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User interface evaluation of a mobile photo editing application

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Abstract

Ultralight is a photo and video editing application developed for iOS devices. The speciality of Ultralight is its intuitive user interface where the edited photo can float behind the editing controls to allow a full editing experience on a small mobile screen. In this Master's thesis, I study the iterative design process and research practical and lightweight user testing methods to conduct an evaluation of Ultralight's design. Based on the findings I design a new update to the Ultralight. Ultralight is an ongoing solo-project which is fully designed and developed by myself.

In the core of the iterative design process is the aim to design, analyse and refine the work in small cycles to constantly learn how well the design functions in reality. This is especially important when working with interactive applications, where the digital platforms allow incremental design, continuous change and improvement. There are different ways to collect data to analyse the performance of digital products, but in this thesis, I focus on fast and efficient user testing methods to collect qualitative data of how the participants use and value Ultralight. I use the evaluation as a design tool to improve the current state of the user interface and analyse the iterative design process through concepts of user experience design, user-centered design, usability, lean and agile methods.

Doing design work in iterations and user testing in-between helps to improve the understandability and quality of the design. Doing user testing is usually thought to be cumbersome and take a lot effort. However, there are many easy and fast methods to conduct user testing in practical manners. In this thesis, I formulate an efficient and easy method for user testing, which can be conducted remotely with the help of the new screen recording feature on the iOS 11 operating system. The iterative design process aims to improve the quality of the design but it is also a crucial tool for the designers to improve their skills by collecting real feedback from their own work.

Keywords Iterative design, evaluation, user interface, user experience, mobile application

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Tiivistelmä

Ultralight on kuvien ja videoiden käsittelyyn kehitetty sovellus iOS-laitteille. Ultralightin erikoisuus on sen intuitiivinen käyttöliittymä. Käsiteltävä kuva voidaan suurentaa koko ruudun kokoiseksi niin, että käyttöliittymä jää kellumaan muokattavan kuvan päälle. Tämä mahdollistaa koko näytön hyödyntämisen pienellä puhelimen ruudulla. Tässä maisterityössä käsittelen iteratiivista suunnitteluprosessia ja tutkin käytännöllisiä sekä kevyitä tapoja tehdä käyttäjätestausta Ultralightin käyttöliittymän evaluointia varten. Tekemieni havaintojen pohjalta suunnittelen uuden päivityksen sovellukseen. Ultralight on täysin itseni suunnittelema ja kehittämä sovellus.

Iteratiivisen suunnitteluprosessin keskiössä on tavoite suunnitella, analysoida ja parantaa suunniteltavaa työtä jatkuvasti pienissä osissa, sekä oppia miten sovellus vastaa käyttäjien tarpeeseen todellisuudessa. Tämä on erityisen tärkeää suunniteltaessa interaktiivisia sovelluksia, jotka ovat osa suurempaa digitaalista ekosysteemiä, jossa on mahdollista jatkuvasti päivittää ja parantaa sovelluksia. On erilaisia tapoja kerätä tietoja ja arvioida digitaalisten sovelluksen toimintaa. Tässä työssä käyn läpi yksinkertaisia tapoja kerätä kvalitatiivista tietoa käyttäjätestauksen avulla. Keskityn siihen miten osallistujat käyttävät ja arvioivat Ultralight-sovellusta. Käytän käyttäjätestausta työkaluna nykyisen käyttöliittymän ja käyttäjäkokemuksen parantamiseksi. Lisäksi käsittelen iteratiivisen suunnittelun eri keinoja ja käsitteitä.

Iteratiivinen suunnittelu ja käyttäjätestaus auttavat parantamaan suunniteltavan työn ymmärrettävyyttä ja laatua. Usein käyttäjätestauksen ajatellaan olevan hankalaa ja aikaavievää, mutta on olemassa monia käytännöllisiä käyttäjätestauksen keinoja. Muodostan tehokkaan ja helpon tavan käyttäjätestaamiseen etänä uuden iOS 11 -versiossa esitellyn ruudun nauhoitustyökalun avulla. Iteratiivisen suunnitteluprosessin hallitseminen on tärkeää suunniteltavan työn ymmärrettävyyden varmistamiseksi, mutta myös suunnittelijoille itselleen. Oikean palautteen kerääminen on loistava tapa kehittää omia taitoja käyttäjäkokemusta suunniteltaessa.

Avainsanat Iteratiivinen suunnittelu, käyttäjätestaus, käyttöliittymä, käyttäjäkokemus, mobiili-sovellus

Weighing Ultralight

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mobile photo editing application

Master's thesis
Timi Koponen, 2018

Abstract

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Master of Arts thesis abstract

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korkeakoulu

Tiivistelmä

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All Ultralight users around the world.

Introduction

To improve as a designer - you need to constantly improve your skills in gathering feedback on your own work.

Halfway through writing this thesis, I had finally formulated the main theme in my head. It is crucial for a designer to have good skills in collecting feedback and evaluating his/her own work. This captures the idea that I want to examine in this thesis. Doing design is not about working for yourself. It is about working for everyone else. In order to create something both beautiful and functional, it is crucial to articulate your ideas and have them understood. Therefore, to develop your skills in design, it is necessary to learn and study how your design functions in the real world. To find out how does the design works or if it does not. By studying your own work you learn how well it matches the users perceptions, needs and what kind of experience it produces in reality. The more knowledge there is, the stronger the design will be, and less guesswork will be needed.

Testing the design helps to improve both the design's understandability and quality. It also develops the skills of the designer too. User testing is a term used in this thesis to contain the various methods to evaluate digital designs. I cover Ultralight's user interface evaluation that I have conducted as a part of this Master's thesis. Doing user testing is usually thought to be cumbersome and take a lot of effort. However, there are many easy and fast methods for doing the user testing in practical manners and to get feedback easily. In this thesis, I research how to do user testing with easy, lightweight and practical methods. The aim is to learn how to improve the current design of Ultralight, and how to conduct user testing during an iterative design and development process.

There are many sources of data and information available for iterative design and evaluations. Reviews are comments that users can write next to the product's page in the App Store. Reviews are a good source to understand the current state of the application and what users find valuable or negative in their use. Analytics data is another source to collect numerical data about different aspects of the application use. I focus on the practical user testing because I have found that it is the most valuable source of information regarding to the actual design work. Besides the evaluation, my personal goal is to learn and understand more of my own design work and how to improve my own skills in working with user interfaces and user experience design.

The main questions covered

- What good, practical and lightweight means are there to conduct user testing during an iterative design process?
- How could Ultralight be improved by means of user experience, understandability and long-term use?
- What type of user testing is especially useful in the design of digital and interactive products?

This thesis covers topics related to the concepts of iteration and iterative design. In some ways, in the digital world, a product is never finished, until the product and its development are abandoned which leads to a slow decline of the product. Digital platforms evolve constantly. But it is not only a technical process. The digital ecosystem allows the constant improvement of the design too. I have created Ultralight iteratively, trying to improve it bit by bit, rather than working for a long time before pushing it into the world. At first, I started to build Ultralight just for myself, but I have gradually shifted the focus more and more towards the users and their needs. Building a successful digital product is a challenging and time-consuming process. It is crucial to constantly learn about the product while it

is being developed and building the application in smaller steps allows this to happen.

I decided to dive deeper into iterative and interaction design because I wanted to get more feedback and understanding of my own work and its outcomes. My intent to continue the work with Ultralight also gave me a clear motivation to go for it. Combining the work with this Master's thesis together with Ultralight allowed me to approach these topics in a more theoretical and structured manner. I believe in craftsmanship and understanding the medium you work with. I have been tinkering with interactive content for as long as I can remember. There has been always something truly intriguing and captivating for me, to see the interactions becoming alive in the digital world. I believe that researching more about these topics will provide a good framework and practical knowledge for my future professional work and for my personal interests as well.

The structure of this thesis is separated into the following parts. First I cover what Ultralight is, its design process and where Ultralight stands now. In the methods of iterative design chapter, I examine different perspectives in iterative design. In the evaluation chapter, I go through various user testing methods and write about the user tests conducted during this thesis and their results. Lastly, in the redesign and conclusions chapters, I analyse my findings and cover how the evaluation affected the current design and compare the different methods regarding my own design work.

The scope of this thesis is to produce one update to Ultralight and in the written part I will cover the design and the user research done. Due to the fact that I am working independently with Ultralight means that there needs to a tight framing for the design because of the amount of time that the development takes. On the other hand, working individually means that there is no actual border

between design and development. Usually, I work simultaneously with both of them. I like to finalise the designs already in code, rather than prototyping them by any other means. I believe that both the user interface design and development are just tools to build the product and realise the product vision behind the application, and therefore they should not be separated too far from each other. In regards to this Master's thesis, I keep the focus on the design and its implications, because that reflects my personal interests the best. Designing and creating something new is what drives me forward.

Ultralight

Ultralight is a photo and video editing application designed for the iOS platform. The speciality of Ultralight is its user interface where the edited photo can float behind the editing controls. This allows the edited photo to be displayed as big as possible on the small mobile screen. Ultralight has many creative and playful editing tools, which make professional photo editing approachable to the new user as well as professionals alike. The name 'Ultralight' describes the lightness and effortlessness of editing with Ultralight. The user experience of Ultralight aims to follow the same principles, being intuitive, fast and playful to use. Ultralight's user interface and user experience are what differentiates it from the many competing photo and video category applications. Ultralight is available for free and it has currently more than half a million downloads and an average user rating of 4.7 (4555 ratings, 6.3.2018)

Information and video of Ultralight can be found from:

www.ultralightapp.com

Ultralight can be downloaded for free from the App Store:

<https://itunes.apple.com/us/app/ultralight-photo-editor/id972428565>

Ultralight started from prototyping of a photo editing application that I personally wanted to use. It has outgrown from this, but it is still the driving force in the background. I have a personal goal that Ultralight should genuinely feel the best application for my needs in the current market context. In the beginning, I did not know what Ultralight was about to be, but after publishing the first version on the App Store I have gradually shifted my focus more and more towards improving the user interface and experience for the wider audience.

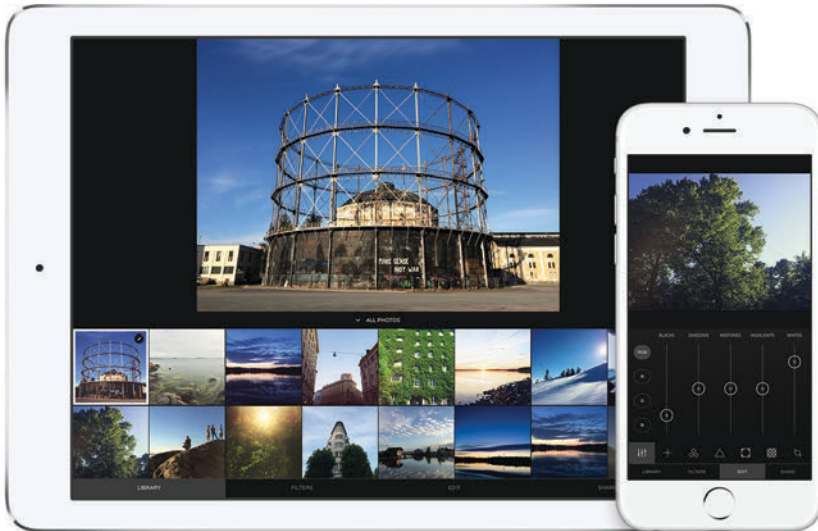


Figure 1: Ultralight

I feel that the work with the design has been the most valuable element in the development of the application. There are hundreds or even thousands of pretty good photo editing applications out there. Ultralight needs to stand out as being the best of its design.

Early design

As mentioned, when I started prototyping Ultralight three years ago, I really did not yet have a clear vision where I was aiming. I had started to learn iOS application development with the Apple's new Swift programming language that was released around the same time. While learning the basics of the language I bumped into

Apple's Core Image library, which offered a collection of photography related algorithms for image processing on the iOS platform. I have a long background in photo editing and manipulation with Adobe Photoshop so it looked like a familiar place to start to explore. I came up with a early concept that eventually developed into Ultralight.

The concept that I first started to prototype was named 'FilterPad' (Figure 2). The rough idea was to modify each filter preset by moving your finger on the vertical and horizontal axes. Inspiration came from the music world. Korg's Kaoss Pad is a small sampling instrument that has a touchscreen to control the effects and patterns (Figure 3). With the touchpad, different effects can be tried out and

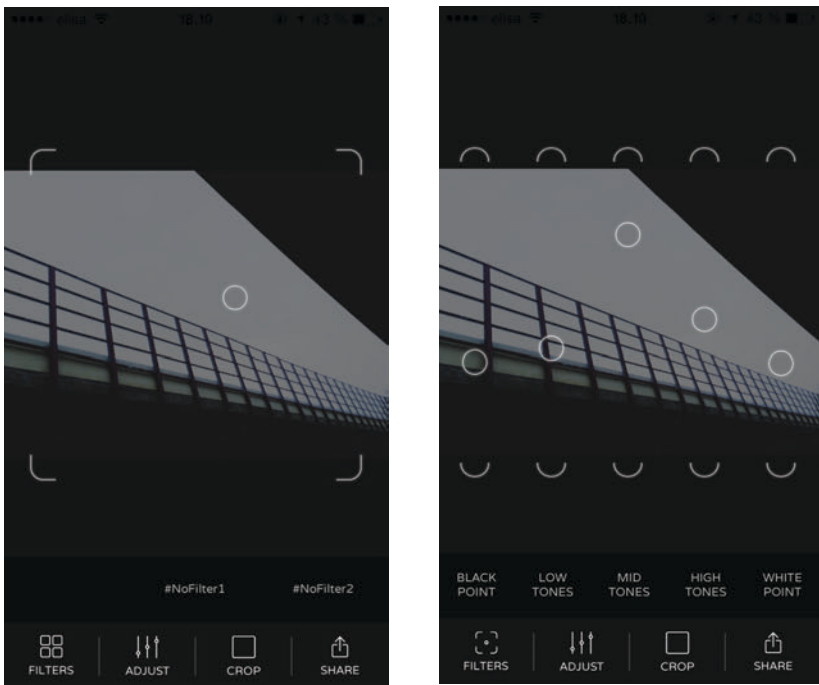


Figure 2: An early prototype of the concept 'FilterPad'. The five sliders for controlling the brightness values were present early on.



