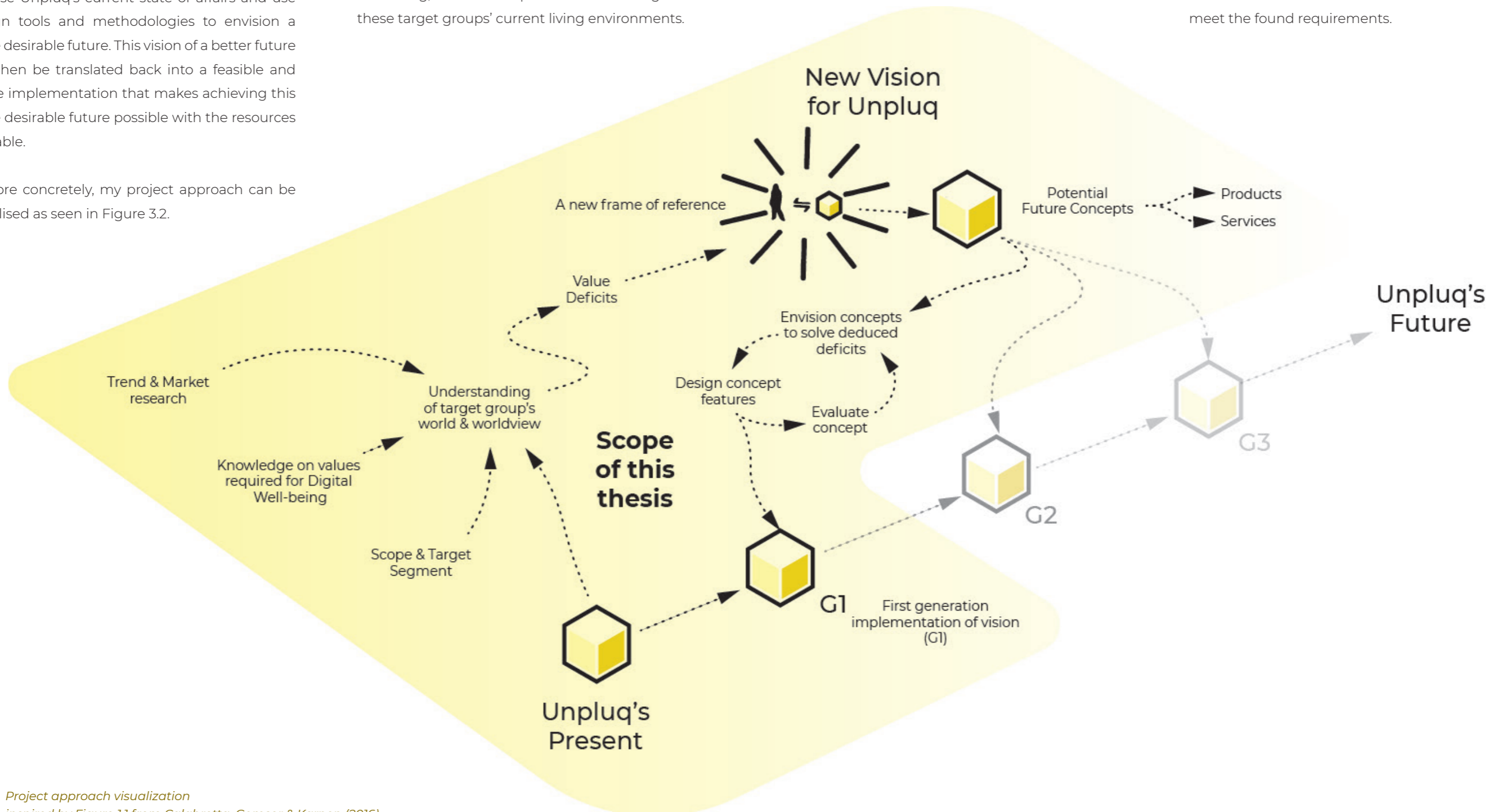
Figure 3.2 - Project approach visualization
inspired by Figure 1.1 from Calabretta, Gemser & Karpen (2016)

Project structure

* Actual process

Discover phase

Define project brief

Explore target segments

Well-being literature review

Define phase

Digital parenting literature review

Market analysis

Interviews with target groups

Develop phase

Develop design vision & requirements

Ideation

Develop Concepts

Deliver phase

Validation with experts

Validation with client

Iterative Prototyping

Validation with users

Deliver concept

Figure 3.3 - Project structure compared to report structure, inspired by project structure visual from Van Lieren (2017)

Report structure

Part 01 - Project Introduction

Part 02 - Theoretical Background

Part 03 - Exploratory Research

Part 04 - Design Synthesis

Part 05 - Final Concept

Part 06 - Project Conclusion

3.4 Report structure

To improve the readability and overview on this report, I structured it in four subsequent parts, distinguishable by different colour themes as seen in Figure 3.3. This structuring is inspired on the 'double diamond' approach proposed by the Design Council (Moritz, 2005)

In the **discover phase**, I draft my initial project brief, explored several target segments and performed literature review to develop a decent understanding of the main fields relevant to the project.

In the **define phase**, I perform qualitative interviews and a market analysis to arrive at a design brief and vision that summarizes the requirements for a product solution for Unpluq that is both desirable, feasible and viable.

In the **develop phase**, I explore the solution space is through ideation, prototyping, conceptualization and validation.

In the **deliver phase**, I describe and discuss the results from the case study for Unpluq.

Recommendations are done on how to further develop this concept and a proposal is given for how Unpluq could implement and built upon this concept to improve their chances at becoming a market leader. Furthermore, I address the implications of this thesis for the fields of design for digital well-being and value sensitive design; the design methodology core to the overall approach of this project.

3.5 Involved parties

Besides the Delft University of Technology supervisory team and company mentor from Unpluq who counseled me through this project, I've also had help from several other professionals. I've consulted several academics from the Delft University of Technology. Prof. dr. M. J. Van den Hoven aided me in improving my understanding of Value-Sensitive Design. Prof. dr. E. Giaccardi, Prof. dr. ir. P.M.A. Desmet & Dr. M. J. Dennis helped me better understand design for well-being.

Next to them, Dr. I. Koning from Utrecht University Social Sciences, Daniëlle Vliexs, teacher in pedagogics at the HAN University of Applied Sciences and Eva de Vries, an integrative psychological counselor in training helped me validate my insights on digital parenting. And, the evaluation of my concepts would have been much harder without the diligent work of two master students Youth studies: Daniëlle Michels & Lisanne van Giessen.

3.6 Design methodology

The overarching design methodology that I used in this project is an interpretation of Value-Sensitive Design (VSD) thinking, which is seen as a core requirement for responsible innovation (Van den Hoven, 2015).

Why Value-Sensitive Design?

During my studies, I found, compared, and assessed several methodologies proposed as potential methods for improving well-being to find a way to improve digital well-being by design. After looking at an expansive collection of resources (e.g. Dennis, 2021; Calvo & Peters, 2014; Brey, 2015; Peters, Calvo & Ryan, 2018; Jimenez, Pohlmeyer & Desmet, 2015; Lomas, 2020; Verganti 2019; Huijbregts, 2018 & Van Lieren, 2017) I settled on VSD because it is often mentioned in literature as a suitable approach to arrive at solutions that can contribute to well-being - including digital well-being (e.g. Calvo & Peters, 2014; Brey 2015). For a more elaborate overview of this comparison, please refer to Appendix B.

What is Value-Sensitive Design?

Value-Sensitive Design was developed to design more morally responsible ICT solutions and has since caught attention from many other fields. The idea behind VSD is that technology inherently embodies values and that by making these values explicit and actively taking them into account in the development process, the result from the project should be more ethically sound (Friedman, 2018).

Through iterative development and evaluation of solutions in three different areas …

· technical feasibility,
· empirical substantiation and
· alignment with the stakeholders' values

… VSD helps realize results with a solid moral foundation.

How Value-Sensitive design works

The insights gained by this continuous validation process can be visualized in a dynamically adjusting "Value Hierarchy", as proposed by Van den Hoven (2015). An example given in Figure 3.4 & 3.5, you can see the principal value(s) presented at the top of this schematic visualization. This approach aims to find concrete requirements that designers can use to develop a solution that can help deliver on the principal value(s). Delivering on these top-level value(s) is done by conceiving of potential sub-values, also referred to as instrumental values (Evans, Jemal & Foxall, 2009) and norms required to realize this principal value.

In the research phase of this report, you will see these value pyramid on design for digital well-being after each chapter, feeding the design implications derived from the research practices into an elaborate values hierarchy which can be seen on pages 26 & 27.
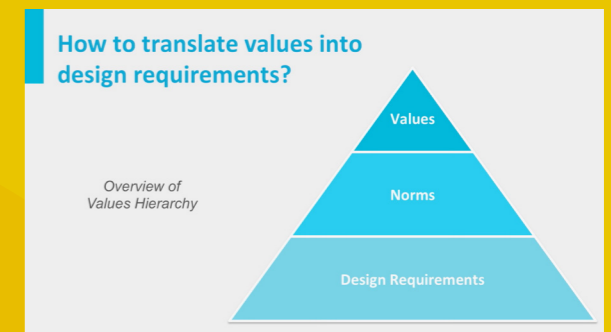
Figure 3.4 - Values Hierarchy as proposed by Van Den Hoven (2015).
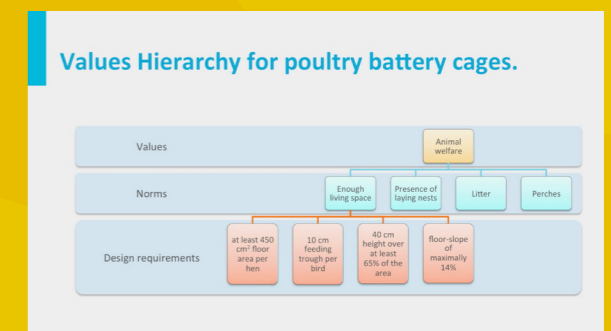
Figure 3.5 - Example of a values hierarchy put into practice, by Van Den Hoven (2015)

Proposal for improvement

As part of my thesis results, I would like to propose an amendment to the current Values Hierarchy methodology. In addition to applying the current design approach, with its values, norms and requirements as proposed by Van den Hoven (2015), I combine this with the thinking that lies at the foundation of the 'list of requirements', another methodology taught at the Delft University of Technology (van Boeijen et al., 2020). In this, I distinguish between the minimal requirements that a solution has to meet to achieve the top-level principal value, and the wishes of stakeholders, which would make the solution an even more suitable solution.

Although not a pure necessity for satisfying the core value, one can add these stakeholder wishes below the traditional values hierarchy requirements as additional desires that potential solutions have to meet.

This way, the designer can first translates the values revealed by the iterative research into hard requirements that the product must meet. After using these requirements for input in a creative process, the designer uses the found wishes to evaluate the effectiveness and desirability of the proposals found. By evaluating these concepts with stakeholders, the designer subsequently improves the value hierarchy and redefines the requirements and wishes. Then, the creative process starts again to arrive at an even better solution.

This adaptation to the design method makes the approach more tangible, the effectiveness of the solutions found more measurable, and in theory, the method more accessible to put into practice.

> ## VSD requires that we broaden the goals and criteria for judging the quality of technological systems to include those that advance human values.

Batya Friedman, 2018

3.7 Values Hierarchy for Design for Digital Well-Being

Figure 3.6 depicts all insights gathered during this thesis on designing to improve digital well-being in the family home.

As you will see throughout this report, this values hierarchy is gradually built up based on the insights gathered in each subsequent chapter.

Looking at this pyramid top-down, achieving each of the layers depends on whether the final solution proposed in this thesis can satisfy the layer below. Decending through the layers of the pyramid, we eventually end up at the requirements that concretely specify what the product should be capable of to improve the digital well-being of parents and children.

The wishes will later be used to evaluate the different concepts proposed.
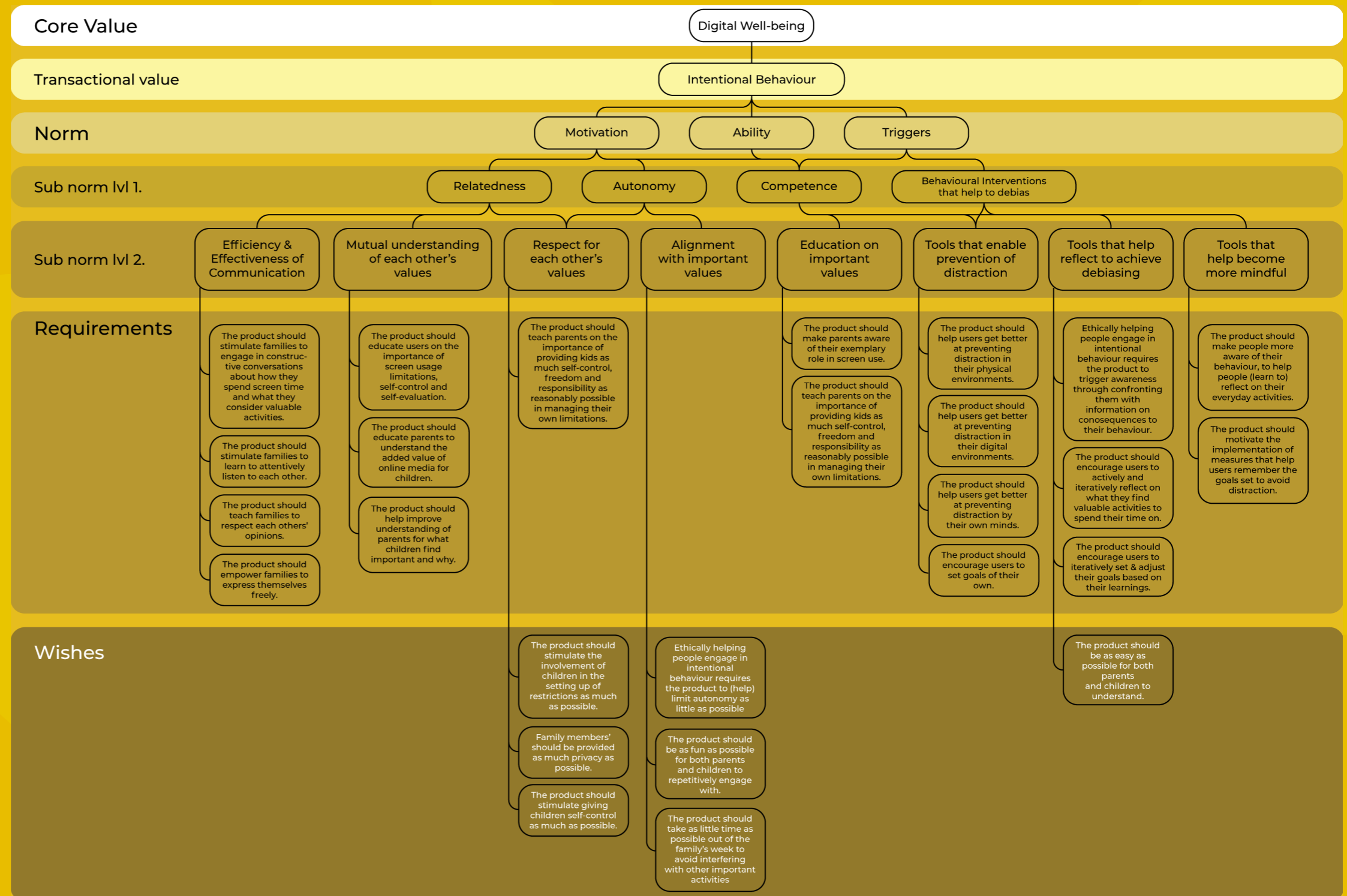
Figure 3.6 - The complete values hierarchy for design for digital well-being that was derived based on the insights gathered in the literature review.
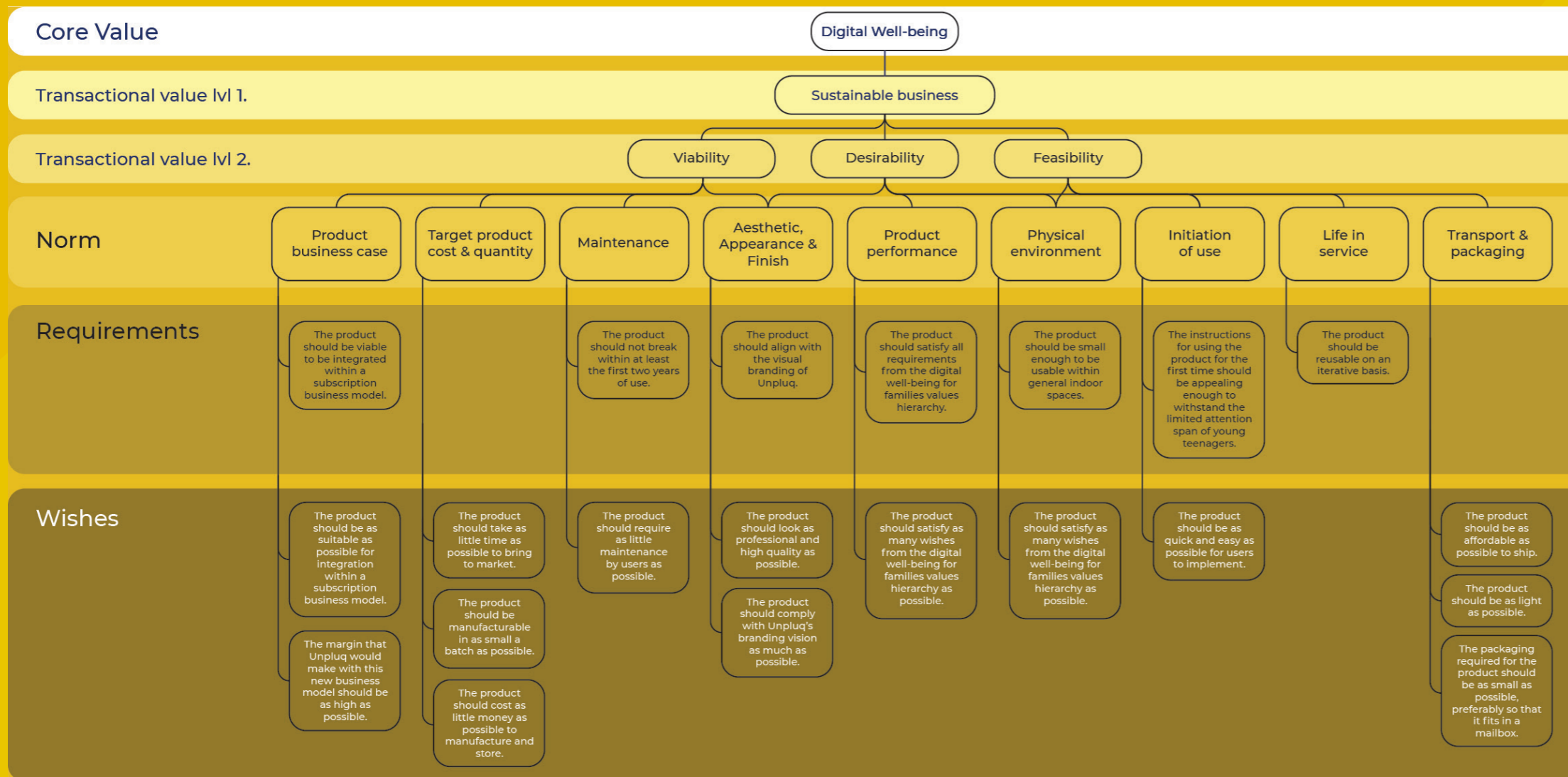
3.8 Values Hierarchy for Unpluq

To make sure that the to be designed product would also comply with the values of Unpluq themselves, another values hierarchy was drafted, combining the learnings from the literature review with the insights from the market analysis for Unpluq to ensure that the product would both be viable, desirable and feasible for Unpluq to deliver.

In this overview, presented in Figure 3.7, the value pyramid is visualized. In this depiction, the assumption was made that the three pillars viability, desirability and feasibility are the main important values that allow for building a sustainable business. Not the entirety of Unpluq's business is listed here; I am only referring to the requirements and wishes that apply to this case study, as well as to how these need to be met to create a sustainable business case for Unpluq. The norms arranged underneath were inspired by exemplar checklists provided in the Delft Design Guide (van Boeijen et al., 2020).

This values hierarchy was only littly affected by the design research performed in the first research part of this thesis. It will therefore not be further expanded on in this report, but it will be used to assess the three concepts conceived of in the design conversion phase. The goal of this hierarchy is to make sure a business case would be developed that Unpluq can and actually would want to bring to the market.

|	Digital Well-being								
Core Value	Digital Well-being								
Transactional value lvl 1.	Sustainable business								
Transactional value lvl 2.		Viability		Desirability		Feasibility			
Norm	Product business case	Target product cost & quantity	Maintenance	Aesthetic, Appearance & Finish	Product performance	Physical environment	Initiation of use	Life in service	Transport & packaging
Requirements	The product should be viable to be integrated within a subscription business model.		The product should not break within at least the first two years of use.	The product should align with the visual branding of Unpluq.	The product should satisfy all requirements from the digital well-being for families values hierarchy.	The product should be small enough to be usable within general indoor spaces.	The instructions for using the product for the first time should be appealing enough to withstand the limited attention span of young teenagers.	The product should be reusable on an iterative basis.	
Wishes	The product should be as suitable as possible for integration within a subscription business model. / The margin that Unpluq would make with this new business model should be as high as possible.	The product should take as little time as possible to bring to market. / The product should be manufacturable in as small a batch as possible. / The product should cost as little money as possible to manufacture and store.	The product should require as little maintenance by users as possible.	The product should look as professional and high quality as possible. / The product should comply with Unpluq's branding vision as much as possible.	The product should satisfy as many wishes from the digital well-being for families values hierarchy as possible.	The product should satisfy as many wishes from the digital well-being for families values hierarchy as possible.	The product should be as quick and easy as possible for users to implement.		The product should be as affordable as possible to ship. / The product should be as light as possible. / The packaging required for the product should be as small as possible, preferably so that it fits in a mailbox.

Figure 3.7 - The complete values hierarchy for corporate sustainability that was derived based on the information gathered in the market analysis and the conversations with Unpluq.

Design Outcome

Figure 3.8 - The final concept: a conversation starter card deck

Design Outcome

As the result of my design project, to help parents and children take more control and spend their time in on more meaningful activities, both online and offline, I developed a card deck to guide parents & children in periodic discussions about their time allocation & screen time activities.

In this overview, I briefly explain the reasoning behind this final design outcome, and where the substantiation for these choices can be found in this thesis report.

Why parents and children?

Parents are a good match with Unpluq because, whilst they are concerned with the well-being of their children, there also is a lack of guidance available to help them know what is best for their children. Parents are also a more affluent target group than Unpluq's current target group, millenials. Teaching children how to manage their time and attention at a young age is a crucial skill to develop in our current attention-hoarding society.

See chapter market analysis

Why improve their capacity to spend time in a meaningful way?

Because spending time unintentionally puts people at risk of developing bad and unhealthy habits. It is a waste of potential for people to spend time on things that do not align with the activities that they value, like developing new skills, or spending time with loved ones.

See chapter on wellbeing

Why discuss time allocation?

Because well-being literature shows sthat being intentional about how we spend our time is crucial for increasing our well-being. People need to learn to reflect and evaluate in order to be able become mindful about what they do.

See chapter behavioural economics

Why discuss screen activities?

Our current devices tempt us into habitual need satisfaction, resulting in time being spent unconsciously consuming digital media. If done in excess, this may harm our well-being.

See chapter digital wellbeing

Why guide these periodic discussions on screen activities?

Because parents often do not know exactly how to approach these discussions constructively and productively. The literature reviewed teaches us that children need the autonomy and

relatedness that internet provides. To be able to manage this properly, they need to learn to be more responsible. Having frequent discussions with their children can help parents develop a better bond with their kids. Through this, parents can improve their understanding of why and what their kids value about screen time. In the mean time, children become more open to learning about better behaviour.

See chapter digital parenting

Why a card deck?

Because it was the most effective way found of meeting all stakeholders needs. Parents and children wanted a simple and accessible tool, as was found through the research through design approach. Also Unpluq wanted a simple, affordable and fast to develop product that they could soon bring to market as an addition to a to-be-developed subscription model.

See chapter research through design.

The card deck is a strategic intervention because a card deck is a very well-known and because of that accessible medium. It is very affordable to produce, can serve as an eye catcher to improve brand awareness and can serve as a stepping stone into the market of teaching parents proper digital parenting; an immensly valuable and important new market.

See chapter final concept

General take-aways
of Introduction

The topic of this thesis is spending digital time more meaningfully in the family life. To come to a good conclusion on that, I will study the fields of positive psychology, behavioural economics and digital parenting.

I explained that Parents and children would be a good market for unpluq to target, because leisure pastime is under charge from electronic devices and children vulnerable to this temptation.

the scope of the project focusses on developing a new vision for Unpluq for targeting this new market, and developing a first concept for how Unpluq could approach that market.

I introduce value-sensitive design as the design methodology used in this project, used to keep track of the design requirements and wishes as to actually establish a product that can improve well-being.

I also describe the final result of the process, as to illustrate how the rest of the report substantiates this design outcome.

Figure B - Photo retrieved from Unpluq.com (2021)

Part 02

Theoretical Background

In the following section of this report, I describe the insights acquired from the literature reviewed on positive psychology, behavioural economics, digital well-being and digital parenting. All of these topics together aid answering the research question introduced in paragraph 3.2: can we improve well-being through design, and if so, how?

To add some context to this question, I first give an introduction of the main terminology used in this section and a brief history of the research of well-being.

After that, I subsequently describe the findings from each of the different fields. I wrap this section up with a completed values hierarchy on designing for digital well-being.

Contents

Figure C - Photo retrieved from Unpluq.com (2021)

04 Glossary

Introduction of the terminology

In this work, I will frequently refer to concepts like 'spending time in a meaningful way', 'flourishing', 'time-well-spent' and 'digital well-being'. One can likely intuitively picture what these topics refer to. I would, however, like to specify some of this terminology right now so that you can follow along without having to backtrack. This introduction helps make sure we are all on the same page right from this report's start.

Let us start with the term 'Well-being'.

1.1.1. Well-being

The Oxford English Dictionary defines well-being as **"The state of being comfortable, healthy, or happy"** (Oxford English Dictionary, n.d.) Well-being is by many considered the ultimate goal of our everyday activities. People who enjoy high levels of well-being are described as flourishing ("What is Well-being", 2018).

1.1.3. Time-Well-Spent / Time spent meaningfully

According to Merriam-Webster.com, the definition of "well-spent" is "worth having been used" ("Well spent", n.d.). **'Time-well-Spent'** then **refers to activities that we engage in and label as contributing to things we value**. This would ideally be the feeling at the moment itself but could also occur in hindsight.

Something **'meaningful'**, citing Oxford Learners dictionary (n.d.), **is something "serious, important, or worthwhile".** Likewise, in the literature on well-being, a consensus seems to exist that items, interactions or activities that contribute to our sense of belonging or that help us work towards actualising goals like building significant relationships or living up to our virtues should be considered meaningful (Mekler & Hornbaek, 2019; Seligman, 2011; Sheldon & Lyubomirsky, 2008).

A meaningful life should include using one's signature strengths and talents to serve goals bigger than our interests, according to Seligman (2011).

Google, on their well-being website, writes the following (Google, n.d.):

" *As technology becomes more and more integral to everything we do, it can sometimes distract us from the things that matter most to us. We believe technology should improve life, not distract from it. We're committed to giving everyone the tools they need to develop their own sense of digital well-being. So that life, not the technology in it, stays front and center.* "

1.1.4. Digital well-being

Digital well-being refers to a subtopic under the overarching theme of well-being, specifically **how our technological advance from recent decades affects our human state of being.** The full-time availability of every type of connection we can imagine also has a downside; it can distract from what matters most. Now that we are drowning in opportunities, and especially because these opportunities are continuously competing for our attention, it becomes harder to filter what we want to spend our time on.

Increasingly having gained attention since the flip of the century, 'Digital well-being' has found its way even into the vocabulary embedded in our everyday electronics. The big corporations that have bought to market personal computing devices like smartphones, tablets and laptops, are now being confronted publicly with the impact their inventions are having on society. In response to this increased attention, many of the more prominent tech companies incorporated the term 'Digital Wellbeing' in their communication. They use it as a goal/metric to optimise users' well-being by stimulating awareness of the time spent on infotainment services.

1.1.5. Infotainment technology providers

I am using the term 'infotainment technology providers' as an overarching word that, in my opinion, correctly captures the technologies that in our capitalistic systems are suspect of competing for our time and attention.

By infotainment technologies, I refer to **technologies that provide us with information and entertainment**.

By providers, I refer to **parties who provide information and entertainment to consumers**,

be it for monetary gain or to transmit a message favourable to that party.

Hence, I am looking at digital services like Netflix, Snapchat, Facebook & YouTube, and advertisers seeking to gain attention for their causes.

Also, technology developers who design the platforms through which these third parties reach consumers, like Apple, Alphabet, Samsung, and Microsoft, should be considered.

05 The Study of Well-Being

What is it that makes people happy?

How do we distinguish which choices best contribute to 'spending time well'? How do we best balance the whims of the here and now that give us pleasure, with the wiser choices that will sustainably help us be satisfied with our lives in the long run? To find an answer to these questions and help people flourish, I studied the development of knowledge on what is required to achieve a sense of well-being.

In the following paragraphs, I first address the historical developments that have led to the most contemporary well-being theories. After this, I describe what stances on well-being I encountered in the recent literature. I conclude this chapter explaining how positive psychology and behavioural economics can be combined to create a preliminary overview of improving well-being through design.

5.1 A brief history of well-being theories

The study of optimising well-being already dates back about 2,5 millennia to ancient Greece, where at that time philosophers like Plato were already theorising on what makes humans ultimately happy.

In these ancient times, Aristotle already taught that we as humans should look within, to our intrinsic nature, to see all that we require for well-being. **The goal is to attain these requirements; this "perfectionism" perspective is what we call the theory of eudaimonia.**

Since these times, three other general schools of thought have emerged with theories for human flourishing (Brey, 2015):

1. Hedonistic theories
2. Desire-fulfillment theories
3. Objective list theories

5.1.1 Hedonistic theories

(Quantitative) hedonism argues that well-being is to be attained by maximising the amount of pleasure one experiences in one's life and minimising the amount of pain (Taylor, 2005). This theory only considers the intensity and the duration of this pleasure and pain. The general argument against this perspective is that it does not appoint any hierarchy between different pleasures.

Assuming all pleasures to be of equal value seems to be in stride with the prevailing conception that intellectual, more sophisticated pleasure such as friendship, attaining knowledge and developing oneself to a higher purpose goal is more desirable than primitive urges (Brey, 2015).

5.1.2 Desire Fulfilment Theories

Desire-fulfilment theories try to solve this issue by stating that well-being is to be measured by the extent to which an individual's life fulfils all their desires. The most basic definition of this theory states that "people are better off to the extent that their current desires are fulfilled." (Brey, 2015). Similar critique arises as to the quantitative hedonism theory; fulfilling short-term desires might also harm an individual in the longer run, hence not contribute to their long-term well-being (Brey, 2015).

Since the conception of this school of thought in the 19th century, philosophers have proposed several more sophisticated variants. One of those more sophisticated variants is informed desire-fulfilment theory. This adaptation adds the requirement that individuals are, ideally, to be made fully aware of the consequences of their choices; when one knows the long-term effects of one's choices, the desire to make the wrong choice might decrease (Brey, 2015).

5.1.3 Objective List Theories

Instead, objective list theories approach well-being in an objective rather than a subjective fashion. These theories prescribe a list of objective requirements for experiencing flourishing (Brey, 2015).

Friendship	Autonomy
Wisdom	Aesthetic
Liberty	Experience
Accomplishment	Morality
Enjoyment	Development of skill

Figure 5.1 - Objective requirements for experiencing flourishing (Brey, 2015)

5.1.4 Introduction of subjective well-being

In the twentieth century, several other philosophical theories have emerged, which take a stance on the topic from, for example, the economic or psychological perspective. Ed Diener, a prominent psychologist, attempted to make well-being more empirically quantifiable by letting people evaluate their situation themselves.

This school of thought is what later gave birth to the notion of subjective well-being and positive psychology. This approach takes the term life-satisfaction into account by letting individuals reflect on the extent to which they consider their lives a success, rather than the previously mentioned approaches, which merely look at experienced happiness at that specific point in time (Brey, 2015).

5.2 Positive Psychology

In the 1990s, Seligman & Csikszentmihalyi (2000) introduced the term Positive Psychology, the most recent development in the study of improving well-being. Positive psychology is the study of what techniques can help humans avoid psychological illness and achieve flourishing instead. Herein, it focuses on stimulating creativity, talent and fulfilment to facilitate well-being. According to positive psychology, a meaningful life is lived in positive psychology when people use their strengths and skills to achieve things in life that they value (Brey, 2015).

With subjective well-being and positive psychology being among the most recent developments that aim to improve experienced well-being, the following sections will focus on theories within these fields and the factors they propose that might affect this experience.

5.3 Determinants of happiness

A breakthrough in this field came from Sonja Lyubomirsky, Kennon Sheldon and David Schkade, who identified back in 2005 that three primary factors can explain the experience of happiness:

> Approximately 50% of our chronic happiness level seems to be determined by our genetic set-point, which we can not realistically change. Another 10% of the variance can be explained based on materialistic and environmental circumstances. Hence, our intentional thoughts and actions account for the remaining 40% of our experienced happiness.

Figure 5.2 - Determinants of happiness (Lyubomirsky, 2017)

That these activities are responsible for 40% of experienced happiness is excellent news because, as designers, we can help people engage more intentionally in activities. Products can make it easier to continuously engage in intentional and valued activities (Pohlmeyer & Desmet, 2017) or support users in finding experiential activities that align with what they find exciting and with what they value (Lyubomirsky, Sheldon & Schkade, 2005).

However, getting over the hump of continuously initiating these new activities may be challenging (think of the dreaded 'New year's resolution'). Hence, it could help to turn the initiation of these activities into habits and subsequently seek sufficient variation in these habits' execution to avoid hedonic adaptation. Lyubomirsky, Sheldon & Schkade (2005) showed that as long as individuals continue engaging in these intentional activities, even if they become habits, these activities can sustainably improve experienced happiness (Jimenez, Pohlmeyer & Hekkert, 2015).

5.4 Frameworks for Eudaimonia

In the past 30 years, many different frameworks were developed that attempt to describe qualities and conditions essential for achieving eudaimonia. Frameworks like PERMA theory by Martin Seligman (2011), CSV by Peterson & Seligman (2004), Positive Design by Pohlmeyer & Desmet (2017), Self-Determination Theory by Ryan & Deci (2000) and Psychological Well-Being Theory by Ryff (1995) introduced several dimensions as potential measures for the extent to which someone experiences well-being include. A selection is shown in Figure 5.3.

5.5 Self-Determination Theory

In this report, I use Self-Determination Theory (SDT) as the main framework for eudaimonic well-being. SDT is a theory on motivation that Richard Ryan and Edward Deci introduced in 2000 and has since been one of the most broadly cited and expanded upon theories explaining psychological well-being (Jimenez, Pohlmeyer & Hekkert, 2015).

Ryan and Deci have isolated a compact set of three core needs that are claimed to be central to humanity's motivational system and are crucial to the human experience of well-being; Autonomy, Competence and Relatedness (Ryan & Deci, 2000). Their research shows that these three psychological needs mediate intrinsical motivation, self-regulation and psychological well-being (Ryan & Deci, 2000). These three needs can also mediate all other dimensions mentioned in the list above. On top of that, this theory was most prominently represented and applied in the literature reviewed. Therefore, this theory seemed most applicable to the study at hand.

