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# SOFTWARE END-USERS' MOTIVATION STRUCTURE

Market-leading photo management and editing software

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ABSTRACT

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The thesis studies end-users of a specific market leading photo management and editing software and seeks to find out what motivates them to use just this specific software, not any other alternative. Motivation towards the software is studied from three points of view, with the aim to conclude how the software triggers intrinsic motivation and extrinsic motivation, and furthermore, to find out how social norms affect on the use of the software. The research data was gathered through conducting interviews with three end-users. The purpose of the interviews was to let the interviewees speak freely on the topic and hence provide the research with unconstructed and truthful data for later analysis. The case software was found to motivate its users in many ways and the results showed examples of each of the studied types of motivators. However, intrinsic motivators were most apparent and it can therefore be said that the case software motivates its users mostly intrinsically.

Key words: motivation, intrinsic motivation, extrinsic motivation, social norms, photo management and editing software

Tässä kvalitatiivisessa tutkimuksessa tarkastellaan tietyn valokuvien hallinnointiin ja käsittelyyn tarkoitetun ohjelmiston käyttäjiä ja pyritään selvittämään sitä, kuinka ohjelmisto motivoi käyttäjiään. Tutkimuksessa halutaan selvittää erityisesti sitä, kuinka ohjelmisto motivoi käyttäjiään intrinsisesti ja ekstrinsisesti. Myös sosiaalisten normien vaikutus asetetaan suurennoslasin alle. Ohjelmisto on markkinajohtaja omassa segmentissään ja tutkimus pyrkii myös löytämään sille syitä motivaation alueelta, ja sitä kautta antamaan ehdotuksia miten tietokoneohjelmistoista pystyttäisiin tekemään monipuolisemmin käyttäjiään motivoivia. Tutkimuksessa haastateltiin vapaamuotoisella tavalla kolmea ohjelmiston käyttäjää. Haastatteluissa kävi ilmi että kyseinen ohjelmisto motivoi käyttäjiään monipuolisesti ja tutkimustuloksiin saatiin esimerkkejä jokaisesta tutkitusta motivaattoryypistä. Intrinsisiä motivaattoreita löytyi kuitenkin kaikkein eniten ja siitä pystyi päätelemään, että kyseinen ohjelmisto motivoi käyttäjiään pääosin intrinsisesti.

Avainsanat: motivaatio, intrinsinen motivaatio, ekstrinsinen motivaatio, sosiaaliset normit, valokuvien hallinta- ja muokkausohjelmisto

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## 1 INTRODUCTION

*“Welcome to the golden age of motivation and emotion. Never in its 100 years of formal study has the field been more exciting than it is today.”*

With these encouraging and truly inspiring words Johnmarshall Reeve welcomes his readers to his book *Understanding Motivation and Emotion*. Reeve elaborates this by saying that we are living at a time when life-changing applications have become obvious and that what used to be a stagnant field of research has turned into something very opposite of that; where creative ideas appear, new theories surface and just the sheer amount of people fascinated by understanding motivation and emotion grow continuously (Reeve, 2009).

In the recent years the whole field of digital imaging has galloped forward both when it comes to the development of hardware as well as software – the advancements the industry has made and experienced in say last 10 years is truly worth noting and looking back to. Today everybody seems to be taking photos, editing them and then publishing them through one medium or the other. Regardless of the type of device, whether it’s a mobile phone or a professional level DSLR-system, everybody has a camera at hand and the amount of images taken grows day by day. Therefore it feels like a safe bet to say that us human beings are more creative and more eager to share that creativity with others today than ever before. “Welcome to the golden age of creativity”, one could say.

Since storage devices have gone way down in price and simultaneously way up in capacity, the quantity of digital image content to be managed has risen respectively. At the same time the use of CD’s, DVD’s and other such ancient storage media seems to have moved aside as means to organize, backup and save image content. The ample amount of images stored into huge harddrives, or even into assemblages of them, has created a need for software that make managing and processing images straight-forward and intuitive a task. Also cloud storage services have noticeably become more common and now offer yet another way to storage image content. Should one not want to jump into this kind of progression and utilization of such software-based tools, more times than not emotionally

and/or economically valuable image content is likely to vanish in this sea of uncoordinated and unidentified data, in all likelihood to vanish till eternity.

As bad and as frightening such loss and cryptic chaos might sound, there are solutions available to prevent such catastrophies from happening, and furthermore, to provide users with a wide range of other features to take advantage of. What seems apparent is that software developers have recognized the growing demand for solutions of the kind, and the growing clientele for that matter, and are constantly developing better, more appealing, cheaper and more easily accessible tools for this constantly growing market. Moreover, what seems to have been a big game changer, due to the considerably big decrease in the pricing of software of the kind also hobbyists can now afford and take advantage of the exact same tools the creative industry professionals use. In this context this price drop can't be highlighted enough, for example in this study's case software's case a solid 50% percent decrease between versions 3 and 4 speaks for a totally different way of approaching consumers and seeing the big picture from the software house's point of view. Such a bold approach widens the possible clientele and empowers also the so called laymen with tools and a level of production formerly available only for dedicated professionals.