Figure 3: Korg Kaoss Pad KP3+ (KORG Inc, 2018)



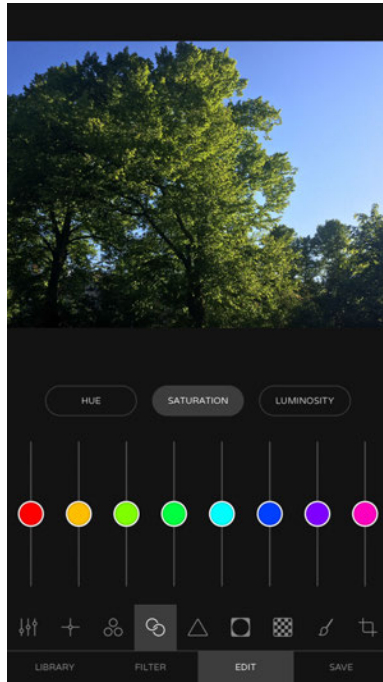
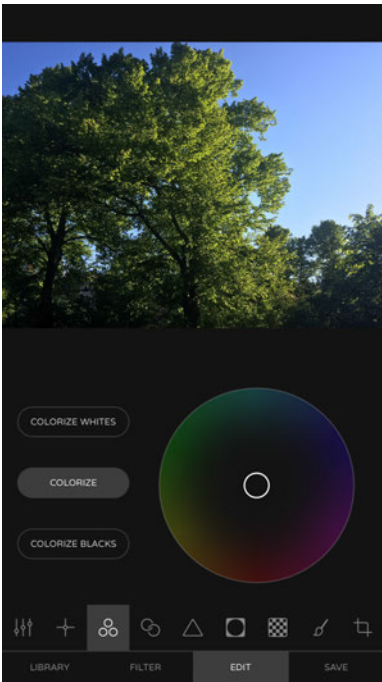
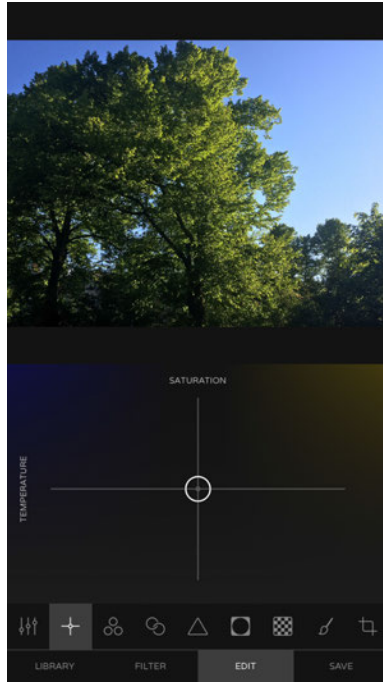
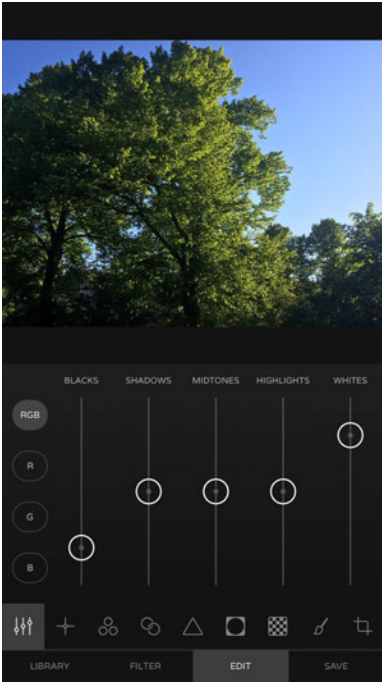
Figure 4: Samplr (Alonso, 2018)

explored by moving the finger on the touchscreen. This concept of physical exploration by touch felt intriguing for me. Another source of inspiration came from the iPad world. Samplr is an application made by Marcos Alonso that explores similar concepts on its touch-based user interface (Alonso, 2018, Figure 4). Both of them felt really approachable and playful experiences for music making, and more like a fun thing to play around, instead of to actually learn how to use a proper tool. This was something that I wanted to capture with Ultralight too.

After creating the first prototypes and showing them off to my friends and colleagues it was pretty clear that the concept did not work as such. It was hard to understand what the dot and the horizontal and vertical axes actually controlled. One thing that still felt great was the core interaction loop, seeing the feedback of the finger movement on the screen and exploring the effect by touch. This was the experience that I wanted to achieve, but more work, thinking and iterations were still needed.

It took more than half a year to get the first version of Ultralight published. Since then, with the use of the same principles and ideas, Ultralight has developed into what it is today. Ultralight has 9 different tools with each of their own playful interaction patterns (Figure 5). They form the core of Ultralight. By combining the effects of each individual tools, together they make the filter presets inside the application. Everything builds upon these tools and the presets. The tools are chosen based on my experience of photo editing and later improved by the feedback received from the users. Ultralight tries to combine both the ease of use together with flexibility and expressivity for the professional users alike.

After two years in the App Store, multiple updates, iterations and improvements later, Ultralight now has more than half a million



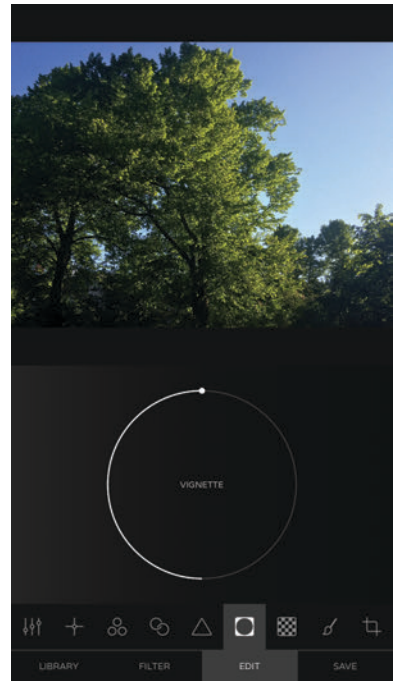
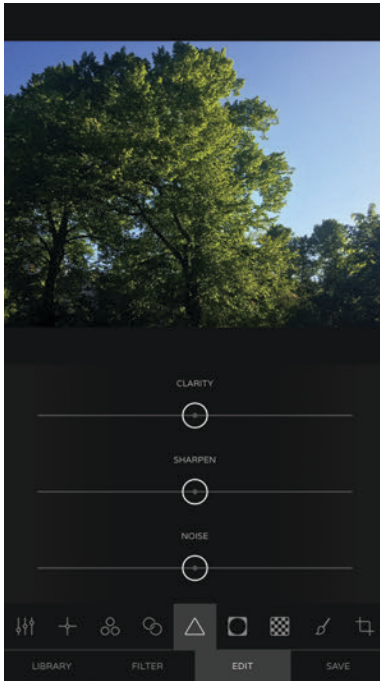


Figure 5: Editing tools in Ultralight

- Curves adjustments
- Saturation and temperature
- Colorise
- Hue, saturation and luminosity
- Clarity, sharpen and noise
- Vignette
- Crop and perspective correction

downloads and a huge number of people using it every month. A lot of hard work has gone into making the application and I feel that the work still continues. Maybe due to the sophisticated approach I was after, it has been tricky to get everything just right. The more features there are, the more complexity the features introduce and the more iterations are needed to make the product understandable and well-functioning. It has been a great journey and many lessons learned. It still gives me such a good feeling to see people to use Ultralight and this pushes me to work even harder to constantly improve what I have done.

Improving the user experience felt a good framing for my Master's thesis because I would have continued my work with Ultralight anyway, but combining it together with the Master's thesis gave me more reason to open up my own thinking and again collect more feedback in a structured way. I formulated the questions around what would be practical ways to collect feedback for Ultralight, but also in general what kind of practical methods there are to conduct user testing easily. Digital designs and products can be improved and iterated over and over again. I wanted to approach the process with structure and thought and open up a perspective on the actual development work which usually stays hidden under the surface of polished products.

User experience is especially important in the photo and video category applications because they rarely stand out by other means and the competition is hard on the saturated market. Sometimes there are novel apps that produce a new type of effects or establish their own kind of aesthetics (Prisma, VHS Camcoder), but for the more general photo editing apps (Instagram, Snapseed, VSCO, Enlight) the easiness of use and the easiness of getting good results is the key. Ultralight does not aim to be the most advanced in regards to algorithms or novel effects, but rather with the polished

user experience and fine-tuned editing workflow which aims to be the most intuitive and easiest to use. Ultralight should feel the best application for regular everyday regular photo and video editing on mobile with the superior user experience.

Methods of Iterative Design

This review examines methods in the iterative design process and covers different aspects and concepts from usability to user experience of digital products. The central topic is working iteratively, which functions as the basis for my work. The topics introduced offer different perspectives for the iterative design process as well as to improve the end user's experience. The final outcome is to create a pleasant and relevant product to use.

Iterative design

Iterative design is a design methodology based on a cyclic process of prototyping, testing, analyzing, and refining a work in progress. In iterative design, interaction with the designed system is used as a form of research for informing and evolving a project, as successive versions, or iterations of a design are implemented. (Zimmerman, 2003)

Iterative design is a design process, where the goal is to produce small iterative steps and constantly learn how the design functions in reality. Instead of designing and building everything at once, in iterative design, the design task is disassembled into smaller pieces to solve. After every iterative step, the design is evaluated to determine how it performs. This method of designing and testing addresses the question of finding the substantial design problems as early as possible in the development and design process. The earlier these issues are discovered, the easier it is to adjust or even change the whole direction. The origins or the word iteration go back to Latin: 'iterō', meaning repeat, do again (Wiktionary, 2017). This is the essence of iterative design or any craftsmanship, doing the work again and again in repetitions. With each iteration, the aim is

to improve some aspects compared to the previous iterations. The iterative design aims to maximise the learning by actively coupling the design with receiving feedback and input from the actual users.

Anders Ramsay raises a valuable perspective on iterative design in his article:

Iterating is designing and, more specifically, understanding what one is designing through actually creating it. ... Until you have actually built what you are designing, you are not going to be able to fully understand it (Ramsay, 2009).

As Ramsay (2009) states, iterating is a way to design and fully understand the end result as early as possible. He also addresses the complexity of digital products that arise from interactivity. With interactive systems, it is complicated to consider all the different outcomes and permutations, even for a seemingly simple system.

Working with any user interface, the intent is to try to shape human behaviour. This is a rather complex task and therefore doing it in smaller steps allows more feedback to guide the design. Nielsen explains this issue by stating that 'user interfaces should be designed iteratively in almost all cases' (Nielsen, 1993). He argues that not even the best usability experts can design perfect user interfaces in a single attempt. The whole concept of user interface design should be built around the concept of iteration (Nielsen, 1993).

There are two streams of interactivity in our digital world of today. Users of digital systems receive feedback and data directly based on their actions and input. Also the builders and the creators of, for instance, websites, applications and services can obtain information about the users' interactions and in general, how well the system and its design is performing. Users' behaviour can be studied in such

detail that has never existed before, thanks to the connectivity. The users of digital products are not bound to the physical aspects, and this opens up new possibilities to develop digital products iteratively.

Another aspect of the digital content is its possibility to change and evolve. The term used widely is to speak about updates. An update is an incremental change made to a digital service. The size of the update can vary, but it defines that something has been changed, that is, updated. The possibility to update digital content, allows iterative way of working to be easier than ever before. This leads to the constant change and improvement of the digital products. But the constant change and development creates products, which at the same time are always ready to use, but never actually finished, and a question is should they even be.

Digital products can be built in various ways, and many aspects of them can be iterated. Generally speaking, iterative way of working is still a rather abstract subject. One way to review iterative working is to compare it to the commonly called waterfall process, which originates from software development. First defined by Winston W. Royce, and later named as the 'waterfall', the model goes from requirements, design, implementation, verification to maintenance (Winston W. Royce, 1970). The issue with the waterfall model is that it does not allow many changes in-between the development. The process flows down one step at a time, which means that the process does not allow stepping backwards or forwards during the work. The waterfall model is optimised to produce a result from start to finish. The iterative way of working has the intent to be the opposite. It focuses on producing concrete small steps to accelerate the learning and continuous output. Digital platforms have many characteristics that support the iterative approach and therefore it can and possibly should be embraced.