Figure 5.3 - Some of the found eudaimonic dimensions for well-being

In the following paragraphs, I will further describe how the three core psychological needs that SDT promotes affect experienced motivation, according to Ryan and Deci (2017)

5.5.1 Autonomy

Autonomy means 'acting willingly in accordance with our own goals and/or values'. In their interpretation, Ryan and Deci (2017) link autonomy to people's freedom to pursue their sense of meaning and purpose, rather than purely to control one's activities. Although being in control may feel like a prerequisite for autonomy, this can best be understood when considering that giving away control over actions is not necessarily harmful, as long as these actions are in line with one's values and goals.
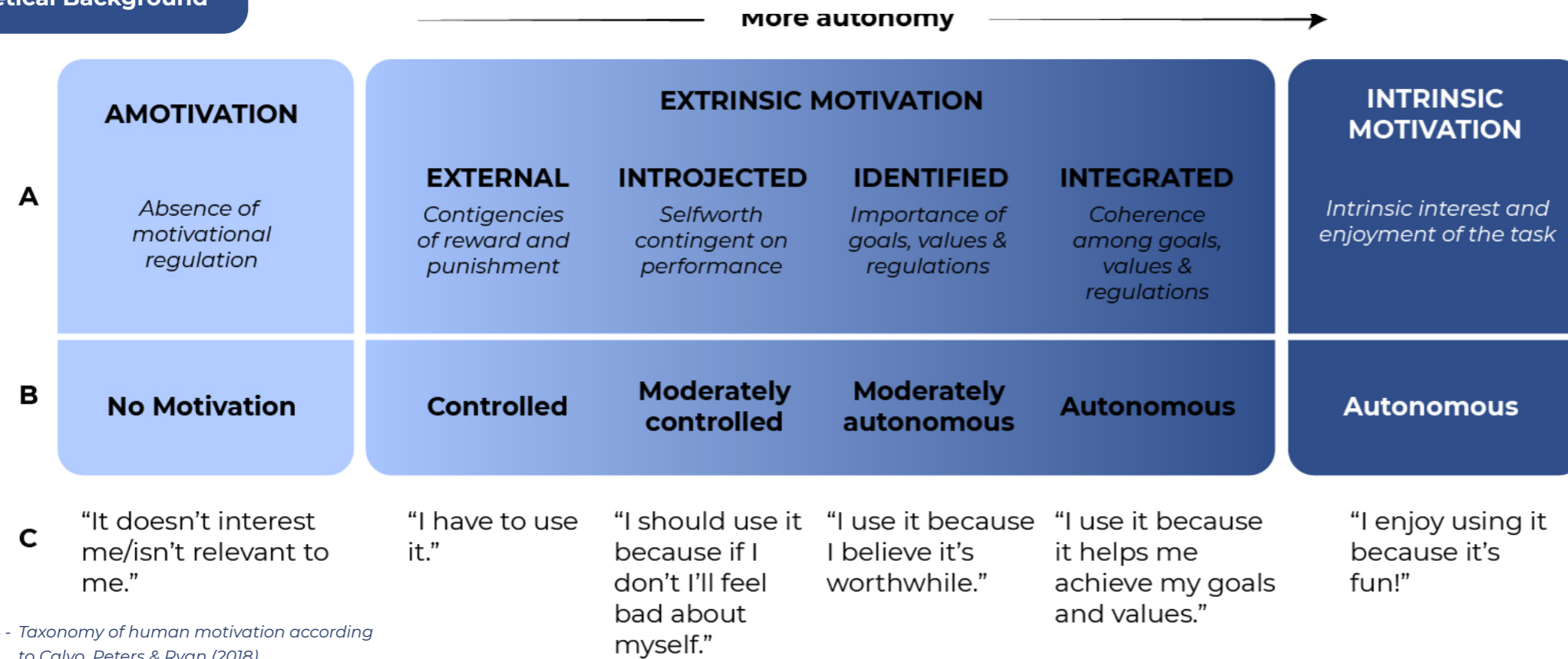
More autonomy →

AMOTIVATION	EXTRINSIC MOTIVATION				INTRINSIC MOTIVATION
	EXTERNAL	**INTROJECTED**	**IDENTIFIED**	**INTEGRATED**	
A *Absence of motivational regulation*	*Contingencies of reward and punishment*	*Selfworth contingent on performance*	*Importance of goals, values & regulations*	*Coherence among goals, values & regulations*	*Intrinsic interest and enjoyment of the task*
B No Motivation	Controlled	Moderately controlled	Moderately autonomous	Autonomous	Autonomous
C "It doesn't interest me/isn't relevant to me."	"I have to use it."	"I should use it because if I don't I'll feel bad about myself."	"I use it because I believe it's worthwhile."	"I use it because it helps me achieve my goals and values."	"I enjoy using it because it's fun!"

Figure 5.4 - Taxonomy of human motivation according to Calvo, Peters & Ryan (2018)

5.5.2 Competence

Competence is the extent to which individuals get a sense of being capable and effective in interacting with their environment (Jimenez, Pohlmeyer & Hekkert, 2015; Peters, Calvo & Ryan, 2018).

5.5.3 Relatedness

As the third and last core need in SDT, relatedness stands for a feeling of belonging and connectedness to the people around us. This dimension is present in almost all frameworks that aim to explain what makes up well-being (Baumeister & Leary, 1995).

5.5.4 Intrinsic Motivation

What SDT teaches is that the more these needs are satisfied, the more individuals feel like they are motivated to engage in their lives and subsequently experience improved well-being. The past forty years of empirical research has proven these needs can explain

causal relationships between design features and the experience of well-being, motivation and engagement. And by measuring the extent to which a technology satisfies one or more of these core psychological needs, the product experience and its contribution to the experience of well-being can be improved (Peters, Calvo & Ryan, 2018).

Peters, Calvo & Ryan (2018) highlight the impact of these three needs on the experienced degree of motivation to engage. As shown in the table in Figure 5.4, on stages of motivation, they distinguished several steps in the experienced motivation. In a situation where individuals experience very little autonomy, they experience very little motivation, as shown in this table's left end. The better the activity aligns with their goals and values, the more autonomy and the more motivated the individual feels. First, they will experience more, yet still extrinsic motivation as we gradually shift from left to right through the table.

In the ultimate case of optimal autonomy, seen on the right of this table, intrinsic motivation would occur. Intrinsic motivation is an interesting state because the individual experiencing it chooses to engage fully out of their own best interests. For an activity to contribute to their well-being, ideally, there should be virtually no resistance from the user to comply, because they enjoy the engagement.

It is important to note that the capacity of motivation to improve well-being is not limited purely to situations in which an individual is intrinsically motivated. We can also imagine scenarios in which an individual is extrinsically motivated but still experiences a relatively high sense of autonomy and alignment with their values. There are plenty of activities that we value engaging in, even though they are not necessarily fun. We do this instead because we believe they contribute to achieving our values, like taking care of our health. We hence can also feel motivated to engage in an activity if we "merely" believe it contributes to achieving our goals.

Summary

Positive psychology teaches us that experienced well-being depends for 40% on whether people intentionally engage with day-to-day activities that align with what they value.

We also know that our environments should provide autonomy, relatedness and competence to allow for intrinsic motivation and, through that, an improved experience of well-being.

Hence, both the environment and peoples' conscious intentions play an essential role in improving experienced well-being.

It should also be possible to use design to improve these environments to stimulate these changes and help people spend their time in more intentional and meaningful ways, improving their subjective and psychological well-being in the process.

05 The Study of Well-Being

Key take-aways

Positive psychology is the science of improving people's experienced & psychological well-being.

It teaches us that 40% of happiness comes from intentional activities.

It also shows that awareness of our values and our experienced autonomy and competence in pursuing them are important factors that determine our well-being.

Last but not least, also our sense of relatedness & belonging to the groups around us are important.

This is great news, because all these factors can be improved by design. Be it through improving people's abilities or stimulating awareness and group-feel

Design Implications

Core Value	Digital Well-being
Transactional value	Intentional Behaviour
Norm	Relatedness · Autonomy · Competence · Awareness
Requirements	
Wishes	
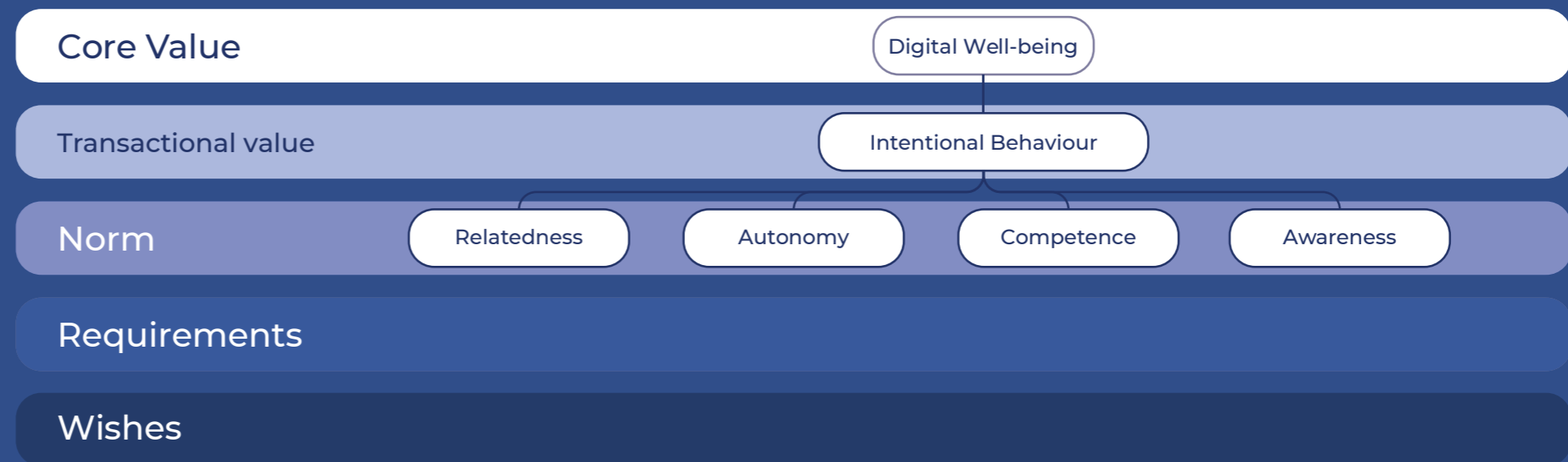
Figure 5.5 - The first and emptiest version of the values hierarchy for designing for digital well-being

Design for well-being should ...

- somehow involve improving the intentionality of what activities individuals choose to engage in.

- somehow involve improving the awareness of what activities individuals value.

- somehow involve improving the experienced autonomy of the end-users.

- somehow involve improving the experienced competence of the end-users.

- somehow involve improving the experienced relatedness of the end-users

06 Behavioural Economics

Why do people do what they do?

In the previous chapter, I established that intentional behaviour is key in improving wellbeing. That brings us to the question of how we can get people to be more intentional about their behaviour.

In this chapter, I hence study what causes people to engage in specific behaviour, and how that translates to helping them engage in behaviour that better aligns with what is good for their well-being.

The field that studies how behaviour is affected by people's environments is called 'Behavioural Economics'.

6.1 What is 'Behavioural Economics'?

Behaviour is generally assumed to be the accumulation of the decisions that humans make. Behavioural economics therefore considers how and why people come to the many decisions we make throughout our lives – both the small decision like picking what to wear today as well as more significant decisions like what career to pursue – and how they are affected by our environments.

Decision-making processes are often complicated and affected by a large number of factors, including the goal of the decision-maker, their mental state, their physical context, their skills and abilities, their social context and their behavioural processes, like habits (PBL/CPB/SCP, 2018; Van Lieren, 2017).

6.2 How people make decisions

According to behavioural economics, **human thinking has evolved into two distinctly different systems: the fast-thinking and slow-thinking ststems** (Kahneman, 2011).

System 1, the fast system, costs little energy and makes quick decisions based on mental shortcuts, called 'heuristics'. This fast way of thinking may not always lead to the most appropriate choices. If the brain reaches a nonideal conclusion by applying such a heuristic, we call this a bias. Although not always helpful, it is clear that this thinking style has had many benefits in evolution (Van Lieren, 2017).
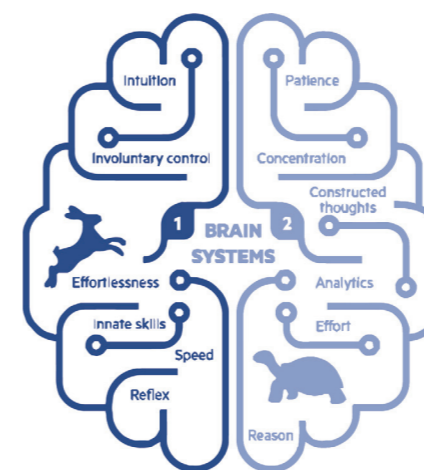
Figure 6.1 - According tot Daniel Kahneman (2011), the human brain has two modes of thinking.

System 2, the slower system, is more conscious and deliberate and is used to take more thought-through decisions. Typical examples include forming new convictions or determining new goals and intentions. Because this type of thinking costs more mental energy, we only use this when truly necessary. **In general, people refrain from switching to this thinking style when they have too little time, information, energy, motivation, knowledge or skills** (PBL/CPB/SCP, 2018, Van Lieren, 2017).

Our environments' design can play an essential role in how we come to decisions. Both our physical, digital, and mental environments together shape the so-called 'choice architecture' we are presented with. This choice architecture can affect what information we pay attention to and, through that, improves or decreases our ability and awareness of which decisions we are making (PBL/CPB/SCP, 2018, Van Lieren, 2017).

This brings us to another theory of behaviour developed by Fogg in 2019. **Fogg's behaviour model states that whether or not people decide to engage in behaviour depends on whether they experience sufficient motivation, perceive to have the required ability to engage effectively and are triggered to act.**

Satisfying this model by providing the requirements for deciding to engage in a specific behaviour can be seen as a prerequisite for engaging the system 2 type of thinking (Van Lieren, 2017).

Next to stimulating awareness, to achieve actual behaviour change, motivation and the perceived ability to perform that new behaviour need to be as high as possible. This theoretical overview provides an excellent way of integrating SDT into our previously established values hierarchy of designing for digital well-being. **Giving people more autonomy, competence, and relatedness should make individuals experience more intrinsic motivation, making it much easier to change their behaviour.**

As for improving ability and providing the right triggers, providing the right tools to shape our environments can trigger people to take the proper steps to change their behaviour. However, how to design for this is not in the scope of the current chapter, and therefore I discuss this in chapter 7.
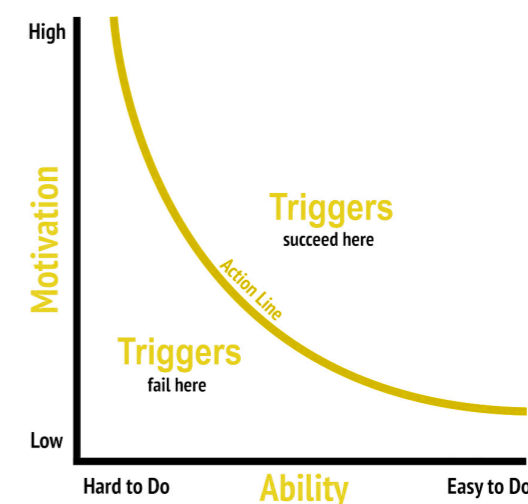
Figure 6.2 - Fogg's behavioural model: Behaviour = Motivation x Ability x Trigger (Fogg, 2019)

> ## "
> ## Resisting temptation and instilling self-control are general human goals and repeatedly failling to achieve them is a source of much of our misery.
> ## "

Dan Ariely in Predictably Irrational (Ariely, 2008)

6.3 The problem with behaviour

The behavioural problem at the basis of this thesis is that we as humans have evolved to take the road of least resistance whenever possible, often at the expense of what would be better for us. **We are hardwired to take the most comfortable route until we are forced or decide to act intentionally instead** (Hagura et al., 2017). A lack of available resources and a lack of motivation or ability leads to the subconscious use of habits and heuristics for decision making 80% to 95% of the time (Zaltman, 2003, Kahneman, 2011). Therefore, we are very likely to give in to distractions without much thought.

As a consequence, **most of us are not very rational or mindful of our consumption behaviours.** In the heat of emotional moments of boredom, frustration, or awkwardness, we tend to give in to tempting distractions (Eyal, 2019; Van Lieren, 2017; Ariely, 2008).

6.4 Distraction

Distractions occur when internal or external triggers tempt people to divert their time and attention to an activity that does not contribute to achieving their (current) goals (Eyal, 2019). Whereas traction is what we call making progress, distractions may divert our attention from the things that we value spending our time on, potentially leading to a waste of opportunity. They can be considered unproductive and potentially even unhealthy ways to escape responsibilities in our lives. Distractions in general (not only those caused by technology) and a lack of awareness of what we value and want to achieve in life essentially prevent us from achieving long-term life satisfaction (Eyal, 2019).

Dan Ariely aptly describes this in his book "Predictably Irrational", as can be seen in the quote at the top of this page.

If the development of habitual responses, also known as operant conditioning (Evans, Jemal & Foxall, 2009), resulting in routine distractions, we need to be careful. Developing bad habits that lead us to inefficient ways of dealing with discomfort may come to harm us at a later point in our lives.

Examples

A typical example of responding habitually to discomfort may occur when switching to media in a liminal moment. Liminal moments are transitional moments during the day when we transition between two different activities in which we have to wait a bit, like while waiting for a pedestrian light. We might pick up our phones to bridge that moment while the light is red, but then continue walking with our minds stuck on what is happening on screen, potentially with life-threatening consequences.

Figure 6.3 - Pedestrians jaywalking whilst on their phones

Figure 6.4 - Photo by Erik Mclean on Unsplash

A less dramatic yet also very common example is when we end up wasting twenty minutes on Instagram during work hours whilst on the toilet. Or when we give in to watching two more episodes of Friends on Netflix late at night whilst we need to get up early tomorrow morning. If we do this, we are giving in to satisfying short-term, hedonic desires. These desires may become habits (see the quote from Eyal (2019) below) that may come to bite us in the longer term, when we miss that promotion because of our lack of productivity or when we drive more dangerously because of a lack of sleep.

Quoting Eyal from his book 'Indistractable' (2019);

> "
> *All motivation is a desire to escape discomfort. If a behavior was previously effective at providing relief, we're likely to continue using it as a tool to escape discomfort. [...] How we deal with uncomfortable internal triggers determines whether we pursue healthful acts of traction or self-defeating distractions. [...] Without dealing with the discomfort driving the desire for escape, we'll continue to resort to one distraction or another. [...] If we don't control our impulse to escape uncomfortable feelings, we'll always look for quick fixes to soothe our pain.*
> "

Based on the examples described above, we can conclude that it is a necessity to do something about the triggers that tempt us to engage in these unplanned activities.

So what can we do about this? How can we counter the development of such bad habits even though it is so neurologically challenging?

3.5 Changing behaviour through design

Behavioural economics teaches us that behaviour is the collection of decisions that people make every day. These decisions are made on autopilot most of the time, letting heuristics decide how to proceed because of a general lack of resources. This lack of resources can explain why humans sometimes develop not thoroughly thought through habitual responses to stimuli.

Therefore, although these responses may suffice to satisfy the short term need that elicits the decision, they may end up being harmful to our longer-term goals and well-being. To help change behaviour for the better, designers can change the choice architecture of environments to motivate people and make it easy to engage in the desired behaviour (Ariely, 2008).

Our **physical, digital, and mental environments play an essential role in our well-being and require optimisation for psychological ergonomics.** The general stance in well-being literature is that these environments should be designed to enforce rather than distract us from our intentions (Dennis, 2020; Eyal, 2019; Calvo, Peters & Ryan, 2018, Van Lieren, 2017, Brey, 2015).

Van Lieren (2017) distinguishes **two global strategies for changing people's behaviour and decision through design.** The first strategy is called counter-biasing, or nudging.

Nudging involves using known automatic thinking patterns to prevent people from falling for less productive biases to help achieve a goal. This strategy is particularly advantageous if the goal is to get all users to make a preferable choice instinctively. The designer of the 'nudge' effectively uses known heuristics to affect people's 'snap-decisions', making it more likely they will choose what the designer thinks is in the best interest of specific stakeholders. The main concern with nudges is that they could be considered paternalistic at best and unethical at worst (Van Lieren, 2017).

The alternative, making people reflect more to let them debias their behaviour themselves, is more apt for getting people to choose what they consider the best suitable option in with their unique situation. This second strategy, called **debiasing, focuses on letting people reflect on and correct their current (mental) habits** (Van Lieren, 2017; Morewedge et al., 2015).

3.6 Mindfulness

Debiasing and developing healthier habits that properly fit an individual would require them to use the second thinking system deliberately. To improve awareness of their decisions and motivations, they should practice reflection to Figure out what activities they find valuable and how their environment could help them engage in these activities. Being aware of what is helping and what is not helping us is the first step in taking action:

Awareness is key (Eyal, 2019; Van Lieren, 2017).

Awareness of our shortcoming, the consequential risks and our willingness to avoid these consequences can provide us with the necessary motivation to undertake action (Ariely, 2008). Changing the environments and choice architecture could then help optimize their sense of autonomy and competence. ▶

▶ With this also comes the need to help people set their own goals and make them feel responsible for attaining these goals. We should help them intentionally look for and engage in new activities (both in the way they think and in what they do) that align better with their values (Lyubomirsky, 2017). If people do not learn to make time for the things they value in life intentionally, they may neglect their values and spend too much time on one area of their lives, forgetting about other critical areas. People need to learn to intentionally decide how they want to spend their time in line with the things in life that they value – be it on work, hobbies, family or friends (Eyal, 2019). **Learning to create balance and plan your time is key, because "if you don't plan your time, someone else will help you waste it"** (Ziglar, 2012).

Eyal (2019) proposes four strategies that can help people take control over how they spend their time, rather than letting external agents determine that:

A. Increasing awareness of the internal converse can make or break the capacity to deal with psychological discomfort.

B. Managing time more deliberately through timeboxing helps balance the time spent on activities that are valued in life.

C. Preventing distractions that occur due to external cues, be it in digital distractions or people in the office or the household.

D. Use precommitments to make it easier for people to stick to their intentions.

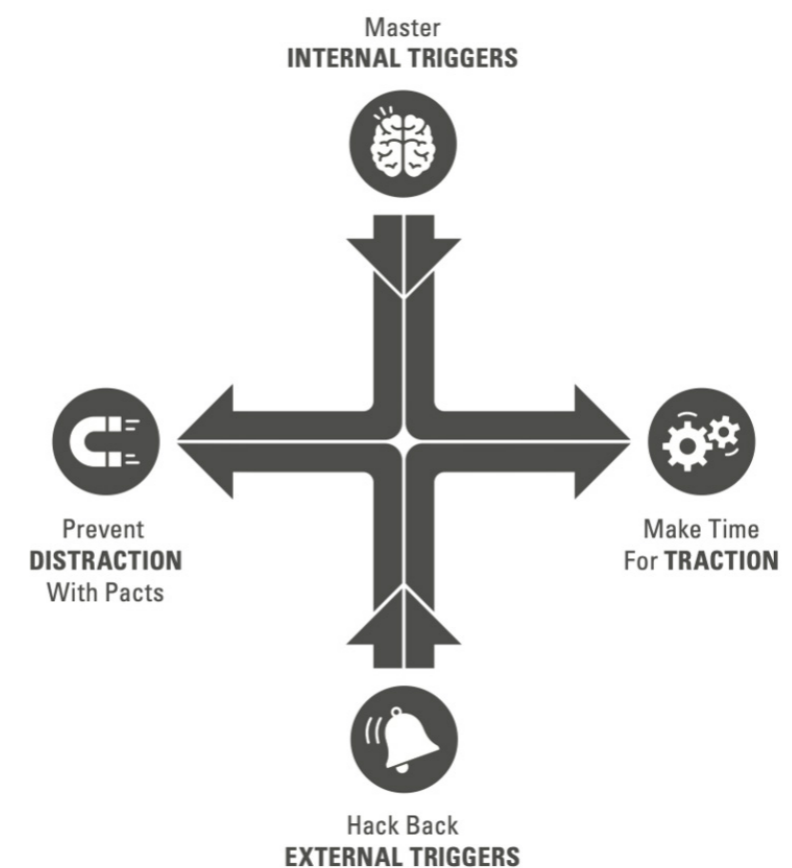

Figure 6.5 - Model for becoming 'Indistractable' (Eyal, 2019)

6.7 The ethics of changing behaviour through design

Even if it serves the purpose of helping improve people's well-being, designing products that affect peoples decision making process, of course, begs the question - **is affecting people's behaviour ethically acceptable?**

Ethics is an essential factor to consider in Value-Sensitive Design (Van den Hoven, 2015), and hence also when improving digital well-being.

In his paper currently under review, Matthew Dennis (2020) also highlights how **the ethics behind designing for behaviour change and digital well-being in particular are an essential issue to look into.** He observes three distinct strategies proposed in academic and popular sources to improve digital well-being:

1. Rule-based strategies
2. Character-based strategies
3. Design of our (digital) environments

He goes on to emphasize that each of these strategies have ethical concerns with them.

Rule-based strategies, which provide consumers with guidelines that they have to follow to avoid harming their well-being, put the full responsibility of effectively coping on the users' shoulders. That, whilst 'persuasive technologies' (PT's) used by digital media providers prey on psychological weaknesses like those described in the previous paragraphs.

Character-based strategies are similar to the rule-based strategies but instead propose that people should train themselves to live by specific virtues, which should make them better capable of withstanding the strength of these PT's. According to Dennis (2020), these strategies still make their wellbeing entirely the responsibility of the users, themselves.

The last strategy, to redesign our environments, instead puts the responsibility of respecting mental well-being in the designers' hands. However, this approach would result in products that force consumers to make decisions which the designer thought were favourable and effectively be paternalistic.

Dennis concludes that the best solution would likely lie somewhere in between. I agree with that stance and **I would opt for an informed paternalistic approach, as proposed by Floridi (2016).**

Informed paternalism involves making sure people are made wholly aware of their choices' consequences but still free to choose whatever they want. Hence, you are not at all obstructing the party whose behaviour you are trying to help improve. The only intervention put into place is the forced acknowledgement of some specific information, effectively resulting in the implementation of the "informed desire fulfilment theory" as mentioned in section 2.1.2. Through this,

Giving the complete understanding of these consequences would, in my opinion, be the ideal way of intervening. Redesign of the environment can help provide this triggering information, effectively bridging the ethical gap between strategies highlighted by Dennis (2020).

6.8 Combining Positive Psychology & Behavioural Economics

Thus, this chapter establishes that people need to intentionally engage in activities that align with their values to perceive their time as better spent.

Because people rely on habits and heuristical thinking 80% to 95% of the time, our mission is to make people more mindful of their everyday choices. Behavioural economics teaches us that helping people engage in this intentional behaviour instead requires mindfulness and reflection, planning, adjusting our environments to

become less distracting and tools that help us stick to our intentions. This, combined with the informed paternal implementation of informing interventions, should help people instead decide to spend their time more intentionally.

Furthermore, combining these insights with SDT to create an environment in which people feel intrinsically motivated to pursue their values, we need to provide the three basic needs in every area of their lives: autonomy, competence and relatedness.

Experiencing autonomy to work towards these goals can provide us with a sense of purpose and meaning. Other benefits include bringing structure and vitality to our lives, contributing to the development of our personalities, envisioning a positive future, and providing us with meaningful memories to look back on (Sheldon & Elliot, 1999; Lyubomirsky, 2008).

To help increase the feeling of competence, we need to help people feel capable of efficiently coping with their mental and physical environments. According to Deci & Ryan (2008), this, again, could be achieved by inspiring individuals and groups to strive for intrinsically rewarding goals, such as personal growth, self-development, learning and assimilation (Deci & Ryan, 2008). Technology can aid here by, for example, removing distracting triggers and providing triggers that help remind people of these intrinsically motivated goals.

As for the last crucial psychological need, we can improve the sense of relatedness by stimulating a sense of community and connectedness to the people around us. Social environments play an important role in decision-making processes (PBL/CPB/SCP, 2018). I interpret this as that we need to create situations where individuals feel like others value their involvement and have each others backs.

Summary

In this chapter, we have established that people do what they do, because all decisions they make throughout their days. These decisions are either made on autopilot, or more consciously.

Because humans have evolved to take the road of least resistance whenever possible, 80% to 95% of the time people make decisions subconsciously, relying on heuristics and habits to spend our thinking energy more efficiently. However, not reflecting on these habits may lead to the development of bad habits. To avoid this from happening, people need to become more mindful of their behaviour and decide how they want to spend their time intentionally.

Design can help change the choice architecture of environments to motivate people and make it easier to engage in the desired behaviour. To help people spend their time more intentionally on what they value, we need to help them debias themselves. This can be done most ethically by informing them on the consequences of their decisions compared to their intentions.

06 Behavioural Economics

Key take-aways

Behavioural Economics studies people's decision making processes and how these are affected by the environment.

Due to evolution, humans have two systems to their thinking: a fast thinking system based on heuristics and habits, and a slow thinking, more conscious system. The fast thinking system is used 80% to 95% of the time.

Behaviour change depends on our perceived ability to engage, whether or not we are triggered to act and our motivation. This is how we can combine SDT with Behavioural Economics.

Changing behaviour to be more intentional requires awareness, and therefore reflection. This can be achieved through debiasing, which can be done most ethically by informing on consequences.

Figure 6.6 - The values hierarchy is expanded with insights from the literature on behavioural economics

Design Implications

- The product should make people more aware of their behaviour, to help people (learn to) reflect on their everyday activities.

- To stimulate engagement in intentional behaviour, the product requires providing motivation, ability & triggers from the environment.

- According to SDT, providing intrinsic motivation requires the product to provide autonomy, relatedness and competence.

- Ethically helping people engage in intentional behaviour requires the product to limit autonomy as little as possible.

- Ethically helping people engage in intentional behaviour requires the product to trigger awareness through confronting them with information on consequences to their behaviour.
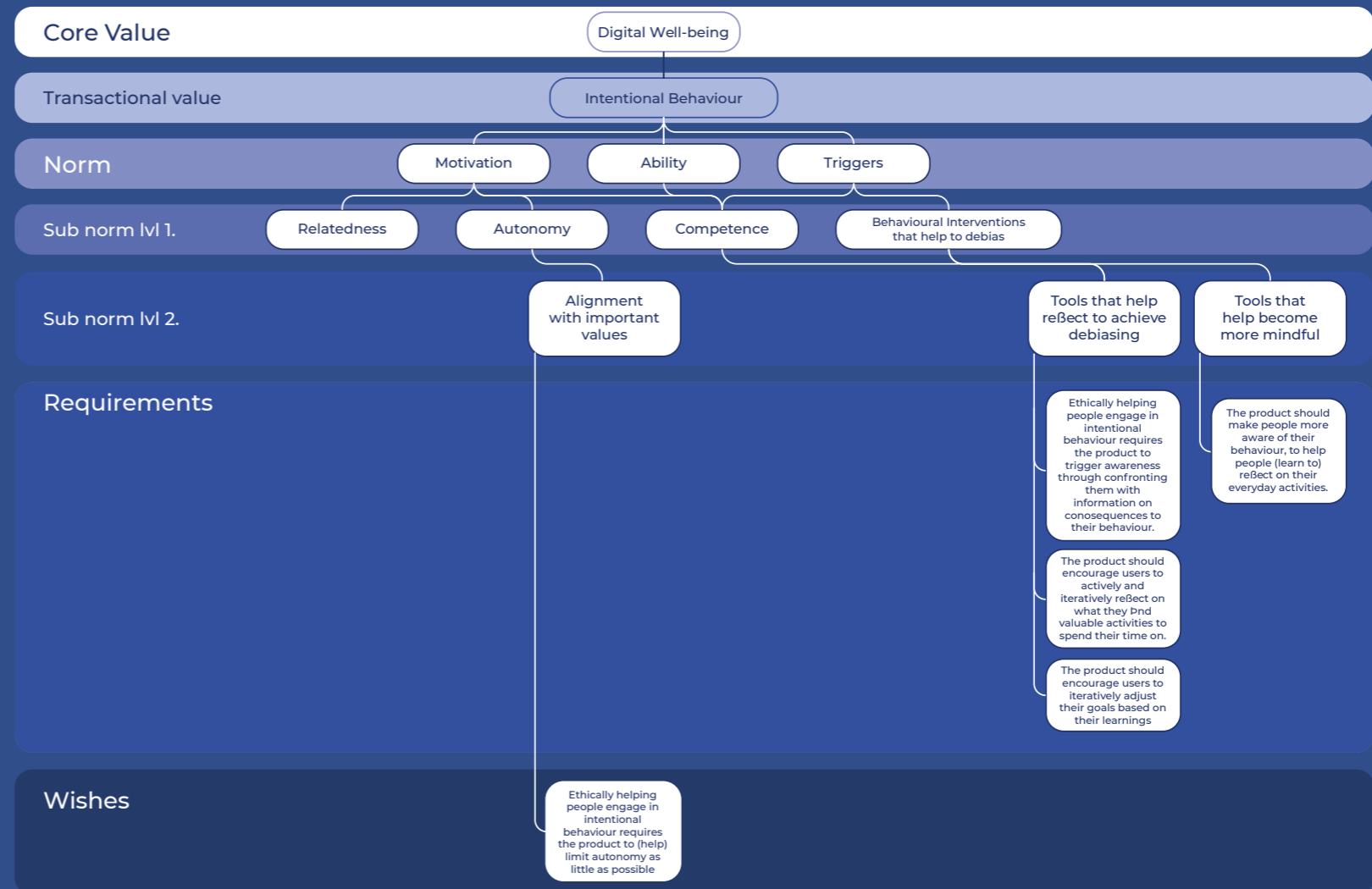
07 Digital Well-being

How to design media that improves well-being

As was already written in the introduction of our terminology, digital well-being addresses how technology affects our psychological health. The term describes the state of well-being that infotainment consumers experience due to the digital environments they regularly engage in.

In the previous chapter, I established the requirements for activities to be experienced as meaningful and contribute to well-being. In this chapter, I apply this knowledge to analyse how our physical and digital environments currently affect time-well-spent and through that well-being.

7.1 When is time spent meaningfully?

We have already established that we consider activities meaningful if they align with the things we value and if we intentionally engage in them.

However, as a consequence of our own experiences and contextual environments, everyone has different goals, virtues, and values that affect what they consider meaningfully contributing to their subjective experience of well-being (Wan, De Bont & Hekkert, 2015).

There is also a temporal factor that makes it harder to achieve clarity on this aspect. **An activity that we enjoy and may deem valuable to engage in during the weekends may be considered a distraction during our working days.** So how can we distinguish whether and when an activity should be considered meaningful or distracting?

Given the scope of this project's primary focus is on helping people make their digital activities as meaningfully as possible, in the following paragraphs, I will briefly touch upon what common goals online media usage serves and when and why these may provide for or collide with our values.

7.2 When is media usage meaningful?

In 2008, a BBC research group performed a qualitative study using cultural probes in collaboration with ten general public members to uncover how and why people interact with their digital media. Although the digital landscape has undeniably changed drastically in the past decade regarding which channels consumers use, the motivations for media use that were found in this study seem like they are still highly representative (Titus, 2008).

According to this study, people use media to serve five general, mutually inclusive goals, as shown in the graphic shown to the right. **As long as the activity under scrutiny serves any of these purposes in balance with a users' other goals, they could be considered meaningful.**

An excellent example of a meaningful application of digital media would be using it as a tool to help realize valuable developmental goals, such as educating oneself to learn more about a passion using videos on Youtube or other online learning platforms.

Figure 7.1 - Five goals for media use (Titus, 2008)

As illustrated by this research, online media is often used by people to 'recharge', in a fashion similar to taking a walk in the park, to escape from the information overload caused by our contemporary lifestyle (Huijbregts, 2019).

7.3 When is media not meaningful?

However, suppose this recuperative activity is, for example, unintentionally extended into nighttime as what often happens in so-called 'binge-watching'. In that case, one may wonder whether the consequence of media consumption is as refreshing as intended.

Due to the high temptation of satisfying these goals through media consumption, it makes sense that people choose to engage with these kinds of media. It is easy and satisfying and traps us in the system 1. kind of thinking described in the previous chapter.

Endless scrolling on our smartphones makes us sacrifice our autonomy because it is so easy. Once no longer proportionally contributing to our perceived well-being, this activity may negatively affect our capacity to flourish. Hence, this may not be considered time well-spent. When the goal of relaxation or escape starts to unintentionally suppress other dimensions also crucial for our well-being, as was highlighted as important by Ackerman (2020), situations can emerge that may be considered cause for concern. **When one uses the medium despite another activity that would contribute more to an individual's well-being in the longer term, media use may be a harmful distraction** (Eyal, 2019).

Ongoing long-term studies are trying to quantify whether these technologies' impact should be considered psychologically harmful (Wiking, 2020; Blum-Ross & Livingstone, 2016).
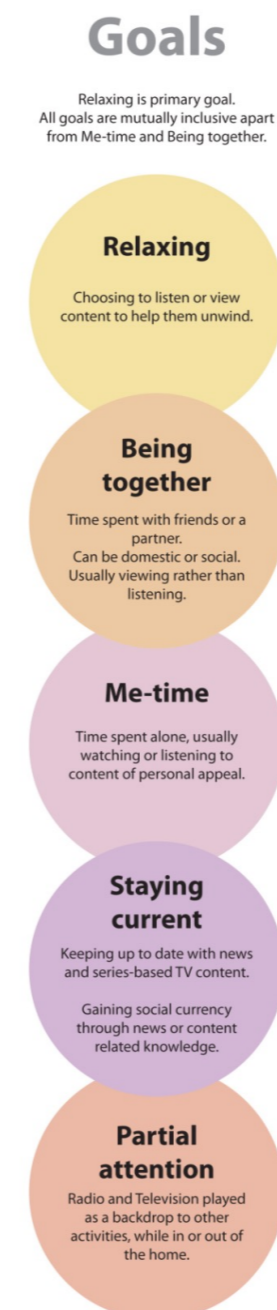
The problem
with current solutions for digital well-being

There are some solutions currently available to consumers that attempt to improve digital wellbeing available to consumers, but these miss the point by focussing on the amount of time we spend on our devices rather than whether what we do aligns with our values, whilst the latter is much more critical (Dennis, 2020; Wiking, 2020, O'Connell, 2018).

They provide data on our consumption but do not teach us how to read the data or provide practical tools to counter temptation.

Like Google's earlier mentioned digital wellbeing integration in Android, Samsung (How to use digital wellbeing, 2020), Huawei (Digital Balance, 2020) and Apple all offer similar services integrated within their software: overviews of the time spent in all applications or on websites by the hour, day and week, and the option of setting up warnings and limitations to prevent you from spending more than a specific amount of time on specific apps.

Although the insight that you spent three hours on Candy Crush last Friday may be a good trigger for you to deliberate whether or not it is a good idea to have that game on your phone, it does not help increase awareness of when and why you reached for that game in the first place. By limiting the amount of time you spend on that app and essentially creating your own Fogg-trigger, you tackle a symptom rather than the cause of your giving in to the temptation. **Checking your screen time stimulates you to focus on whether you want to limit how much time you spend on a specific activity, rather than that it helps you think about how you want to spend your time instead.**

It's effectively like walking around with a glass cookie jar in your pocket, with a counter on it that shames you for how many cookies you eat on average per day. It doesn't provide you with any alternatives, any suggestions for what else you would want to snack. It doesn't help you change your behaviour; it just shames you for eating too many cookies.

In our noisy and demanding society, becoming aware of our values, let alone setting goals and sticking to them, is not all too straightforward. As shown in the example here to the right, people around us, or media and the industry, may impose values on us. Next to that, we're also not trained to set goals aligned with our values (Pohlmeyer & Desmet, 2017). And that is not surprising, considering that **the activities that make people tick are very personal and may differ for every one of us. It's just quite hard to get right.** Design cannot (yet) tell people what will make them happy.

7.5 How design can & should help

I already touched upon this topic in the previous chapter on behavioural economics in discussing the ethics of improving digital well-being through design. There, I concluded that design should serve to inform people appropriately on their options, in order to make them more aware of how their choice architecture is affecting their decision-making process. In this, both the designer and the user have an ethical responsibility. Pohlmeyer & Desmet effectively reach the same conclusion:

> " It is a way of living that design can facilitate, but that a person has to be responsible for in the end."
> Pohlmeyer & Desmet, 2017

Design hence can help people intentionally look for and also engage in new activities (both in mental habits as well as physical practices) that align better with their values (Lyubomirsky, 2017). It can assist people in setting and achieving their own goals. It can also help create the right internal and external circumstances to make it viable to pursue these goals. We need to help people bring up the courage to get outside their comfort zone and maintain a balanced plan whilst resisting the temptation of shorter-term needs, which requires self-regulation (Ariely, 2008).

As was established in the previous chapter, the primary way to limit potential distraction is by adjusting the choice architecture that consumers have to go through when using devices. Good examples would be providing incentives, implementing nudges that streamline the user's behaviour in a desirable way, or help them debias their thinking.

A design approach to helping people deal with challenges like these was conceived of by Ozkaramanli & Desmet (2012), who proposed six design strategies intended to help people get a better grip on these self-control dilemmas. These dilemmas consist of conflicts between a short-term, hedonistic goal and a longer-term eudaimonic goal (Jimenez, Pohlmeyer & Hekkert, 2015).

These six design strategies, which effectively sum up the insights gathered in the literature studied so far on how design can help people achieve a better sense of well-being, are:

1. Increasing people's awareness of the consequences of choosing to pursue the longer-term goal
2. Increasing people's awareness of the consequences of choosing to pursue the shorter-term goal
3. Make it easier for people to pursue the longer-term goal
4. Create a barrier to make it harder to give in to the temptation of pursuing the shorter-term goal
5. Make pursuing the longer-term goal more pleasurable
6. Make giving in to the temptation less pleasurable

Figure 7.2 - Picture retrieved from Computerhowtoguide.com

Author's note:

I want to emphasize here that I do not think that all the things we may call distractions are necessarily wrong. Sometimes, when something urgent and important requires our attention, it may be essential to shift our focus to that other activity. Neither do I think that we should spend all the time we have in our lives productively. 'Doing nothing' can also be utterly justifiable as 'time-well-spent' as long as we choose to do it intentionally and in good balance with the other things we value. We should, of course, be allowed to relax after a day of hard work. What matters, however, is that we make this choice should whilst considering and respecting our values.

Thinking back to the school of thought of SDT, we can see how this lines up with the stance that activities contribute to our subjective well-being if they are consciously valued. Ultimately living by these values should help us achieve a perceived state of well-being.

To increase intentional behaviour in line with people's values and through that increase their autonomy, people should first be made aware of how their habitual decisions are not in line with their values and how they could be, instead (strategies 1 and 2).

To increase people's capability to engage in better behaviour, as required for people's competence and ability to cope, design could make sticking to intentions easier and giving in to temptation harder (strategy 3 and 4). This could be achieved by providing stimulating triggers and getting rid of distracting triggers (Eyal, 2019; Ariely, 2008).

Lastly, to be sure that pleasurable long-term goals are preferred over shorter-term goals, providing awareness of goals aligned with values whilst also providing the option to engage in precommitments to make giving in to temptation less pleasurable can help satisfy strategy 5 and 6.
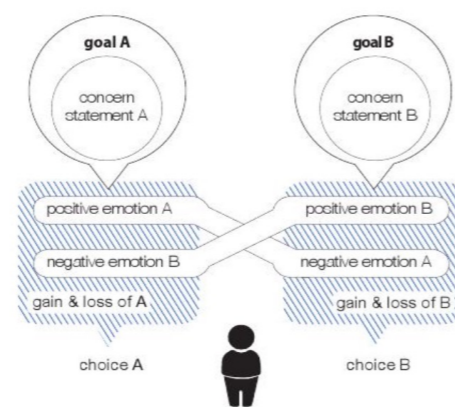
Figure 7.3 - Model for showing the mechanics of dilemmas (Jimenez, Pohlmeyer & Desmet, 2015)

Summary

Digital well-being describes the state of well-being that infotainment consumers experience due to the digital environments they regularly engage in.

Online media usage serves a lot of great purposes. Media consumption may, however, become a harmful distraction if it suppresses other dimensions crucial for well-being. We consider activities to be contributing to our well-being if they align with the things we value and if we intentionally choose to engage in them. However, because everyone has different goals, virtues, and values that affect what they consider meaningfully contributing to their psychological well-being, it is hard to design one-size-fits-all solutions.

There are some solutions available to improve digital well-being available. This software provides an overview of the time spent in all applications or on websites. It can also help you set up warnings and limitations to prevent you from spending more than a specific amount of time on specific apps. Checking your screen time, however, stimulates you to focus on whether you want to limit how much time you spend on a specific activity, but it does not help increase awareness of when and why you reached for your phone in the first place. It does not provide enough tools to improve your ability.

Design can help people intentionally look for and engage in new activities that align with their values. It can also help people become aware of those activities they do not consider valuable. Next to this, design can provide people with the right tools that increase their ability to behave more in line with their intentions, by making achieving goals easier and giving in to distraction harder.

Key Take-aways of Design for Digital Well-being

So, what have we learned about what people consider time well-spent? Why and when do we find some things distracting, and what role do infotainment technologies play in this?

We can see that time and attention, like money, clearly are limited resources; we only have so much of it in our human lives, and we can only spend it once. Learning how to spend it on things that we value hence intuitively feels like a bare necessity.

Spending our time well, however, is much more easily said than done. The question of what should be considered the best way to spend our time has been a core dispute of philosophy since ancient times. Seneca, a Roman philosopher, already wrote 2000 years ago that "People are frugal in guarding their personal property; but as soon as it comes to squandering time, they are most wasteful of the one thing in which it is right to be stingy." (Costa, 2005).

TIME SPENT MEANINGFULLY
I consider to have established that people need to engage in intentional activities that align with their values in order to perceive their time as better spent. To help people achieve this change in behaviour, we've learned from behavioural economics that people need to be stimulated to actively reflect and become aware of their decisions. To change their decisions for the better, they then need to be motivated and enabled enough to engage in different behaviour. And to be motivated enough, they need to be provided with a sense of autonomy, competence and relatedness.

MEANINGFUL DIGITAL ACTIVITIES
Engaging in online infotainment activities can serve many different purposes, plenty of which can contribute to making our lives more meaningful.

These goals may include, for example, relaxation, spending time together with others, personal development, staying up-to-date and background noise.

Activities are meaningful when they help users achieve goals or fulfil desires that these users find essential, as long as the choice to engage in this activity does not interfere with what they intended or should be doing at that moment.

DISTRACTING DIGITAL ACTIVITIES
People start (consciously or unconsciously) considering switching their attention to another stimulus when a need or discomfort tempts them (Eyal, 2019; Yue, 2013). Triggers that cause temptation can come from both internal or external cues. If that other stimulus does not help achieve that person's (current) goals or values, we call this a distraction. As a consequence, unfavourable or potentially even harmful situations can occur.

As long as we keep giving in to these distractions, we risk ending up with a disbalance in allocating time to other essential areas in our lives. Such bad habits may steal time from other activities that we deem valuable and contribute to a meaningful life, ultimately harming our life satisfaction.

WHAT WE CAN DO ABOUT IT
To prevent time from unintentionally being wasted, people need to be enabled to control their habits and environments to prevent factors that lead to distraction. This requires improving people's:

- Awareness of self-talk & attitude
- Reflection on values & time-allocation
- Shaping an undistracting environment
- Commitment to their own goals

In my humble opinion, product-service design can and should support these are capacities. Ethically sound interventions should trigger awareness by providing judgement free information about consequences to behaviour.

Products can help people improve their awareness and capacity for reflection through stimulating debiasing. It can help make the favoured behaviour easier by (helping) create nudges that correct the choice architecture. And it can make it more fun to stick with one's intentions by helping people engage in commitment arrangements with themselves or others.

Design Implications

Design Implications

- **The product should help users get better at preventing distraction in their physical environments.**

- **The product should help users get better at preventing distraction in their digital environments.**

- **The product should help users get better at preventing distraction by their own minds.**

- **The product should encourage users to iteratively set & adjust their goals based on their learnings**

- **The product should motivate the implementation of measures that help users remember the goals set to avoid distraction.**

Core Value	Digital Well-being
Transactional value	Intentional Behaviour
Norm	Motivation · Ability · Triggers
Sub norm lvl 1.	Relatedness · Autonomy · Competence · Behavioural Interventions that help to debias
Sub norm lvl 2.	Alignment with important values · Tools that enable prevention of distraction · Tools that help reßect to achieve debiasing · Tools that help become more mindful

Requirements

Tools that enable prevention of distraction:
- The product should help users get better at preventing distraction in their physical environments.
- The product should help users get better at preventing distraction in their digital environments.
- The product should help users get better at preventing distraction by their own minds.
- The product should encourage users to set goals of their own.

Tools that help reßect to achieve debiasing:
- Ethically helping people engage in intentional behaviour requires the product to trigger awareness through confronting them with information on conosequences to their behaviour.
- The product should encourage users to actively and iteratively reßect on what they Þnd valuable activities to spend their time on.
- The product should encourage users to iteratively set & adjust their goals based on their learnings.

Tools that help become more mindful:
- The product should make people more aware of their behaviour, to help people (learn to) reßect on their everyday activities.
- The product should motivate the implementation of measures that help users remember the goals set to avoid distraction.

Wishes

- Ethically helping people engage in intentional behaviour requires the product to (help) limit autonomy as little as possible
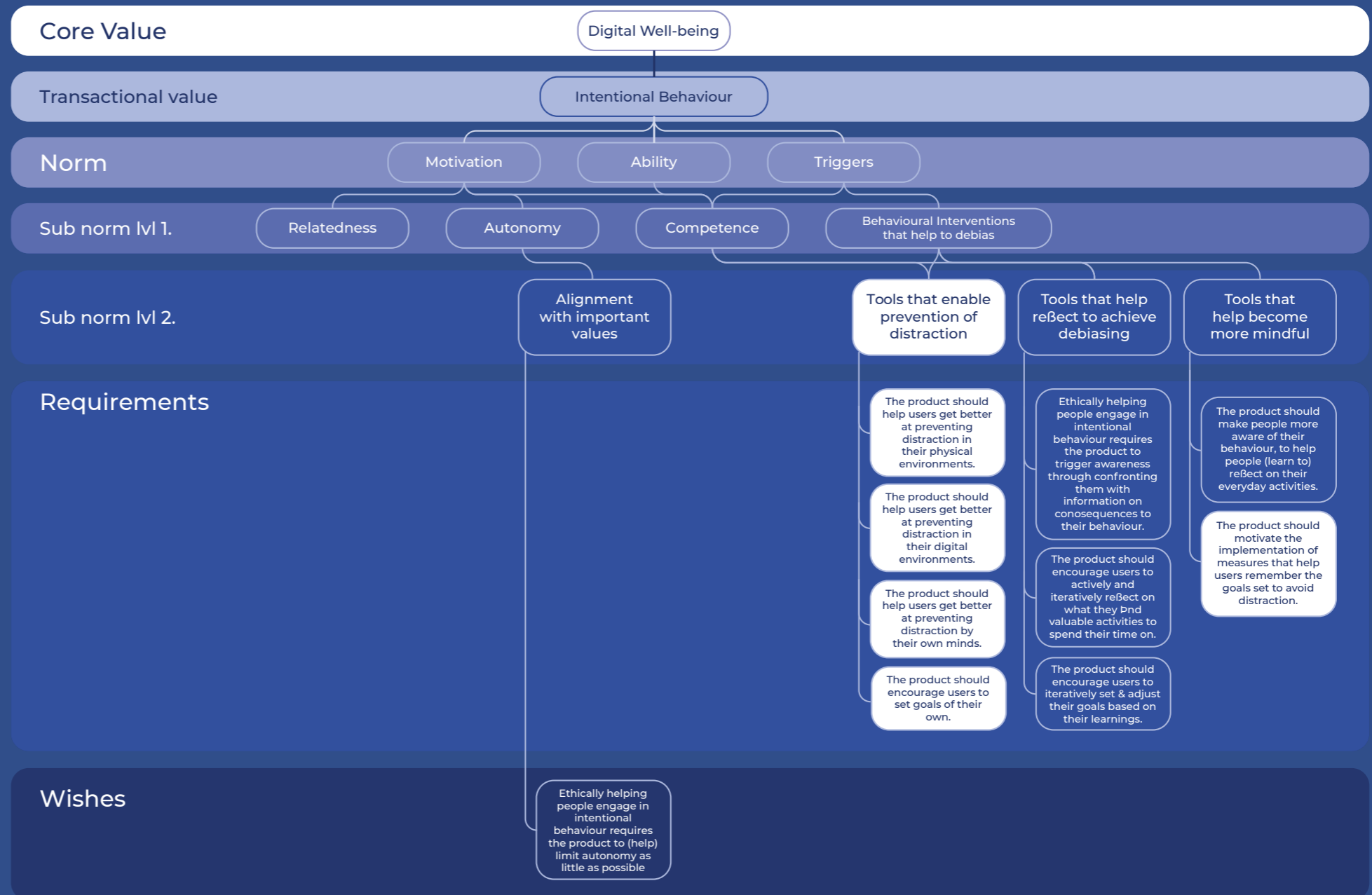
Figure 7.4 - The values hierarchy on designing for digital well-being is expanded with insights from the literature on Digital Well-being

08 Digital Parenting

How can parents properly protect their kids?

In response to the alarming stories circulating in mainstream media (look at The Social Dilemma reception), parents are understandably concerned about how they should best approach protecting their kids from the potential harms that online media usage brings along.

Frequently asked questions are: 'When should I allow my kid to have a phone?' or 'How long should I allow my child to spend time on their phones?'

Whereas tech world whistleblowers are also wary about their inventions' ethical consequences, not everyone is concerned. Pedagogical sciences view technology primarily as an enabler that can also bring a lot of fun, happiness and connection into our lives.

This chapter addresses findings in pedagogical literature on whether there is any consensus on promising strategies to best aid parents in supporting their teens while discovering the world-wide-web.

8.1 Consequences of tech for parenting

The main challenge that parents face in managing their kids access to technology lies in maintaining a proper balance. The rapid diversification of technology does not help mitigate parents' sense of losing control of what their children are doing online. With mobile devices making digital consumption available anywhere, the more straightforward and more practical parenting rules previous generations used to manage screentime for the television do no longer apply and make sense.

This problem exists because there is no prominent source for support in properly guiding their children in their online escapades (Kutrovatz et al., 2018). Nor are there resources that help professionals like teachers and health-practitioners support parents in approaching this the right way (Blum-Ross & Livingstone, 2016). This results in parents either having to scour the internet for guidance and inspiration on how to support their kid correctly or simply wing it and follow their gut.

Parents nowadays often end up simply letting their teens go, which can also help parents have some time for themselves to unwind (Solon, 2016; Geurts et al., 2020).

Although this laissez-faire approach may initially help parents better manage the rest of their responsibilities, it is also clear that when kids get their smartphone and further develop their interests and lifestyle, parents start losing the overview of their kids' online activities (Blum-Ross & Livingstone, 2016). This **unmanaged freedom can put the children at risk of exposure to harmful interactions and materials or negligence of other essential aspects in life due to overconsumption.**

Although improved guidelines are currently under development (e.g. CHT, 2020; Guerrero & Forment, 2019), there seems to be no clearly carried consensus on best digital parenting practices as of yet. Based on several sources on pedagogical psychology, however, I found some pointers that could be promising to consider.

First, I will describe insights from analyses on different parenting styles and their efficacy.

8.2 The right approach to parenting

In literature, we can discern several paradigms for raising one's child. As Elder (1962, citing de Wit & Van der Veer, 1989) indicates, we can distinguish an autocratic approach to raising kids and an authoritarian style, a democratic style, an egalitarian approach, and a permissive laissez-faire approach and an ignorant approach. **de Wit & Van der Veer (1986) emphasize they approve most of the democratic approach since that would best provide children with a sense of independence, autonomy and a responsible attitude towards their own lives.**

Kids need to learn self-regulation and avoid giving in to instant gratification (Solon, 2016); **these are crucial qualities in our rapidly changing modern society.**

In the democratic parenting style, parents regard the adolescent as a respected individual whose opinions deserve consideration when setting rules. Growing up, they are to be granted increasing autonomy and are free to participate in discussions related to their behaviour. In this, the parents show an open attitude and give their child a sense of being safe, respected and loved.
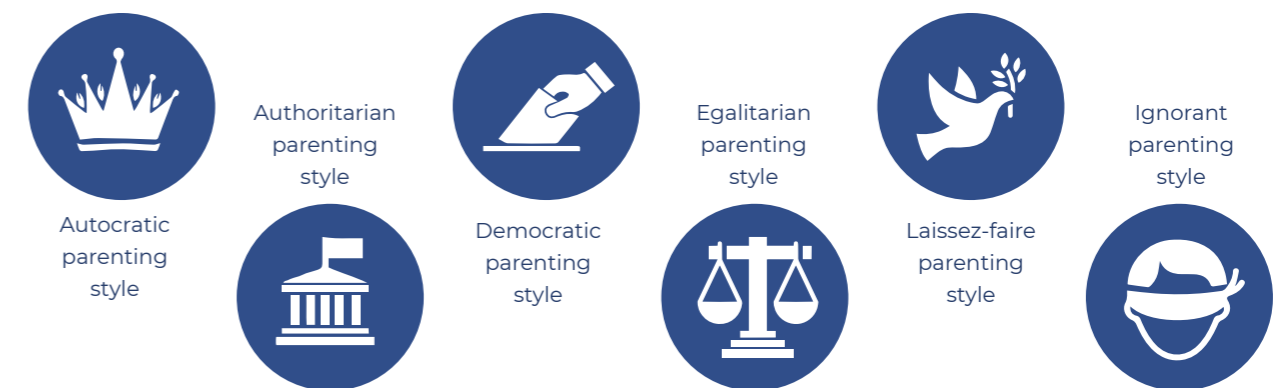

Figure 8.1 - Parenting styles according to Van der Veer (1986)

8.3 The right approach to digital parenting

Figure 8.2 - Photo by Sergiu Vălenaș
on Unsplash

Serve as a rolemodel

Blum-Ross & Livingstone (2016) confirm the call by de Wit & Van der Veer (1986) and indicate that parents who responsibly model the correct behaviour to their children and are involving the kids in setting their limits of their own have kids that are better capable at managing the challenges that media use brings along.

To serve as proper role models, they need to reflect their own amount of and reasons for screen time. They should also ask their children questions about when, where, and why they are accessing their screens.

Respect their privacy

With the ethics described in paragraph 3.7 in the back of my mind, I agree with the stance of Lehman (2021) that privacy is a privilege that children have to earn and can loose. If parents fear that their children are at risk because of their behaviours, parents have the responsibility to try and protect children from their own poor decisions. I would, however, advise that this interference would best be done in a tolerant paternalistic way (Floridi, 2016), unless the situation is more urgent and more drastic interference is required.
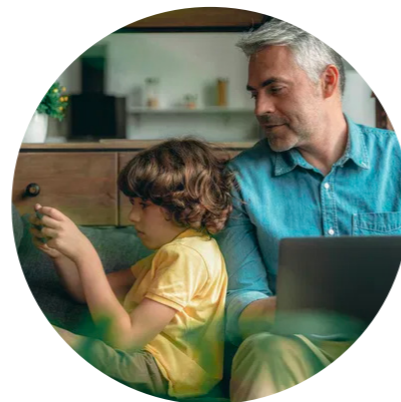
Figure 8.3 - Picture retrieved from
Webwatcher.com

Figure 8.4 - Picture retrieved from
Raisingchildren.net.au

Do set SOME rules

Although research is not entirely conclusive on the best way for parents to deal with children's habitual use of technology, it is definitely recommended to make some arrangements with your children. Important agreements according to research, for example, include stopping with screens approximately one hour before going to bed, and at least eating one meal per day together as a family (Center for Humane Technology, n.d.)

Show positive interest in your teen's online activities

Although children value and arguably need their freedom, do not appreciate parental interference, and although most of their online activities are usually entirely innocent, parental understanding and intervention can be assumed to be necessary. Research shows that children cannot correctly distinguish fake from real news or hidden advertisement (Raad voor Cultuur, 2005). The data hoarding practices that more and more digital companies engage in and the resulting rise of free services require that kids become more aware of the consequences of using these services (Mijn kind online, 2014).

For parents to be able to make sense of the technological world and constructively protect children, it is of utmost importance to engage in conversations with the teens themselves to build understanding, rather than to look at data such as screen-time and judging the face value of that (Hermes, Van Goor & De Jong, 2019; Blum-Ross & Livingstone, 2016). Parents have the means nor the time to educate themselves and effectively stay on top of the risks that teens might expose themselves to, such as slut-shaming or cyberbullying.

Figure 8.5 - Picture retrieved from
internetmatters.org

Therefore, building a relationship of trust that allows for engaging in judgement-free conversations about the topic is, according to Hermes, Van Goor & De Jong (2019), the most viable way of helping children get the best experience out of their online activities.

Understand the added value of online media for children

Teens try out many things online, make mistakes, learn from these (or not), have fun, alone or with friends and use the internet to collect information. The internet provides them with new places to discover and get lost in, where they are free to decide for themselves what they want to do. They spend quite some of their spare time acquainting themselves with these services (Hermes, van Goor & De Jong, 2019). This seems to be mainly appealing to their sense of autonomy.

Figure 8.6 - Photo by Emili Wades
on Unsplash

Once parents and other influential organizations begin to get a hold of the popular platforms and develop an increased understanding of what happens in these places, parental intervention may start. The children may flock to find new ways to experience a better sense of autonomy again. Hermes, van Goor & De Jong (2019) emphasize that media serves different individuals' purposes and creates meaning in different ways. They indicate that the 'digital world' is highly individual and continuously growing and changing.

Figure 8.7 - Picture retrieved from Wearethecity.com

Help your teen develop self-efficacy

I dare to reason that it may be best for children to start educating them on how to use technology wisely as soon as they get access to their own devices and making them increasingly aware of their own responsibilities with the more freedom they get. Teaching children how to think and self-assess their behaviour from the get-go before developing unproductive habits might go a long way to protect them from the notorious distractions current generations suffer from.

This requires involving them in setting rules, as the democratic parenting style recommends, respecting their opinion and educating them on the importance of taking their responsibility in setting goals for their online behaviour. Several sources consider this stance to be best for the child's development (e.g. Eyal, 2020; Blum-Ross & Livingstone, 2016; Solon, 2016; de Wit & Van der Veer; 1986).

Summary

The main challenge that parents face in managing their kids access to technology lies in maintaining a proper balance. This problem exists because there is no prominent source for support in properly guiding their children in their online escapades.

This lack of guidance results in parents often not knowing what to do. Letting children go fully free can put them at risk of being exposed to harmful interactions and materials or result in negligence of other essential aspects in life due to overconsumption.

To avoid this, parents should teach their kids responsibility, and to self-regulate and avoid giving in to instant gratification. These are skills that are crucial qualities in our rapidly changing modern society.

Parents also need to learn to set the right example, by limiting their own consumption. They should try to keep a positive conversation with their children about their digital habits going, to learn to understand and appreciate why their kids value it. And lastly, they need to involve their kids in the setting of boundaries, so that kids understand and hopefully can appreciate your intention to protect them from harm.

Key Take-aways

Of Positive Psychology & Behavioural Economics

Their is a lack of guidance for parents on how to properly guide their children's digital behaviour.

Parents often loose track of what their children do on their devices once kids go to highschool and get devices of their own.

Unmanaged freedom can put the children at risk of exposure to harmful interactions and materials or negligence of other essential aspects in life due to overconsumption.

Parents need to model the correct behaviour to their children if they want to have kids that are better capable at managing the challenges that media use brings along.

Kids need to learn self-regulation and avoid giving in to instant gratification. They are to be granted increasing autonomy and are free to participate in discussions related to their behaviour. In this, the parents should show an open attitude and give their child a sense of being safe, respected and loved.
Teens try out many things online, make mistakes, learn from these (or not), have fun,

alone or with friends and use the internet to collect information. Media serves different individuals' purposes and creates meaning in different ways. Parents need to learn to understand that.

Because the 'digital world' is highly individual and continuously growing and changing, for parents to be able to make sense of the technological world and constructively protect children, it is of utmost importance to engage in constructive conversations with the teens themselves. Building a relationship of trust that allows for engaging in judgement-free conversations about the topic is the most viable way of helping children get the best experience out of their online activities.

08 Digital Parenting

Design Implications

- The product should stimulate families to engage in constructive conversations about how they spend screen time and what they consider valuable activities.

- The product should stimulate families to learn to attentively listen to each other.

- The product should empower families to express themselves freely.

- The product should teach families to respect each others' opinions.

- The product should educate parents to understand the added value of online media for children

- The product should educate users on the importance of screen usage limitations, self-control and self-evaluation.

- The product should teach parents on the importance of providing kids as much self-control, freedom and responsibility as reasonably possible in managing their own limitations.

- The product should help improve understanding of parents for what children find important and why.

- The product should stimulate the involvement of children in the setting up of restrictions as much as possible.

- The product should be as fun as possible for both parents and children to repetitively engage with.

- The product should make parents aware of their exemplary role in screen use.

- Users should be provided as much privacy as possible.

08 Digital Parenting

Design Implications

This values hierarchy on design for digital well-being is now complete, based on the insights gathered from the literature reviewed.

With requirements and wishes specified for each of the norms found to contribute to achieving well-being and hence (so is assumed) desirability for the end-users, in the following section the focus will shift towards the other three core requirements for strategic design:

Feasibility & Viability.

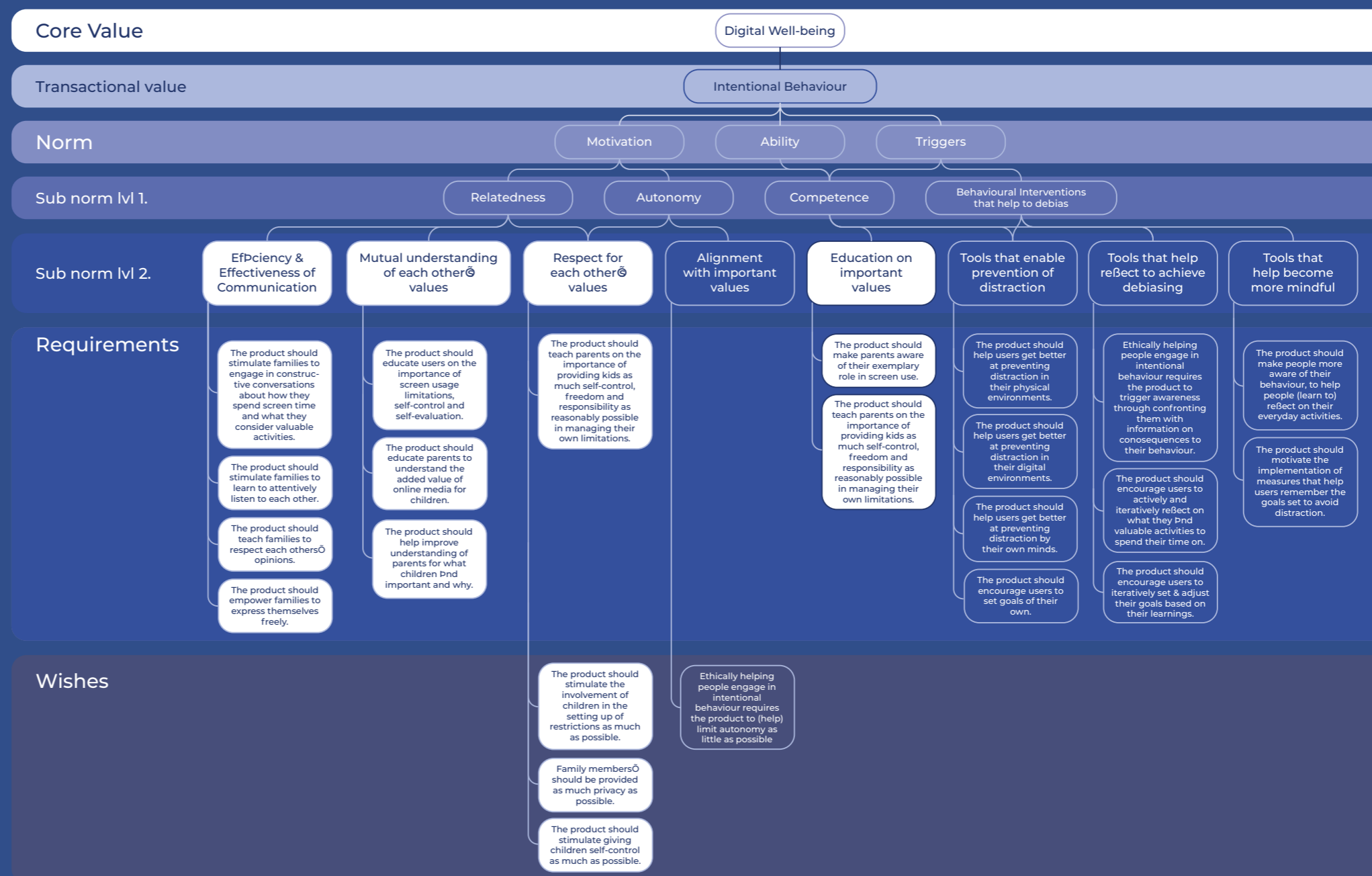|								
Core Value				Digital Well-being				
Transactional value				Intentional Behaviour				
Norm			Motivation		Ability		Triggers	
Sub norm lvl 1.		Relatedness	Autonomy		Competence		Behavioural Interventions that help to debias	
Sub norm lvl 2.	Efﬁciency & Effectiveness of Communication	Mutual understanding of each other's values	Respect for each other's values	Alignment with important values	Education on important values	Tools that enable prevention of distraction	Tools that reﬂect to achieve debiasing	Tools that help become more mindful
Requirements	The product should stimulate families to engage in constructive conversations about how they spend screen time and what they consider valuable activities.	The product should educate users on the importance of screen usage limitations, self-control and self-evaluation.	The product should teach parents on the importance of providing kids as much self-control, freedom and responsibility as reasonably possible in managing their own limitations.		The product should make parents aware of their exemplary role in screen use.	The product should help users get better at preventing distraction in their physical environments.	Ethically helping people engage in intentional behaviour requires the product to trigger awareness through confronting them with information on conosequences to their behaviour.	The product should make people more aware of their behaviour, to help people (learn to) reﬂect on their everyday activities.
	The product should stimulate families to learn to attentively listen to each other.	The product should educate parents to understand the added value of online media for children.			The product should teach parents on the importance of providing kids as much self-control, freedom and responsibility as reasonably possible in managing their own limitations.	The product should help users get better at preventing distraction in their digital environments.	The product should encourage users to actively and iteratively reﬂect on what they ﬁnd valuable activities to spend their time on.	The product should motivate the implementation of measures that help users remember the goals set to avoid distraction.
	The product should teach families to respect each others' opinions.	The product should help improve understanding of parents for what children ﬁnd important and why.				The product should help users get better at preventing distraction by their own minds.	The product should encourage users to iteratively set & adjust their goals based on their learnings.	
	The product should empower families to express themselves freely.					The product should encourage users to set goals of their own.		
Wishes			The product should stimulate the involvement of children in the setting up of restrictions as much as possible.	Ethically helping people engage in intentional behaviour requires the product to (help) limit autonomy as little as possible				
			Family members' should be provided as much privacy as possible.					
			The product should stimulate giving children self-control as much as possible.					