User-centered design

User-centered design (UCD) is an example of an iterative process and it defines the requirements for the design through user's needs and context. It approaches the design likewise in cycles where the last evaluation phase feeds the different specifications needed again in the design. In the core of UCD, hence its name, the user-centered design focuses and keeps the users involved throughout the design and development process. UCD focuses on the context and the needs of the users and it is to make the products highly usable and effective. It was first introduced by Donald A. Norman's research laboratory. The following general phases usually outline the UCD process: (1) identifying the context of use and finding out who will be using the product and for what purpose, (2) specifying the requirements and what types of goals should be met in order for the use to be successful, (3) creating the design solutions, (4) evaluating designs in order to find out if the design fulfills the requirements and the needs in the actual use (Usability.org, 2017). User-centered design is a more structured approach to design, but it focuses mainly on the users' needs and the design works as a way help the users to accomplish those needs.

User-centered design is sometimes used interchangeably with the term human-centered design. The main difference is that user-centered design is a subset of human-centered design. Put in a simpler way: every human will not be your user, but all of your users are human beings (Usability Geek, 2017). They still share similar approaches and user-centered design is more focused on the actual users and the desired target group.

Usability and utility

Two core terms related to user interface design and user-centered design are usability and utility. Both usability and utility introduce different perspectives to study the value of the user interface. Nielsen (1993) defines these two aspects as: 'utility is the question of whether the functionality of the system in principle can do what is needed, and usability is the question of how well users can use that functionality.' (p. 25) Therefore utility means what can be actually done with the user interface and system, for example, the features and tools in question. Usability, on the other hand, is how well and effectively one can perform the different tasks with the user interface. Something being useful means that it combines both utility and usability (Nielsen, 2012).

Nielsen divides the definition of usability into five subcomponents: learnability, efficiency, memorability, errors and satisfaction.

Learnability answers to the question how well does a first-time user perform the different tasks. Efficiency means how fast and efficient it is to get desired results after learning to use the interface. Memorability is how quickly the users will remember the user interface again after certain time has passed. Errors have both the aspects: how easy it is to make errors and how easy is it to recover from those. And finally, satisfaction, how pleasant the experience is (Nielsen, 2012).

Looking at design through utility and usability is effective and certainly needed when dealing with user interfaces. But especially when working with consumer-oriented products, other values also come into play. The traditional user interface design focuses more on the technical and process-oriented approach. It defines the requirements and boundaries needed for the design, but is also somewhat technical and aims mostly for the effectiveness and measurability. User's perceptions and the user experience are considered when studying the more holistic use of a product.

User experience design

User experience (UX) design is still an evolving practice and title which have recently joined the field of digital design. UX design tries to encapsulate more human factors related to the interaction design of a digital or a physical product. The goal of user experience design is described to improve customer satisfaction and loyalty through utility, ease of use, and pleasure provided in the interaction with a product (Kujala, et al. 2011). ‘... user experience attempts to go beyond the task-oriented approach of traditional HCI by bringing out aspects such as beauty, fun, pleasure, and personal growth that satisfy general human needs but have little instrumental value’ (Kujala, et al. 2011).

Therefore user experience design deals more with the subjective and personal experiences of using a product. This reveals that even though a system would be perfectly designed for maximal utility and usability, it would not necessarily outperform a competing product. The user’s experience is always opinionated and subjective. Users’ background, emotions, expectations, values, goals and conventions come into play when using a product and UX design tries to address this problem. User experience design works more as an umbrella term capturing the vagueness and open-ended nature of experiences. The important thing is to remember to focus on the experience itself and the different ways to affect it.

User testing

As user-centered design methodology frames the application, service or product should be designed for the real users in mind. User testing means studying the usability and user experience by replicating the actual use of a product or even better testing with the actual users of the service depending on the stage of the development. User

testing is more of a general term collecting the various methods used for studying the users' behaviour. User testing can be more focused on usability, i.e. usability testing, or to the perceived experience, i.e. user experience evaluation. Test settings will also range from simpler testing setups, for example, in informal locations, like testing in a cafeteria or office, to a full-fledged usability lab.

Usability testing is the process of watching and tracking an actual user while they use the product to see if it is in fact usable. Usability testing is a great way to understand how real users use and experience website or an application. It is a flexible way to collect a range of information about the users, and it is easy to combine with other techniques. Usability testing is a cornerstone of UX practice (Babich, Adobe Blog, 2017).

It has been also shown that a good sample size for doing usability testing is 5 participants (Nielsen & Landauer, 1993). This is due to the overlap of findings within each participant. After every new participant the amount of new data will constantly decrease and after five participants most of the usability problems are most likely already revealed. Also what Nielsen later supports is to divide the tests into multiple smaller ones, rather than running only one big usability test in the end. After running the first test there is the possibility to fix the issues found in the first study and then re-run the usability test again. There is always the risk of fixes not working as intended or even introducing new usability issues with the new designs (Nielsen, 2000).

User testing can be divided into moderated and unmoderated testing depending on if the professionals are watching and obtaining feedback live (moderated) or if the tests are run remotely (unmoderated) (Babich, Adobe Blog, 2017). Moderated testing is due to its participatory nature more time intensive but also more interactive compared to the unmoderated test situation. Unmoderated tests can be on the other hand run easily with the help of different online tools and therefore data

can be collected faster and concurrently. Moderated testing is most common in the early design phase, but both methods can be used flexibly depending on the needs.

Traditional usability evaluation usually emphasises the effectiveness and efficiency. While users are completing certain tasks their time and errors are measured and analysed. However, these methods are not well suited for measuring the user experience, where the focus is on understanding how the user feels about the system. 'UX cannot be evaluated with stopwatches and logging' (Roto, et al. 2009). Roto, et al., collected different UX evaluation methods for the CHI2009 conference and concluded a basic set of methods related to UX research. Lab studies were usually related to the early development phase and sometimes done together with the usability testing. Field studies covered the different ways to examine the real-life situations and outcomes. Surveys were an easy way to collect data fast and online surveys worked well for the international audiences. Expert evaluation and heuristics were used usually before running the actual user tests to overcome the cover common usability problems ruining the real test. Mixed methods were then a combination of different ways to gather data, e.g. collecting data with both interviews and surveys. (Roto, et al. 2009)

There are indeed a vast variety of different methods and ways to conduct user research and I will go deeper into the different methods that I have chosen to use and analyse them later on. Doing user testing depends always on the examined product. Using different methods might reveal different types of findings, but there is no right or wrong way of combining which methods to use. User testing is a great tool for any designer to improve the quality of his/her own work and therefore the designers should get involved in user testing and understand how different methods suit for each case.

Lean and Agile methods

Two other terms that describe the development of digital products in software development, are Lean and Agile methods. Agile development refers to the Agile software development manifesto which is written to combine the main four values of how software development should be done. The values are: 'Individuals and interactions over processes and tools. Working software over comprehensive documentation. Customer collaboration over contract negotiation. Responding to change over following a plan.' (Agile Manifesto authors, 2011). All of these values together encapsulate the principle of working together towards well working software. 'Agile refocuses software development on value. It seeks to deliver working software to customers quickly and to adjust regularly to new learning along the way' (Gothelf, Seiden, 2013). It is common, that the development process shares aspects from both Agile development and Lean production models.

The other approach is Lean production or shortly just Lean. Lean production somewhat follows similar thinking as behind Agile development, but it is more production oriented and nowadays vastly utilised by the startup businesses. Lean has its roots in the car manufacturer Toyota's production system and the term Lean was made famous by the book 'The Machine that Changed the World'. The basic principles of Lean production aim for continuous improvement and to reduce the so-called waste, meaning unnecessary work. In Lean production, everything that does not add value to the end user should be cut out. (Womack, et al. 1990)

Both Lean production and Agile development rely on the iterative way of thinking to learn quickly and to get constant feedback to have a better and smarter development process. Applying the Lean production principles in this context would be for example optimising

the different ways and strategies to learn and to get feedback to cover just the right questions in the right time to inform the development and design process on the go. From Agile's perspective, one could adapt to the new findings and apply them directly to the end product or even pivot the whole design if that is needed. As Agile development states, there should be the willingness for the constant change in the design and development to respond to the new knowledge at hand. Both of these two approaches together try to answer the question of value and how to actually achieve it in the end product. Building great digital products requires close collaboration within the users and good methods to learn and study the users' behaviour as well as good methods to produce the work at hand. The more and faster one learns about the product and its limitations, the better the end result will eventually be.

Review conclusions and discussion

I did choose to dive into the specialities of user interfaces and user experience design due to the fact that within my project, Ultralight, the user experience is the most crucial value in what it is offering to the user. In the end, as with any product the core is built on the design for the real people and understanding the human nature. To reach that information you need to let your design into the hands of the actual users and see what will happen. That is the best way to start learning and that is where the work actually starts off. With every iteration, the design evolves and becomes better. The different terms usability, user-centered design and user experience allow to study it more closely and look it from different perspectives. But in the end, any means to learn and improve the quality of work will do.

In digital work the different platforms and technologies are changing fast and therefore also the methodologies, terminology and best practices are constantly keeping up with the change. But on the other

hand, this allows constant change and improvement. Thinking Lean and Agile might help to deal with the change and also to elaborate it. This hopefully leads to working smarter and getting more feedback earlier.

In reality, user testing is easily left unnoticed. I would argue that most designers and developers know the benefits and know the process, but still, it is pretty easy to leave it undone or do it poorly. Usually, when the teams are working in Agile and Lean ways, it means mostly focusing on prioritising the upcoming work. But of course, at the end of each iteration, there should be an active emphasis to focus on the learning and analysis as well. User testing takes a lot of effort. It is not really pleasing to see the design getting torn apart and users getting stuck and frustrated. Even worse, user testing will generate probably even more work, for example in the form of redoing something completely again which means returning back to the starting point. It is in our human nature to filter the reality through own perception and falsely rely on that on design. The way to really understand how others see the product is to study the real use with the real users. That is what user testing is for.

Overall I feel there is still a lot of overlap in the terminology and no shortage of different methods to think of. Still, in the end, it is a matter of execution and practical manners. There is a lot of craftsmanship involved in the mix. One important aspect is to learn how to deal with the change and keep things going and alive. The concept of iteration is especially tied to the digital products. I want to study it further. If doing something is at the beginning of each iteration loop, in the end, there is the need to learn and get feedback on what you did. This makes the iteration loop to rotate and allows to continue to work better informed than before. The key is to improve both, your own skills in doing and also your skills in getting feedback and testing your work.

Evaluating Ultralight

The production part of my thesis is a new update to Ultralight where I have again improved the user experience and usability. I keep a long design list of ideas and feature requests to have some perspective for the future. But on the other hand, sometimes it is really hard to see how well the current state is functioning. As they say, you become blind to your own work. To balance this, I wanted to again conduct more in-depth user testing and analysis and gain a better perspective where I should be heading and what I should still focus on and improve on the current design.

I went through a vast amount of different user testing methodologies and picked few of them based on the practicality and if I had some experience or knowledge of the method before. The other criteria were that the testing should be easy to conduct and that it would not require any special hardware. I am after practical insights to support the design work. User experience is usually measured qualitatively, and therefore, I wanted to rely on people's subjective opinions as well as my own designer's intuition. I want to keep on running some regular user testing as long as I work with Ultralight. For this to happen I wanted to research a bit of the different methods to find out what kind of user testing works the best for my own design workflow. I will compare and discuss the practicalities related to the different methods and what type of results each of them produces. I will look at the different methods from a practitioner's point-of-view, which means I focus heavily on the usefulness and that the tests can be conducted in a short amount of time.

I have separated three different groups for the Ultralight user testing and evaluation: (1) first-time users, (2) experts in photography and (3) long-time Ultralight users. My initial thought was to focus mostly

on the long-term users, but I decided to widen the reach to collect more data at hand. Most of the user testing methodologies rely on testing the first-time users so it was natural to consider them too. I might still focus on the long-term use when prioritising the future work and redesign, but naturally it depends on the results.

Collecting feedback and data

To reach this point with Ultralight I have of course conducted user testing before. When I was initially developing the first version of Ultralight, at first I relied only on showing the earliest prototypes to my friends and acquaintances. I used to call this method ‘turning small talk into user testing’. In its simplest form, it usually started out me telling that I have been working with a new application and then handing the prototype into the hands of the unsuspecting test subject. The rest would be just following what happens and what seems to be fun to do or too hard to grasp. The key takeaway was not to try to explain too much, but rather see and listen what are the initial reactions. Also what people would ask would reveal tidbits of information here and there. Even after getting the app into the App Store I have kept on doing this small and inexpensive user testing every time I had a suitable chance.

Beta testing

The other and more structured way of collecting user feedback I used was a few months long beta testing time before the application was first released. I used Apple’s own TestFlight service which allowed to distribute the application through email invites before actually releasing it. I recruited friends and colleagues mainly through Facebook and later collected feedback asking if they have had a chance to test Ultralight and what they thought about it. I also asked what felt hard and then naturally followed to ask for more

details of why did it feel hard and did they overcome the issues on their own. This approach was good for collecting multiple insights in a fast manner, but I still felt some aspects and details of face-to-face user testing were missing. It felt that the more experienced in design the test subject was the better feedback they were also able to give and articulate. With regular users, a lot more asking and interviewing was needed to find out if they really did understand the user interface and the different concepts. The contrast grew even more extreme when I later received more feedback about Ultralight. For anyone not working with the design, it is really hard to identify what exactly is the issue. Especially with consumer products people will just walk away if something feels complicated in the beginning. Running a beta testing phase is still very important, especially from the technical point of view. One cornerstone of UX is that the product is working as intended and the initial bugs and hurdles are sorted out.