Figure 8.8 - The values hierarchy on designing for digital well-being is expanded with insights from the literature on Digital Parenting

General take-aways of Theoretical Background

Positive psychology and behavioural economics teach us that improving well-being by design requires us to:

- Make people more aware of which activiteis they regularly engage in.
- Making people more aware of whether or not they value these activities.
- Making people more aware of which activities the would value engaging in more often.
- Helping people make it easy to change their behaviour as much as possible by:
  - A). Motivating them as much as possible by stimulating their experienced autonomy and relatedness through triggering awareness, stimulating debiasing practices and mindfulness.
  - B). Improving their experienced ability/ competence by providing the right tools.
  - C). Helping create an environment with triggers that stimulate traction rather than distraction, to optimize the choice architecture of their everyday environment

Digital well-being teaches us that improving digital well-being by design requires us to:

- Help people become more aware of how they could spend their time in a more balanced way.
- Provide people with the tools that help them make them more capable at resisting temptation by distracting factors.

Digital parenting teaches us that helping parents better control the time their childiren spend on their devices requires us to educate parents on the right practices proposed by pedagogical sciences and psychology:

- A). Make them more aware of the exemplary role their behaviour plays.
- B). Stimulates respecting the autonomy and privacy of their children by letting them be responsible yet aware of their own decisions
- C). Involve the children in discussions about limitations to screen time to help them better understand the necessity hereof.
- D). Engage in frequent friendly discussions to improve mutual trust and understanding.

Conclusion of Theoretical Background

Combining all the insights from designing for digital well-being with knowledge of what is required for proper digital parenting, we now have established an expansive understanding of how to digital well-being in the family life through design.

This understanding is captured in the values hierarchy shown on the previous page.

I hereby assume that if a product meets these wishes and requirements, we can presume the product to be desirable to use for the end-users, if their goal is to improve their families' digital well-being.

In the following section, I discuss how I established the feasibility and viability of how Unpluq could bring this product to the market.

Part 03

Exploratory Research

In the previous sections, I built a clear case favouring the family life market as a strategic next step for Unpluq. Looking back at the core thinking in Strategic Product Design as described in chapter 3, I consider the desirability of a solution like Unpluq for this market established in the previous chapters.

Next, we have to shift our attention to the viability and feasibility of targeting this new market: how can Unpluq deliver such a product and claim a strategic position in this market?

Can it reasonably be assumed that we can convince families to invest in such a product? Can we provide sufficient value to persuade this target group to buy Unpluq rather than revert to any of the dozens of free alternative 'parental control' applications? And how big are the risks of Unpluq being outrun by competitors or operating system developers such as Google and Apple?

Figure D - Photography by Yes!Delft (2020)

09 Interviews

What do families think about digital devices?

Now that I have established a detailed understanding of the theory behind well-being, it is time to start looking at how this relates to practice. In this chapter, I describe the external study performed by interviewing parents and children on how they cope with managing their screen-based activities. The general research question for the following interviews was:

How do parents and children feel about each other's device usage?

These interviews helped me create and visualise an understanding of the context and dynamics of the family environment.

9.1 Research approach

I interviewed ten parents and three children aged 12 to 15. The participants were all sourced through a snowballing approach initiated in my social network. Initially, I intended to observe families within their natural environments to learn and access their latent knowledge, but Covid-19 restrictions complicated this. Instead, I had to perform the majority of these interviews using video calling tools. All the conversations were recorded and analysed for recurring themes.

Primarily, I spoke to parents of children aged 5 to 8. After several interviews, the focus shifted towards parents of 10- to 12-year-olds because it became clear that parents would maintain a closer grip on the access that the kids had to their devices before this age. As soon as these children go to secondary school and get access to smartphones of their own, they acquire more freedom in what content they watch, and parents start to have less control and influence. Therefore, I also interviewed several families with children who were in the first grades of secondary school.

9.2 Findings interviews

These interviews taught me a lot about family rituals & habits and confirmed insights found in the literature review on digital parenting. In the following paragraphs, I discuss the interviews' results, comparing parents and children's views. I only list the general conclusions and most relevant quotes from the interviews here for brevity's sake. For a more detailed overview of all insights from the interviews, please refer to Appendix C.

The insights are visualized in several personas for later use during the design process. Hereafter, I present a visual overview of the family context at which points in their everyday schedule clashes may occur. Lastly, I conclude on what this exploratory research means for the product that Unpluq should implement.

9.3 Summary of interviews

Virtually every parent simply wants what they think is best for their children, but they do not always know the best way to deal with digital parenting appropriately.

Some parents do get it right

Although I have seen some examples of parents doing a great job teaching their children how to deal with devices properly (see quote 1), many parents do not feel very confident about how they deal with digital parenting.

9.3.1 Insecurities about digital parenting lead to limiting autonomy

There are parents who follow the 'laissez-faire approach', as mentioned by Veer & De Wit (1989) (see quote 2).

Fear is either fuelled by what is heard or considered learned, ...

There also are parents who are afraid of the potential consequences, their fear fuelled by what they hear and see around them, by convictions from previous generations (see quote 3)

... or by what parents experience themselves.

Based on their own experiences and observations of the habits they or their families develop (see quote 4 ▼ & quote 5 ▼).

Quote 1

"As a parent, you can of course guide and steer your kids in doing this correctly. That is part of raising your kids nowadays, it used to be different for previous generations."

Mother of an 11-year-old & 13-year-old daughter

Quote 2

"The future will also just be more like this, right, so should we actually be limiting their access?"

Parents of three daughters aged 12, 14 & 16.

Quote 3

"I want to avoid my kid from getting addicted to these devices; I am convinced that the brain simply shuts down when watching videos. Games are still sort of active but watching is just completely mindless. I want to minimize her consumption of media like that and would rather have that she finds other ways to entertain herself, to go play outside, for example, or play with other kids, rather than reaching for devices right away."

Father of a 5-year-old daughter

Father of three daughters aged 12, 14 & 16

Quote 4

"I feel like I've become dumber since the introduction of the smartphone. I don't have to remember anything because I can just look it up whenever I need it. I do access more useful information through Safari, but also forget it more easily."

Quote 5

"Sometimes, I would like to live a bit more in the here and now. For example, when I'm sitting on the couch at night, and I look up from my phone just to see how everybody else is also staring at their screens. I would rather engage in a conversation, but the rest apparently is too busy with their own activities. So, then I just go back to my screen."

Quote 6

"A lot of other parents are stricter and check screen time, turn off the WIFI and force the kids to leave their phones downstairs."

14-year-old child

Quote 7

"I work when the situation requires me to. When things are going wrong or when things are busy, I feel like I have to work. Not because it is expected of me, but more because it is a responsibility that I like to take."

Father of a 15-year-old daughter

9.3.2 Limitations to child autonomy may lead to rebellion

Ideally this would lead to parents seeking to learn better ways of dealing with this issue, but it also often results in the limiting of their kids autonomy (see quote 6).

Parents often do not follow their own rules.

The parents who limit their children's autonomy also often do not recognize that if they do not follow these rules themselves, they indirectly signal to their kids that these rules are not as important (See quote 7)).

This makes the rules feel unfair and unimportant to children

Children generally do not appreciate this inequality, a parental approach we can confirm to frequently be ineffective according to the literature (e.g. Blum-Ross & Livingstone, 2016) (see quote 8).

Quote 8

"My father also uses his devices a lot for social media. He gets to do something he values on his screens at night, so why should I not be allowed to do something I value on my phone at night?"

15-year-old child

Quote 9

"If you would [judge your child's bad habits, red.], the behaviour might continue in secret; the kids might think: 'I'll just do it when nobody sees me, otherwise they might start whining about that I should continue doing my homework.'"

Mother of 11-year-old & 13-year-old daughter

Rules that feel unfair may elicit rebellion

This may lead to their kids feeling tempted to undermine their parent's authority to get their autonomy, nonetheless. Like one mother who does understand doing this the right way highlights (see quote 9 ☐), we see this kind of behaviour indeed occur in situations where autonomy is being limited (see quote 10).

9.3.3 Devices can have a lot of added value

We also see how parents often do not fully grasp how these devices' added value is valid. Parents may need to learn to understand better that their perceptions of norms and values differ from what the current generation values and that that is not by definition necessarily wrong (see quote 11).

Devices serve a lot of meaningful and

Quote 10

"Because of school, I spend less time on hobbies like doing creative things. I had to set different priorities. My parents blame my devices, however. That caused some confrontations which ultimately led to the setting of rules; 'don't spend too much time all at once', 'don't spend entire days on the devices. Now I use it secretly, or at school."

15-year-old child

Quote 11

"Whereas their generation would pick up the phone to call their friends, I do that through Snapchat and Instagram. They don't understand how that is similar. [...] I rather prefer sending friends a 'Snap' rather than calling them. Snapping is much easier."

As one child particularly aptly described how she sees her relationship with her phone:

"I'm not addicted to my phone; I'm addicted to my friends."

15-year-old child

important activities

Children experience a lot of value from their screens. We've learned from literature that qualitative, small-group online social activities and gaming, as long as they stay within bounds, can be healthy, meaningful and even beneficial for children's developments. The motivations mentioned in chapter 4 section 4.2 'When is media usage meaningful?', also apply to the kids use of these devices:

1. Relaxation
   The devices help them relax (see quote 13),

2. Being Together
   It serves them with a portal to connect to their friends and the outside world (see quote 14)

3. Staying current
   It provides them with the means to stay up-to-date on topics that their peers also find important (see quote 15)

4. Partial attention
   In current times, technology is omnipresent in children's everyday lives. They use it to serve as background to their days, resulting in them being and getting used to all-day entertainment (see quote 16).

5. Me-time
   It can also teach them a lot of fun, expressive and potentially valuable new skills (see quote 17).

15-year-old child

Quote 13

"I like zoning out [with media, red.], that's my way of relaxing."

14-year-old child

Quote 14

"I especially like being able to talk to others and seeing what they are up to."

15-year-old child

Quote 15

"When I have nothing to do I watch TikTok, That's fun, there's a lot of hilarious videos."

12-year-old child

15-year-old child

Quote 16

"That is fun because it feels like someone is talking to you, someone is telling you stories. Parents don't see the added value of these things."

Mother of 7-year-old daughter & 9-year-old son

14-year-old child

Quote 18

"I spent 4 hours today on TikTok"

Quote 19

"I mainly use TikTok to watch video's. You lose track of time; I think that is a waste. You're constantly watching 30-second-long videos, easily continue watching and spend half an hour on the service. [...] I'd like to use Snapchat less. It's fun but it's useless. You have some superficial conversations and keep track of streaks, but no real quality interactions."

15-year-old child

Quote 20

"We try to teach them to make it their own responsibility. You can do that, amongst others, by showing how you are doing this yourself. We're not necessarily checking on them, but we're just open to each other about our consumption patterns."

Mother of 11-year-old & 13-year-old daughter

Quote 17

"My oldest son is learning how to draw due to a very fun app, a bit like photoshop, which is teaching him how to draw Naruto characters."

9.3.3 Device-use should be taught to be balanced with other activities

There, however, also are cases in which device-use indeed becomes excessive. Not all kids see this as a problem, and although some do recognize it, they are not necessarily empowered to change their behaviour (see quote 18 & quote 19).

Children need to be trained to balance their time wisely

We also know from research that typical behaviours like media-multitasking lead to inefficient use of mental resources and could lead to increased stress levels (Reinecke et al., 2017). Parents, therefore, are at least partially right to be worried because unbalanced amounts of time spend on meaningless or potentially even harmful services can end up coming at the expense of other activities that are also important.

Therefore, kids need the right kind of training to learn to reflect on what they do with their time. They need guidance in seeking a healthy and balanced allocation of pastime to solve the lack of awareness and intrinsic motivation that can be held primarily responsible for the addiction-like behavioural patterns that we so often observe today.

As mentioned previously, a great example was seen of some parents doing this the right way. They realized that their kids needed to learn to develop self-responsibility by holding one another responsible (see quote 20).

Quote 21

"Sometimes, when they realize that they have spent a lot of time on a specific new game during the week, they may consider getting rid of it because they don't think it is worth it."

Mother of 11-year-old & 13-year-old daughter

Quote 22

"If you find it important that they do it, why don't you also do it yourself?"

Quote 23

"As a parent, you can of course guide and steer your kids in doing this correctly. That is part of raising your kids nowadays, it used to be different for previous generations."

Mother of 11-year-old & 13-year-old daughter

Quote 24

"It is important to try to be involved in the kids use of the device; by showing interest and keeping the conversation going, you can have a say in what they do and don't do."

Mother of 7-year-old daughter & 9-year-old son

Through this, they are giving their kids the capacity to reflect and become responsible consumers. Best of all - it has become a nice, fun and reflective ritual for them (see quote 21).

Parents need to be trained to ask the right questions and give the right examples

This approach, however, also requires some additional awareness of parents. As was the case with the parents who were doing this the right way, parents need to be taught that.

They need to learn to reflect on their own consumption, to justify it towards their kids and set their own consumption goals, as to show a form of solidarity to the kids (see quote 22).

They need to become aware that it is their responsibility to teach their children how to deal with those devices properly and that they have to keep the conversation going to stay involved with the kids' digital lives (see quote 23).

This would in turn allows the parents to gain an improved understanding of what children are doing on their devices and creates a solid base to start a constructive discussion off of (see quote 24).

"It doesn't matter if you have found a fun new game, if you just really like to play that. If you happen to spend four hours on it, that may be perfectly justifiable if it aligns with their plans and values."

Mother of 11-year-old & 13-year-old daughter

Thiis approach aligns perfectly with what is recommended by pedagogical experts like e.g., Hermes, De Jong & Van Goor (2019) & Eyal (2019); kids have to learn to reflect and put their consumption in perspective. That will teach them to 'budget' their time for themselves and understand whether they value spending time on, for example, that new game. As this mother noted:

6.4 Overview of places & times for interventions

Based on the story's families told me, I created an overview of places and times during their everyday lives at which a product intervention of Unpluq could prove lucrative.

The visualization in Figure 9.1 shows two different scenarios for an everyday behaviour, as well as the locations in which this behaviour takes place:

1. The brightly coloured overview shows the behavioural patterns of parents and children during everyday life.

2. The overview in more faded colour visualizes an average behavioural pattern during Covid-19 times.

The lightning bolt icons highlight the points in time at which I think it would make the most sense to implement and engage with an intervention. One can see that a preference is given for interventions to occur later during the day, because during leisure time, the family can more freely spend time on their goals and values.

During work and school, the parents and children are more likely obliged to engage in their agreed-upon duties, which are more likely to be engaged out of extrinsic motivation than intrinsic motivation they bring to their spare time activities. Also, throughout the day they will not have time to engage with a time-consuming intervention. For the weekend, such a scheme would, of course, look different.
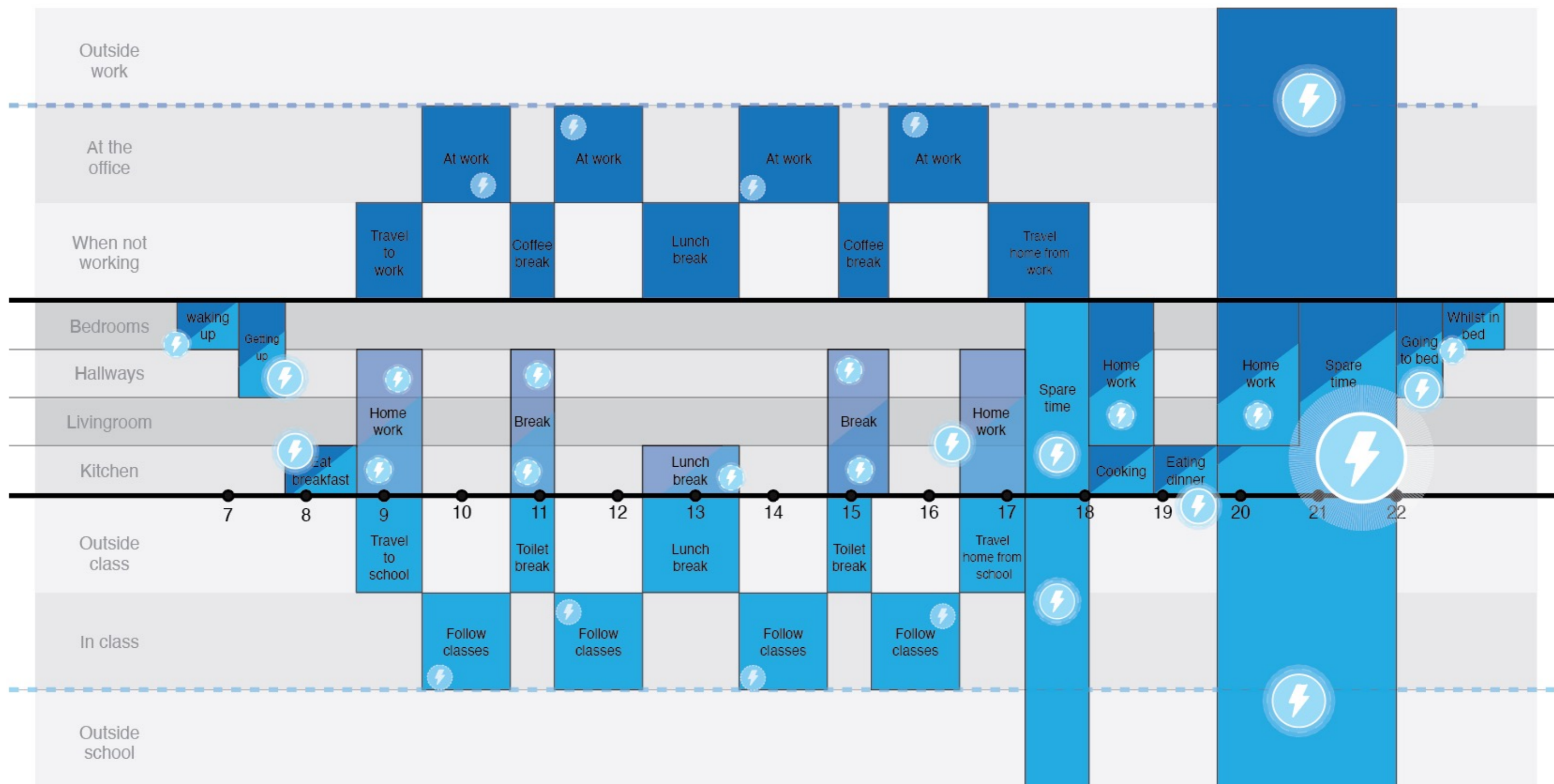
Figure 9.1 - An overview of when and where might be the best times and places for an intervention in the family life. This graphic was derived based upon the anecdotal information received from parents and children during the interviews and represents a general working day. This scheme would look different for a weekend day.

Figure 9.2 - Empathy map based on how children indicated to feel about the smartphone conundrum. Data from the Pinwheel study (2020).

Figure 9.3 - Empathy map based on how children indicated they think their parents feel about the smartphone conundrum. Data from the Pinwheel study (2020).

9.5 Empathy maps by children

To get an even better understanding of the child's point of view, I would like to refer to an study performed by one of Unpluq's competitors: Pinwheel Phone (Pinwheel, n.d.).

In creative collaboration with a group of children who did not yet have a smartphone, they asked for the children's opinions on how their parents were going about the discussion on giving their kids access to a smartphone of their own.

The opinions of these children were collected in two different Empathy maps. Empathy maps are used to visualize an overview of insights gathered from user research.

These empathy maps show how children desire access to entertainment and communication with their friends and relatives. On the other hand, parents fear their kids might become addicted to their phones and therefore hold off on giving their kids too early. In the meantime, the parents engage in excessive screen time themselves, which the kids view as hypocritic. Pinwheel's study (2020) confirms my research's insights, showing how kids want to have specific needs satisfied but are limited in doing so by their parents' fears and lack of proper communication.
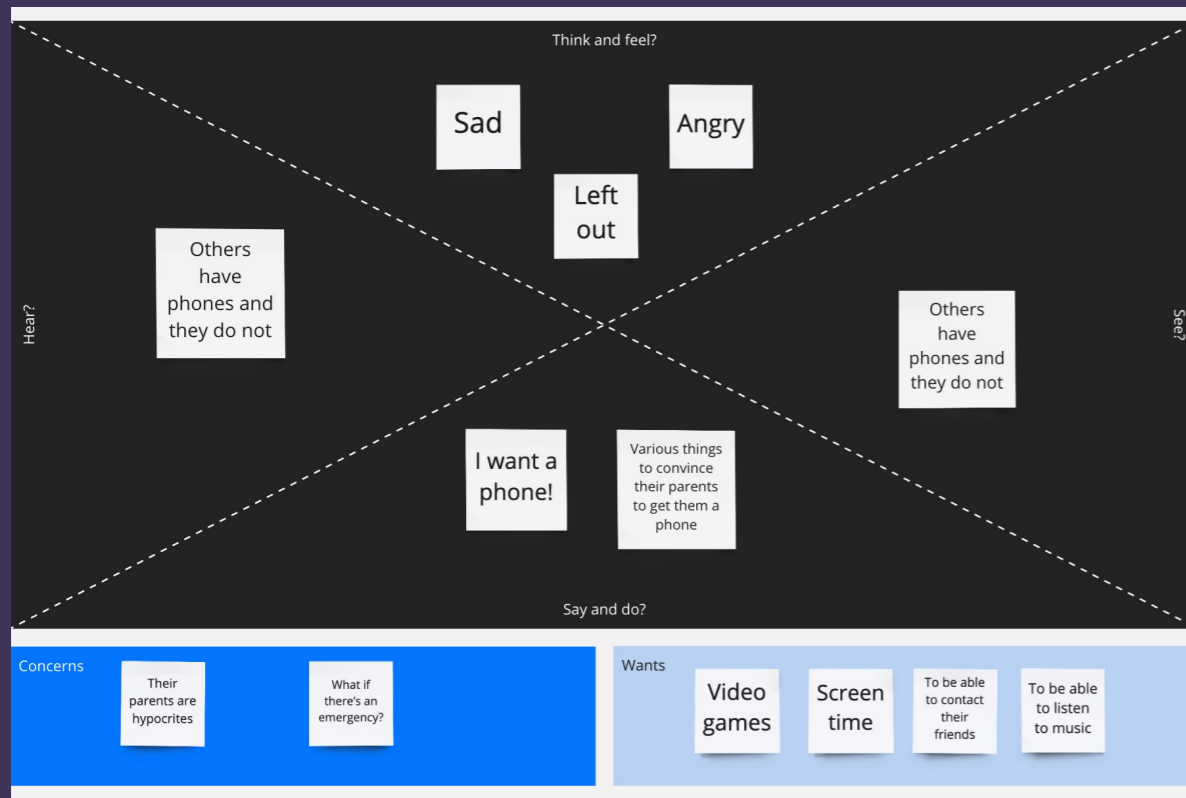
Summary

In this chapter, I discussed the results of the interviews with families and compared these with other research, analysing both parents and children's views on the issues at hand.

Although practically every parent tries to give their children what they think is best, parents often do not know how to approach digital parenting the right way. They do not fully grasp how devices add value to children's lives and instead try to limit the child's access to devices. This approach is not necessarily wrong but may harm the children's autonomy, resulting in the children starting to see device usage as a forbidden fruit. The child may respond either by continuing the behaviour in secret or become unhappy because they are deprived of their core psychological needs: it may be clear that their screens actually they provide them with a lot of value.

To not limit the child's freedom, but still be able to avoid consumption in excess, instead, children need the right kind of training to learn to reflect on what they do with their time. This will teach them to 'budget' their time for themselves and understand whether they value spending time on, for example, that new game. Stimulating the kids to set their own goals will make it much more intrinsically rewarding for them to limit their activities to these things that they themselves believe actually contribute to their wellbeing.

This requires parents to engage in a recurrent constructive conversation about the topic, allowing them to understand what children are doing on their devices. This solution brings the best of both worlds; the parents teach their families the capacity to reflect and become responsible consumers whilst also forming a lovely family bonding ritual in the process.

Key Take-aways

Of Interviews

Combining the insights from the digital parenting literature as well as from the interviews performed, I observe one central knowledge gap in parenting practices:

Parents often do not know how to draw the line, set boundaries for healthy screen use, and maintain balance harmonically.

1. We can split this problem up into three main questions:
2. How to best communicate about setting boundaries
3. How to help their families learn to spend their time the right way
4. When and where to best limit access

We've learned that the answers to these questions are:

1. By also involving the child in agreeing upon what you all find important and practising what you preach.
2. By showing intrinsic interest in their online activities, you can effectively build a relationship of trust with your kid. Once they have established such a relationship, parents can teach their child to self-evaluate by mindful reflection together on how they want to spend their time.
3. During meals, before sleeping and during activities that you agree upon to require involvement and focus.

Next to this, I deduce three general themes based on this exploratory research that could be interesting starting points for Unpluq to approach solving this problem with a new product:

PARENTS IN THE DARK: ADDICTED TO THEIR PHONES OR ADDICTED TO THEIR FRIENDS?

Parents often seem to feel like they don't know how to deal with their children's perceived inability to prevent overconsumption of digital services, fearing it may be detrimental to their health and other essential activities, such as homework. They don't know whether what their kids are doing online is good or bad for them, nor do they know how to get their children to behave healthily and safely. On the other hand, children don't fancy their parents limiting their digital freedom if that clashes with the time they want to spend with their friends or their interests.

ME OR MY SNAP STREAK?

People, and especially children, often give in to the (digital) temptation of spending their time in the here and now (hedonism), rather than engaging consciously in activities that are in favour of what they value (eudaimonia), such as hobbies or other activities of personal interest.

FAMILY VS ME-TIME

When performing activities on screens, people often feel tempted to engage with their activity of interest, which results in multitasking in the best-case scenario or seeking isolation from the rest of the family instead, in the worst-case scenario. How can we mix and match these interests to increase family time spent meaningfully together.

10 Market Analysis

What is going on in the parental control market?

So far, a clear case has been built in favour of the family life market as a strategic next step for Unpluq. Looking back at the core thinking in Strategic Product Design as described in chapter 3, I consider having established the desirability of solving the issues mentioned at the end of the previous chapter.

Now, I want to shift our attention to the viability and feasibility of targeting this new market.

- Can Unpluq deliver such a product and claim a strategic position in this market, and if so, how?
- Can it reasonably be assumed that we can convince families to invest in such a product/service?
- Can we provide sufficient value to persuade this target group to buy Unpluq rather than revert to any of the dozens of free alternative 'parental control' applications?
- How significant are the risks of competitors or operating system developers such as Google and Apple outrunning Unpluq?

To understand whether or not this market could be strategically attractive to Unpluq, I utilise a combination of several research methods to provide a preliminary overview of these and other market-related concerns.

10.1 Research approach

In the following chapter, I discuss the results from a 4C analysis as introduced by Hultink (2019), which is used to get a better sense of the marketing landscape in which a new digital wellbeing product for families would compete. The 4C method is a contraction of an analysis of the four topics Consumer, Competition, Context and Company.

1.

CONSUMER

For the Consumer analysis, I make a case for how the parental control market could prove promising compared to alternative segments the start-up could aim to serve.

2.

COMPETITION

Next, we will look at the competition. Who will be Unpluq's competitors in this new market? Which parties already play a role or may start to play a role? What do they compete for? How are they competing? To analyze Unpluq's competitive potential in the parental control market, I use the Porters' 5 Forces approach.

We will also look at four different competition levels, using an abstraction tool also proposed by Hultink (2019) to determine the most promising competitive set. This results in a structured overview of the important players in this market and a prospect for what Unpluq can expect from these players in the years to come.

Out of concern for both brevity and Confidentiality, the insights from the competitor analysis can be found in Confidential Appendix A.

3.

CONTEXT

To create an understanding of the relevant contextual factors that could pose as threats or potential opportunities for Unpluq, a trend analysis using the DESTEP approach is discussed, resulting in a trend-based vision used as substantiation to found a proposed problem statement.

4.

COMPANY

Finally, concluding on the insights gathered in the first three analyses, a SWOT analysis is provided. In this analysis, I combine insights into Unpluq's strengths and weaknesses provided by the start-ups' cofounders with the earlier mentioned analyses. This results in a concluding overview of opportunities that could potentially give Unpluq a unique advantage in the parental control market.

10.2 Consumer Analysis

In the scoping chapter at the start of this thesis report, I already argued why, in conversation with the client, I decided to focus on families as a target group. In this paragraph, I will make an additional argument as to why targeting families would be a clever move for Unpluq.

Whereas 88% of millennials confirm to experience 'smartphone addiction' (Hoeffnagel, 2018), they are currently in a phase in their lives in which they are not as affluent. **The millennials have left their formative years behind and now face other significant life changes**, like getting married and having kids (Taks, 2020). **Their main concern might not necessarily be paying extra to disconnect, mainly because their online lives and experiences also provide them with a lot of additional value.**

The generation before them, more specifically **the generation X mothers (aged 40 to 55), are, instead, currently in the position of making purchasing decisions for their busy households, and hence could be more financially appealing for Unpluq to target (Taks, 2020).** Although they are harder to reach because of this busy lifestyle (they have to care for their elderly parents and their Generation Z children and have an even harder time balancing everything, especially now due to the Covid-19 crisis (Taks, 2020)), their children's health and development are, naturally, amongst their top priorities.

Their children, Generation Z, aged 5 to 22, are the tech-savvy consumers of the future. Due to high expectations, they indicate to feel like a lot of pressure is put on them by the environment, schools and homework being the leading cause for concern. Given their ambition (Knijff, 2020), it might be wise to empower them, help them take control of their time and environment. **They need this help because they are eager to take charge in society, but limited in their capacities** (Unicef, n.d.; Heck, 2019; CBS, 2017). **Attempting to help them grow up with (positive associations with) Unpluq might be an excellent strategic move for this startup to make.**

10.3 Competition Analysis

As for the analysis of the competition in the parental control market, the intricate details, insights and potential advantages of this competition analysis are considered Confidential and therefore hidden from public access.

You can read more about this in Confidential Appendix A. Please refer to the contact details provided at the start of this thesis for access to this material.

In short, the conclusion from analyzing the competition confirms the earlier conclusions from the literature review: **Unpluq could benefit in this market from helping parents teach their kids to understand the importance of rules, to be critical and self-regulate their behaviour.**

10.4 Context Analysis

The context analysis is something that I can share here. In the following paragraphs, I discuss the results from a trend analysis that I performed to understand contemporary family life's cultural context better. Trends can help designers better understand the contextual factors affecting a market (Van Boeijen, Daalhuizen & Zijlstra, 2020). I then translated these analysis's insights into a design vision, which can is used as a starting point for the creative conversion process.

10.4.1 Analysis approach

For this analysis, the Trend Foresight and DESTEP approaches suggested by Van Boeijen, Daalhuizen & Zijlstra (2020) and ViP methodology by Hekkert & Van Dijk (2011) are used as general heuristics.

First, images of trends were collected entering relevant search terms in the Google Image database. Potential current and future developments were deduced from these images relying mainly upon intuition.

As is argued by TrendsActive (Elands, 2020), I believe that the main requirement for being able to anticipate future developments is to have an understanding of human psychology, sociology and culture and combine that with the current state of affairs.

Therefore, the conclusions drawn from the trend overview were further enriched and cross-referenced using the psychological insights gathered during the literature review described earlier in this report. Trend reports by trendwatchers like TrendsActive and were also referenced to compare my efforts with the work of professionals. A trend watching expert from TrendsActive was interviewed to confirm my approach and conclusions.

In total, I gathered a collection of 93 trend factors, using the DESTEP framework and ViP methodology to distinction between Developments, Trends, States and Principles as a means to ensure I covered a broad enough spectrum of potentially relevant contextual factors.

After this, I performed a clustering exercise to distill patterns that could be playing a role in developments in our contemporary culture. This ultimately resulted in a trend-based vision which could then be used as substantiation for the worldview to base a proposed problem statement on.

10.4.2 Outcomes Trend Analysis

The following pages list the 5-step story based on a trend analysis of contemporary trends in the fields of Demographics, Economics, Psychology, Ecology, Socio- & Culturology & Technology.

These five steps add up to a concluding design vision describing how Unpluq could successfully respond to the patterns observed, in line with the theory proposed by Hekkert & Van Dijk, (2011)..

A continuous struggle with information overload and instant gratification

1.

People currently are in a continuous struggle with information overload and instant gratification, which both occur due to the 24/7 availability that contemporary technology provides us with. This prompts a spoiled attitude towards finding media that is worthwhile, relevant and reliable: we want to be effortlessly entertained by relevant, appropriate and engaging media and we want it now.

We care about living our lives and building our worldviews based on relevant, reliable, and accessible information. However, with the unfathomable amount of information available, we struggle with filtering appropriately.

"The information we access in our current everyday lives comes close to 174 newspapers per day."

(de Boer & Cheung, 2018)

The reason the outside world overwhelms us with information is because attention is the new gold. The majority of commercial companies publishing information online are doing so because they hope to earn some of our attention. Our attention will either help them sell their own product or help them capture rich and meaningful data which they can sell to help others learn how to better sell their product.

The resulting 24/7 availability of information has also led to consumers getting spoiled. They have gotten used to all information being accessible instantaneously, and therefore everything that either takes more time or effort is becoming a nuisance. The overload of information hence may drive the consumer desire for more effective and efficient ways of accessing information. It may also explain the focal shift towards less mentally tasking channels like audio and visual media, which provide a more accessible way of taking in information.

"Visual languages are changing to a more spontaneous, fun, playful, funny and wholesome tone. Videos are often short, and show life in its real, raw way."

(de Boer & Cheung, 2018)

Struggles with digital parenting during the lockdown makes parents confused about doing the right thing for their child's wellbeing and future

2.

Digital parenting is a drastic challenge for parents in these times. The shift to working from home blurs the boundaries between work and life, making life even harder for Generation X. Parents frequently need, can and also often want to get help.

Parenting has always been a high-stakes yet rewarding battle for survival: parents feel like they HAVE to get raising their children right. They feel responsible for helping their children become self-reliant citizens but cannot do it on their own. A lot of people already have a hard time taking care of themselves; because it is hard for them to motivate themselves to change their behavior: the Dutch population already spends about 8.5 hours per day consuming media (Schaper, Wennekers, & de Haan, 2019).

Let alone doing the right thing for protecting our children from this same information overload and distraction Walhalla. Although the urgency of preparing our kids for the future is clear, the previously addressed information overload makes it hard to help parents effectively learn about best practices. They do not have the time nor the resources to educate themselves on the newest digital developments, on what information to trust and what not.

There is no clarity as of yet on how to get digital parenting right, and that whilst Generation Z is currently going through the most important time of their lives: their formative years. The time to help the kids improve their mental well-being is NOW (Taks, 2020).

Digital overconsumption is more attractive during the lockdown

3.

COVID adds to the strain that society already puts on individuals, which may lead to an increase in the desire for escapism and transcendance.

As was mentioned before, people struggle with the growing demands of our increasingly digital society. Generation Z teenagers experience a lot of pressure from schools, homework and the environment. Generation X parents have a hard time balancing taking care of the children and grandparents with their demanding jobs, especially now the Covid-19 crisis makes them responsible for homeschooling and blurs work-

life boundaries. The increasing fear of missing out on life and consequential negative emotions amongst others, causes people to seek means to destress. They consequently find solace in entertainment media; to mentally escape. This way of destressing does, however, not always suffice. What can be done to help people manage their stress effectively

Wellbeing is a maze, but a way out seems possible

4.

Wellbeing can be achieved by focussing on our autonomy, our personal development and by increasing our relatedness. The challenge for (family) wellbeing is an uphill battle, but it is feasible: it just requires teaching and improving clarity on the right balance, the right skills and the right resources. The focus on smaller local ties could help out there.

Although wellbeing is subjective due to our learned rules and available (mental) resources, there are some ground rules on what makes us happier. The main problems caused by the pandemic can be attributed to people feeling deprived of their core psychological needs, as described before by Self-Determination Theory (Ryan & Deci, 2000).

The answer to improving wellbeing is improving peoples psychological wellbeing, too. This can be achieved by helping people be more mindful and let them experience more autonomy in expressing themselves, as well as helping people stay connected to one another. Due to Covid-19, we will be spending more time at home. Strengthening our local communities and feelings of capacity to live out our values within the bounds of what is legally possible could help make a significant difference.

Digitisation is part of the problem, but is here to stay and can also provide opportunities and contribute to the solution

5.

The ongoing digitisation of our society, as well as the inginuity of the current infotainment services, can prove to be both a curse or a blessing. Designers of these media have a huge potential but also a responsibility towards the end-users of the technology they create.

The ever-expanding availability of technological solutions has kept our society livable in the current crisis. Although it might not always be the right means to help users relax and unwind, it can also provide opportunities for lightening the burden of our current condition. Augmented reality may become hot topic in years to come. For an example, look at Ikea, who want to allow people to try out new furniture virtually. Or Google, who hope to get people to use google lens more to perform searches for information online. Voice applications are also increasing in availability. With the increasing connection of IoT solutions, I'll

have to keep an open mind towards the roles that new technologies may play in years to come, and how they can provide potential opportunities for helping satisfy our core psychological needs.

"People get a kick out off the confirmation that social media gives. Networks may be the pinnacle of modern technology, but their success relies on the ancient desire to feel connected and tell stories. If you look at it that way, Facebook is our digital campfire."

(de Boer & Cheung, 2018)

Trend-based vision

Looking at this overall story, we see the initial concern that served as the starting point of this thesis reflected; the main theme of this story is 'Attention Management'.

We are facing a data-glutton economy that feeds on our attention to grow wealthy.

Because everyone is competing to succeed in our society, parents are overwhelmed with the demand to manage their time. Nonetheless, they want their children to be better equipped to manage society in the future, but don't know how to best support that development. Especially in the confinements of the current pandemic, this is challenging.

Therefore, I conclude that:

Unpluq should want to make it easy for parents to raise their children as attention-management natives within their own household & bubble.

This should increase the bonding within the family and provide improved senses of belonging, whilst teaching family members to become mindful of what they find meaningful activities that allow them to express their values.

To get an improved sense of autonomy and competence, this requires experiencing freedom to intentionally experiment, fail, learn and ultimately grow, together.

Overall conclusion explorative research

Key take-aways

In this chapter, the focus was on the viability and feasibility of the parental control market for Unpluq.

I performed a 4C analysis, in which the competition, the consumer target groups, the context and the company Unpluq itself were analysed.

I established that Unpluq has a tad limited position due to the minimal amount of resources available. However, considering the themes observed in chapter 9, Unpluq may not have to depend on significant resources to offer an exciting value proposition nonetheless.

Parents practically always want what is best for their children, and Unpluq may be in a great position to deliver on that desire. This may be a clever move because Generation X parents are more affluent than the Millenials.

The trend analysis teaches us that parents have hectic lifestyles on their hands. The media bombards them with scary news about the consequences of media use. In the meantime, they are watching helplessly whilst our current digital society is practically forcing itself on their kids.

In brief, there may be a great opportunity if Unpluq can Figure out a way to help these parents feel like they are doing the right thing for their children.

The challenge then remains to bring enough value to the table to justify preferring Unpluq's product over that of the manifold free competitors out there. Overall, these competitors, however, focus more on limiting the children's freedom than helping them learn to deal with it. That is where I think that the potential for Unpluq lies.

Therefore, this thesis's design phase will focus on realising the vision of helping Unpluq teach parents to raise their children as attention-management natives.

This so far seems an under-represented approach within the market and may give Unpluq a unique advantage - that is, if they manage to sell themselves as an entirely new type of parental control.

Although the risks of being overtaken by competition may be present with this approach, the topic is quite knowledge-heavy. Therefore, I deem it not too likely that many competitors will be taking a similar route any time soon.
By teaching children to become self-managing,

I do not necessarily mean giving them full autonomy; they will still need guidance and protection from potentially harmful experiences. Let me illustrate this with an example:

In a prehistoric village, a wall was built to protect the tribe from outside threats. Two families living near the fence have two different ways of teaching their kids not to venture beyond the wall.

One family tells their children the outside world is a dangerous place and that the kids should refrain from even thinking going out there at any time. No discussion about this is possible.

The other family teaches their children about what goes on in the outside world, why that could be dangerous and why they have built a wall to protect themselves from that. The parents inquire actively what their kids think of this and answer all their questions.

Which children do you think are more tempted to climb the walls in rebellion? Whose kids would you think are better prepared for the outside world when they are old enough and inevitably will have to join in the hunt? Which children will eventually do better in the world?

Part 04

Design Synthesis

The research phase of this thesis is now complete.

By studying literature from several fields and interviewing stakeholders, and through detailed market analysis, I have derived a conclusive framework of requirements and wishes.

In the following section, I put these wishes and requirements to work by using them as input for creativity. First, I describe the creative process that I executed. Then, I explain how, with the client's consent, a choice was made for one specific conceptual direction to develop further.

Contents

11 Design Brief

Designing a digital parenting product for Unpluq

It may be clear that parents care about the development and health of their children. Because of that, they indicate to struggle with properly dosing the access their children have to digital media. In the previous chapters, I established that this may be because parents often do not know whether what their child does on their devices adds value to their development and therefore worry about the undeniably significant amount of time that children spend on their devices:

Are they maintaining enough balance?

The solutions to this problem that are currently available on the market allow parents to limit functionalities on their children's devices, but in the process these limit children's autonomy and connection to their friends; an intervention which, in turn, can harm their relationship with the parents, or worse: the children's mental well-being.

In this chapter, I will derive a strategic attitude that Unpluq can take to thie problem described above. Based hereupon, I establish the problem statement that I will work on in the design phase of this project.

11.1 Proposed Solution space

Based on the insights gathered in the research phase of this project, my hypothesis is that all these challenges originate from one deficit:

The problem is a lack of awareness of, communication about and intentional acting upon values.

Both parents and children will have to learn to constructively discuss how and why they spend their digital hours on a weekly basis, showing respectful interest in one another's screen time and through that creating an understanding and agreement on what is and what is not desirable and why.

If this is realized, everyone in the family would subsequently feel stimulated to reflect more actively on, envision and help manifest what they want their own and family's everyday life to look like.

It will of course be challenging to reach an agreement where everyone is happy with the outcomes of these discussions, and it might be so that some parents feel like this doesn't sit well what they think is best for their children.

That is why **a solution like the one described here should come with a well-designed service that helps parents facilitate these discussions in such a way that it is perceived to be respectful towards both sides in this dilemma.**

In pedagogical and behavioral sciences, it is commonly known that children generally follow rules better when they themselves have contributed and agreed on these rules (e.g. Eyal, 2019). They also complain less about the penal consequences when these rules are broken.

Subsequently, to help these families live their lives in ways that align more with their core values, they should be provided with the right tools that help them intentionally implement their plans. This includes adjusting their environments to avoid succumbing to distraction during emotionally hot moments. Tools for adjusting their environments should e.g. help them create stopping cues to improve awareness and that help make giving in to temptation harder.

11.2 Proposed strategy

The strategy as proposed in this thesis for helping families to learn to spend their time in more meaningful ways, can be achieved in taking two major steps. Through this two step strategy, Unpluq can help families avoid a major part of the frustration and concerns caused by infotainment technologies.

Unpluq can provide and develop both discussion tools for step 1 as well as the awareness tools that help achieve step 2. As was mentioned at the start of this report, due to the limited time available, this thesis focusses on creating the discussion tools for step 1.

Therefore, in agreement with the Unpluq founders, the following problem statement was formulated as the design challenge that I would attempt to solve in the design phase of this thesis:

Proposed strategy

1.

First, facilitate the tools to help families with children aged 10 to 12 develop a habit of having fun and constructive discussions about meaningful time allocation. These discussions should serve primarily to educate everyone on the important topics. It should also help take action in implementing agreements in a way that respects everyone's values as to build as much intrinsic motivation to make intentional behavior change possible. The goals would be:

A. Teaching parents to iteratively talk to their children about what they are doing is believed to be the best way parents can support and protect their children from harm on the internet, whilst not suppressing their freedom.(Hermes, Van Goor & De Jong, 2019).
B. Teaching the children at an early age to reflect iteratively on what they consider valuable time allocations, and why is perceived to be the right solution to properly dealing with screentime. (Ghosh et al., 2018).
C. Helping the parents set boundaries together with their children (because setting boundaries is considered a key component of preventing excessive screen use) and involving the children is said to be most contributive to their compliance and development (Blum-Ross & Livingstone, 2016)

2.

Then, provide the tools that enable adjusting the environment to support spending time meaningfully and limit the temptation of distractions. This would help increase the ability to change behaviour as well as provide the required triggers.

The development of physical and especially digital tools that can provide the required ability and triggers is proposed mainly as recommendation for Unpluq to continue looking into after this thesis.

This could be done as follows:

A. The insights that users gathered from the product service shouldbe transferred into involvement of the Unpluq key, to stimulate learnings being implemented in practice. This is a prerequisite because changing behavior is, in the end, all about changing habitual action for a prolonged period of time.
B. The project should enable and trigger the family in spending their time consciously on things they consider valuable to improve subjective wellbeing (Lyubomirsky, 2017)

Problem statement

"How can Unpluq teach parents to have constructive and inquisitive conversations with their kids about online activities, in order to help everyone learn to iteratively reflect on and improve how they spend their time, both online as well as offline?"

Design Requirements

11.3 Design Requirements

To make this design challenge workable, an overview of design requirements was derived from what I learned from the literature review and explorative research described in the first part of this thesis report.

This resulted in the value hierarchies already shown at the start of this thesis in section 3.6 and 3.7, in line with what is proposed in the VSD methodology. These value pyramids translate the found values into requirements that the to be designed solution will have to meet, if we want to develop a solution that actually respects the values of all stakeholders as much as possible. This, subsequently, should make it as likely as possible that we end up with a value proposition for Unpluq that would actually work in practice.

The primary values hierarchy lists the found value constructs and derivative requirements that should be respected if we want this project result to help families improve the degree to which they spend their time in a meaningful way.
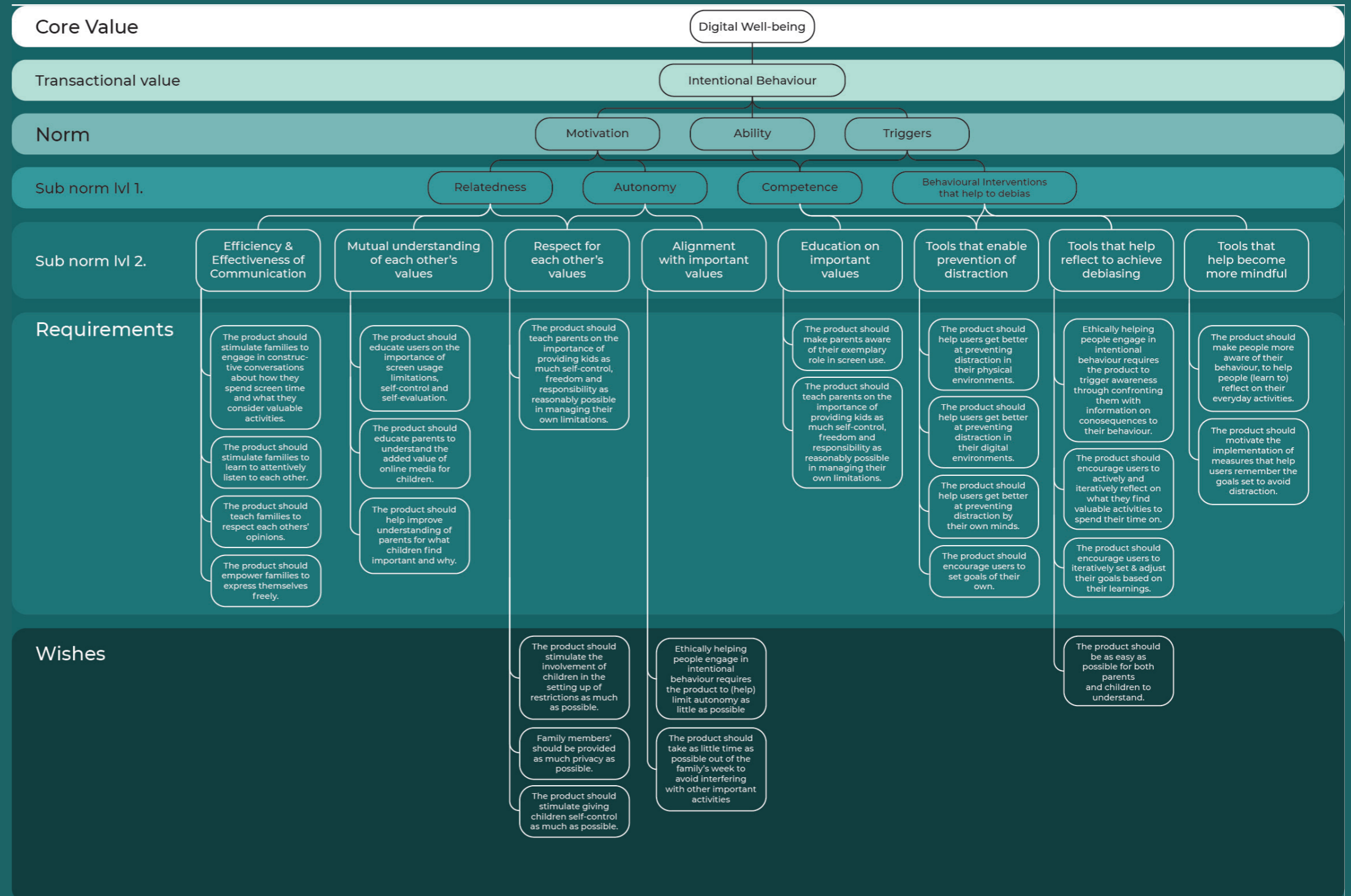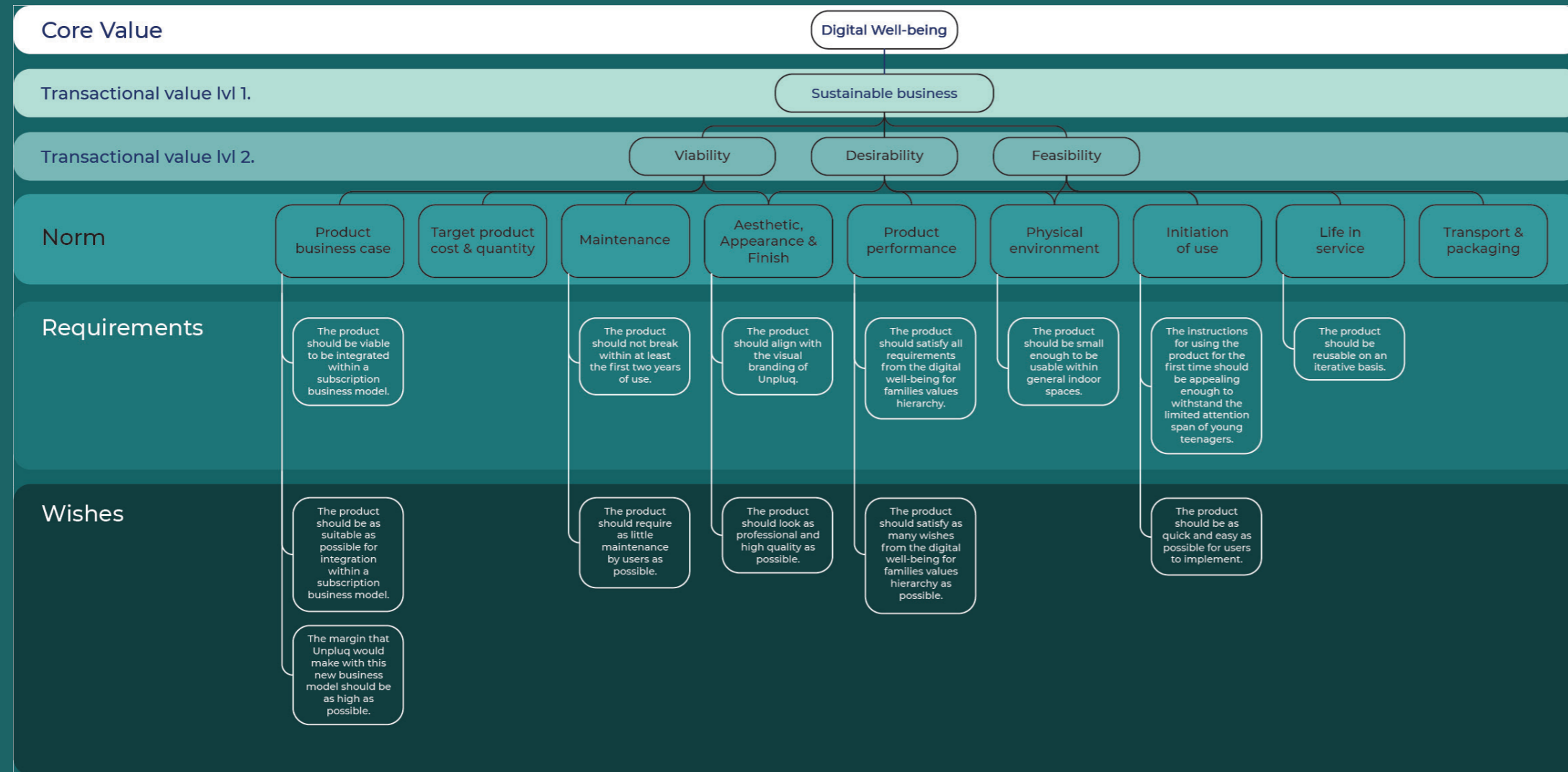
Core Value: Digital Well-being

Transactional value: Intentional Behaviour

Norm: Motivation · Ability · Triggers

Sub norm lvl 1. Relatedness · Autonomy · Competence · Behavioural Interventions that help to debias

Sub norm lvl 2.

Relatedness		Autonomy		Competence	Behavioural Interventions that help to debias		
Efficiency & Effectiveness of Communication	Mutual understanding of each other's values	Respect for each other's values	Alignment with important values	Education on important values	Tools that enable prevention of distraction	Tools that help reflect to achieve debiasing	Tools that help become more mindful

Requirements

Efficiency & Effectiveness of Communication:
- The product should stimulate families to engage in constructive conversations about how they spend screen time and what they consider valuable activities.
- The product should stimulate families to learn to attentively listen to each other.
- The product should teach families to respect each others' opinions.
- The product should empower families to express themselves freely.

Mutual understanding of each other's values:
- The product should educate users on the importance of screen usage limitations, self-control and self-evaluation.
- The product should educate parents to understand the added value of online media for children.
- The product should help improve understanding of parents for what children find important and why.

Respect for each other's values:
- The product should teach parents on the importance of providing kids as much self-control, freedom and responsibility as reasonably possible in managing their own limitations.

Education on important values:
- The product should make parents aware of their exemplary role in screen use.
- The product should teach parents on the importance of providing kids as much self-control, freedom and responsibility as reasonably possible in managing their own limitations.

Tools that enable prevention of distraction:
- The product should help users get better at preventing distraction in their physical environments.
- The product should help users get better at preventing distraction in their digital environments.
- The product should help users get better at preventing distraction by their own minds.
- The product should encourage users to set goals of their own.

Tools that help reflect to achieve debiasing:
- Ethically helping people engage in intentional behaviour requires the product to trigger awareness through confronting them with information on conosequences to their behaviour.
- The product should encourage users to actively and iteratively reflect on what they find valuable activities to spend their time on.
- The product should encourage users to iteratively set & adjust their goals based on their learnings.

Tools that help become more mindful:
- The product should make people more aware of their behaviour, to help people (learn to) reflect on their everyday activities.
- The product should motivate the implementation of measures that help users remember the goals set to avoid distraction.

Wishes

Respect for each other's values:
- The product should stimulate the involvement of children in the setting up of restrictions as much as possible.
- Family members' should be provided as much privacy as possible.
- The product should stimulate giving children self-control as much as possible.

Alignment with important values:
- Ethically helping people engage in intentional behaviour requires the product to (help) limit autonomy as little as possible
- The product should take as little time as possible out of the family's week to avoid interfering with other important activities

Tools that help reflect to achieve debiasing:
- The product should be as easy as possible for both parents and children to understand.

Figure 11.1 - The complete values hierarchy on designing for digital well-being.

Core Value				Digital Well-being				
Transactional value lvl 1.				Sustainable business				
Transactional value lvl 2.			Viability	Desirability		Feasibility		
Norm	Product business case	Target product cost & quantity	Maintenance	Aesthetic, Appearance & Finish	Product performance	Physical environment	Initiation of use	Life in service	Transport & packaging
Requirements	The product should be viable to be integrated within a subscription business model.		The product should not break within at least the first two years of use.	The product should align with the visual branding of Unpluq.	The product should satisfy all requirements from the digital well-being for families values hierarchy.	The product should be small enough to be usable within general indoor spaces.	The instructions for using the product for the first time should be appealing enough to withstand the limited attention span of young teenagers.	The product should be reusable on an iterative basis.	
Wishes	The product should be as suitable as possible for integration within a subscription business model.		The product should require as little maintenance by users as possible.	The product should look as professional and high quality as possible.	The product should satisfy as many wishes from the digital well-being for families values hierarchy as possible.		The product should be as quick and easy as possible for users to implement.		
	The margin that Unpluq would make with this new business model should be as high as possible.								

Figure 11.2 - The complete values hierarchy on designing for sustainiable business.

The second values hierarchy focusses on the values that Unpluq will have to see met, if we want this product to contribute to making their business more sustainable.

The list of requirements, as we can see at the bottom of these pyramids, are what will be used as a starting point for the ideation on potential solutions to the design challenge mentioned earlier.

Below the found requirements, also separate wishes are listed. These wishes will be held in mind during the development of concepts and ideas and are used at the end of the process to evaluate which of the final concepts best fit the current design case.

11.4 Functional requirements

Based on the requirements specified in these two value pyramids, I decided to derive a more concise list of requirements that would contain the most crucial elements that should not be overlooked in the final design; the requirements that would make the to be designed solution work and therefore able to solve the design challenge specified earlier.

This provided me with a concise list of functional requirements that would have to be met by the final designs, which ultimately helped kickstart the creative process. This list contained the following items:

· To invite the users to periodically pay attention to their digital habits
· To prompt users to engage in a constructive conversation about their digital habits
· To seduce people to reflect on their digital habits
· To stimulate parents to set boundaries to their digital habits
· To stimulate parents to involve children in the discussion on boundaries on digital media consumption
· To stimulate the usage of the Unpluq key & launcher
· To stimulate people to reflect on and set their intentions
· To help people stick to their set intentions
· To be enjoyable for parents
· To be enjoyable for children
· To be easy to understand for parents
· To be easy to understand for children

As was described, these functional requirements were translated into 'How to...?' (H2) questions and through that utilized as a starting point for ideating on product concepts that would comply with all requirements to be able to help Unpluq...

"... teach parents to have constructive and inquisitive conversations with their kids about online activities, in order to help everyone learn to iteratively reflect on and improve how they spend their time, both online as well as offline?"

Summary

In this chapter, a concluding list of requirement and wishes was made to wrap up the insights gathered from the research phase of this project. This overview of what the product to be developed should deliver upon was then translated into a list of functional requirements that could be used as a means to kickstart the creative process.

In the following chapter, I will address the creative process executed for this thesis and the steps that were taken through which a decision on the final concept to be developed further was made.

Key Take-aways

Design Brief

Based on the research performed in this thesis, I conclude that the problems parents and children experience surounding technology use can be attributed to a lack of awareness of, a lack of proper communication and a lack of intentional acting upon values.

I argue that the solution could be a well-designed service that helps parents facilitate these discussions in a way that is perceived to be respectful towards both themselves and their children.

I propose a two step strategy for providing this solution:
A.   Provide the tools to create awareness
B.   Provide the tools to act on awareness

In this thesis, I focus on taking step A, because this step is new to Unpluq. They are better equipped to take step B.

I derived a list of functional requirements based on the value hierarchies built in the research phase of this project. This list of functional requirements will be used as input for the creative process.

12 Design Conversion

From design requirements to design concepts

In order to explore the solution space and with the intention of finding an as good as possible fitting solution for the prespecified requirements, I followed an iterative process of idea generation and verification with parents, children and Unpluq.

This chapter describes the methods that were used in this creative process, the choices that were made, as well as the motivation behind these choices. First, a brief summary of the process is given. After that, a more in-depth discussion addresses the learnings gained in the separate steps of the process. Wrapping up this chapter an overview will be provided of the substantiation for the most important decisions made in this process.

12.1 Overall Approach

During the literature review and explorative research phases, I had already explored initial idea sketches and solution scenarios in order to test my understanding of the issues and potential solution spaces. These ideas were periodically evaluated with families, by letting them evaluate the ideas using an approach called Quantifying Design Resonance as introduced by Lomas (2020). This simple, four-question tool allowed me to efficiently quantify whether these directions resonated with potential end users.

After completing the research phases of the project, more initial ideation was engaged in in order to freely explore the potential solution spaces and narrow down on Unpluq's preferred solution direction.

To cast our net out broadly, first individual brainstorm sessions were executed. After discussing these initial results with Unpluq, a creative session was arranged to explore the solution space even more.

The final solution would, of course, have to comply with the earlier specified design requirements to provide a legitimate solution to the design challenge formulated in the previous chapter. Therefore, I used the list of functional requirements distilled in the previous chapter as a starting point to kickstart the more focused creative process.

Figure 12.1 - Collection of some of the initial idea sketches made in this project.

12.2 From functional rerquirements to concepts

As was described before, after generating a plethora of initial ideas in these early creative sessions, I wanted to develop a collection of concepts that would align better with the requirements that I had gathered during the research phase of the project.

To achieve this, I decided to apply a way of designing inspired on a tested and proven approach to creative ideation, as taught in the early years of the Industrial Design Engineering bachelor at the Delft University of Technology.

I started exploring the solution space by generating 'How-to...?' questions that answer these functional requirements. The generated answers to these questions were arranged in a morphological chart (see Figure 12.2) and this chart was used to generate six concepts.

A more detailed overview of the morphological chart can be found in Appendix E.

I then used the SCAMPER methodology to check whether these six concepts could be made to even better comply with the list of requirements.

As the SCAMPER results were based on the six concepts with which I chose to continue the process, the results of this step are hidden and documented in Confidential Appendix B.

Figure 12.2 - Morphological Chart that was made for this project using an iPad.

12.3 Results

The six concepts were then discussed with the Unpluq founders to check their fit with the Unpluq brand and can be found in Confidential Appendix C. Together with Unpluq I ultimately selected which concept to further elaborate upon.

12.4 Client Evaluation

In order to be able to see which of the conceived concepts best aligned with Unpluq's goals, I arranged a meeting with the Unpluq founders to discuss the outcomes from the creative process.

I presented Jorn and Tim with the process that I had gone through to reach these final conclusions, as was described in the previous chapter and then concisely explained the six concepts that had come out of that process. All of the concepts were received with enthusiasm, but it was clear that the playful concept direction was favoured by Unpluq.

Some recaps of the feedback on the several concepts were:

*"What comes out of this project should be something charming, **it should be fun! That is of utmost importance, because otherwise users might never really use it.** Or try it once, then it would turn out a tad boring and neither the kids nor the parents would like to do it. **By making it into a game, with some fun questions that they could play whenever they want, that could potentially be prevented.**"*

*"I also think the boardgame is very interesting, because **it stimulates to learn about our challenges in a playful way.** It can be fun for children and parents to play, but also **teach you relevant facts that could potentially help you use your phone more thoughtfully.**"*

*"The parental control guide might be focused too much on parents. I wonder whether that might work, because it would be too direct a way of having parents approach their kids, which makes it less likely that kids will actually listen. **The goal of your project is to start a conversation between parents and children, in order to let them agree on behavior rules. A game would seem to be a very good way to deal with that.** Parents and kids need to reach conclusions together for this to work."*

*The card game is also very interesting, but it could be more fun, too. Right now, it is maybe too dry, not something that you would play because you feel like it. **It is similar with the questions, but this concept provides some more background information.** You could also provide that within the other concepts."*

Figure 12.3 - Jorn Rigter, co-founder of Unpluq

Figure 12.4 - Tim Smits, co-founder of Unpluq

The other concepts were deemed less viable for clear reasons:

- Concept 2, being a physical and electrical concept, is likely too costly to develop, both when it comes to time as well as money.
- Concept 4 makes a lot of sense, but is a tad too straight-forward, maybe even boring as an outcome of this creative project.
- Concept 5 relies on mechanisms that have not yet been proven and need far more time to test and further develop than is available within the scope of this thesis.

12.5 BEST PRACTICES ANALYSIS

Given the interest of Unpluq in primarily the playful elements of the concepts that came from this creative process, a best practice analysis was performed on existing board and card games to learn more about and inspire creative thinking more in the line of gamification. The resulting table and overview of potentially interesting game play elements can be seen in Appendix F. Using the insights from this analysis, a selection of elements was made that could be used as inspiration for the three final concepts presented in Confidential Appendix D.

Summary

In this chapter, I describe the creative process through which I delivered six concept proposals to Unpluq. Based upon feedback from the two founders on the perceived desirability, feasibility and viability of these concepts, we slightly adjusted the requirements and made a selection of three concepts to further develop.

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Families vs. machines | Niels Weggeman
Families vs. machines | Niels Weggeman
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12 Design Conversion

Key take-aways

The creative process resulted in six initial concepts that Unpluq could choose to further develop as potential solutions to help parents and children learn how to spend their time in more meaningful ways. In the initial evaluation of these concepts with the client, the ideas that resonated most were essentially the playful ways of educating users about healthy behaviour.

Based on this feedback, I recombined elements from these six preliminary concepts into three more detailed concepts. These concepts are not included in this report, out of concern for Confidentiality. I then elaborated these concepts further based on learnings from a best practice analysis on game development.

I summarised each of these concepts in a compact and comprehensive overview that explain the purpose of the concepts and the form it would take up. These one-pager overviews helped convey the concept ideas to the supervisory team and client and also helped choose which concept to develop further in the end. Please refer to Confidential Appendix D for a more detailed overview of these concepts.

Figure 11.2 - The complete values hierarchy on designing for sustainiable business.

Design implications

- The product should be as fun as possible for children and parents to repetitively engage with.

Important note

At this point, the values hierarchies are considered to be complete. No more requirements and wishes that are not ultimately concept specific will be added. Therefore, after this page, the values hierarchies will not be presented after each chapter anymore.
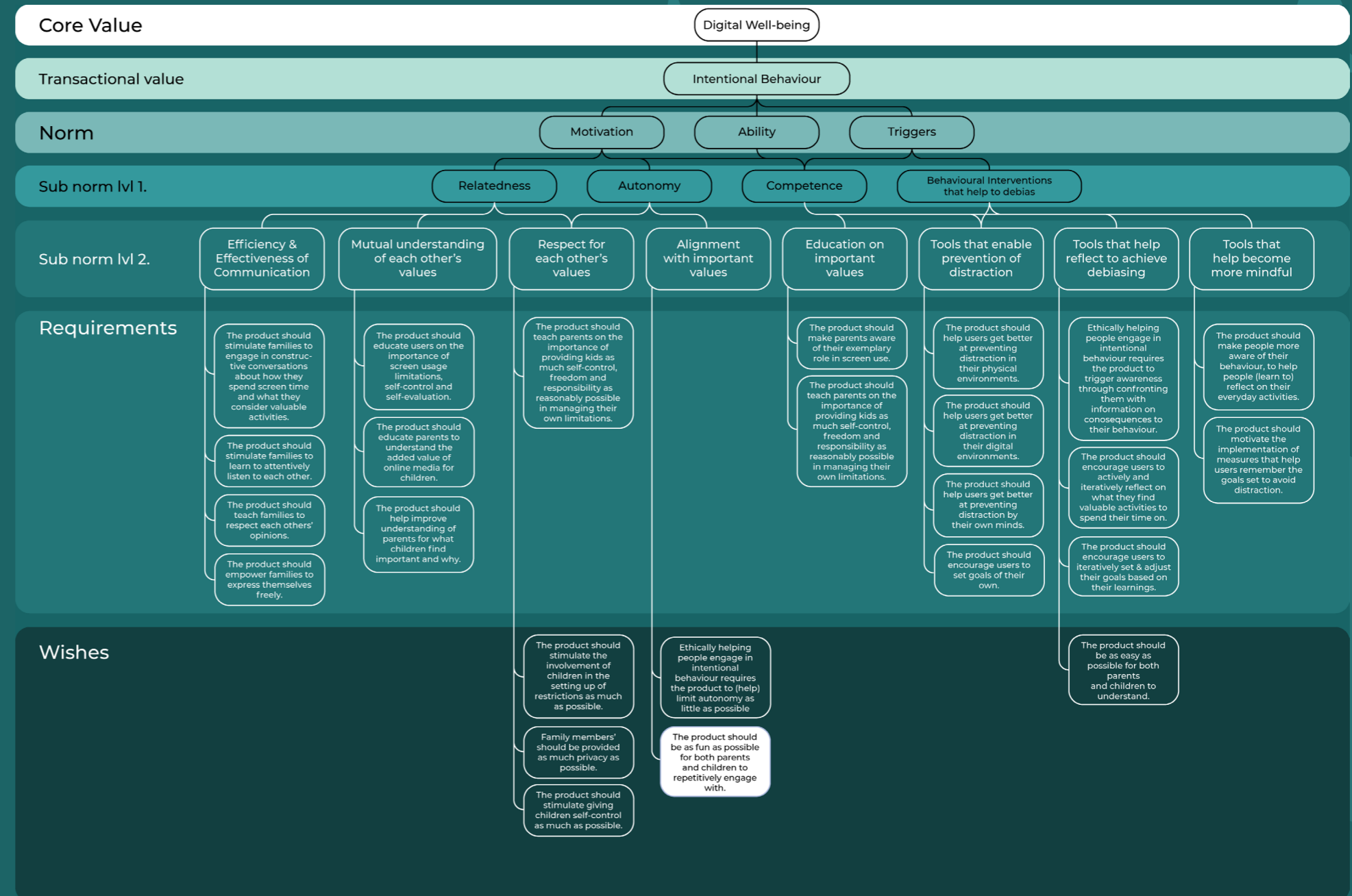
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Families vs. machines | Niels Weggeman
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13 Concept Evaluation

Which concept should Unpluq continue with?