After releasing Ultralight I have collected more analytics data from various sources to track the performance of the application, but I have not really found a good way to use the quantitative analytics data to help with the design itself. It has been good for showing how many users there are each day, how long they tend to edit the photos, what filters work the best. But in the user interface perspective, it is much harder to say if something was found confusing. Are people not using certain tools because of the design or simply if they do not need them. The quantitative data lacks the finer context and I have not found it really useful with the real design work. That is why I did choose to use the user testing to obtain more qualitative data about the actual use of Ultralight.

Feedback and reviews

People give feedback mainly through two different channels. Direct feedback arrives through email or as a review on the App Store.

Feedback is really crucial and I have tried to encourage people to send it as much as possible. Usually, the feedback falls into two categories. Either something is not working and people let me know about the bug or issue. Or then the users are missing a certain feature that they already know from some other software or application. Bug reports should be of course handled fast and fixed. They usually tell that people are using the application and care about the product and certain features. No-one will report a bug that has not hit their normal use, and usually, people report only after they have not found any other way around the issue. Sending that email is the last thing people are willing to do. The other category is feature requests. This means again that people do care about the product and would like to see something they have used somewhere else. Design-wise feature requests will not tell exactly why people want to have these features and are they even the best way to solve the thing they are trying to solve. It is just a known convention for them. I usually always try to ask a few extra questions why exactly they want that feature and what they would be using it for. Also, people will go wild when asked about should there be more features. Of course there should, but in reality that probably is not the case. Beautiful design is just enough design and no more. As the famous quote by Antoine de Saint Exupéry says: 'It seems that perfection is attained

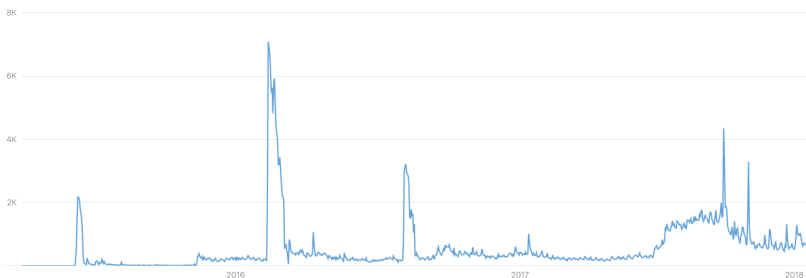


Figure 6: Downloads of Ultralight over time.

not when there is nothing more to add, but when there is nothing more to remove.’ (Saint-Exupéry, 1939).

App Store reviews are a somewhat different source of feedback. There might be a written part in the review, but mostly they are just a star rating on a scale from 1 to 5. The stars will tell the general impression people had. But due to how the App Store operates and how it uses the numeric rating for boosting the application visibility, the reviews are always under a slight manipulation. Because it is good for an application to have good reviews application developers will most likely ask for the rating only after a positive experience. Ultralight does this too. This somewhat cuts the low end of the reviews, but when people will actually come and give bad reviews they are mostly one-star reviews. Either something is not working or there is not enough value in the product itself. If the one-star reviews are flooding in there is most likely something upsetting the long-term users such as a bug or an unwelcome new feature. The negative reviews again lack the fine details of why, but it will still tell that the user had a really bad experience. So bad it has been worth stating it publicly under the reviews. The good reviews usually state what has been working well or been especially delightful for the user. And then there might be feature requests. Reviews are a good source to understand what is valuable to the users and maybe which direction to go with the further development.

I have also conducted one survey previously in late 2016, to collect insights what were users’ experience at that time and what features they would like to see next. There were exactly 100 responses to the questionnaire. I mostly studied these two questions: ‘What was the most difficult thing in using Ultralight in the beginning?’ and ‘What feature(s) would you like to see next?’. I used the answers to determine which new features to work with and to improve the first-time usability. Based on the data I ended up introducing a new

feature of selectively editing certain areas with brushes and adding more filters to use.

Practical user testing

As working individually I want to mostly focus on the practical and guerrilla user testing methods. Guerrilla testing means, studying the usability and user experience with simple and easily conducted methods. It helps to validate and invalidate critical assumptions. (Simon, 2017). I want to be able to run the tests on my own and I do not want to use complicated extra hardware or run a full usability lab test. In my mind, the simple tools include pen, notebook and a simple way to record the session. Luckily nowadays with iOS 11, it is possible to directly record the screen and audio which suits perfectly for my purposes. The final thing needed is to be prepared. Finding out a good mixture of user testing methods that suit my needs and prepare the tests. In the following part, I consider different general practices used to conduct user testing.

Before running any user test there needs to be a clear idea of what will be studied, why and what questions are going to be asked. It is good to leave space to find out something unexpected too. The focus of the test can be an already existing feature or studying the user experiences of the product. Usually, a user test is written in the form of a test scenario for the testers. Schade gives good tips



Figure 7: Ultralight ratings

for writing the test scenarios for qualitative usability studies. Good scenarios give the users a concrete goal and motivation for the task. Telling them what to do, to find out or to complete. How the task is written already frames the task and it should be thought out carefully not to bias or influence the testing itself. The task should be explained clearly but without leading the users and without already taking the user interface into account. (Schade, 2017)

To study Ultralight I formatted these questions

- What is valuable in using Ultralight?
- How well do new users learn to use Ultralight?
- How could Ultralight be improved for long-term users?
- Does Ultralight fulfil the needs of the expert users, actual photographers and video professionals?

Think aloud protocol

The most common usability testing method is called the think aloud protocol. 'In a thinking aloud test, you ask test participants to use the system while continuously thinking out loud – that is, simply verbalizing their thoughts as they move through the user interface.' (Nielsen, 2012). Letting the user do the talking is a great way to get into the head of the users and investigate how they think and perceive. Mike Hughes points out good practical details related to using the think aloud protocol. According to Hughes, the first rule of thumb is to actually practice the think-aloud protocol with the participants before using it in the study. Hughes suggests to start first with one simple question which is not yet related to the actual user test and ask the participant to think aloud while coming up with the answer to it. Then he continues to ask the same question again, but emphasising the thinking aloud and guiding the participants to really open up their way of thinking (Hughes, 2012). This way it is possible to teach the users to think aloud properly and therefore improve the quality of the data.

Another good tip that Hughes gives in how to use the think-aloud protocol is to use both the reinforcement and extinction. With this he means reinforcing the wanted behaviour, in this example, rewarding the participant by noting and thanking when the participant is actually thinking aloud openly and telling about her experience or the troubles with the product. Using extinction is the opposite. Leaving the test subject without any feedback at all when the participant starts to suggest new features or talk about her personal preferences, which means that the participants has already left the problem space and had started to invent her own solutions instead of focusing on the actual problems. (Hughes, 2012)

Interviews

Interviews are another cheap and easy to conduct method for researching the users. In my previous experience, I have been using mostly the freeform interview method, which means that I have not used a prewritten script. In the freeform interview, the questions are defined by the context and they tend to follow naturally the conversation. This has been good when talking with certain friends of colleagues who have been already Ultralight users and then questioned about their use. For the more structured interviews, the Interaction Design Foundation suggests focusing on the following topics: background, use of technology in general, the use of the product, main objectives and motives and user's pain points. (Interaction Design Foundation, 2017). When conducting an interview the interviewee' should focus mostly on open-ended questions and leave enough silence to let the participant do the talking. By staying mostly silent helps to avoid the acknowledgements and confirmations to unnecessarily bias or lead the participant. (Danzico, 2010)

Active listening

Paying attention to listening is a key either when doing an interview or in any other type of user testing. Active listening means using non-verbal communication such as occasional nods, eye contact and smiles indicate that you are indeed listening and want to hear more. Another way is to rephrase the participants' statements to let them know that you did understand what was said (Higgins, 2009). Generally, it is good to keep the distractions away from the test situation and avoid interruptions while the participants talk. Using active listening will give more in-depth answers and allow to build more trust in the test set. As already stated the user test moderator or interviewer should leave enough room for the test participant to express their thoughts.

Laddering

On many interviewing methods there is the emphasis on asking 'why' multiple times. Laddering is an interviewing technique which tries to move in the means-end chain towards the underlying core values by asking why. The means-end chain is a structure of the consumers' perceptions and product knowledge on three levels. Attributes are on the top level of the chain and mean personally relevant features for the consumer. Attributes lead to various consequences that satisfy the underlying core values. The core values are at the end of the chain (Gutman, 1982). For example, a consumer might choose a product because of its trendy colours, which at the end of the means-end chain could satisfy their need to have acceptance from their peers. Laddering in interviewing tries to move from the surface level attributes to the underlying core values by asking why certain attributes are meaningful for the user (Hawley, 2009). This is done by constantly asking 'why?' questions. Asking why leads to deeper levels towards the core values. Using this technique requires some practice

but also patience from the participants. As Hawley (2009) notes his personal experiences it is good to prepare the participant beforehand and explain what is the goal of the laddering. As noted sometimes it might be hard for people to actually define the reasons behind their preferences thus leaving the interviewer stuck on the attribute level.

Lightweight journey mapping

Customer journey maps in their traditional format are used to map customers interactions or touch-points with a brand, service or product. They span across the time and outline how interactions fit with the customer's activities, goals and objectives. Lightweight journey mapping uses this method as a form of user experience research (Dove, et al. 2016). The journey map is structured around the key events of the user interactions. Using the journey map as an user experience research tool in practice can be for example that the participant draws an emotion graph by rating her experience and feelings next to the map. This creates a story of how the user was feeling after certain key events which reveals if there were any sudden changes in the mood. The participants can then either tell in interview format or write down the details next to the graph what caused the changes during their experience.

Teach-back

Teach-back is a method where first an expert explains a topic to a non-expert, after which the non-expert explains the new information back to the expert. During the teach-back session, the expert corrects any misunderstandings (Curedale, 2013). I noticed that the teach-back method could be useful for the evaluation of the Ultralight design. In a way that the users of Ultralight teach-back how they tend use the application and what tricks they have learned along the way. I do not personally have experience of this method beforehand,

but I have used a related method which is called being as 'being the summer trainee'. In this method, the test participant explains her workflow to the design researcher as if the researcher would be a new summer trainee learning to conduct similar tasks. The method can be used to study the different type of use cases people have in their work and how do they solve these tasks currently. This type of information gives good and first-hand experience of the different processes and applications used in the work. Usually, the outcome is to produce new user interfaces which suit the current workflow better and make the tasks easier and more efficient.

Netnography

Nowadays Facebook and other various internet communities are a great resource to join groups around different interest topics. Netnography means ethnography research on the Internet. It means qualitative research done by applying ethnographic techniques to study the cultures and communities emerging through computer-mediated communications. Netnography can be done as a part of marketing research to understand the tastes, desires, symbol-systems and decision-making influences of particular consumer groups (Kozinets, 2002). Reading, studying and participating in the discussions can reveal a lot of useful information and preferences about the topics that are relevant. I have been trying to follow actively the different groups around photography, videography and mobile devices. Online communities can be also used for recruiting test users around specific target groups.

Running a user test

To be able to run the user tests successfully, it is useful to define the target group for the test. From the analytics data, I have a general overview of the demographics of Ultralight users. The outline is that

Ultralight is used by mostly young adults and females. To run the user tests within this Master's thesis I have set the following criteria and divided the test target groups into the following three segments.

- (1) First-time users should be interested in photography and users of Instagram, which is a popular photo sharing network of today.
- (2) In the experts' group, members should be at least semi-advanced hobbyist or professional in photography or video and should know one desktop editing software for photography or video well.
- (3) Long-term Ultralight users should have been using Ultralight for multiple times already, preferably the longer the better, and that they find value to continue to use the Ultralight.

Recruiting the test users is the most tedious part for many. Krug (2009) suggests in his book not to get stuck on finding the right target audience for user testing but to prefer recruiting loosely. When certain issues are found it is good practice to think would the preferred user group have the same problem, especially if it has to do having some specific domain knowledge (Krug, 2009). For a consumer product like Ultralight, which is available for free from the App Store, there are no actual boundaries in downloading it. This too allows more variance in the recruiting. Because the aim is to focus on running user tests in practical manners, I decided to try to follow the easy ways and shortcuts for the recruiting. Mostly finding the participants through online communities and Facebook groups, but also asking for friends that I knew who were already Ultralight users.

It is usually a good practice to pilot the test tasks beforehand. With the pilot, the goal is to ensure that all of the test tasks are clear, complete and understandable. Krug suggests that it is not necessary run the pilot test for as long as with the real participants. The pilot is just to ensure that you got everything is ready and working for the actual test (Krug, 2009). The pilot can be also used to ensure that you have your recording equipment set up and working.

Krug outlines how to handle the user study in the following steps. First to welcome the participants and make them feel comfortable. A good approach is to tell the goal of the user test and make it clear that only the application or the product itself is tested and not the participants themselves. In that sense, the participants cannot fail and cannot do anything wrong. It is good practice to take a written consent from the participants where you agree that the test session can be recorded. It is possible to double the written consent with light pre-survey about the participants and their background but that is not always necessary. When running the users tests you follow the previously written script and let the users do most of the talking. After the test is completed remember to thank and reward the participants with whatever was the motivation or incentive, that you probably already advertised while recruiting the users (Krug, 2009).