In this chapter, I cover the process through which I evaluated the three concepts that came from the creative process. Together with the Unpluq team, we decided to continue with Concept 3 as the final concept. Although not necessarily the best concept to solve the problem described before, this concept seemed most feasible and viable with the resources that Unpluq has available for this project.

The first step in the evaluation concerned a conversation with Unpluq about which direction best aligned with their brand, vision and resources. The entire current team of Unpluq was involved and shared their opinions on the three concepts.

Additionally, the concepts were compared against the list of wishes and requirements based of insights gathered in the research phase, to see which scored best considering the collected knowledge. Based on these insights, an agreement was reached to continue with the Unpluq Card Deck on the final conceptual direction.

13.1 Evaluation with Unpluq

After presenting each of the three concepts to the Unpluq team, we had an elaborate conversation weighing the pros and cons of the different concepts proposed.

Overall, the analogue concepts were favoured because the team considers digital solutions to helping people Unpluq to be paradoxical and through that potentially confusing for the end consumer.

Another important factor in this evaluation was the simplicity of the concepts. The easier it would be to implement, the more accessible it would be to all stakeholders: for Unpluq to produce and for users to use.

The team also considered the game play elements, and the roleplaying element particularly, to be a fun and entertaining approach to improving mutual understanding. However, because Unpluq has minimal experience as a game building company, developing (digital) games might turn out to become expensive, both in development time as well as in costs. On top of that, building games could even turn out to be confusing Unpluq's brand image.

Concept 3 hence was considered the most feasible option within the resources that Unpluq has available. This concept suits the brand best because Unpluq is looking to implement a subscription-based value proposition as quickly as possible. Therefore, the solution that comes from this project should be affordable to implement in the very near future, requiring little investment in R&D and time to market.

13.2 Evaluation based on requirements

The concepts were also compared against the wishes from the values hierarchies through the use of Harris profiles.

Looking at the resulting visual overview in Figure 13.1, Concept 3 visually seems most likely to topple to the positive side. Hence, these Harris profiles also suggest Concept 3 to be best fitting with the current goals of Unpluq, in line with the general conclusion from the evaluation meeting.
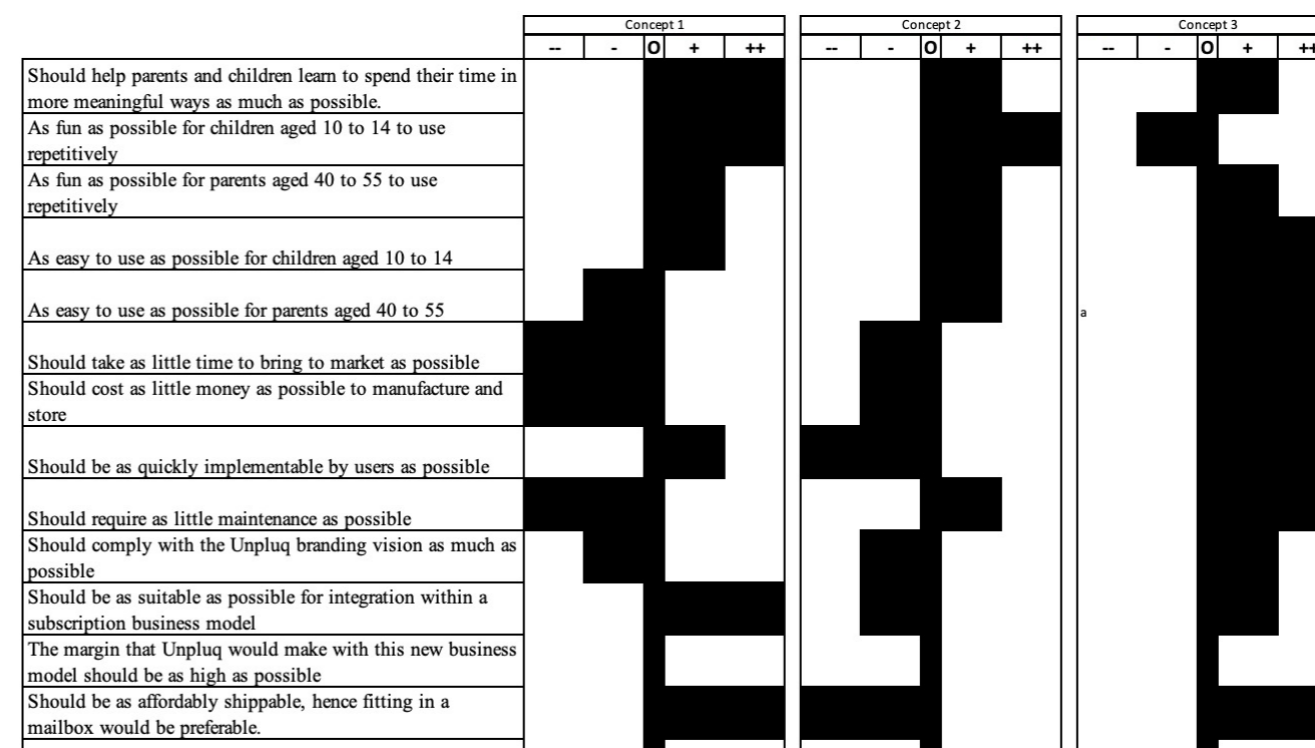
What is a Harris profile?

The name Harris was mentioned several times earlier in this report. As far as I know, the 'Harris profile' is in no way related to Tristan Harris, the Google Ethicist;

A 'Harris profile' is a heuristic decision-making tool for comparing the efficacy of concepts that already meet all specified essential requirements.

To help to decide on which concept is best capable of satisfying the remaining wishes for the project, one has to sort the to-be-satisfied wishes from most important at the top to least important at the bottom.

One then rates the concepts on how well they satisfy each wish on an ordinal scale ranging from '--' to '++', and colouring in the corresponding blocks as shown in Figure 13.1. In doing this for each wish, a pattern emerges that resembles an abstract structure tending to topple to one side.

Wish	Concept 1					Concept 2					Concept 3				
	--	-	O	+	++	--	-	O	+	++	--	-	O	+	++
Should help parents and children learn to spend their time in more meaningful ways as much as possible.															
As fun as possible for children aged 10 to 14 to use repetitively															
As fun as possible for parents aged 40 to 55 to use repetitively															
As easy to use as possible for children aged 10 to 14															
As easy to use as possible for parents aged 40 to 55															
Should take as little time to bring to market as possible															
Should cost as little money as possible to manufacture and store															
Should be as quickly implementable by users as possible															
Should require as little maintenance as possible															
Should comply with the Unpluq branding vision as much as possible															
Should be as suitable as possible for integration within a subscription business model															
The margin that Unpluq would make with this new business model should be as high as possible															
Should be as affordably shippable, hence fitting in a mailbox would be preferable.															

Figure 13.1 - Harris profile on concepts developed.
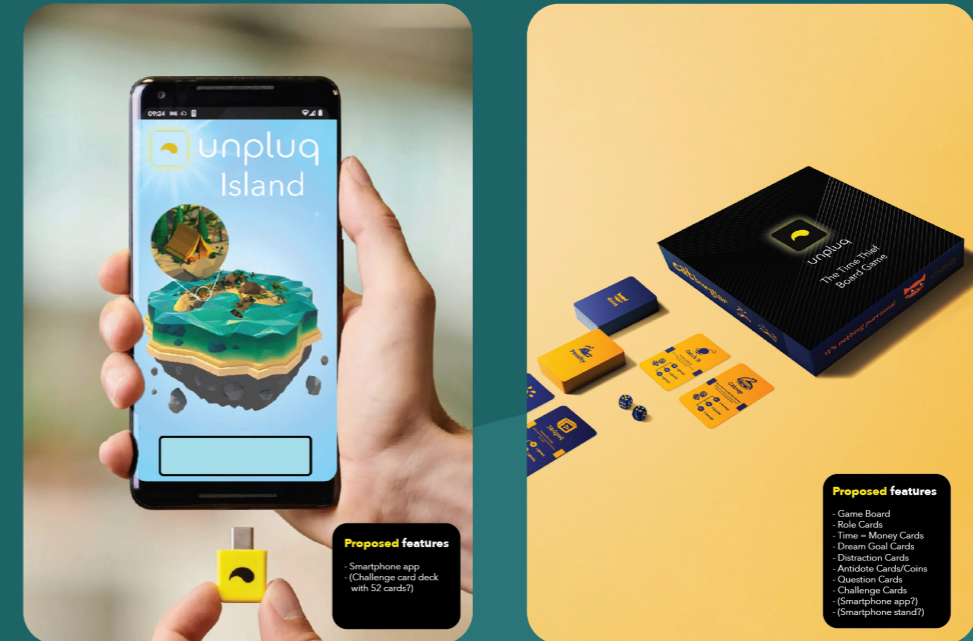
13 Concept Evaluation

Key take-aways

The three concepts under consideration for further development all have some distinct benefit that makes them stand out.

- Concept 1 would be much more integrated within Unpluq's current product, therefore closer to users' actual behaviour and therefore more likely to be able actually to change habits.

- Concept 2 would be more complex but come closest to a persuasive game that would let families consciously experience and practice dealing with distractions in a semi-realistic setting.

- Last but not least, Concept 3 is straightforward and the most affordable to bring to market.

With the Unpluq team, we decided to continue with Concept 3 because this concept seemed most feasible for Unpluq to bring to market at this point. They deemed the other concepts exciting opportunities to keep in mind and potentially develop later; Unpluq, however, currently does not have the required resources to realize the more complex concepts.

In the following chapter, I will discuss how Concept 3 is developed further in agreement with the client.

14 Final Concept Development

The process of finalizing the card deck concept

In this chapter, I will describe and discuss the Research Through Design process which was used to iteratively improve the final concept.

14.1 Approach

Three iterations on the card deck were completed and evaluated in use with the target group. The final concept also is evaluated in discussion with psychology and pedagogic professionals, leading to a finalized concept proposal in chapter 12. For an elaborate description of the iterations, please refer to Confidential Appendix E.

14.2 Best practices analysis

I started the final developmental process of this project by looking at existing and successful card decks similar to this concept to get inspiration for how best to realise this projects' card deck design.

I used a variation on the vALUe method to label aspects of these existing products. In this, I distinguished between elements that I liked, that I did not like, and why I had these opinions. I then used these systematic labels as inspiration for ideas that could make sense to implement in my own concept.

This has helped spark ideas that could be implemented in the final concept, which helped me develop a primary concept that could be further developed through Research through Design.

I considered one card deck in particular inspiring: the Spiegelspel cards by Dijkstra (2010). This card deck contains cards that provide a fact, a small thought exercise and some reflection questions.

Given the insight from the literature that it is important to improve awareness of our behaviour and our values and improve our ability to set and stick with our intentions, it made sense to start of with a concept that provides both facts to increase awareness, questions to stimulate reflection and assignments to train implementation.

Figure 14.1 - Picture of inspiring card from Spiegelspel (Dijkstra, 2010)

Figure 14.2 - Notes on Best practices analysis

Figure 14.3 - Notes on Best practices analysis

Inspired by how other card games put cards to use, based on the insights from this best practices analysis, I developed a preliminary conceptual card game experience:

Conceptual experience:

———————————————

"At the start of the experience, a statement card gets drawn. This statement card has relevant psychological facts on it and an assignment to be executed either by an individual or group. Potentially, there are different viewpoints included on the card. The cards include a set of reflection suggestions for use after the assignment. After the conversation, the cards can be scanned with a smartphone to enable players to access additional information on the topic.

An alternative solution would be to present the different steps in the experience, each on a separate card instead.

Players take turns in sharing their opinions on the statement or answering the question. This taking turns could potentially be done in teams or by representing a particular role.

Additionally, the game would consist of different rounds. In the first round, the family would primarily focus on how last week's assignment went. This reflection round could potentially be implemented creatively.

For example, a guessing element could challenge players to imagine looking at the statement from other players' points of view. Alternatively, intervention cards could challenge you to look at the statement from a different perspective and develop arguments for both sides.

The reflection round is either done creatively or done by asking specific questions. This round ends with setting goals related to the question statement, potential note-taking, and the cards' scanning.

In the second round, the focus would be on discussing and executing the following weeks' challenge."

14.3 Iterations

In an iterative process, by developing the card deck, printing it out and letting families engage in a session, the card deck was reviewed and improved several times. I added a detailed description of this process in Confidential Appendix E.

In the following paragraph, I summarize this process and highlight the most important insights gained.

ITERATION 1

Based on insights from the best practice analysis described in the previous subsection, I started with each card effectively being a conversation guide about a specific topic. It offered a four-step approach:

1. The participants would read out the topic of the conversation.
2. Next, the card contains a curious fact that emphasizes the relevance of the topic.
3. Then, several reflection questions sensitize the group to be more open to how their habits might not be optimal.
4. On the other side of the card, they could read about an exciting challenge that would tempt them into considering forming a new habit related to the topic.

Although parents cherished the conversations the cards helped start, 10- to 12-year-old kids did not find the topics and approach as fun and instead felt like they were partaking in a school exercise. In the feedback interview, they attributed this mainly to the complex phrasing of the cards' contents.

Figure 14.4 - Screenshot of iteration 1

ITERATION 2

To make sure that this was not an issue of content but of presentation, I decided to make the cards more accessible by increasing their size, better structuring the content, and improving the wording of the content so that it would be lighter for young players.

These more elaborately designed cards also proved to be still too information-dense and, because of that, too hard to use.

Figure 14.5 - Screenshot of iteration 2

ITERATION 3

Therefore, in iteration 3, I completely threw the concept around and put the different types of content on separate cards. I also added several additional types of cards to try and see whether adding more gameplay elements to the deck would make it more fun to use.

I now had a card deck of 150 cards with Fact Cards, Question cards, Role cards, Opinion cards, App cards, Activity cards, Do cards, Challenge cards and several other toolkit cards to help make the game more playable and fun.

This was obviously overdoing it. In a session with a table filled with cards, as shown in Figure 14.6, I filtered out a lot of the cards together with another family. The cards we eliminated were either phrased negatively or addressed too touchy subjects, which could instigate arguments rather than constructive conversations. The App, Activity, Role and Opinion cards were also found not to contribute but only complicated the card deck experience. Therefore, we also excluded these cards from the deck for the sake of simplicity - a factor repeatedly highlighted by several stakeholders earlier in this project.

I also noticed here how parents may not always be emotionally prepared to properly discuss these issues. A lack of awareness of what is suggested by pedagogical sciences to be best for children may result in limited willingness from parents to give their children more freedom.

Parents in these situations may often develop coping strategies which are not always necessarily effective and may therefore lead to counterproductive developments like secretive behaviour (Geurts et al., 2018).

This is a crucially important step; parents will need to be able to fully understand why giving their children more responsibility and autonomy is important, as well as learn about the right ways of approaching the required conversations with their children if we want this product to be able to succeed. If the parents are not properly prepared for this discussion, they will likely not be open to the input that their children may try to provide.

Figure 14.6 - Testing session of iteration 3

14.4 Final Concept

In a research through design type of fashion, I iteratively improved on the card deck concept and ultimately settled on a card deck with 34 conversation starter cards, an instruction booklet for parents, several other toolkit cards, a card stand and a tear off note block with premade templates.

The conversation starter cards consist of four different suits, namely:

a). Fact cards, that aim to make the family aware of important themes in this field
b). Question cards, intended to help the family engage in a discussion that aids the mutual understanding of what family members find valuable activities to engage in.
c). Do cards provide eye-opening assignments, that the family can engage in together. These exercises help them become more aware of how they spend their time and provides them with several tools to increase their ability. This is where the tear off templates come in handy.
d). Challenge cards are challenges that the family can try out for one entire week, or longer if so desired. These challenges aim to provide the last step in bridging from theory

The tear of templates present the family with tools that they can use in addition to the do cards, to increase their awareness of how they spend their time, as well as to improve their ability to cope with planning challenges. to putting into practice, ultimately helping the development of new habits.

The instruction booklet would help parents introduce the concept to their kids the right way, ensuring that the family has a positive initial experience with the product. To investigate whether this would be the right way of educating the parents, I interviewed several experts from different fields. This will be described in the next chapter.

Key Take-aways

Of Final Concept Development

This iterative research through design approach has taught us that parents really value having these conversations with their children.

The discussions however have a tendency to become lengthy, and hence it would be advisable to keep the product experience as short as possible.

It is hard to make the cards fun for children but making the cards simple and at least removing the negatively phrased cards is a good start.

Parents are not always fully ready to engage in these discussions with their children. If their parents hold limiting beliefs over what their children can or cannot do, this may hinder the process.

Summary

By doing research through design, I made three iterations on the card deck design.

I tested each of these concepts with potential end-users, through making qualitative prototypes of the cards and running in person trials with families.

After this process, I settled on a card deck with 34 conversation starter cards, an instruction booklet for parents, several other toolkit cards, a card stand and a tear off note block with premade templates.

15 Validation with Experts

How do we best educate parents AND children?

During the testing of iteration 3, it became clear how sensitive these discussions may become if parents are not prepared to discuss more freedom for their children. To check whether the insights I gained from these experiments so far could be considered reliable and learn how I could better prepare parents to be open to engage in such conversations with their child, I contacted a psychologist, Eva de Vries, a paediatrician, Dr. I. Koning, and a social scientist, Danielle Vliexs. From these interviews, I collected the following insights:

1. You need to make sure people are aware they are having a problem, otherwise they will not consider changing their behaviour. It works better to let people set their own goals.

2. In pedagogics, the general advice is to start talking to the parents, first. Parents need to become more aware of their own parenting style and whether that is the best approach for their specific situation. They need to be educated first on how to raise their children appropriately in accordance with SDT to be able to deal with smartphone distractions, as well as on how their own behaviour as parents serves as a role model for their children. They may have certain assumptions about what is best for their children, but these assumptions need to be reflected upon.

3. Parents must first understand that the change you are proposing is reliably researched to be for the better. You want to show them in a positive way that things can be done differently. Next to that, certain articles would have to be provided to educate parents with the right tips and tricks on having that conversation with children. Then, they can proceed to have a conversation with their children.

4. The age group 10 to 12 is an age at which children can start to grasp these kinds of questions properly. At this age, children start going to secondary school, parents are less involved with their everyday activities and children need to start learning to take on more responsibility themselves. It could help, in this case, to ask them things like:

   o From which activities do you get a lot of energy?
   o What do you really like doing?
   o What are you really good at?'

5. A great idea to help the children gain more autonomy would be to let them to pick a question they would like to discuss with their parents, themselves. That way, a child can impress their parents with a certain awareness, which could help them get more faith in their child's capacity to deal with self-control. Whether or not this will work really depends on evaluation; what did and what didn't work? What can we learn from this? What would we do different next time?

6. If you don't have these conversations and instead limit your child's autonomy, they are very likely to start doing what you don't want them to do in secret.

Summary

In three interviews with experts from different fields, I saw confirmed that the age group to which this product is targeted can likely handle these conversations appropriately. The experts agreed that limiting the children's autonomy would almost always result in rebellion or unhappiness. They validated the suspicion that focussing on the positive side of things can help children discover how to use their time more meaningfully. It also confirmed that educating parents on how to approach discussions like these is considered a crucial first step by pedagogics.

Key Take-aways

Of Validation with Experts

The age group that I am targeting with this product makes sense and should be the right starting point of tackling or even preventing screen habit issues.

To get children more intrinsically motivated, it may help to let them pick the cards they want to discuss.

It is crucial that parents are properly prepared for engaging in these discussions, to avoid the discussions from taking a negative turn and the parents using the product to again one-sidedly limit the children's autonomy.

Design implications

Based on the feedback from these three experts, and the insights from the research through design process, I derived the following additional desing implications:

• Parents need to be properly educated before partaking in these discussions to avoid limiting believes stopping the conversations from being held the right way.

• Children should be stimulated to pick the cards they want to discuss

16 Validation with Users

Testing the final concept in practice

To evaluate the effectiveness of this concept, I set up an external test in collaboration with colleague researchers from Utrecht University.

16.1 Approach

To validate this card deck intervention's effectiveness, I planned to interview several parents on how they perceived this proposed intervention's usability and effectiveness. Naturally, I wanted to do this as efficiently yet unbiased as possible.

PREPARATIONS FOR EVALUATION

During my literature research, I had come across the work by Ina Koning at the Utrecht University. Koning, an assistant professor in remedial education with years of experience researching parenting issues like alcohol consumption prevention, has also contributed several papers on digital well-being (Geurts et al., 2018; Koning et al., 2018). She is currently running cutting-edge research into how parents should best approach digital parenting to cope with social media addiction.

During my literature review, I reached out to her for feedback and suggested approaches for my project. She has provided me with invaluable counsel, motivation and feedback during the process.

She has also made it possible to evaluate this concept by running and transcribing several qualitative interviews. These were performed by several researchers in training who still had to make additional hours for their internships. I decided to take up this offer because outsourcing this evaluation would have several benefits for my project:

1. Having other professional evaluated my project decreases the risk that my direct connection with the work would result in a bias in the qualitative interview.
2. Having someone else explain my work allows me to establish the clarity of my concept
3. The evaluation would cost me less time in the project, whilst the researchers in training also get rewarded for spending their hours

Through Ina, I contacted two enthusiastic interns, Daniëlle & Lisanne, whom each interviewed one parent on how they perceived the card deck I designed. To set this evaluation session up, Koning provided me with an exemplary interview guide for evaluating a project of their own. Inspired by this interview guide, I drew up an interview guide for evaluating the card deck concept. You can find this guide in Confidential Appendix F.

PREPARING THE PARTICIPANTS

The parents were sourced through the interns' network and informed upfront on this evaluative session's set-up.

Two days in advance of the interviews, they were presented with a consent form and a questionnaire to evaluate some demographic measures before experiencing the card deck. The questionnaire then presented them with a QR-code, which led them to a 20-minute in-app experience of the concept. After these 20 minutes, they continued to another form to collect some preliminary feedback on their first impressions.

After forming an impression of the concept, they took part in a 45-to-60-minute interview on their experience. During this interview, the interns would ask them to evaluate and describe their experience of the concept on the topics of:

· Usability
· First impression
· Quality of the content
· Applicability of the concept
· Expected effectiveness
· The design of the card deck
· Suggestions for improvement

In the following paragraph, I will explain and describe why I chose to present the participants with a digital card deck experience.

- -

16.2 The test: a digital card deck experience

WHY DIGITAL?

To make this experience of the card deck more accessible, I chose to present the materials through a digital app prototype. Made using the software package ProtoPie, this prototype allowed presenting parents with a card deck experience either on their smartphones or computers.

I used this test set-up because I wanted to make sure that the participants could easily access the card deck without being dependent on manufacturing and postal services. Additional benefits were that it saves on production costs, and this way, I could also control the time spent on the exercise.

Whereas this solution might not be a fully comparable substitute for the actual card deck, it granted more control over the time spent on the test by participants. It also provided more guarantee that we could complete the testing efficiently within this project's timeframe.

I originally wrote the app in Dutch to make it more accessible for the Dutch parents interviewed. For the sake of this thesis report, I translated it into English.

WHAT IT LOOKED LIKE

At the start screen, the participant is informed once again that they will have 20 minutes to look at the app experience. After pressing 'begin', they are taken to the instruction manual. By swiping sideways through the manual, they are presented with several tips on how they should best use this product together with their kids to make sure that the nature of the conversation is in line with the recommendations derived in chapter 8 on digital parenting.

You can see the instruction manual as shown in the app in Figures 16.1 to 16.11.
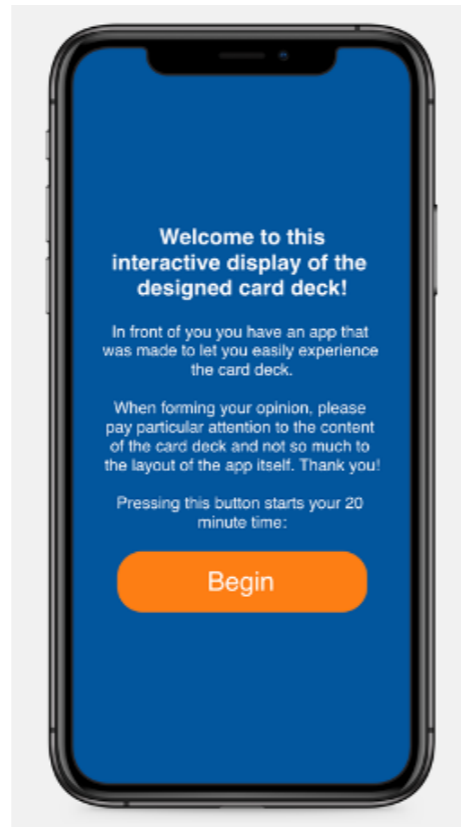
Figure 16.1 - Starting screen of testing app

Figure 16.2 - Page 1 of instructions   *Figure 16.3 - Page 2 of instructions*   *Figure 16.4 - Page 3 of instructions*

Figure 16.5 - Page 4 of instructions   *Figure 16.6 - Page 5 of instructions*

After the tips, they arrive at a brief overview of the contents of the package. Here, the prototype introduces the participant to the conversation starter cards, the card stand, the tear block with templates. You can see this overview in Figure 16.7 & 16.8.
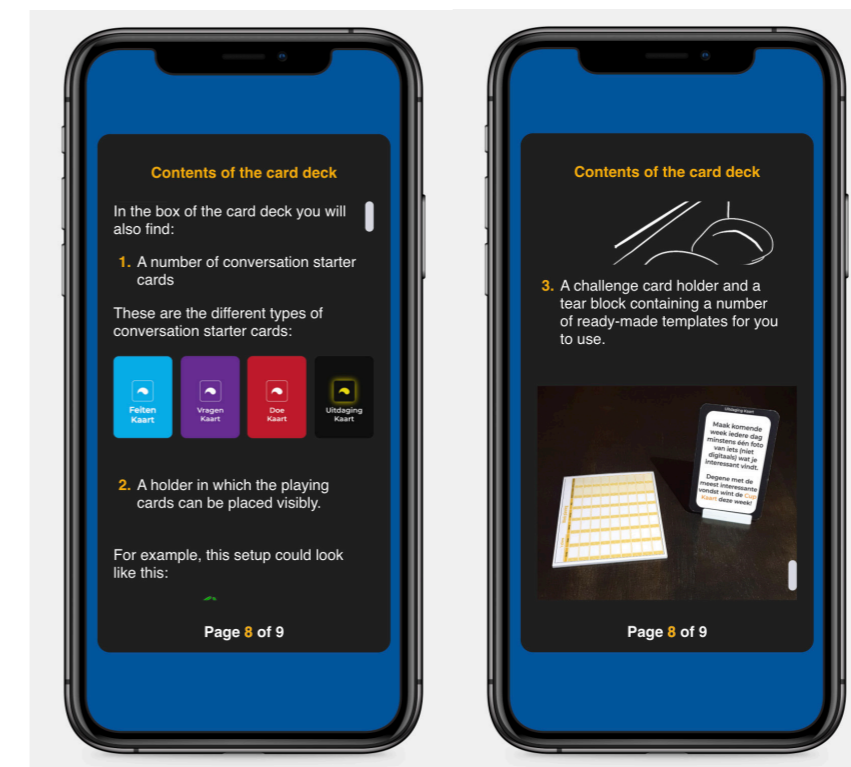
Figure 16.7 - Page 6 of instructions   *Figure 16.8 - Page 7 of instructions*

The last part of the manual, as seen in Figure 16.9 and 16.10, explains how the family should use the deck.
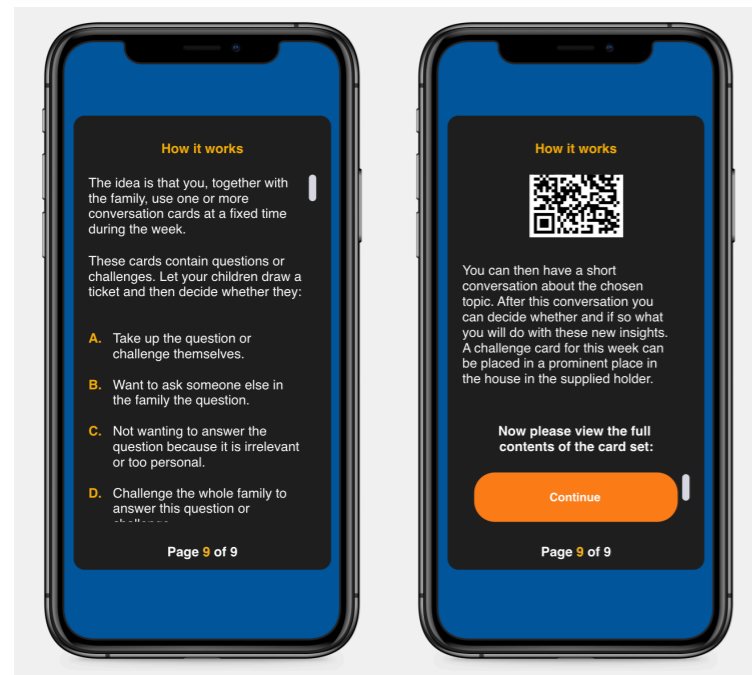
Figure 16.9 - Page 9.1 of instructions

Figure 16.10 - Page 9.2 of instructions

After tapping on 'continue', the parents would be presented with the different designed cards, allowing them to scroll through the cards included in the set intuitively. The prototype illustrates what the setup could look like, as seen in Figure 16.11. By clicking 'draw a card', random cards pop up that shows a challenge or an assignment.

Figure 16.11 - Main card deck overview

Figure 16.12 - Card pops up

Scrolling further down, they can tap on any of the different types of cards and scroll and flip through the cards that come with the card deck.
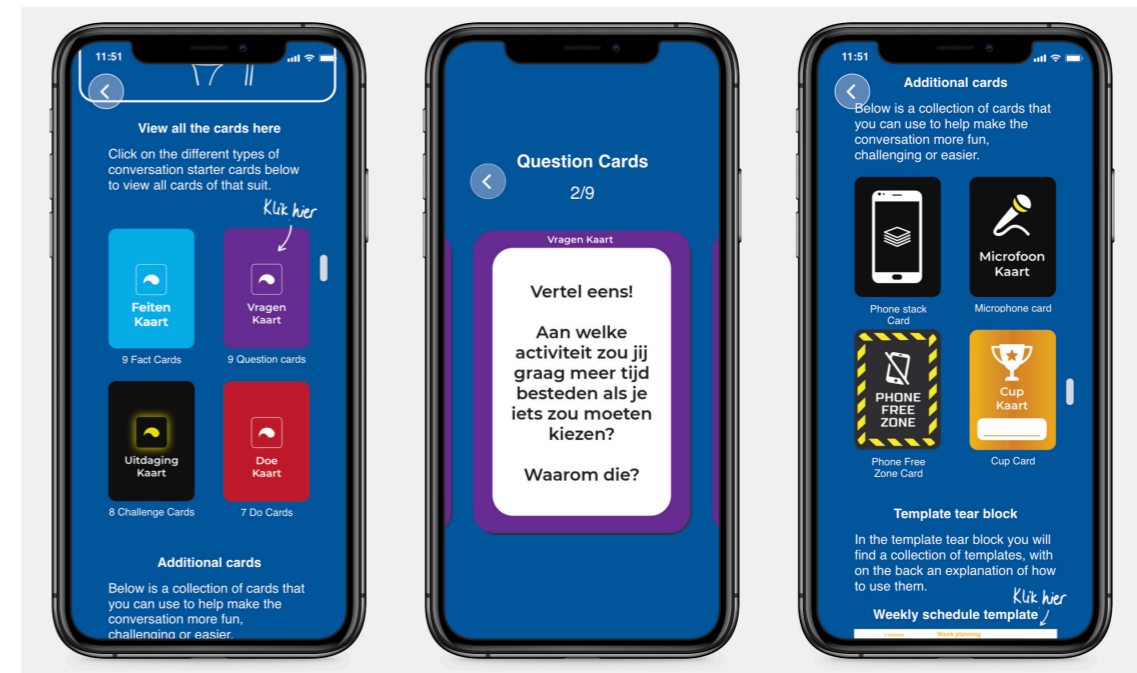
Figure 16.13- Main card deck overview 2

Figure 16.14 - Card revealed

Figure 16.15 - Main card deck overview 3

At the bottom of the general overview are the templates, explaining how they should be put to use.

Figure 16.16 - Main card deck overview 4

Figure 16.17 - Template

Figure 16.18 - Opinion card

After 20 minutes, the app warns the participant that their trial in the app is over. They then get referred back to a last short questionnaire to evaluate their first impressions. You can access and experience the app yourself through scanning this link:

Figure 16.19 - QR-code to app experience
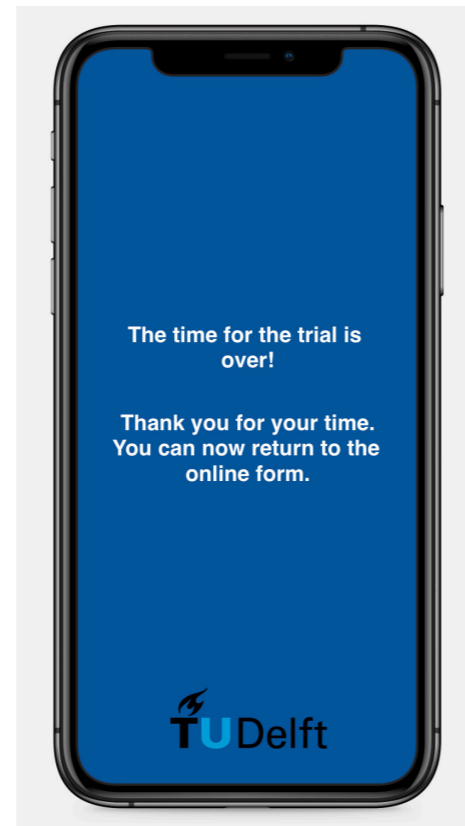
Figure 16.20 - Final page of app

16.3 Results & discussion of this validation

Due to time limitations, only three parents were interviewed. A mother aged 41 who had a 12-year-old daughter and a couple aged 44 and 45 with a 9-year-old daughter, a 12-year-old son and a 13-year-old daughter. They were fully proficient in Dutch. The transcripts from the interviews can be found in Confidential Appendix G.

They indicated they thought the card deck was perceived as fun, playful, interactive, easy to use, clear and positively short in use. They indicated that the card deck would indeed make it easier to have conversations about the proposed topics. Although not all of the different suits of the cards were deemed relevant for the same proficiency and experience with devices (e.g. certain challenges were deemed more relevant to kids who had more experience with smartphones), none of the suits were advised to be left out, because they each serve a specific purpose.

It was suggested that the card deck would especially be suited for children who only just got their device and are still learning how to use it. Parents with older kids may already have discussed these matters. In general, the parents say they would especially recommend the product to other parents who are only just giving their children access to their own devices.

The fact that the deck suggests using only one or several cards is a good thing, it keeps it accessible and manageable. They reckon using the cards would only take a few minutes often times, and therefore would not mind doing one card every night. I therefore decided to get rid of the once-a-week proposal and instead leave parents free to determine when they want to engage with the deck.

The manual explaining how to use the deck had clearly been properly read, because parents had understood that children had to be the ones responsible for picking which cards to discuss and which not.

Expanding the card deck at a later point in time during a subscription model is considered a relevant addition. Parents indicated that the amount of cards was not too much and that it would be likely they would run through the cards at some point, wanting additional questions and more info.

The templates were not necessarily considered as much added value. Because these had not been explicitly validated, they were therefore removed from the final concept proposal and instead left as an additional recommendation for Unpluq to consider when further developing this concept.

Key Take-aways
Of Validation with Users

Testing with users seems to indicate that the concept indeed has become fun, clear, short and easy to use for parents and children. It was confirmed to seem most applicable for teaching children how to think about managing their time when they only just received access to their own devices

The manual for parents seems like a good addition to helping parents understand how the cards should be used Using the cards as an addition to the Unpluq subscription model seems to make sense considering it is in the nature of the concept that at some point, it will require updating.

Summary

In this chapter, I describe how, with the help of Dr. Ina Koning, I made a test set-up to analyse the effectiveness of the designed concept digitally.

These interviews were then performed and transcribed by two master students from Youth studies at Utrecht University.

The results do not drastically change or improve the concept because overall, the cards proposed seem to be serving their goal of helping families engage in conversations about the relevant topics.

Design Implications

- Parents need to be properly educated before partaking in these discussions to avoid limiting believes stopping the conversations from being held the right way.

- Children should be stimulated to pick the cards they want to discuss

Part 05

05
Final Concept

As mentioned in the previous chapter, this concept is a strategic intervention that Unpluq can offer parents as part of the subscription model they plan to implement.

The following section explains the envisioned product experience and why and how the product proposed would help families improve their awareness and ability to spend their time in more meaningful ways.

In the three ensuing paragraphs, I will further explain each of the components that make up this concept. I also provide a preliminary indication and visualization of what these components could look like if further developed.

The work presented here is detailed to a conceptual level; each of these parts still requires some further development by Unpluq. To this end, I give a collection of suggested requirements and recommendations for further developing each of these components.

Photo by Arun Clarke on Unsplash

17 Final Concept Unpluq

The accumulation of all previous work

17.1 Why it works: concept benefits

We have learned from practice that parents and children who get their first smartphones often start growing apart. The children develop lives of their own, they start playing games whenever so desired, watch videos and talk to friends.

Their smartphone is a portal to the outside world, and it provides them ultimate freedom.

However, complete freedom in using these devices is something that is very scary for their parents. What if the child becomes unhealthy from looking at screens all day? What if they come across harmful material online? Or what if they miss out on important opportunities for their growth development?

This is often a starting point for a lot of clashing within the family. Children think parents are overly worried and annoying, and parents think children are naïve and at risk.

In practice, it turns out that the risk for children is almost always limited, and that the autonomy and connections to their friends add a lot of value to their lives. On the other hand, certain awareness of that they need to take proper care of themselves and also have to spend time on other important activities, like sleeping, sports and their family is also important.

Therefore, this card deck is designed to help parents and children engage in a conversation about how their everyday activities add value to their lives, and on how things could be improved. By engaging in regular conversations about these vital topics, parents learn to better understand how they have to give the right example, and how valuable the online world can be for children. Also, children learn to better appreciate why they need to learn to set limitations to their own behaviour; to protect themselves. By increasing mutual understanding, the card deck creates a constructive base for better agreements, encourages improving the choice architecture of their everyday lives to support traction and discourage distraction, and hence helping families learn to spend their time in more meaningful ways.

17.2 How it works: product experience

To clearly specify the context and scenario of putting this card deck to use, I start off with the WWWWWH overview as proposed as a methodology by van Boeien et al. (2020).

WHO?
A 10- to 12-year-old kid and their parent(s)

Figure 17.1 - Picture of card on stand

WHAT?
The parents explain the kid a story about the product and provides them with the Unpluq Key and card game materials

WHERE?
At the family home

WHY?
To teach the kid to be more self-reliant in chosing how to spend their time

WHEN?
At a regular point in time every week.

HOW?
The parents will explain to the children what the Unpluq card deck is for and why they bought it. In this conversation, they will keep the tips presented in the instruction booklet in mind to ensure that their family gets a positive first impression of the product.

To explain more in depth how the product would be experienced, in the following paragraphs I split the experience of the card deck up into several perspectives. First, I describe the general scenario. Then, I split this scenario up into a parents' point of view and a children's point of view. This way, I can more clearly emphasize the intended effect and benefits of the product.

17.3 The overall scenario

Either one of the parents comes across Unpluq through social media or youtube commercials.

Potentially after consulting their partner or significant other, they decide to purchase the Unpluq keys & trial package. With this package comes the card deck.

After dinner or on a quiet weekend afternoon, the parent(s) gather the family to explain the goal of Unpluq. The parents tell the child a story about why they find it important and valuable to learn how to spend their time on things that matter. They explain they bought Unpluq to help the family learn to be more in control over how they spend their time, as well as to better learn to understand why everyone values these activities. They also explain that with the Unpluq keys, a card deck came that they would like to use at a regular time every week to do a fun brief exercise or challenge and have an update conversation. They explicitly explain that the goal of this update conversation is to learn to better understand what every member of the family finds important and why, so that they can reach better agreements on how to deal with screen time.

The card deck will be put in a stand from which cards can be drawn and will be put on display, to make sure the family does not forget about it. The parents also emphasize that the kids can draw three cards and pick one or two to discuss.

Every week, the family gets together (potentially prompted by the Unpluq app), to reflect on what they learned from last week's exercise or challenge. The card from last week still sits on front of the stand.

After this reflection. the kids then draw three cards and pick one or two to discuss with the family. The family executes the exercise on the card, potentially using the tear-off block note templates. During or after the exercise, or if the card poses a question, they have a discussion about the topic at hand.

After this discussion, the card is put in front of the stand. The templates are put where the family sees fit. During the week the card will sit on the stand, as to remind the family of the challenge or topic for this week.

Together, the family will embark on a journey of better learning to gradually understand and make explicit what it is that they value in life, as well as how to make more time for these things.

17.4 The child's experience

1. The child is first confronted with Unpluq when the parents introduce the brand, the keys and the cards.

2. Although at first, they may feel slightly uncertain about the added value of the cards and key, the parents will let them as free as possible in putting the key to use.

3. Every week, the card asks an interesting question or proposes an educative exercise which will teach the kid to think more about things they find fun to do and help them spend their time more in line with these things. Because of this, the kids will see the added value of the Unpluq key and conversations and will hopefully intrinsically adopt the habits of reflecting on how they spend their time.

4. The questions and challenges on the cards will challenge the kids to think about why they spend time on the things they do, how this makes them feel and whether they want to change something about these habits. The card deck also provides them with the tools to better lelarn how to change these habits.

5. After a period of several weeks, Unpluq will become integrated in their lives and help the kids gradually take more and more control over how they spend their leisure time.

17.5 The parents' experience

1. Either one of the parents comes across Unpluq through social media or youtube commercials.

2. Potentially after consulting their partner or significant other, they decide to purchase the Unpluq keys & trial package. With this package comes the card deck.

3. It is important that the parents tell this story in such a way that it leaves the family with a positive first experience of Unpluq. Therefore, the instruction booklet to prepares the parents properly for how to introduce the product to their children.

4. With the Unpluq package also come the Unpluq keys, the Unpluq card deck set and the instruction booklet. The parents are provided with the required knowledge to appropriately use Unpluq, as well as how to introduce it to their kid(s).

5. At a specific and calm moment during the week, they introduce their children to Unpluq and explain why they bought it, in line with the storyline and key points as suggested in the instruction booklet. They will then engage in the challenges and assignments together with the kids, as to learn to better understand what activities their kids value and why.

6. Through periodically using this product, the card deck helps the parents better understand their children's worldviews, teaches them important reflection and planning skills as well and even makes them more aware of their exemplary role.

17.6 Concept components

After the iterations described in chapter 11 and the feedback received through validation with experts and end-users as presented in chapter 13, 14 and 15, I settled on a relatively simple card deck with a few additional twists in the final iteration. This includes:

17.7 Conversation starter cards

The cards are designed to look simple yet fun, so that they would look appealing rather than daunting at the first sight. The conversation starter cards are split up into four different suits:

A). Fact cards, that aim to make the family aware of important themes in this field
B). Question cards, intended to help the family engage in a discussion that aids the mutual understanding of what family members find valuable activities to engage in.

C). Do cards provide eye-opening assignments, that the family can engage in together. These exercises help them become more aware of how they spend their time and provides them with several tools to increase their ability.
D). Challenge cards are challenges that the family can try out for one entire week, or longer if so desired. These challenges aim to provide the last step in bridging from theory to putting into practice, ultimately helping the development of new habits.

Whereas the cards in iteration 2 looked beautiful because of the integrated artworks, a colourful yet simple alternative proved more desirable in the review sessions.

The backside of the cards are one plain colour to communicate that the card is part of a particular suit. It also has a stylized version of the Unpluq logo on it and a verbal description of what the suit does.

The frontside of the card has a coloured edge, also to communicate what type of card this is. On the card a brief verbal message either conveys an exercise or a challenge for the family to engage in.

The contents for these cards were inspired on a collection of challenges found on online sources that aim to inspire awareness for screen users, or for parents and children in particular. Also some of the challenges originate from brainstorming done together with Unpluq. A complete overview of all the cards can be found in Confidential Appendix H.

The cards included in the set were filtered together with users, based on their perceived applicability and how fun they were.

To check whether the cards indeed aligned with the conversational requirements set in this project, I heuristically compared the cards with each of the requirements (see Figure 17.3). This allowed me to verify that, theoretically, if all the cards are used and reflected upon, the card deck should help improve the digital well-being of the family.

If further developed, the cards should be:

· Designed to align even more with the Unpluq brand.
· The fact cards could be rewritten to be more suitable as conversation starters. If not prompted, a fact would be too blunt.

Figure 17.2 - Picture of cards on table

Challenge Card

Do Card

Question Card

Fact Card

Challenge Card

Charge your phones outside your bedroom this week!

Do Card

Make a list of 5 fun, original and easy things to do when you feel bored.

Pick one and plan at least one hour this week to spend on that activity!

Question Card

What do you find a positive way of spending your time online?

Why is that?

Fact Card

Did you know...?
... that the blue light of your screens can affect how well you sleep?

Even with the blue-light filter turned on, your brain still gets tricked into making less sleep hormones!

Figure 17.3 - Picture of comparing cards to wishes & requirements

17.8 Card-stand for the conversation cards

To make sure families would stick with the periodical engagement with the card deck, a card-stand as shown in Figure 17.4 is included to allow putting the card deck on a prominent place within the house.

As can be seen in Figure 17.6, alternatively Unpluq could want to make a different card stand to hold all the cards at once, like shown in this conceptual visualisation. This would make the cards easier to keep together.

If further developed, the card stand should be:

· made production ready. It should be high quality and durable to maintain a proper brand representation for Unpluq. Maybe from higher quality plastic, or from wood.

Figure 17.4 -Picture of card stand

· optimized to be able to hold the cards, whilst also allowing for the presentation of one card in the front. Here, families can place a conversation starter card if so desired.

17.9 A parental instruction guide

Based on the feedback from experts described in the previous section, these instructions would educate parents through tips on the right way to approach this kind of conversation with their children.

Next to this, the instructions briefly explain the way to use the product. It advises parents to let children draw one or several cards at a specific time during their week and choose whether to answer the question themselves, pose it to another family member or complete the assignment in a shared group activity.

A brief inquisitive discussion on the topic would follow, and if relevant, the challenge would be put on the card stand for a week.

Also included in the guide are several reflection questions to help the family learn from this experience at the end of the week before engaging in the following week's challenge.

If further developed, the instruction guide could be:

· designed as a website or short video instead, to make it more accessible and hence more likely families will fully embrace the principles important for the successful implementation and adaptation of the card deck and keys.
· integrated in the Unpluq app.

Figure 17.5 -Picture of card on stand 1

Figure 17.6 -Picture of cards in fictive stand

Figure 17.7 -Picture of Instruction manual

17.8 Concept substantiation

In the following paragraphs, I describe why I think that this concept is capable of helping improve digital wellbeing within the family life.

1.

Stimulate conversations about values

Using a playful and optimistic tone of voice, the deck would ultimately stimulate the family to learn more about the importance of reflecting on their values, of setting boundaries for their mental and physical health, as well as of involving everyone in the family in the discussion about what to do about these topics.

2.

Teaches about healthy habits

Fact cards would educate parents and children about relevant knowledge and through that improve awareness of healthy and meaningful habits. This awareness aims to inspire motivation to change behaviour subsequently.

3.

Fosters understanding between parents and children

To make sure that the parents approach the game in a way that makes a constructive vibe possible, the card deck's instructions should prepare parents to intently listen and remain open to their children's thoughts and opinions. The Question cards then foster and improve the mutual understanding between parent and child. Combined with the knowledge on how to approach such conversations, this should open up the possibility of improving the parents' willingness to grant the children more autonomy.

4.

Challenges to develop and implement meaningful habits

To top off the card deck's effect, the exercises and challenges would provide the last requirements for changing behaviour. This is done by providing tools that increase their ability and triggers to implement and practice the new behaviour.

17.10 How the concept answers to the requirements

The positive vibe of the card deck in combination with the facts and questions should stimulate parents and children to engage in a constructive discussion about valued activities and educate them on how to think about the role that screen time should play in this. A properly designed instruction manual as described above should motivate parents to mind their own behaviour, as well as respect their children's opinions and grant them the autonomy and respect required for trust.

By creating brief and fun challenges that also require the adjustment of physical environments and phone settings (hence digital environments), by asking questions that stimulate reflection on current habits and the effectiveness of the challenges, all requirements and wishes suggested in both values hierarchies can be considered to be met.

17.11 Benefits of concept for Unpluq

This concept is especially easy for Unpluq to deliver once it is developed. Looking at the wishes that were gathered in the values hierarchies, card decks are very affordable and fast to manufacture at relatively high quality. With card decks being a centuries old medium, people will likely have an easy time grasping the purpose of the product.

A card deck also has a small footprint and therefore will be easily stored and affordable to ship, especially if the box is designed to be so small that it can fit in a mailbox.

With the inclusion of the card stand, Unpluq will become a continuous presence within the household. This can help increase brand awareness, also for visitors who are coming by, and may increase the word-of-mouth

And, since nothing is more analogue than paper, the only risk of requiring maintenance is when certain challenges, knowledge, facts or references become obsolete or outdated.

That is where the interesting potential comes in of the card deck being expandable with new updated challenges or facts, which could become a part of Unpluq's subscription model ambitions. Because the cards are intended to be used only once in a while, the family can use the product for some time before replenishment is required.

With this analogue concept, Unpluq has a unique selling point in hands. With this concept being an easy first step into this new market for Unpluq, other equally simple solutions could also be developed in the coming months. The analogue educational focus point of this concept may eventually even prove a strategic game-changer: if Unpluq chooses to go on to develop solutions aimed at improving awareness of time allocation as suggested in the recommendations in the next chapter, they are taking on a completely unique approach to digital well-being and digital parenting; providing both awareness creation and digital stopping cues may prove to be the best way of helping people take back control over their lives, and may help Unpluq take that ambitious position as digital well-being market leader by 2025.

### 17.12 Conclusion on the concept

In this physical form, the concept suggested intends to provide all elements required for a successful digital well-being & digital parenting product for Unpluq.

By improving the family's awareness of how they spend and want to spend their time, we grant them the opportunity to improve their awareness of what they consider valuable activities.

By improving the mutual understanding through conversations, we are improving the sense of relatedness within the family and removing barriers to family member's ability to engage in intentional and valued activities.

Finally, by providing them with the right tools and triggering challenges that help initiate engaging in these intentional activities, the children can learn to become more self-reliant in how they allocate their time, and all requirements mentioned in the values hierarchies for realizing digital wellbeing are met.

Also, the product is easily manufacturable for Unpluq, can help stimulate brand awareness and could even serves as a strategic first step into the awareness creation market.

Figure 17.7 - Initial concept drawing
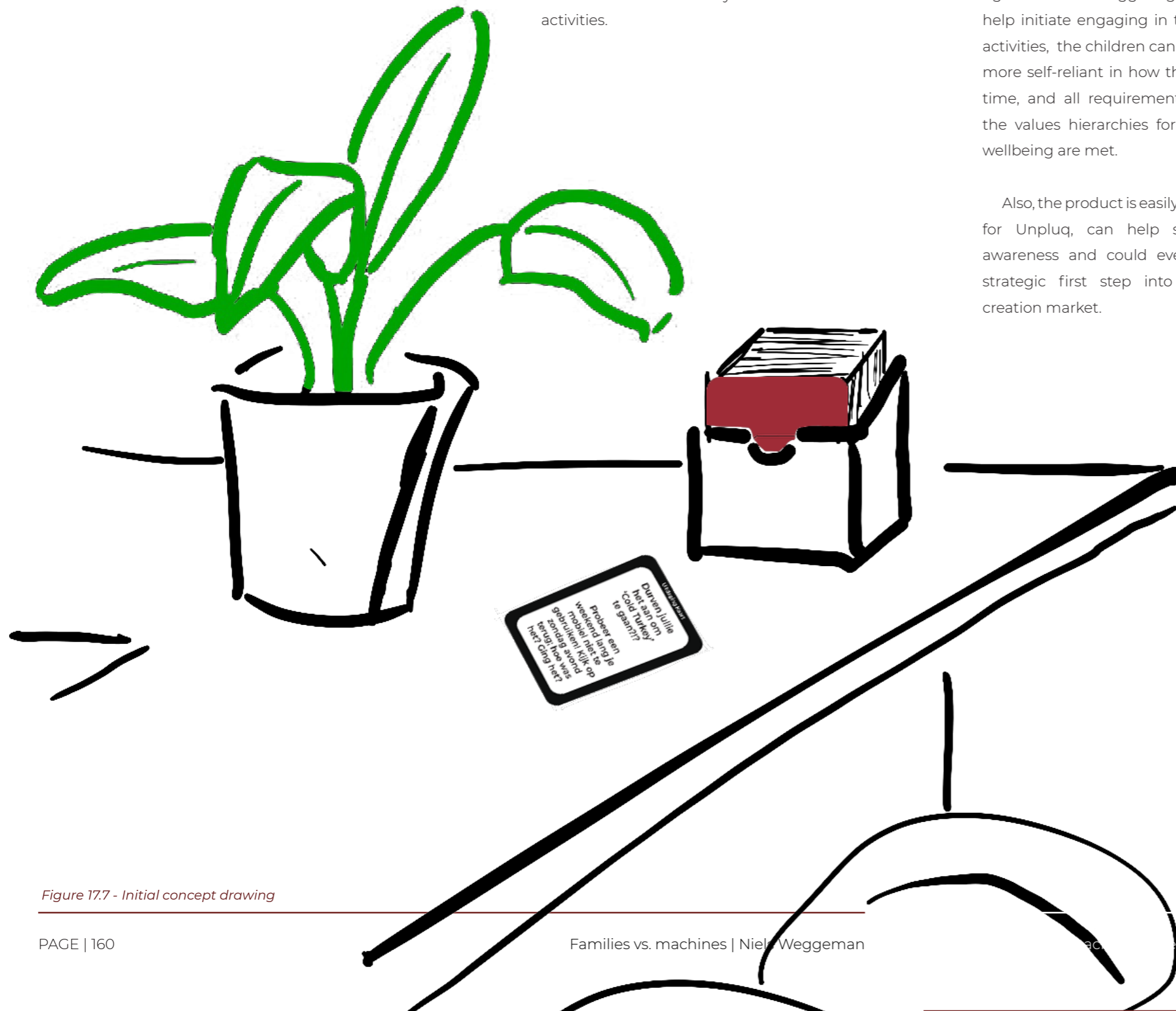
Summary

Altogether, a concept with 34 conversation starter cards was proposed. These cards would be kept on a stand (also included in the product) somewhere in a prominent place within the family home, as to make sure that the family does not forget to frequently engage with the product.

Also included in the concept was an instruction guide to educate parents on the proper way of implementing such a product. With this product, families should hence be able to engage in fruitful discussions about screen time. By learning from one another about what they consider valuable activities and by executing challenges that stimulate the breaking of habits, this card deck helps famililes take a first step in getting more control over their time-allocation, and through that learn to spend more time on the the things they value most.

Key Take-aways

Of Final Concept Unpluq

Considering the wishes and requirements found in the research part of this thesis, I developed a card deck as a final concept.

I consider this concept to be a strategic solution that satisfies needs from all important stakeholders and can serve as a great first step for Unpluq to become a market leader

18 Presentation Website

18.1 The Final Deliverable

To be able to showcase my final concept effectively, a online one-pager was made to briefly communicate my work.

The websitie is live through the link accessible with the QR-code to the right and looks as shown in the screenshots in figures FIXME.

Figure 18.1 - Scannable link to website

Figure 18.2 - Webpage header
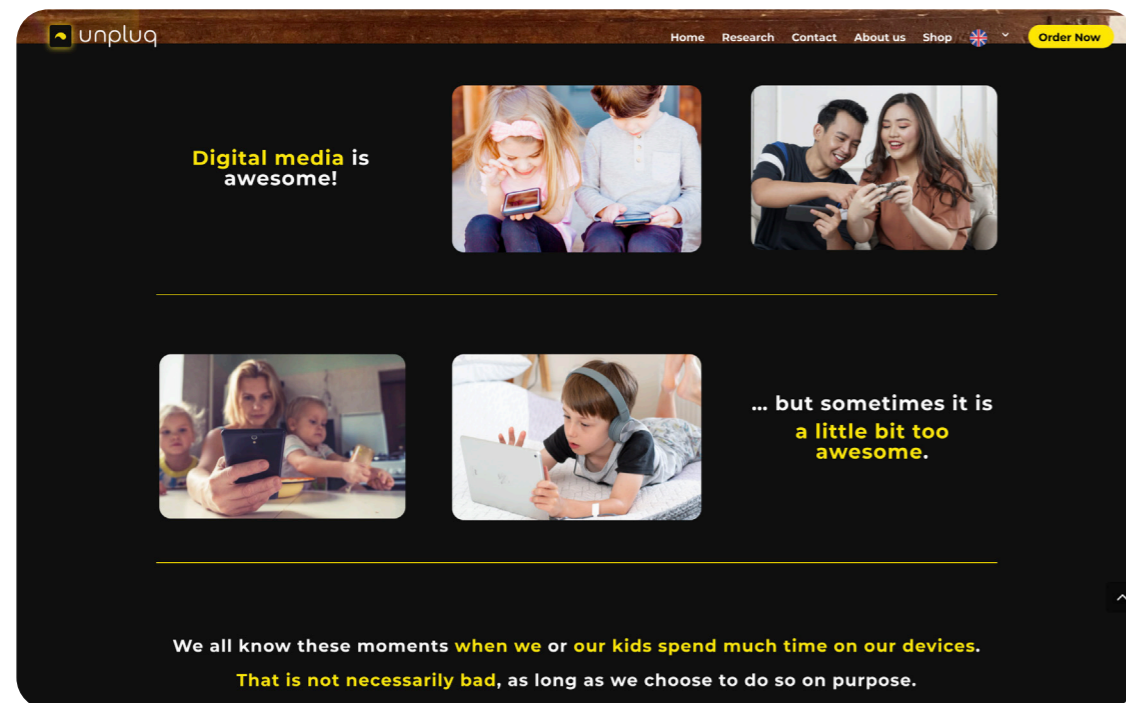
Figure 18.3 - Introduction of the issue
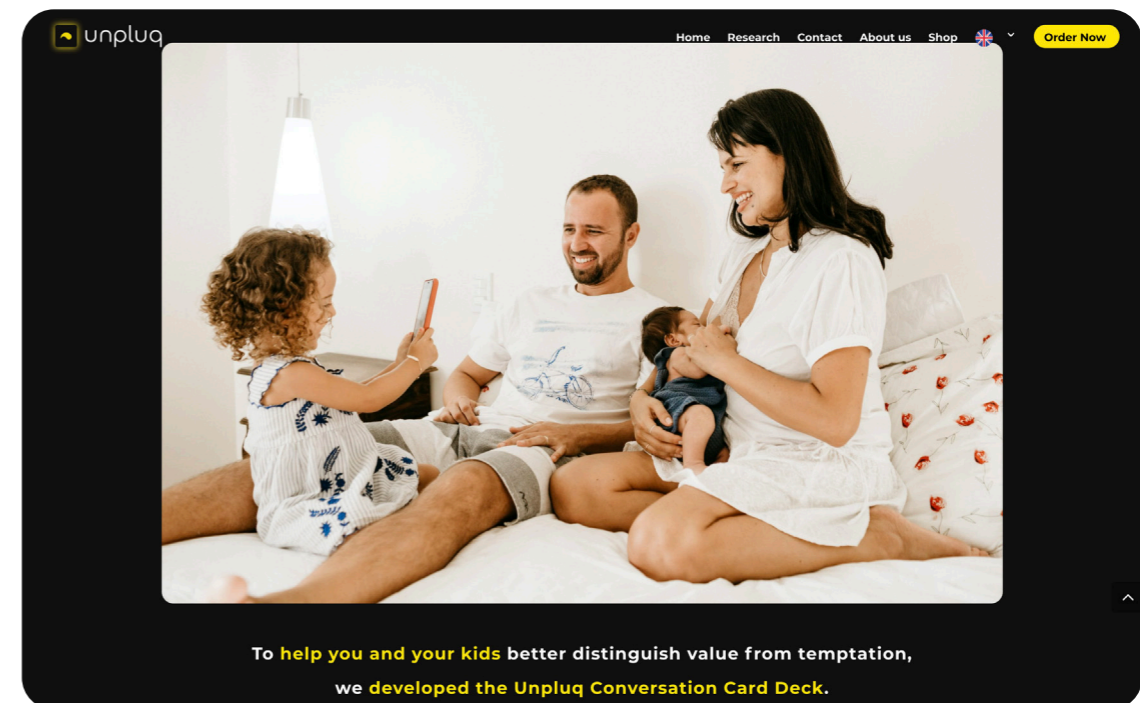
Figure 18.4 - Introduction of the solution
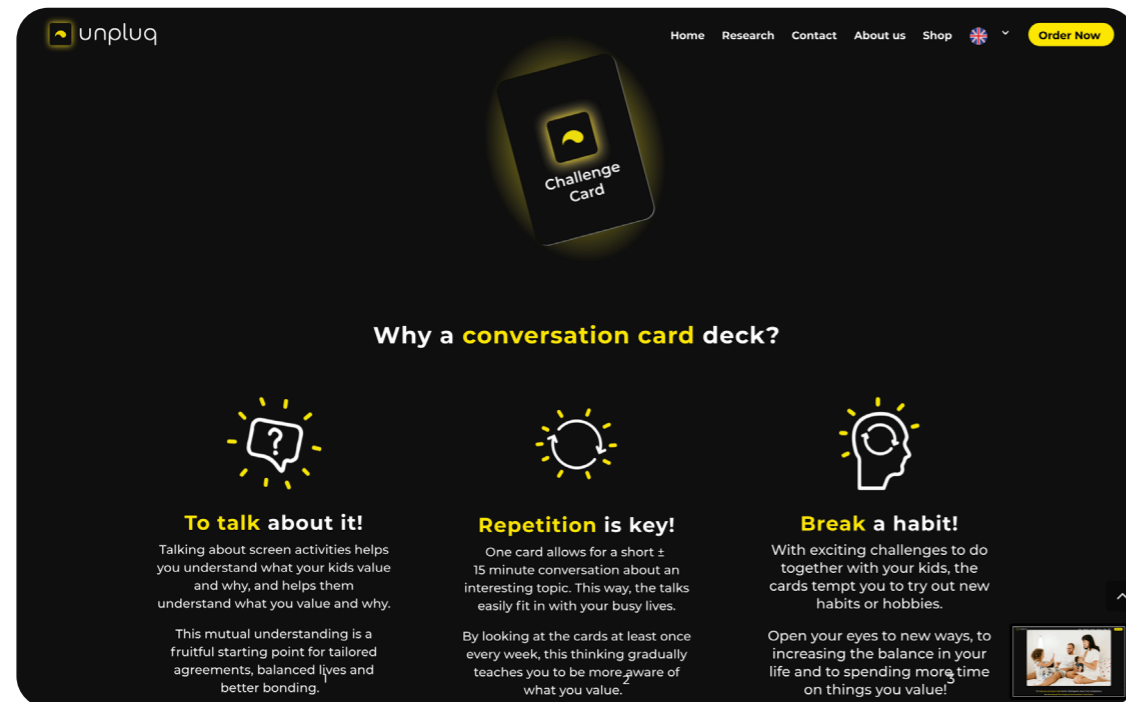
Figure 18.5 - Explanation of the solution

Figure 18.6 - Providing sources to substantiate the claims made

Figure 18.7 - Explaining how the product should be used.
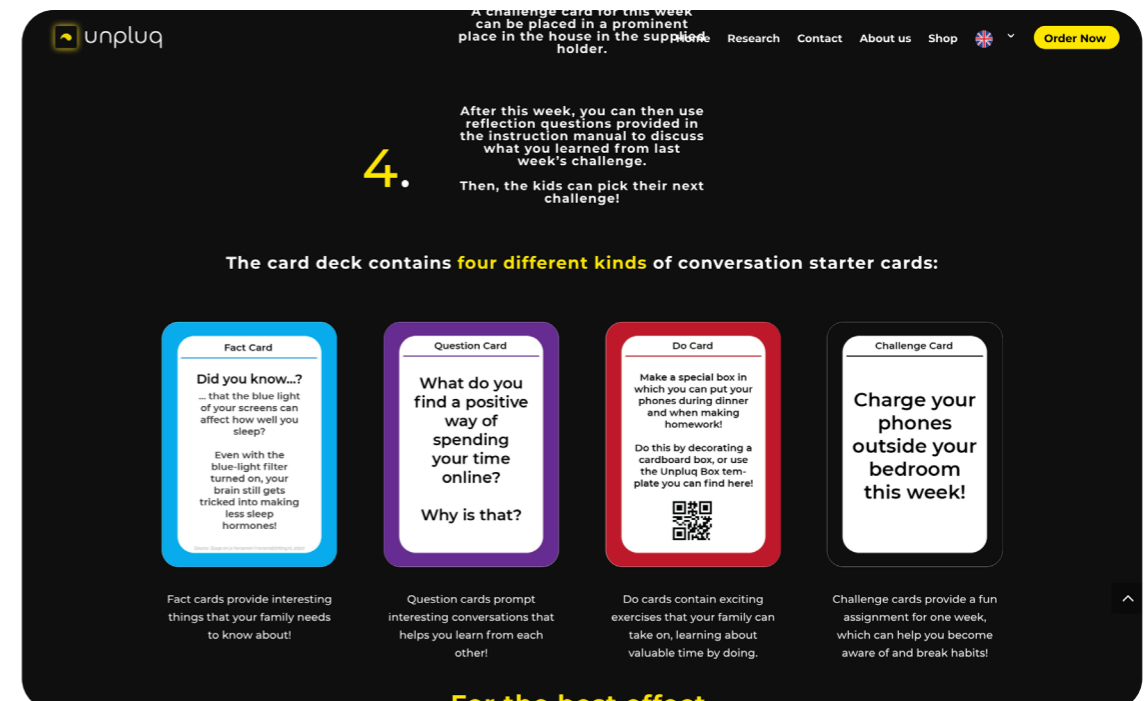
Figure 18.8 - Explaining more details of the product.
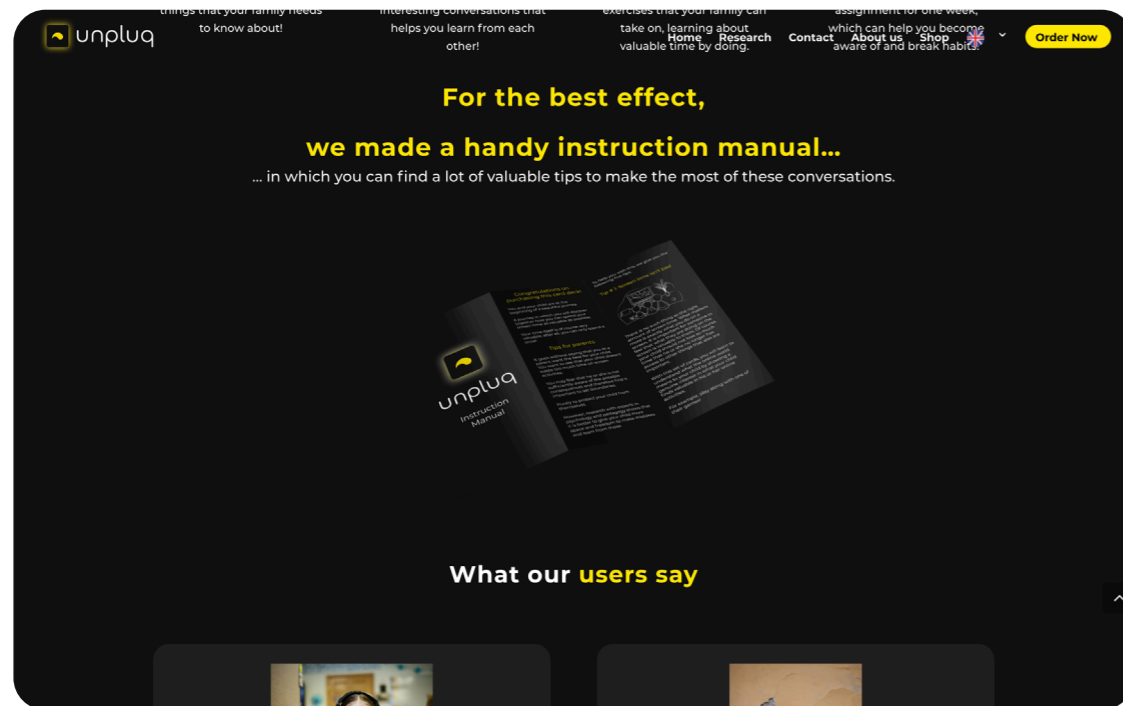
Figure 18.9 - Introducing the manual and addressing its added value.
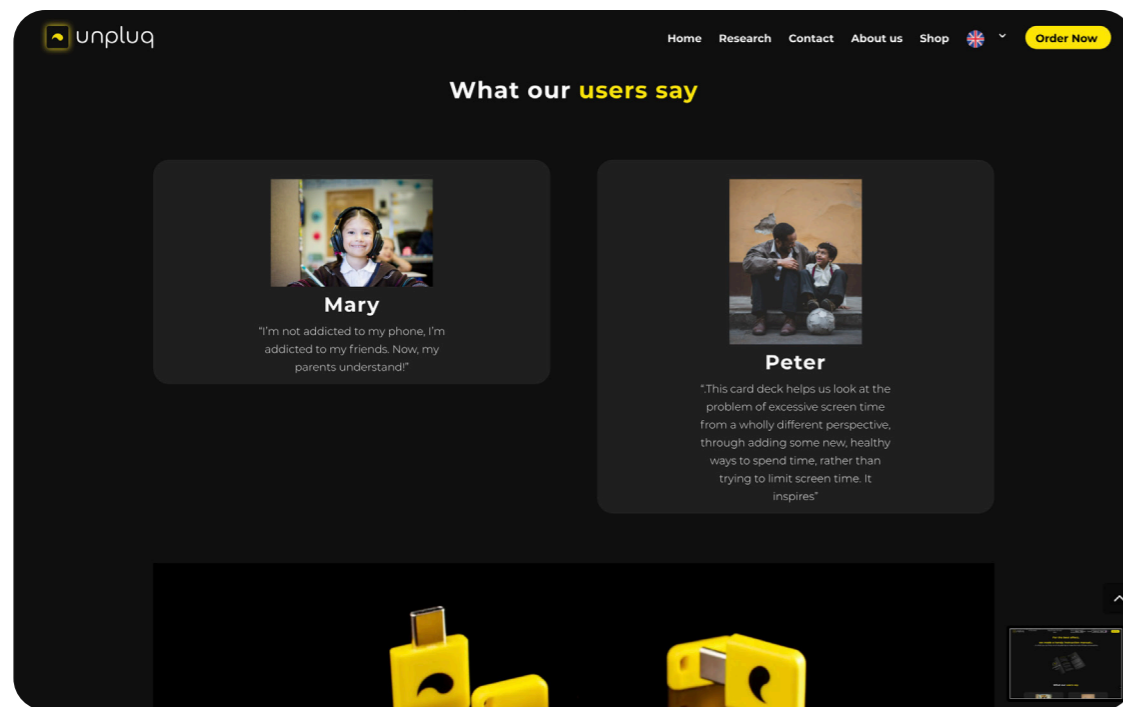
Figure 18.10 - Highlighting enthousiastic quotes from during consumer interviews
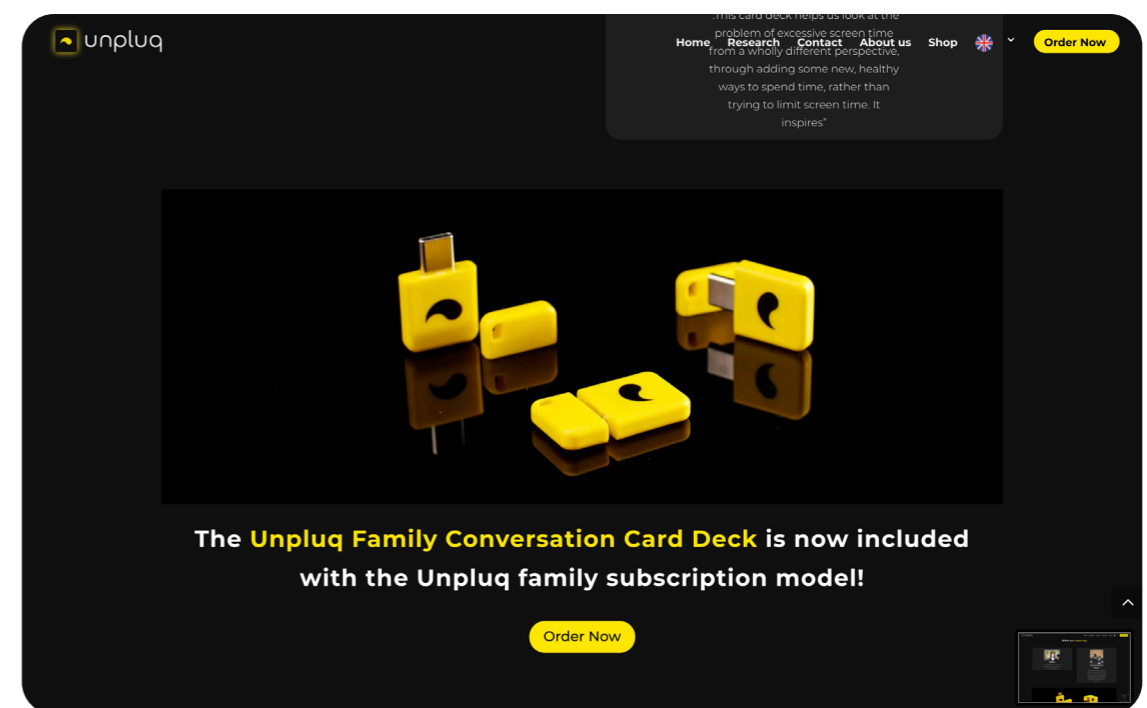
Figure 18.11 - Introducing how the Unpluq Family Conversation Card Deck adds on to the Unpluq Family subscription model.