After running the tests and collecting all of the data it is time to analyse the feedback and synthesise it into actual designs. I will talk about my findings in its own chapter later. I keep all of the new ideas and improvements related to Ultralight organized in a design list and that is also the place where I collect all the findings in the end. After collecting topics and issues into individual items allows the one last crucial step come into play, the prioritising. The prioritising the future items helps to choose which problems to solve first and also forces to think about the topics in practical manners. Usually, there are certain items that need to be completed before the others. I try to do the thought work of prioritising constantly and my notes and design lists are stored in Evernote, which stores them online to allow access to add or edit the items anytime.

As talked previously the design work should be done iteratively, which means that after one round of user testing the insights collected could and should be already used to improve the product. As for this

thesis, I will be focusing only one round of testing and then build one update out of the findings, due to the amount of work needed for all of the different steps: testing, designing and developing. Especially developing is time-consuming. Ultralight has been developed earlier iteratively and will be continued that way in the future. Working individually means that all of the different steps are present at all times.

User tests conducted

I started to think about the different user tests based on the three target groups I was after. For the first-time users, I wanted to conduct a traditional user test with a test task to complete. For the so-called experts' group, where people already have a lot of experience and knowledge of working with photos and videos, I wanted to run both a task-based study plus another task with more focus on their previous knowledge and the perceived affordance of the current user interface. Meaning how easy the user interface was to learn for people with the domain knowledge. For the long-term Ultralight users, I wanted to study how they perceived and valued Ultralight, and also to test their knowledge about the app with the teach-back method.

The user tests were conducted with the help of the new feature in the iOS -operating system which allows participants to directly record their screens and their voice with their iPhones. A test script was done so that people could remotely follow how to set up for the test. Running the user test remotely took 20 - 30 minutes per participant. The participants did the setup to do the recording and then followed a set of questions and tasks and narrated the videos with their own voice and thoughts as instructed. The last step was to send the video back to me through the WeTransfer-service.

I really wanted to run the tests on the participants' own phones, because I felt that their own content plays a significant role in the usage of the application. Doing the tests remotely allowed both this and also made the recruiting a lot easier through different Facebook groups. As an incentive for doing the test, I offered a 10 € iTunes gift card and free Ultralight Pro version. I recruited the test users from various photography related Facebook-groups and the long-term Ultralight users through Ultralight's Facebook and Instagram pages.

I designed the tests for the three separate user groups: first-time users, expert users and long-term users. The test itself was separated into five parts. First, a presurvey with users consent to record the session and some background info. The second step was the preparations. It mostly concerned how to set up the screen recording feature. Third, there were the actual test tasks depending on which of the three groups the user did fit into. The fourth was instructions to send the video back and as a fifth step, there were few questions to end the study. To run the test successfully the participants needed a computer to follow the test while doing the recording on their phone. This was instructed both on the recruiting message and on the first page of the study. The survey itself was written with Google Forms.

For the first-time users, the test task was a traditional usability task of completing an assignment. The participants needed to first choose a photo that would likely to share on social media and explain why they did choose exactly that one. Next, they needed to pick a suitable filter preset for the image and explain how they compared the different filters with each other. Last they needed to add more brightness, sharpness and crop the image as a square before saving the image. After the more traditional test task, the participants were asked to talk in their own words what kind of experience doing the assignment was and evaluate the usefulness of the application.

For the expert group, I followed a different approach. First, they needed to go through all the different views and features found on the application and explain what type of features they did see and later try and explain if the features worked as they had expected. Testing this way would both reveal the participants' background knowledge and then make them try out the features concretely. From my personal experience this seems to be a common practice when trying out a new application, just quickly go through it to see what the application has to offer. After going through the features the participants were asked to briefly explain with their current experience what kind of application Ultralight is and evaluate if Ultralight would be useful for their use.

For the long-term Ultralight users, the test was designed around the teach-back -method. As the first question was to briefly explain what kind of application Ultralight is and why it is valuable to them. After that, the participants were asked to go through all the features and explain to them as they would be teaching someone else how to use the application. After which, they were asked to explain how they had used Ultralight on a previously edited photo or a video. The participants needed to also explain in which order they tend to use the different tools. And last, the participants needed to tell how they would compare Ultralight to different apps they are using and explain if there were certain features missing.

The user tests were designed based on the research about the different user testing methods and the most suitable combination was chosen for the evaluation. I did run a pilot study to test that all of the instructions were easily understandable and could be followed thoroughly. I also separated the tests into the three different target groups to later analyse and compare the different approaches to each other. The goal was to get a lot new practical data at hand of the current design but to also to research how these online remote user

tests could be conducted easily in the future. As an extra, I also added one question about participants views towards advertisements.

The trustworthiness of the test tasks and questions were thought beforehand. I identified a few different aspects to consider. The participants would be running the test on their own. This forced the test tasks to be really structured and easy to follow. In a live situation, the interviewer could ask more specific questions and ask the participants to open up their thoughts if something was left unclear. The good thing was that the participants were really on their own and could not rely on asking for more details. I hoped that the participants would answer thoroughly and emphasised this in the instructions. A hypothesis I had was that using the teach-back method would reveal how well the participants knew the user interface and its functions by going through the whole application - not just the things they were used to use. One issue with the remote testing was that some user would open the application already beforehand, and examine it on their own to give a better impression of their knowledge. This was a slight issue with the method, but I thought if the participants would not have figured something out this would still reveal it.

Findings

The videos sent by participants were viewed multiple times to conduct the analysis. At first, just previewing that everything was working and quickly watching the whole video through. The second time I watched I made a transcript about what the participant said. I wrote notes and separated them based on the different views where the user was at that time. When watching the videos for the third time, I actively analysed what they did and how the participants did use the features in question. Fourth viewing time was about analysing how the participants interacted within the application and thinking about their experience. Usually, the usability problems were visible

already on the first viewing time, but watching them few more times revealed a lot of small details that were easy to lose on the first go.

General findings of the whole testing paradigm were that the method offered good data and it was easy to approach people on the right target group on Facebook. After the test tasks, questions and instructions were done, it was easy to give support for people to run the tests on their own. The testing required some activity on Facebook and a good timing to get the people on board. I published few messages on Friday afternoon, but the messages got stuck in the group's moderation queue and eventually got published too late in the evening. Due to the algorithms, it took some time for the message to appear on news feed, so most of the participants signed up during Saturday or Sunday. Many conducted the test immediately, but my finding was that the longer the time span was the easier it got for the people to forget or drop out without completing the test. Speaking aloud was emphasised on the instructions and all of the participants were basically talking about their thoughts and answering the questions really well. The videos were between 10 - 30 minutes long, most of them being 15 - 20 minutes. This was already a good amount of data, and I would have thought that running a live test would have been somewhat equivalent in time. I felt it was good that I could not be interfering the participants talking, but this required the questions and instructions to be really clear. With the participants recording the videos themselves made it a little more complicated compared to running normal surveys and it did lead to few problems with the recordings. 3/10 of the participants had to restart the video or they had problems sending them. Roughly maybe one-third of the people interested did not end up taking the test at all, but this was close what my expectation was beforehand. In general running, the tests

remotely made it really easy to conduct the test, and it allowed the people to participate from their homes and elsewhere where they felt it was suitable, which was a really good feature to have.

I analysed the data in two manners. First I separated the transcripts into different sections based on which parts of the user interface the participants were talking at that time (Figure 8). This made it easy to spot the usability problems in context. The second manner was to go through the transcripts qualitatively and map similar topics discussed into a matrix, which allowed me to study which topics were shared among the participants' answers. Finally, the answers were grouped into six categories: describing the Ultralight experience, interaction, filters, usability, new ideas and advertisements.

Describing the Ultralight experience

Ultralight and the experience was described as following. Most participants said that Ultralight was convenient (7/10), easy to use and easy to understand (6/10). Ultralight was said to offer wide and nuanced control (5/10) and to have multiple options in both filters and tools (5/10). Participants also said that Ultralight really embraced the mobile approach (5/10) and the editing felt advanced (5/10) and that the tools were excellent (3/10). Participants did not really describe the experience playful or fast, which is how I have advertised Ultralight before.

Interaction

One way I studied the data was to analyse the experience based on the interactions done during the video. I made notes what type of reactions the interactions resulted in the participants. Half of the participants verbalised that they were delighted by the results (5/10). Either when trying out the filter options or when adjusting the tools individually. For many, the sudden view or layout changes caused confusion or took some time to comprehend (5/10). Especially when opening up the In-app purchase dialogue which looked completely different than the rest of the application. Separating the filters into separate categories was also poorly designed. When participants reached the end of one filter category they most likely stopped the browsing there (3/10). It was good that the effects of moving the slider was strong enough, since many participants tried the extreme values at first, to see what type of results the tool provided (3/10), but some were also quite careful with the movements (3/10) so it was good that the effect was easily visible even with small movements.

Filters

Most of the participants said that they valued that the filters would create a certain mood, feeling and lighting to the photo (7/10), but also many emphasised that the filters should not be overdone (4/10). With the editing, there were clearly two different editing styles. Some were more after a natural look, which emphasises the photo and what was seen by the participants' own eyes (5/10). On the other hand, some participants were after a more dramatic look and clearly verbalised this and also by doing by adding a lot of clarity and contrast. (2/10)

View 1	View 2	View 3	View 4	View 5	View 6	View 7	View 8	View 9	View 10
[Image]	[Image]	[Image]	[Image]	[Image]	[Image]	[Image]	[Image]	[Image]	[Image]
[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]
[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]
[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]	[Text]

Figure 8: Organizing the topics based on different user interface views

Usability

Many distinct usability issues were found, mostly because there were participants from the three different user segments. With the selective tools the users can paint and apply edits only on certain areas, but the whole feature was found confusing (4/10). The crop and perspective tools had problems with the touch area being too close to the upper corner, reset being hard to find and the perspective tool being hard to control. How the filter list was categorised was found unintuitive for most participants (5/10). The hidden features with the sliders (hold to reset and tap to nudge) were not found due to the missing affordances. Three minor visual bugs were also noticed during the testing where the layout was not presented as intended.

New ideas

New ideas were also introduced by the participants. The most common wish was to have more filters and textures for free (3/10). Another feature request was to have automatic improvement on the photo or video (2/10). Making the edit history visible was also requested (2/10). There were some ideas by individual participants. Having filters for certain types of photos or situations [P1] and marking the favourite filters and masking option for the texture tool [P3].

Advertisements

One extra question was added in middle of running the tests to find the participants views towards advertisements. Only a few participants who would not mind them (2/7) and the majority saw them negative and intrusive (5/7). But still, it was acknowledged that if the advertisement would be shown after the editing process, it would be better thus not interrupting the editing work.

Conclusions of the findings

Comparing between the different target groups and methods showed that all of the methods revealed usability issues which were a good thing. The new ideas and requests came only from long-term users, but besides that, I was hoping to learn more how to improve the long-term usage. The rest of the results did not differ too much between the groups. In the experts' group, the task was to go through all the options systematically and talk about those, which showed well how the users would possibly evaluate the application for the first-time. There was a lot of valuable data and insights for the design in the systematic go-through. When compared to the data from the first-time users, who did the traditional user test task, the test task itself was maybe a bit

too easy for this test, since most participants completed it pretty easily and it did not offer as many insights. Overall all of the methods provided data and were useful methods when running a user test.

Some challenges were also present in conducting the tests. Many interested people dropped before actually conducting the test, which meant that maybe the test set was too laborious or the incentive was not the best fit. But on the other hand, it was easy to get participants from the Facebook groups which balanced the situation. I especially chose to conduct the tests on the participants' phones and on their own time to have more personal experience in the setup, but analysing the videos still felt more than people were conducting a user test rather than genuinely editing the photos themselves. It was understandable, but maybe I was hoping for a more intimate experience where participants would have opened up their values and feelings more. Compared to regular live user tests the setting felt a lot more relaxed and people were talking widely and openly about their opinions. One big challenge was also that I was doing the evaluation myself. As working so closely with the application it was both good and bad thing for the evaluation. It was hard to be objective and avoid seeing the usability issues as such, without immediately starting to think how the design could be improved right away. Also knowing how things should work and how the design was intended meant that I had to watch the videos many times to really good a sense of the troubles participants faced. But similarly, it was really good to see participants using my own design, which gives a unique perspective to understand my own work.

As a conclusion, I defined areas what could be improved based on the evaluation. From the usability perspective, the most improvement would need the selective tools feature. There were problems in understanding how to use the feature and how the different options were organised. The whole feature is quite recent in Ultralight, which

also shows that I had not enough time to improve it beforehand much. Also, there was some room for improvement in the usability of the crop and perspective tool. From a user experience perspective the most important thing would be to fix the filter selection and categorisation. This is the first thing users encounter when using the application and the quality of the filters also defines the quality of the whole application. Many participants also requested to have more free filters to use. Other things that can be improved is to add the affordances for the sliders to make all of the nuanced features visible to everyone. The in-app purchases view could be redesigned or at least the transition to the view, so it would not cause interruptions in the application usage flow.