19 Recommendations for Unpluq

How could Unpluq best continue this project?

19.1 For improving on the card deck

Improve visual design with creative sessions

The current graphic design for the current cards is preliminary and based upon interpretation and aesthetic preferences by me as designer. For better alignment with the Unpluq brand, I would advise to engage in several fun creative sessions with those involved with the Unpluq branding as well as end-consumers to settle on a more substantiated final visual style.

Consider adding exercise templates

As mentioned in chapter 13, I considered including exercise templates in the final concept. Within the time span of this project, it was however not possible to validate the effectiveness of these additional tools.

The templates could potentially be a relevant addition because some of the 'Do cards' sometimes require some extra materials. Earlier during the process, I proposed using QR codes to access such online forms, like to print out a box template, or to do a 24-hour empty glass exercise as proposed by Rich (2016). However, because some parents deemed QR codes to be confusing in earlier iterations, I might suggest avoiding having to refer to unknown channels as much as possible and instead decided to test whether an analogue solution could work.

Because certain challenges on the cards become more effective with repetition, a tear-off block could include several copies of the same template. This interaction intuitively feels like it signifies improvement through iteration. Therefore, it seems like a suitable replacement for the QR codes. On the back of the empty templates, instructions could be included for as to how to use that specific template.

Templates could e.g. include the 24-hour Empty Glass exercise, a time blocking week planner and a rule-setting template. These templates were, however, not tested with parents for their effectivity and therefore presented here in the recommendations.

If further developed, the note block could be:

- Further analysed on their efficiency through user testing
- Designed to fully align with the Unpluq branding
- Considered making available as a separate as a workbook or be provided as digital print outs for the family. It could even be filled out digitally on a computer. This could save valuable resources.

Explore additional promising experience elements

To finalize this current concept, I would advise Unpluq to run some more iterations on this project to explore several other potentially interesting allies. Ideas like …

- making different cards for educating the parents,
- a fun game element like using roleplay, or
- adding different levels to the challenges of the cards ranging from light questions, through exciting challenges to reflection cards

… were considered potentially valuable additions to the experience but were not further explored due to time restraints to this project.

Numbering the cards

As was suggested during the expert feedback session in chapter 14, the purpose of this product is to take families on a learning journey. When comparing the learning journey proposed by the professor of pedagogics to the cards developed, I recognized that there may be some added value to letting the cards guide the family through that journey. By numbering the cards, a specific order could be suggested for use of the cards which could make the usage of the cards more effective. I consider this a promising direction to further research.

Figure 19.1 - Template proposal

Validate using METUX

I took some first steps in validating these concepts through interviews with end-users and field professionals. However, in the research in this project, also an evaluation toolset was found for actually measuring the impact of products on longer term well-being. This set of questionnaires and other similar measurement tools is called METUX, which stands for Motivation, Engagement & Thriving in User Experience (Peters, Calvo & Ryan, 2018). For more information on this approach, please refer to Appendix B.

Because these tools suggest more longitudinal research to establish these longer term effects, they were deemed unpractical for the current thesis, but to really measure the impact of Unpluq, using such tools could potentially prove seriously valuable in further evaluating the impact of this concept, as well as for becoming a 'digital well-being market leader.'

What is METUX?

METUX is an anagram that stands for Motivation, Engagement and Thriving in User Experience. It was developed as a methodology by Calvo, Peters & Ryan in 2018 as an approach that should help human-computer interaction (HCI) developers improve the well-being that users of designed systems would experience.
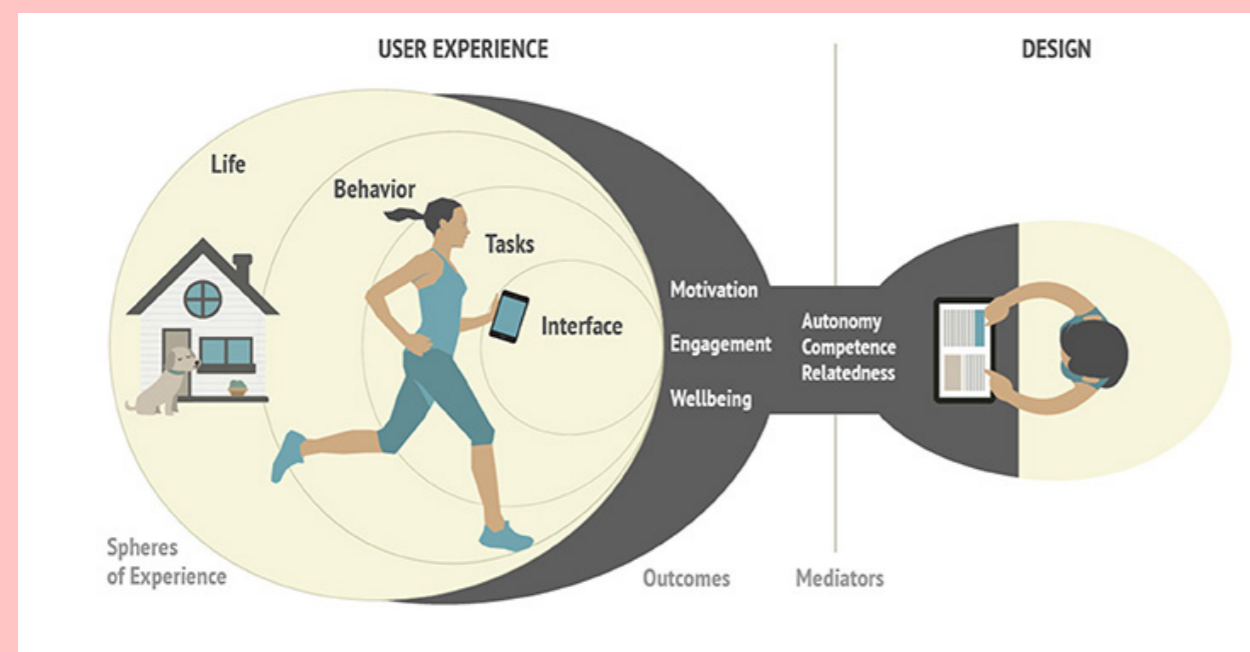
Figure 19.2 - Visualisation of METUX framework by Calvo, Peters & Ryan (2018)

19.2 For becoming a market leader

In this thesis, I think I have established that many of the things we do on our phones are valuable to us. Talking to people, watching the news, entertaining ourselves. However, we don't always use those things at the right time, wasting time on activities that don't help us achieve other things that matter to us. That is why it is important that Unpluq helps people create an environment in which they have as little temptation as possible at times they want to spend more in line with their goals. Much of creating that environment comes with becoming aware of when we are distracted and of what we actually want to be doing (Eyal, 2019).

To achieve that, I would recommend them to consider pursuing the following horizons.

As suggested in section 11.2 on problem framing, I would advise both expanding into the educative field to improve ability and awareness of their intentions, as well as improving on the functionalities currently provided in their digital service. To be truly effective, I believe the app should also help people to integrate their planned intentions into their phones.

With this adjustment, the product would not only help people remember that they want to use their phones less, but also reminds them of what they wanted to do instead.

Ultimately, I would advise Unpluq to use this analog brand identity as a way to bridge towards a more systemically integrated solution that really helps people grow and learn and master their digital wellbeing.

Horizon 1

That is where concepts like the one resulting from this project comes in. The card deck concept proposed in this thesis can help in improving awareness and reflection skills. More and better tools can be developed for this to help people improve their ability of iterative reflection even more. Some preliminary easy and quickly implementable ideas:

- Make a grab bag box with fun activities the family could simply reach into for inspiration of things to do together
- Offer Whiteboard to collect fun ideas that the family comes accross, to encourages children to further develop their interests
- Use mobile phones in physical games, like a game in which the game board is built up using the different mobiles together.
- A family charging hub
- A doorhanger to store your smartphone in when working

Horizon 2

If in time Unpluq has acquired more resources and can spare more time and attention to developing additional tools, it may be interesting to consider further developing one or more of the analogue concepts that originated from the creative process performed in this study. These concepts can be found in Confidential Appendix C.

Horizon 3

People will need guidance to implement their intentions, to avoid falling back into habitual thinking patterns in heat of the moment. When people get emotional, or are instinctively distracted by something in their environment, it takes a lot of self-control to avoid giving in (Eyal, 2019). Therefore, in subconscious decision-making moments people may also need support.

That is where the Unpluq app and key come in to help people not forget about their intentions. Unpluq currently has made the first step by offering people an extra blockade against accessing distraction out of habit. But through that, it only reminds you you did not want to spend time on your phone. And when one does chose to plug in, one can still spend too much time on Instagram before remembering they actually wanted to do something else. The Unpluq key does help dose these moments better, but ultimately leaves us with the liberty to still get stuck in these time-sucking services.

Instead, I propose to take it one step further:

Next to teaching people to reflect and improve through trial and error, I think Unpluq should also help people plan in advance what they actually want to do with their time and help them remember about their plans during the week, in the Unpluq app.

I would propose developing an overall, integrated system which helps you take both steps:

First, it helps you become more aware of how you want to spend your time through the educational tools like this card deck. Through that, it guides you in planning your intentions

Then, you put your personal electronics to use in helping you remember these intentions. This ought to be done the informed paternalistic way: just show them: your intentions were [...] what do you want to use your phone for, and do you want to set a timer?

A phone that helps us hide the apps that distract us during times when we actually wanted to do other important things, and remind us of our intentions instead, would be ideal.

Think of it as a swiss army knife; do you want every tool to always be available at any time, which makes it harder to find and focus on the specific tool you need? Or would you rather have a very smart tool that is neatly sorted and instantly provides you with that one tool perfectly suited for the task at hand? I know what I would want.

For further suggestions on improving the Unpluq value proposition, I would be happy to discuss potential next steps.

19.3 Contributing to alleviation of the digital divide

In a utopian world, everyone would have equal access to these learnings. As we see in our contemporary capitalistic society, often times the poor have less opportunities than the rich.

To avoid adding to the digital divide, I would advise Unpluq to consider making these cards and the methodology available to parents and children free of charge. Sell it to schools for example, offer it digitally for free or consider making it available for free through municipalities or other local communities.

This gesture of goodwill will most likely only aid the mouth-to-mouth spreading of the name of Unpluq and may serve as a great way of improving brand awareness.

People could proceed to print and cut out the cards and tools themselves. I expect that individuals with sufficient resources will still buy the proper quality card deck, to have something of good quality without having to put in unnecessary effort.

Figure 19.3 - Photo by Toa Heftiba on Unsplash

20 Recommendations for Design for Digital Well-being

How can design for digital well-being be improved?

16.1 Applying VSD

Using the improved value hierarchies from VSD could be a valuable new tool to design for well-being.

During the process, it is likely that not all requirements found during the process are easy to make specific. Nonetheless, they might pose as valid arguments for what an optimized answer to achieving the value would look like.

By using the wishes generated as an additional layer in the values hierarchies, you are effectively postponing a specific decision in what is necessary for realizing the desired value. In line with general design thinking, postponing allows you to explore multiple concepts instead of working iteratively towards just one optimal solution, which is how VSD seemingly has been applied so far.

The expected effectiveness of several solutions developed in the iterative process can then be assessed at a later point based on the wishes, and through that a potentially more effective design implementation process of VSD can be realized.

I would recommend scholars with more experience in the material behind VSD to review the amendment proposed in this thesis, and consider whether this would indeed help improve the applicability of this design approach.

16.2 A Design for Well-being framework

Combining SDT with Fogg's behavioural model and determinants for happiness provided a nice set of requirements to be met by the design:

o   Motivation:
-    Awareness
-    Autonomy
-    Relatedness
o   Ability / Competence
o   Environmental Triggers

Together, this seems like a promising framework for improving well-being through product design. I would highly encourage further scrutinization of whether this framework suffices and holds up in line with a more expansive literature review.

Also, the results from designing with this framework could be analysed in more longitudinal studies through applying tools like e.g. METUX. Please refer to Appendix B for more information on this tool and alternative design methodologies.
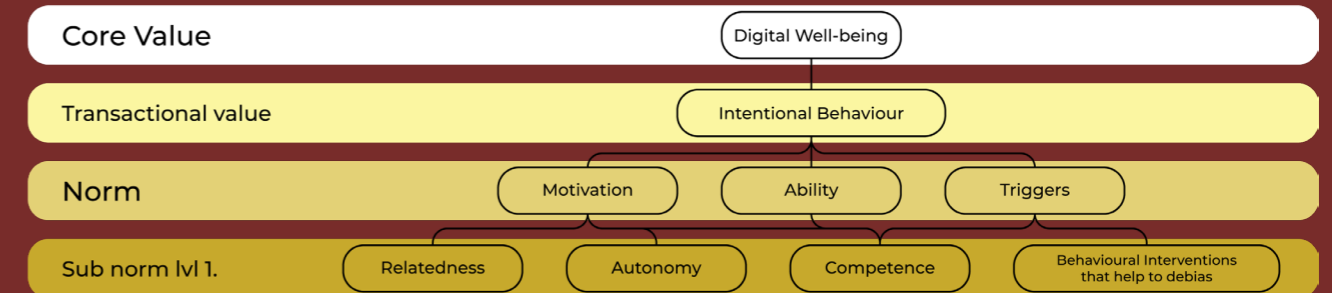

Figure 20.1 - Design for Well-being framework

Part 06

Project
Conclusion

Wrapping up this thesis, I have found a clear answer to both research questions as specified in chapter 3. I developed a concept to help Unpluq enter the market of digital parental control, have given a prospect for how Unpluq could proceed entering this market.

In the following and last section of this thesis report, I discuss the conclusions that I draw from this research, the theory and the process.

To wrap this thesis up, I finish with a reflection on my own learning goals and take-aways from this extensive and defining project.

Photo by Joke Vringer

21 Discussion, Limitations & Implications

21.1 About the project outcome

"Anything that stops discomfort is potentially addictive, but that doesn't make it irresistible. If you know the drivers of your behaviour, you can take steps to manage them." Eyal, 2019

This line sums up the core insight my thesis. I set out on this journey more than 8 months ago, with the intention of finding out how to help people spend their time more meaningfully than on social media.

What I have learned, is that, however, not all screen time is created equal. one may think that spending too much time watching brainless entertainment and playing brainless games may be bad for kids and should be kept to a minimum. At point blanc, it may look like that is the case. But, as it turns out, it is not that much of a problem necessarily. The digital world can teach a lot of valuable lessons, or just plainly provide a lot of added value.

One can discover new interests, improve practical or strategic thinking skills through gaming and stay in close contact with whomever you hold dear.

So, you may wonder, should screen time be limited then at all? How can we then still protect children from the risks that the online world may pose without constantly having to fight them about it? The answer lies in teaching them to be aware of their own behaviour and letting them actively learn to deal with the required responsibility.

The final concept from this project is especially designed to help parents do that. It is fun, comprehensible and on top of that, also affordable for Unpluq to manufacture. The effectiveness of the concept was discussed and evaluated throughout the development process, but considering that the final concept was only confirmed in two qualitative interviews with three parents, my first suggestion for further validating this project would be to test and prove the viability – are people really willing to buy?

Furthermore, a lot more stones could have been turned in this project abound with time limitations. This put a stern limitation on the time available to truly finalize the work. Suggestions for next steps are provided in the recommendation chapters.

Overall, I consider this project a proper first step of many that Unpluq can take to further expand into aiding families with digital parenting.

21.2 About the project execution

As I mentioned in the acknowledgement of this thesis report, 2020 to 2021 was a weird time to be doing one's graduation project. In lock-down because of the Covid-19 crisis, I have had to be creative about executing this project whilst not working from IDE as my home-base.

Although I think this limitation created a lot of creative freedom and did help me step outside my comfort-zone, the health concerns that come with physical contact made the desired user-based research approach in this project harder to achieve. I had countless fun and interesting interviews over Zoom and even tried to get parents so far to, virtually, show me around their houses in order for me to be able to get a better idea of potential sources of ineffective practices within their digital habits. This was not an effective approach, in the end. Without the virus, I think that I could have had much more and much easier contact with families and especially with children than now was the case. There is a risk that this limited exposure to the end-users might have affected my capacity to empathize with both parents AND children.

21.3 About the project approach

As was explained in chapter 3, I approached this project in a way similar to ViP and Reframing, but with a bit of a twist of my own. I first collected input from literature, targeted interviews with stakeholders and experts and an in-depth market research to develop a future vision for how Unpluq could enter this market. This vision was then translated back through an iterative, 'minimum viable product' based design strategy into a primary concept to help Unpluq take this first step.

To tap more into the latent knowledge of consumers, it might have been valuable if I could have implemented a context mapping approach. However, I deemed this, as mentioned in the previous paragraph, to hard to execute properly within the constrains that Covid-19 put on me.

Nonetheless, I am happy with what this approach has brought us in the end. The process brought us plenty of original suggestions for how Unpluq could approach this market and I feel that by going through this process, truly new ideas have emerged.

Conclusion 22

21.4 About the project methodology

I am not entirely certain whether I applied VSD in line with what the creators of this methodology had in mind. I tried to reach out for validation of this approach, both with Calvo and Van den Hoven, but they were not available for feedback within the timeframe of this project. I think that the combination of this more top-level approach with the concrete design iteration process as taught at our design faculty, as well as with the other methodology for the list of wishes and requirements has given some interesting insights into actually designing for digital well-being, and other values.

One point of concern that I think would require further investigation is how to make the found norms and requirements explicit. This has been a struggle for me as a perfectionist, especially. Because we are working with a topic as personal as values, it might easily be the case that there is no such thing as explicit for this approach. Either that, or my workable interpretation of the values for designing for digital well-being might in the end still have been some wrong assumptions.

Even still, I do think that VSD can potentially be a very interesting approach for the field of industrial design engineering to want to further explore and potentially expand with the thinking taught at our faculty.

21.5 About the design for well-being framework

As I already suggested in chapter 15, for a design for well-being framework, I combined SDT, Fogg's Behavioural Model, Determinants for Happiness & ethics. I saw overlap between these theories based on my preliminary understanding of positive and behavioural psychology.

Although analysing the capacity of this framework to actually improve well-being through design was outside the scope of this thesis, I think that it served as an effective design heuristic for this design project. I consider it promising and interesting that this framework leaves us with only four, relatively concrete dimensions to design for when trying to improve well-being:

- Autonomy
- Relatedness
- Competence/ability
- Triggers to create awareness

Then, of course, there is still the ethical side note that interventions should try to only limit in an informational paternalistic way as proposed by Floridi (2016). Although I understand that there could be better or alternative dimensions for improving well-being, I feel like this framework does help bring well-being within the reach of designers. The actual effectiveness of this approach can, however, not automatically be assumed to be a proven design approach, and will require further study.

22.1 Personal conclusion

Like I already said in the discussion chapter, this story started eight months ago, intending to find out how to help people spend their time more meaningfully.

This story has opened my eyes and provided me with a more relaxed stance on the issue; screen time in itself is not wrong; it just matters whether we value what we do and intentionally choose to do so.

Spending 30 minutes on Instagram or a night on Netflix is perfectly justifiable if it aligns with your values and what you planned to do with your time.

I think this is an essential insight for Unpluq and society, in general, to keep in mind – because the digital world can also offer us as consumers a lot of added value. The key is in finding and maintaining the right balance.

22.2 Project conclusion

I started this report with two main research questions:
- How can positive design principles be applied to creating a setting in which parents and children experience more well-being within their everyday lives?
- In what way and form should Unpluq design products for parents and children to enable them to manage their well-being better?

I consider having answered both these research questions satisfactorily:

To apply positive design principles in the family home setting, I performed extensive research on the requirements for improving digital well-being through design. I put these insights into practise to design a concrete design concept for Unpluq. Then, I captured the lessons taken from

the literature reviewed, end-user and expert interviews and market analysis in a final 'values hierarchy' proposed by the Value-Sensitive Design methodology. This values hierarchy contains all the requirements that I think should be met to create a setting for improved well-being in the family life.

After this, the created values hierarchy allowed me to evaluate product concept ideas that Unpluq could implement to take the first step into the digital parental control market. I finalized this design through iterative testing and evaluation with essential stakeholders and settled on a very concrete final product.

This way, I have also answered the second research question by proposing a **desirable, feasible & viable** product strategy that Unpluq can implement almost instantaneously to help parents and children manage their well-being.

23 Personal Reflection

23.1 About myself and how I spend my time

I am a super curious and driven workaholic who is also easily distracted due to a lack of discipline. You can probably understand why I would be interested in working on a project on spending time more meaningfully. This project has taught me to look at how I spend time in a much more conscious way. I've started to learn to accept spending time with friends, family and loved ones as a just as justified activity next to my career ambitions. Both matter equally to me, and hence I should not feel guilty about spending a night with friends whilst I could have been working. I should keep tabs on not doing so excessively as a means to avoid other responsibilities. But I also should not punish myself for it. I need to be conscious of the choices I make, reflect, and adjust if I deem them necessary.

23.2 About Perfectionism & Managing Expectations

I spend much time trying to think of ways to do my work even better. "What if I would make that extra video to convey the message to families better? Parents & children would love that; it would work way better than a simple & boring booklet." Thanks to my supervisors' feedback, I have become aware that I should not always want to do everything. At times, during this project, I have gotten myself all worked up about trying to do as much of the things I could think off, trying to make this project even better. There was no "check-up system" in my mind considering whether or not these ambitions were adding value, whether they were realistic.

Instead, I would spend endless time polishing things and trying to think of even more things that I could do, which would eventually amount to a list of tasks that eventually becomes unmanageable. This leads me to become immensely stressed out because I cannot deliver on the quality I have in mind, whilst I have never checked what is required — neither internally with my own goals nor externally with the outside world.

I have an issue with managing expectations - I often just do not do that. Instead, I assume my high expectations are correct, project them on the outside world, and freak out if I fail them.

This project hence has taught me: you cannot sand the paint before it is dry. If you have limited time, you have to decide whether to paint or to sand.

Instead, I need to learn to think about: what effectively best conveys the vital message to the relevant stakeholders? What works best, with minimal effort, to convince them to pursue the thinking presented in this project? Rather than what makes my work look most beautiful and impressive, so they tell me I did my job well? This, sadly, is something I only realized very late in the project. You can see that by the amount of effort that went into the layout of this report.

I'm probably writing this at the risk of my own grade... Hehe

But this has taught me to reflect more consciously and try only to do the things that are utterly necessary for the project. Considering how time is as valuable as I make it out to be in this project: what is the 'minimum viable project' for this deliverable?

Not to say that slacking is justified. But living in a world with limited resources, we cannot afford not to be intelligent and conscious with how we allocate them. Instead, it is all about becoming conscious of how you set intentions and aiming to stick to them.

23.3 About contact with the stakeholders

During the first two-thirds of this project, I found it hard to know how to manage the interactions with my supervisors appropriately. I often did not know exactly what they expected of me, and because of that prepared overly elaborate presentations just to make sure I would have "done enough". This is an issue similar to the one described before.

Additionally, I also tend to sometimes slack in communication. I think this is also a consequence of my perfectionism; if I do not know how to deal with something, I start postponing it to when I have the courage or the knowledge to take it up.

23.4 About the essence of this thesis

Then lastly, there is this one question that has been bothering me in this project all along:

"Am I right for making spending time wisely so universally important? Isn't 'spending time right' just a value that some may share and others may not?"

And, as they say philosophically, "tomorrow never comes".

Lastly, getting the most out of coaching sessions is hard for me because I often am not wholly aware of the exact issue I am running into. Once I reach out for feedback, I often get advised I should have taken a different direction way earlier. This is likely due to a lack of conscious reflection because if I notice problems earlier on, I could likely decide to take action on them before they become problematic. I feel like I still have more to learn on this topic; when to ask for feedback, and if I do, how to do so best.

Eyal seems to find it necessary to spend our time on things we value (Eyal, 2019), just like I think the same about spending money. Others may feel like buying, based on hedonistic desires, what your 'Ego' wants (in Freudian terms (Evans, Jamal & Foxall, 2009) and making time for whoever seems to 'need you' is also wholly justified and more important.

After this project, one answer, and mine, would be that we all need to learn to become aware of the choices we make and learn from ourselves if we regret them afterwards. But I do not think I have THE answer to that question. I think that this is likely a topic to which no good answer exists. There may be many different ways of looking at this problem, making it much more complicated than I can fully wrap my head around, especially after a mere half-year of studying it.

There are complicating factors like: "what if people get so addicted that they lose all motivation to pursue a different lifestyle" and it would be bluntly arrogant to assume that mere awareness solves everything. I do, however, believe that awareness and proper constructive communication can prevent such situations from occurring. And that is why it is my answer to this issue: prevent rather than cure.

23.5 About my passions in design & my career

One of my learning goals at the start of this thesis was to learn more about applying cognitive sciences in design. Somehow, I expected it would have been more analytical and involve more actual measurement rather than pure hypothetical theories that it turned out to be. It has been an educative journey, but I do feel like now, I am ready for a new challenge.

I notice that I regret that this project involved relatively little PC work. I notice how my tendency and interests gravitate towards programming

and building digital prototypes. You can see that from my final deliverables. However, printing a physical card deck would likely have been less work and a better representative of the actual card deck experience. But, instead, I chose to make a simulation experience in a digital software package called Protopie.

Coding has become a growing hobby of mine in recent years. That is why my activities post-graduation will be more experience and software programming focussed and will likely play an essential role in the job opportunities that I will pursue.

23.6 About working at a start-up

Covid-19 was a very limiting factor in managing to get that experience. Out of safety concerns, I decided I would instead choose to limit my physical presence in the office. And, because it was highlighted in the graduation manual, I also decided not to get too involved in the company's business because I should be spending on my graduation and not on corporate tasks not related to that goal. As a result, I only had limited experience working at a start-up and in a start-up setting. I did get a little taste of it in the morning 9 'o clock start of the day sessions and during those few times when I did visit the office and attended

discussions about the important topics going on behind the scenes.

Through this, I gained awareness of other essential activities at start-ups, like the search for investment money and the 'having to do everything yourself' mentality. These observations were eye-opening, and I feel like it could be valuable to get more experience with this if the situation permits.

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25 Picture References

Part 1

Figure A:
[Unpluq website header]. (n.d.). Retrieved April 16, 2021, from https://unpluq.com/wp-content/uploads/2020/10/Unpluq-main-new-7.jpg

Chapter 1

Figure 1.1:
[Protional visual from The Social Dilemma, a Netflix Documentary]. (2020, September 25). Retrieved February 02, 2021, from https://www.cinemablend.com/news/2555346/what-is-the-social-dilemma-things-to-know-about-the-netflix-documentary-before-you-watch

Figure 1.2:
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Chapter 3

Figure 3.4:
[Screenshot] from van den Hoven, J. V. (Director). (2015, January 20). Lec 7.4b applying Value sensitive, Part 3 [Video file]. Retrieved March 19, 2021, from https://www.youtube.com/watch?v=oVkAOoP5moY&ab_channel=NewMediaCentre

Figure 3.5:
[Screenshot] from van den Hoven, J. V. (Director). (2015, January 20). Lec 7.4b applying Value sensitive, Part 3 [Video file]. Retrieved March 19, 2021, from https://www.youtube.com/watch?v=oVkAOoP5moY&ab_channel=NewMediaCentre

Figure B:
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Part 2

Figure C:
[Tree over water]. (n.d.). Retrieved April 16, 2021, from https://unpluq.com/wp-content/uploads/2021/03/clear-mind-reflection-980x652.jpeg

Chapter 5

Figure 5.4:
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Chapter 6

Figure 6.1:
[We have TWO THINKING SYSTEMS in our brains]. (n.d.). Retrieved April 16, 2021, from https://medium.com/@g_rishiraj/lessons-learnt-from-thinking-fast-and-slow-by-daniel-kahneman-5bbba3ae0d49

Figure 6.2:
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Figure 6.3:
[The pedestrian crossing at Block 177 Toa Payoh Central.]. (n.d.). Retrieved April 16, 2021, from https://static.straitstimes.com.sg/s3fs-public/styles/article_picrture_780x520_/public/articles/2019/04/16/ST_20190416_WYJAYWALK16_4773630.jpg?itok=uqTmyjpL×tamp=1555350606

Figure 6.4:
Photo by Erik Mclean on Unsplash

Figure 6.5:
Eyal, N. (2019). Indistractable: How to control your attention and choose your life. BenBella Books.

Chapter 7

Figure 7.1:
Titus, R. (2008, October 28). BBC Internet Blog: More than just watching TV. Retrieved January 24, 2021, from https://www.bbc.co.uk/blogs/bbcinternet/2008/10/watching_tv_is_more_than_just.html

Figure 7.2:
[Computer cookies are Web usage files, not treats in a cookie jar.]. (2012, August 20). Retrieved April 16, 2021, from https://www.computerhowtoguide.com/wp-content/uploads/2012/08/kid-peeking-at-cookie-jar.jpg

Figure 7.3:
Jimenez, S., Pohlmeyer, A. E., & Desmet, P. M. A. (2015). Positive design: Reference guide. Delft University of Technology.

Chapter 8

Figure 8.2:
Photo by Sergiu Vălenaș on Unsplash

Figure 8.3:
[Father spying on son]. (n.d.). Retrieved April 16, 2021, from https://i1.wp.com/www.webwatcher.com/blog/wp-content/uploads/2019/10/child-phone-monitoring.jpg?fit=600%2C400&ssl=1

Figure 8.4:
[Father talking to son]. (n.d.). Retrieved April 16, 2021, from https://raisingchildren.net.au/__data/assets/image/0028/47773/discipline-teenagers.jpg

Figure 8.5:
[Parents gaming with child]. (n.d.). Retrieved April 16, 2021, from https://www.internetmatters.org/wp-content/uploads/2019/05/shutterstock_530766700-1.jpg

Figure 8.6:
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Figure 8.7:

[Teen on laptop]. (n.d.). Retrieved April 16, 2021, from https://www.wearethecity.com/wp-content/uploads/2016/11/shutterstock_345005999.jpg

Part 3

Figure D:
[Picture of Yes!Delft Incubator Office]. (2020, October 12). Retrieved April 16, 2021, from https://www.facebook.com/YESDelft/photos/3601192433266461

Part 4

Figure E:
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Chapter 18

Figure 18.2:
Peters, D., Calvo, R. A., & Ryan, R. M. (2018, May 28). [METUX framework]. Retrieved April 16, 2021, from https://www.frontiersin.org/files/Articles/300159/fpsyg-09-00797-HTML/image_m/fpsyg-09-00797-g002.jpg

Figure 18.3:
Photo by Toa Heftiba on Unsplash

Closing remarks

Thanks for making time for reading my thesis!

> "They paved paradise and put up a parking lot
>
> With a pink hotel, a boutique, and a swingin' hot spot
>
> Don't it always seem to go
>
> That you don't know what you got 'til it's gone
>
> They paved paradise and put up a parking lot
>
> They took all the trees, and put em in a tree museum
>
> And they charged the people a dollar and a half to see them
>
> No, no, no
>
> Don't it always seem to go
>
> That you don't know what you got 'til it's gone
>
> They paved paradise, and put up a parking lot "
>
> - Excerpt from 'Big Yellow Taxi' by Joni Mitchell -

Beautiful cover by Mateo Oxley

My past 8 months have been a invigorating journey in which I spent a lot of time learning a lot about what people find valuable.

Like I said at the start of this work: our time and attention are both limited and immensely valuable transactional resources and it is in our own best interest to learn to deliberately allocate these resources to our own values, goals & development, instead.

We can do that by learning to become aware of what we consider valuable, and equip ourselves with the right tools to stay on top & on track.

It is up to you to take control over how you live your life. That is the main lesson I take away from this thesis.

As they say in 'Big Yellow Taxi', here seen on the left:

"Don't it always seem to go,
That you don't know what you got 'till it's gone."

So spend your time, and spend it wisely ;).