Redesign based on the evaluation

Always after each iteration step I face the same question of where I want to steer the design. Usually, there is the question between novelty or usability (Figure 9). I feel that it is easier to try to focus on either one of those at a time. Doing new updates usually follows the pattern of new major feature releases, which take longer time and where the focus is to make something completely new, or then minor and faster updates, which focus on improving or fixing something already existing (Yarmosh, 2016). Due to the focus on the user testing in this Master's thesis, the topics naturally flows towards the usability and fine-tuning the existing designs. Even the most novel parts of the design are done earlier, it is actually a lot of work too to make them truly understood and for that the iterative feedback improve loop is needed.

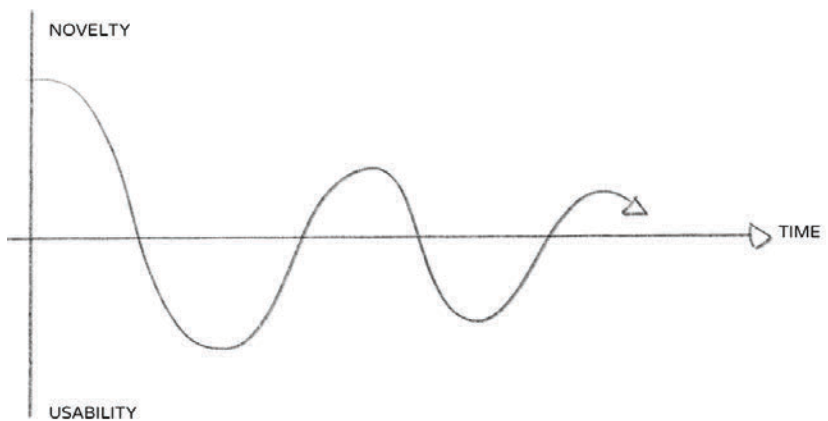


Figure 9: The update pattern of Ultralight.

Doing user research can tell how things are, but research will not necessarily give answers how the design should be changed. There is the difference between what is the focus of the research. When I focus on novel features I naturally try to look into new visual trends and new rival applications to find out inspiration for the new type of effects and trends there are going on. When focusing more on improving the current design I rely more on the feedback, reviews, analytics and user testing. These all will give an overview of the current state and different insights to decide what to do next. It is an ongoing puzzle to think how new and old ideas fit together. I try to keep on collecting data, feedback and new ideas all the time, but I rarely do anything right off. It is a rather slow process to think carefully the different options and how they fit the existing design.

Design process

I visualise my own design process as follows. In the core of the design is my big design list of ideas, improvements, insights and research. I try to collect everything I have been thinking of or is related to the design and then formulate the design action points from those. One example of this process, is that I had written down to add the percentage visible next to the filter opacity slider. Now when I was redesigning the filter list selection I remembered to add also the percentage there to make it more clear what is the function of the slider. I keep this design list just as a text document in Evernote to have quick access to it from all of my devices. Another important step is to manage the chaos of the ideas, which means prioritising and grouping similar items on the list all the time. I do this by moving the more important ideas up on the list which will help to see what is coming next.

After the design list phase, I already have a pretty good sense of what should be done and why. After which, I usually draw some



Figure 10: The design process.

rough user interface sketches to illustrate how the ideas turn into an actual user interface to get the first glimpse how the ideas fit together. I have had many good ideas that ended up into trash during the sketching phase. Mostly because they were too complicated to turn into simple and understandable designs. After the sketching, I usually still do one more pass visualising the user interface on Sketch with the actual look and feel of Ultralight. I do not try to polish the designs visually too much, but just enough to get a sense how everything fits together and that they are visually in balance. This is something that is hard to see on the paper, but easier with the same looking elements as in the actual application. In my way of designing, I usually start with the actual screenshots of the application, to have the current situation visible and build on top of that.

The design will still keep on living in the code as well. I usually prototype the look and feel still on the actual device quite a lot. In Sketch it is easy to get the visual coherence in place, but after working with the actual code it gives another layer how the interactions will work and look in the actual device. Due to this, I tend to write the user interface code first and try to nail it before moving towards the full implementation. Usually, all of the different phases can and will go in-between each other and this also produces new ideas to the design list. Based on the Lean and Agile methods I

usually try to finish one item from the design list completely before moving to another. This is due to two things. When working with the code it is just more efficient to get one topic finished at a time and not leave open-ended tasks hanging. This helps to produce the incremental improvements to the project. Another reason is that doing one thing at a time also helps with the design, as long as you have the basic concept worked out. Comparing the new design with the current one gives it the right context and helps to find the good solutions and compromises when there are some limitations in place.

New designs

When going through the new designs I rely on the terminology of Donald Norman which he introduced in his book *The Design of Everyday Things*. Affordances communicate what actions are possible and signifiers determine where the action should take its place, also sometimes referred as visibility (Norman, 2013). The affordances and visibility make the discoverability happen. Letting the user to realise what is possible to do. To help the user to know how to use the controls there should be enough immediate feedback as well as constraints in place. Another term is natural mapping which means showing the relationship between the action and the controlled object in an understandable and natural way (Norman, 2013).

Filter selection view

I decided to redesign the whole filter selection view based on the many struggles that the current design caused (Figures 11, 12). The focus on the filters was raised as one of the most important aspects regarding the whole application. Most of the problems were due to the bad mappings between the tabs on the top and the filter selection list divided into multiple parts. This caused many participants not to go through all of the filters and stop browsing after reaching the

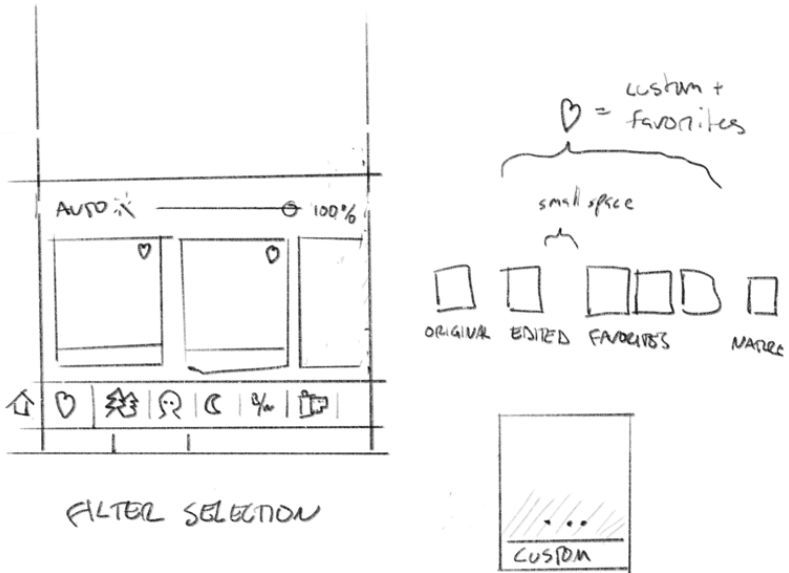


Figure 11: Designing the new filter selection view.

end of one category. Another aspect was that users stopped when bumping into the locked filters. Also, the discoverability of the filter opacity adjustment slider was poor when placed on the bottom and user's finger covering it. The new design is based on the same tab convention used in the editing view already. I decided to combine all of the different filters into one big scrollable list with small empty space in-between to separate the different sections. The different filter categories were formed to make it more understandable what the different filters could be used for. New icons and categories in order are original, favourites, nature, portrait, night, black and white and film. The auto improvement button was added on top of the filters to the left and the filter opacity slider to the top right to give better mapping between the filters. Also, the '100%' label was added to improve the understanding of the use of the filter opacity slider. As

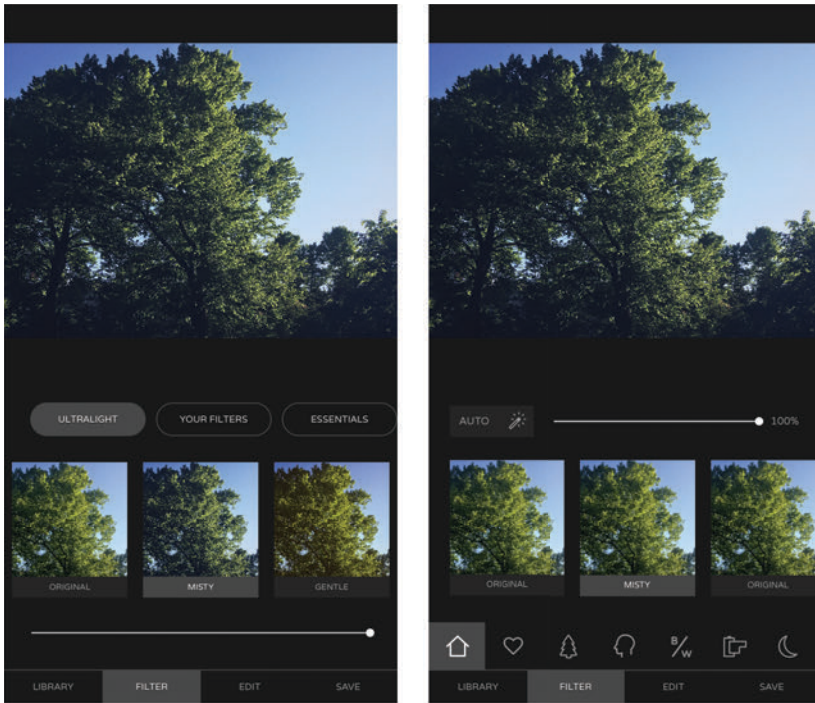


Figure 12: Comparison between the old (left) and the new (right) filter selection view.

part of the new categorisations, I went through all of the different filters and separated them into the corresponding categories and studied the usage rates of all of the filters from the analytics to get a good understanding which filters work and which ones are the less popular ones.

Selective tools

With the selective tools, or formerly known as the fine-tune brushes, the biggest problem was to understand the change of paradigm, the users would need to paint the mask beforehand to make the effects visible (Figure 13). I decided to approach this with a completely new

design for the layout. Previously I have used the layout where the image is on top and controls are below throughout the application. Now I felt that I needed to break it so that the image area would completely fill the main area of the screen to give more visual weight to where the action is done. I moved the brush buttons to the bottom and the rarely used invert- and clear-buttons to the top. This gave the painting area the screen portion it needed. Also when choosing the brush tool or erase, there would be an indicator helping to tell where to apply the action. I had a lot of troubles finding the right design for this since I was somehow locked in the idea of using the same layout throughout the application and it took time to get my thinking outside of this mental block.

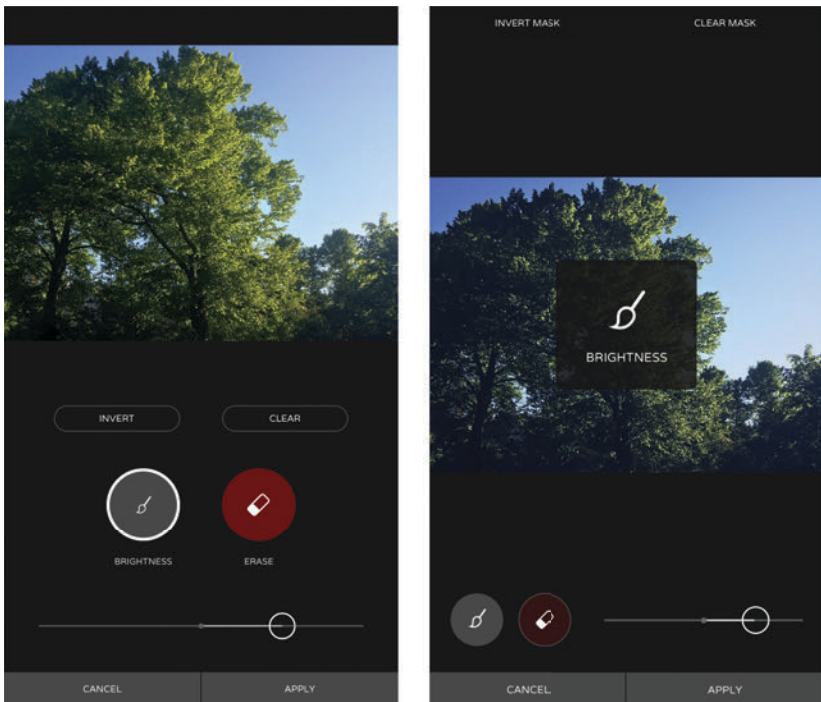


Figure 13: Comparison between the old (left) and the new (right) selective tool view.

Affordances

All the editing is done with sliders in Ultralight (Figure 14). The participants had troubles in finding all of the features that the sliders offered. It was clear that in the beginning, you should slide with your finger to move the dot to apply the effect. But the sliders also offered to fine-tune control by tapping to nudge the circle in the direction needed. In the user testing, many participants were looking for a way to reset the individual controls and it can be currently done by long-pressing and holding the slider. There were no clear affordances to give a hint about these features and that needed to be fixed. I did not want to clutter the whole interface so I decided to add the affordances briefly after the editing to make them subtle but always present. In the current design, the slider is almost always coupled with a label to tell the function of the slider and to also show the current values while moving the slider. After the user lifts her finger up, there will be shown 'hold to reset' and arrows, to show how to reset and the tappable areas. I tried visually multiple different options for the affordances and ended up with these because of the clearest and cleanest look.

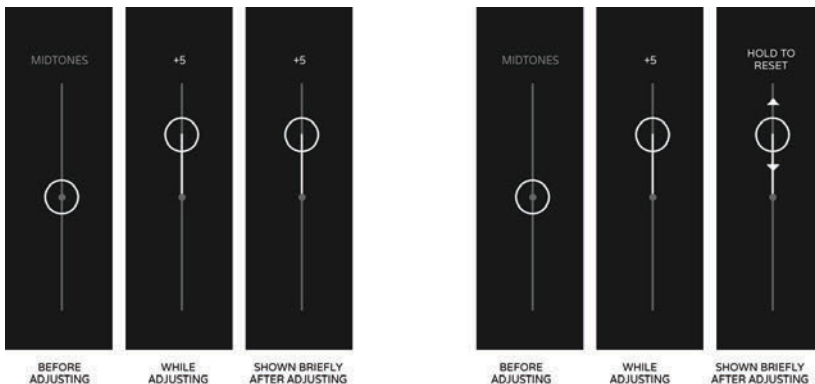


Figure 14: Comparison between the old (left) and the new (right) slider interactions.

Perspective and crop view

Another area which needed slight usability tweaks was the crop and perspective view (Figure 15). The problems were not that big here but rather few minor tweaks needed. The biggest problem was how the perspective tool was used. In the old design, the picture needed to be quite small to visualise the draggable areas and the dragging affected two corners at the same time. In the new design, there are clear affordances to drag the corners directly from the image itself. The dragging would now affect only the same corner. This way the picture could be as big as possible and this new interface solved some technical difficulties I had with the previous design. This example really shows the value of both knowing the technical

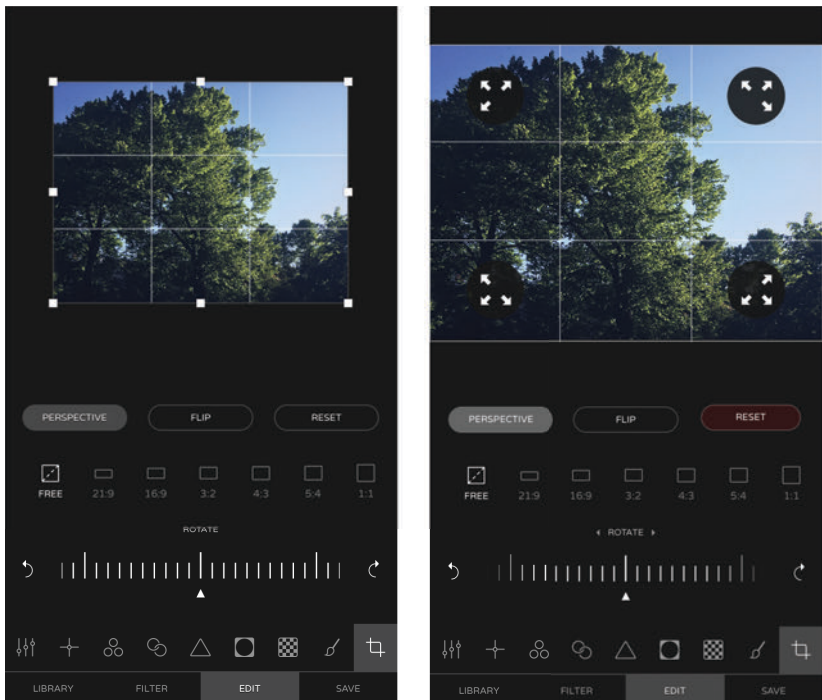


Figure 15: Comparison between the old (left) and the new (right) perspective view.

implementation as well as the design to make good decisions from both points of views. One minor improvement was to add a slight red tint to the reset button because many participants were looking for it some time.

In-app purchases view

Last biggest change I wanted to make was how the in-app purchases were presented (Figure 16). I have been thinking about changing the whole monetisation of the application, but that would have been a too wide topic to cover. I have been thinking about subscriptions and advertisements, but I did not feel yet comfortable enough to change how the whole monetisation works, so I focused only on the cosmetics for now. There were problems with people losing the context when the in-app purchases were presented, due to the completely different background and layout compared to the rest of the application. I changed the transition and the made the in-app purchases fit the rest of the application better. Now when pressing a locked item within the application, it does not take you completely away, from but the view but rather slides the in-app purchase options from below on top of the current screen. This would make smaller context change and allow bigger cancel area when also the top part is tappable to return the previous view.

Based on the new understanding about the value that users found in Ultralight I decided to redesign how the position of Ultralight is communicated. This mostly affects the App Store and the Ultralight landing page visuals. The main selling point of Ultralight continues to be the full-screen editing, where the user interfaces flows nicely over the edited photo. As stated by the participants, they did not really describe Ultralight playful or fast, so the new key points are the convenience, anyone can learn to use Ultralight and that it offers the widest control in the mobile context for photo editing.

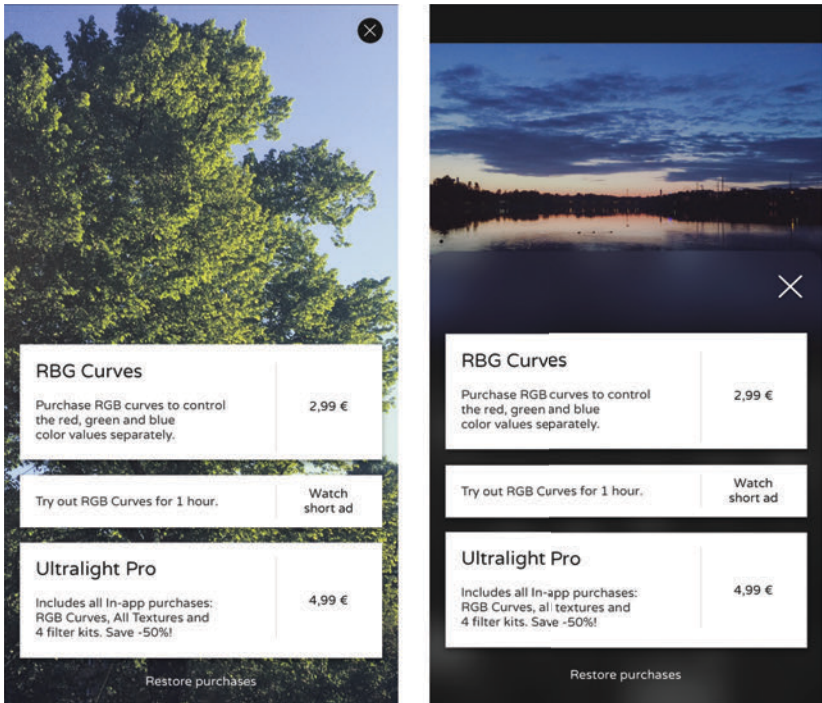


Figure 16: Comparison between the old (left) and the new (right) in-app purchases view.

Few participants noted the connection between the name 'Ultralight' together how the experience felt which was also a great thing to hear. The new App Store marketing images will be done as a part of the actual update later.

Finding the optimal designs can take a long time especially on mobile since the available space for the layout is so small compared to other platforms. Another problem arises from working with a living product. It is hard to change or remove anything completely once it is introduced without irritating the current users. While designing I am mostly trying to find the best combination between simpleness and the biggest possible interaction space available. In other words

what would offer most options for the users with the least amount of complexity. With already the current design available I have to always compare it to the new one and think about the pros and cons of changing the layout. The changes should feel always clearly better compared to the previous one. The problems of the new design will arise later again with the real use and feedback. Third limiting factor in my design is clearly my resources. When working independently I have to always think forward and figure out if the new design is a reasonable thing to do. My own intuition, feedback and these limitations shape the new designs.

Conclusions and discussion

To encapsulate the whole process in a simple way I believe that I did succeed with my original goals of to research the iterative design process and to conduct a structured and thorough user testing for Ultralight. I believe that, I have now a lot stronger sense of how to organise a creative digital design work together with its iterative and evolving nature. Both, in doing interactive design and with the aim to improve as a designer, require good skills to research and collect feedback of your own work. The other half comes from understanding the medium and applying your knowledge and intuition to the work. I feel that I was able to apply these principles to my own project and successfully made again more concrete work towards making Ultralight's user experience stronger.

In the digital environment, the design can be iterated over and over again with the process of learning and adapting. User testing can be done in multiple ways but at its core is the aim to learn to look and see the project through somebody else's perspective. There are a lot of terminology and approaches that emphasise the different angles to the iterative design and digital work. User experience aims to capture the whole experience but on the other hand, by covering a lot, leaves it at the same time a bit vague. User-centered design is more technical and usability-focused approach, therefore it is good for structured work. Lean and Agile methods focus more on the actual development process and how to organise it in the most efficient yet flexible way. All of these combine different iterative methods and approaches which rarely will be visible for the actual end user, but still, the more you learn and know the more it will show in the actual end result.

In user testing, there are quite versatile ways to collect data and the way I conducted the user tests was especially good in studying

what were the participants' perceptions about Ultralight and finding new areas for improvement. The testing conducted was not aimed towards novelty as such, but it could have been one of the areas of focus more, now when thinking back. I found the structure of the test well suited for practical work and the possibility of doing it remotely and online makes it really a fitting approach to the design work later on. I will definitely keep on running a similar type of user testing later. The participants reported that conducting the user test felt comfortable and also I did not see any issues when viewing the results. Participants talked freely and followed the instructions well. Later on, I would probably try to split the number of questions and the length of the whole session a little bit shorter. Focusing more on specific issues and running the whole video capture through in maximum of ten minutes.

Running the tests on the participants' personal mobile phones was a bit of a challenge and it needed to be instructed carefully. I hoped to see closer and more personal interpretations when conducting the test to get a better understanding of the underlying values of why people edit the photos and what ambitions lie behind the results. This was a rather high hope and with the current setup, the most value came from the possibility to recruit people online and that the test was easy to do remotely from home or from another socially safe and relaxing location. Doing the tests remotely allowed to contact actual Ultralight users abroad which would have been really hard to achieve otherwise. I enjoyed the freeform talk of the participants and was able to find out a lot of new insights from the data. Later when using the same method I will probably change it so that I still have an opportunity to ask one or two profound questions afterward if some clarifications are needed. This should happen quickly enough so that the participants will still have a fresh experience on their minds. With the current evaluation I would have liked to understand a bit more about how the participants compared

the filters and their styles together and why exactly they liked some of those. This could have been added or emphasised on the questionnaire too. The barrier to take part in the test was quite low because only the screen and the voice were recorded, but of course this limited the data available in the end. It would have been nice to see more about the real reactions and emotions that would have been possible in a live situation.

When comparing the results between the three user groups: first-time users, expert users and long-term Ultralight users I feel that the most interesting separation was with the new users from the right target group and the long-term users. Diverging the first-time users with the expert group did not produce many new insights as such. For a consumer product like Ultralight, it was also a good approach to recruit participants quite freely, even it may not hold true for all products. Overall the whole testing produced a lot of new and usable data for my design work and especially useful was to get the first-hand experience of people using my design. Some details would have been easy to miss, but having the video recording allowed to go through the videos multiple times. It would have been nice to interrupt and ask for the more detailed question on few occasion, but of course, the follow-up questions could be asked through different channels later.

I had one extra question in the user testing to find out more about the participants' views towards advertisements in hopes to delve deeper into thinking the whole monetisation of the application. During the process, I noticed that it would have been a rather big task and probably a topic for a thesis on its own. Even though I still have thought about the monetisation throughout the process, I ended up deciding to leave everything out of the scope of this thesis and focus purely on the design aspects. In regarding to the in-app purchases I only tweaked the cosmetics now.

When working with an individual project I have to consider a lot how much work I can put into the update and what is realistic to produce. This is a constant struggle to scope how much time and effort is needed to make the changes. Programming the changes is still rather slow and the time available is the one biggest limitation and constraint in my current work. The more views, features and tools I have in Ultralight the more complexity it introduces and the more time it takes to maintain the old before being ready to produce again something new. Therefore, I have to be really strict with the new work introduced to the project. When dealing with a continuing project like Ultralight, I hope to change one thing at a time and complete it before moving onto the next issue. This helps to deal with the complexity, but it is not ideal, when it would be nice to do small iterations and prototypes constantly. Luckily I get to decide and choose what I want to do and that makes it limiting but great at the same time.

It has been definitely a privilege to get to evaluate my own project and my own design. I see that my role as both as the designer and evaluator gave me great possibility to learn and to get first-hand experience of my own work. I see that this type of experience is critical for anyone doing design, to really understand how and where to improve, both also when to trust your own design intuition as well. The same skills could be used to evaluate somebody else's design too, but that would require a deep knowledge and understanding of the project to get to the same level as when evaluation your own project. It would be interesting to let others to evaluate Ultralight to get again another new perspective to the project as a whole. When evaluating your own project there might be the problem of biasing the participants to be too careful or polite in their responses, if they understand the close relationship between you and the project. But with my evaluation I did not feel this way, since participants also gave direct, strict and ruthless feedback.

In the future, I see that the role of the design and designers keep to grow since technologically it gets easier and easier to produce digital services and applications, which means higher competition for the best performing products. At the same time there will be more and better data available to study the experiences and validate the designs with the data. The actual work and the decision made regarding to the user interfaces might become more automated, but the strong design intuition will still be needed to iterate and shape the experiences. The digital platforms will keep on to evolve and more technological solutions will be available, but it will not reduce the need to truly understand both the human and their needs to create efficient and elegant design.

With Ultralight I continue the work to get the new update live, and I will probably do a follow-up to study after the changes to again find out more new areas to explore. It has been really great to work with Ultralight in a more structured and thoughtful way, and it has definitely helped in the whole process. I feel it has been super valuable to take the time to write down and formulate my own ideas in the form of this Master's thesis. I will continue to work with Ultralight and constantly try to improve my own work. Going back to the ideas as in the introduction part sums up the whole process for me. In order to improve as a designer, you need to constantly improve your skills to get feedback of your own work too. Doing this thesis has offered a great platform to dive deeper into this journey.

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Appendix

Ultralight User Testing

Ultralight User Testing

Hi and welcome to Ultralight user testing.

The test is done by recording the on-screen events and speaking aloud what you are doing and answering few questions. Only the events on the screen and your voice will be recorded. The recording will be done using the iOS 11 screen recording feature. While conducting the test please follow these instructions from your computer screen.

By participating the user test you grant a permission to use the recording and the answers to improve the design of the application itself and to analyse the results on my master's thesis. The video or parts of it won't be published or given forward.

The user test is only to study the usability of the Ultralight application - not you. Therefore you can't fail in the test.

The goal is to study how use the application is used from the video. Because of that, it is important that you are speaking aloud as much as possible while recording. Do the recording in a quiet place where you can speak aloud for 10 - 15 minutes. Please use English.

When you are ready to begin please fill in the details below and continue to the next page. Doing the whole test will take approximately 20 - 30 minutes.

To thank you for completing the study you will get a 10 € iTunes gift card and Ultralight Pro for free.

Your name and email address are only used to deliverer the rewards electronically.

*Pakollinen

Sähköpostiosoite *

Sähköpostiosoitteesi

Name *

Oma vastauksesi

How would you rate your own skills working with photos and videos?

1 2 3 4 5 6 7 8 9 10

Amateur Professional

I use Ultralight

- Less than once a month
- Once a month
- 2 times a month
- Once a week
- More than once a week

I have been using Ultralight

- Less than 2 months
- 2 - 6 months
- 6 - 12 months
- Over 12 months

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Preparations

Preparations

Please check that you have the latest version of Ultralight installed.

<https://itunes.apple.com/us/app/ultralight-photo-editor/id972428565>

Please check that you don't have any unwanted or private photos or videos in your recent photos. Your on-screen events will be visible on the video.

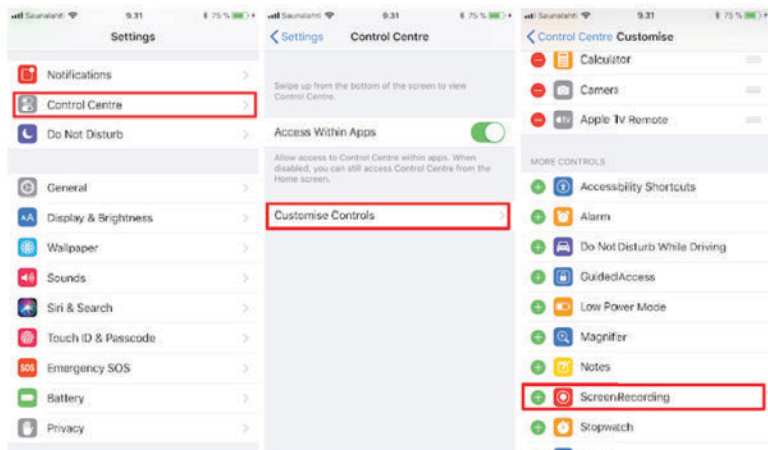
Prepare to record the video.

iPhone Screen Recording

Please ensure that you have enough storage on your iPhone. Also please check that you have enough battery remaining.

Add the Screen Recording to your Control Centre as follows.

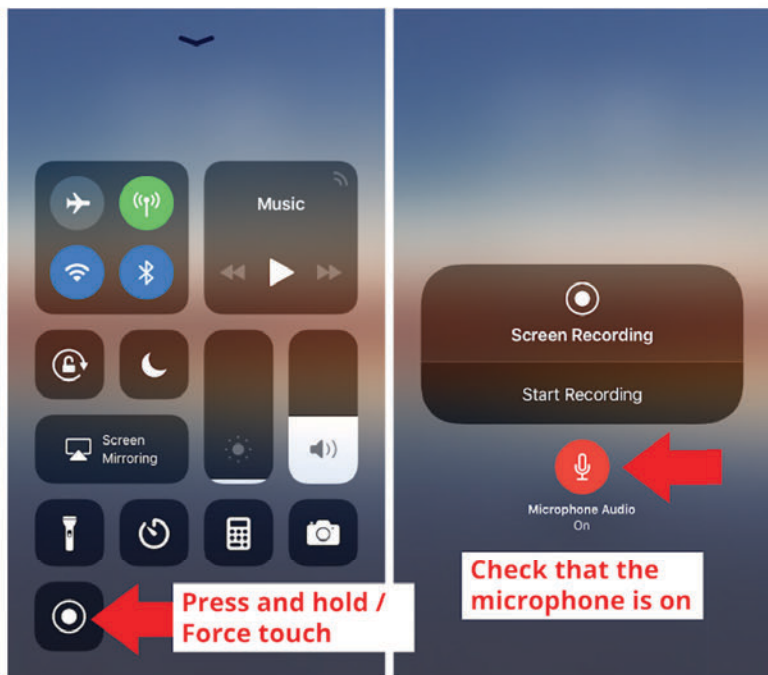
Screen Recording



Swipe up from the bottom to open up the Control Centre.

Turn the airplane mode on to hide notifications appearing on the video.

Before you start to record



You are ready to start!

Other things to note:

If the video recording stops, you can continue from the stopped time and send both videos. It might take some time to save the video in the end.

The airplane mode disables notifications appearing during the video recording and your phone won't be connected. Because of this the in-app purchases won't work. This is the intended behaviour during the test.

You can start to record. Next up there are the actual test tasks.

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Test tasks

First-time user

Testitehtävät

Käyttäjätesti suoritetaan nauhoittamalla video näytön tapahtumista ja kertomalla ääneen mitä teet sekä vastaamalla kysymyksiin. Muista siis kertoa ajatuksesi ääneen, jotta ne tallentuvat osaksi videota. Kerro siis miten mietit tai mikä tuntuu hankalalta.

Muista että on tärkeää, että olet äänessä mahdollisimman paljon, jotta videolla on mahdollisimman paljon sisältöä myöhempiä tarkastelua varten.

Suorita tehtävät rauhassa ja vastaa perusteellisesti. Älä kiirehdi.

Avaa Ultralight ja suorita tehtävät sovelluksessa.

Lue myös kysymykset ääneen.

Etsi ja valitse viimeaikainen ottamasi kuva, jonka voisit jakaa sosiaalisessa mediassa.

Kerro miksi valitsit juuri kyseisen kuvan?

Kerro yleisesti minkä tyyliä kuvia jaat.

Etsi kuvaan sopiva filteri.

Kerro minkälaisia tyyliä haet kuvaan ja miltä eri vaihtoehdot näyttävät.

Kerro myös miten arvioit filtereitä toisiinsa.

Lisää kuvaan kirkkautta, terävyyttä ja rajaa kuva neliöksi.

Voit halutessasi säätää kuvaa myös muilla työkaluilla.

Kerro mitä haluat saada aikaan.

Tallenna kuva.

Kerro omin sanoin kokemuksestasi.

Mikä oli erityisesti mieleesi?

Mikä oli hankalaa?

Jos kuvan tallentamisen jälkeen ruudulle ilmestyi mainos..

Miten reagoisit?

Kerro omin sanoin kokemuksestasi.

Kerro mikä tuntui helpolta.

Kerro mikä tuntui vaikealta.

Kerro miten Ultralight vertautuu muihin käyttämiisi kuva- tai videosovelluksiin.

Kun olet valmis lopeta videon tallennus.

Experts in photography and video

Testitehtävät

Käyttäjätести suoritetaan nauhoittamalla video näytön tapahtumista ja kertomalla ääneen mitä teet sekä vastaamalla kysymyksiin. Muista siis kertoa ajatuksesi ääneen, jotta ne tallentuvat osaksi videota. Kerro siis miten mietit tai mikä tuntuu hankalalta.

Muista että on tärkeää, että olet äänessä mahdollisimman paljon, jotta videolla on mahdollisimman paljon sisältöä myöhempää tarkastelua varten.

Suorita tehtävät rauhassa ja vastaa perusteellisesti. Älä kiirehdi.

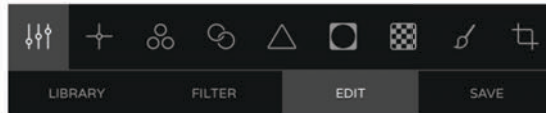
Avaa Ultralight ja suorita tehtävät sovelluksessa.

Lue myös kysymykset ääneen.

Käy rauhallisesti kaikki sovelluksen eri näkymät ja toiminnallisuudet läpi.

Kerro ensin ääneen mitä toimintoja näet ja kerro mitä ajattelet niiden tekevän. Kokeile löytämäsi toiminnot läpi ja kerro vastasiko niiden toiminta odotuksiasi?

Ultralightin toiminnallisuudet



Käy uudelleen kaikki sovelluksen eri näkymät ja toiminnallisuudet läpi.

Kerro ovatko toiminnallisuudet sinulle tuttuja muista sovelluksista. Kerro miten arvioisit eri toimintojen hyödyllisyyden. Miksi?

Kerro lyhyesti millainen sovellus Ultralight on?

Kerro tämänhetkisen kokemuksesi perusteella minkälainen sovellus Ultralight on. Kerro mikä erottaa ja/tai on samankaltaista muiden sovellusten kanssa.

Vertaile sovellusta muihin käyttämiisi sovelluksiin.

Kerro onko jotain toimintoja, joita sovelluksesta puuttuu. Kerro millaisissa tilanteissa turvaudut muihin sovelluksiin. Miksi?

Olisiko Ultralightista hyötyä juuri sinulle?

Miksi tai miksi ei? Perustele. Kerro vapaasti omista ajatuksistasi.

Jos kuvan tallentamisen jälkeen ruudulle ilmestyisi mainos..

Miten reagoisit?

Kun olet valmis lopeta videon tallennus.

Long-term user

Test tasks

The user test will be done by recording the on-screen events from your phone and talking aloud your actions and answering to questions. Please remember to talk aloud so your answers will be recorded to the video. Talk aloud what you are thinking and what feels complicated.

Remember that it is important that you are talking aloud as much as possible, so that the video will have as much content as possible for future analysis.

Do the tasks undisturbed and answer thoroughly. Don't hurry.

Open up Ultralight and do the tasks in Ultralight.

Please read the questions aloud.

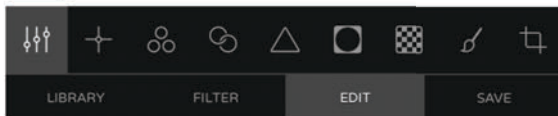
Shortly describe what kind of application Ultralight is on your own words?

What is valuable especially for you?

Your task is to teach others how to use Ultralight.

Take your time and go through all the different views and features.
Tell what different parts do and how they are used.

Ultralight features



Pick a previously edited photo or video and tell how did you edit it.

Show and tell how did you use the application.
Tell about your usual workflow.

In which order do you use the different features of Ultralight?

Tell in which order you use the different tools and features.
Tell what tools or features you don't use at all. Why?

Compare Ultralight to different applications that you are using.

Tell if there are some specific features missing.
Tell when you need to fall back to a different application. Why?

After saving there would be an advertisement on the screen...

What would be your reaction to it?

When you are done you can stop the recording.

Send the video

Send the video

Check that the video was saved. Please note the saving can take some time.

Open in browser: www.wetransfer.com

Press and hold the refresh-button on the top right corner and request the desktop site, so you can use the service directly from your browser. Check the image below.

Send the video as follows.

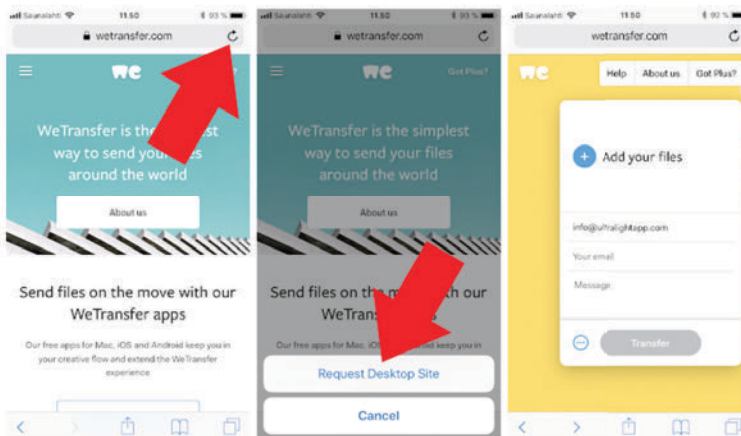
Add the video file.

Email to: info@ultralightapp.com

Add your own email and your name as the message.

Transfer.

WeTransfer.com - use directly from the mobile browser.



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Thank you

Thank you!

To finish the test please answer the last questions and send the form.

How would you rate your experience

	1	2	3	4	5	
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant

Which grade would you give to Ultralight

	1	2	3	4	5	
Lowest grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Highest grade

I will use Ultralight again

	1	2	3	4	5	
Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Agree

I could recommend Ultralight to others

	1	2	3	4	5	
Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Agree

Other feedback

Oma vastauksesi

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