Interestingly, since the exact same software has now the potential to both form an important part of someone's occupational workflow, and through that to be an important source of someone's income, as well as offer an intriguing tool for spare time purposes, the software developers have hit a certain sweet spot and have a very lucrative situation at hand. Such a situation provides fruitful territory for motivation research, especially since achieving a better understanding of this motivation formula might shed light on how to design and implement a successful, or even a market-leading software product, that would resonate among a wide range of customers and keep them committed to the product also in the long run.

The research in question studies end-users of a specific market-leading software and is particularly interested in the way it achieves to motivate them, both intrinsically as well as extrinsically. Also social norms are taken into account and

examined as motivators. As a byproduct of this motivation analysis the research seeks to find out why the software is appealing to the majority of end-users who are in need of such kind of a tool, and through that, give suggestions on what to take into account when designing software for today's creative end-user.



## 2 METHODOLOGY

This chapter describes the research and the means of carrying the research through.

### 2.1 Research Problem

The research is an explorative study with the goal of finding intrinsic and extrinsic motivational factors that stimulate and keep users attached to a specific image management and editing software. Furthermore, the study shows interest in and looks for the presence of social norms as motivational factors.

### 2.2 Research Questions

The study seeks answers to the following questions:

- How does the application invoke intrinsic and extrinsic motivation among its users? What kind of an effect do social norms have?
- Based on the findings, why is the application the current market leader?

Since motivation is a such a psychological phenomenon, qualitative research methods are seen as the most suitable set of tools in approaching it and for that reason selected as the backbone of the whole study. The research is an inductive study since it aims to create new theories on motivation issues.

### 2.3 Interviewees

The ideal interviewee for the study is either someone who is working, teaching or studying in the creative- or in the IT-field (e.g. photographer, graphic designer, IT-specialist). What is also critically important is that the interviewee is an end-user of the case software. The case software is introduced in chapter 2.

Ideally the whole group of end-users consists of at least three people, of which each individual person can provide the research with a different story on the software's use. It would be preferable that certain attributes of the end-users would show variance; for example regarding occupation, age, gender, experience

in using the application and for example the amount of IT-knowhow they possess. Though the previously mentioned characteristics might not have an immeasurable influence on motivation they , could bring to light unpredictable value-adding points that would have been otherwise neglected. For example a teacher who teaches the application's use is probably motivated in a different way than a hobbyist photographer who uses the software merely for personal enjoyment.

## 2.4 Implementation

The end-users are selected purposefully by contacting people who are known to be users of the software in question. People are contacted both in order to arrange interviews as well to ask for recommendations and contact details regarding other possible end-user candidates. This method is also many times referred to as "snowball-sampling". Snowball-sampling is used in order to collect a group of people that shows as much variance as possible. End-user selection also targets at least one person whose experience on the software is somewhat limited.

The research data is gathered by conducting face-to-face interview sessions. By their nature, the interviews are open-ended, hence not strictly restricted when it comes to their structure. The purpose of the interviews is to let the interviewees speak as freely as possible and thus reflect on their truthful opinions and experiences, hence the purpose is not to steer them towards a certain direction.

The interviews are recorded with an audio recorder for later analysis and transcription. The target duration of each individual interview is approximately 60 minutes and it consists of two parts. The first and the more brief part focuses on the interviewees as people and aims to find out some basic information on them. The purpose of this so called secondary data is to produce a concise description of the end-user, i.e. who they are as people and as professionals, yet without spending too much time and effort in doing so. The second, and the main part of the interview, delves into the motivation issues through conversations related to the application, especially to its deployment and use.

The audio recordings are examined and the most relevant parts transcribed for later referencing. Whilst going through the research data a coding technique is

needed in order to find the points relevant to the study. The study requires three particular areas to be separated from each other; namely intrinsic motivation, extrinsic motivation and social norms. In order to find such separation in the raw data, or at least to be more attentative and awake in finding it, certain codes are anticipated beforehand in order to visualize what those codes might be and look like within the actual data gathered from the interviews.

### 3 CASE PHOTO MANAGEMENT AND EDITING SOFTWARE

This type of software is a computer-based application used to manage, edit and publish digital images. Such applications are mainly used by photographers and graphic designers who need a good level of control when it comes to storing, editing, printing, viewing, organizing and publishing their digital image content.

Photoshop Lightroom (LR), from Adobe Inc., is today's market leading photo management and editing software and is taken as a case example in the study by interviewing its end-users. The application is used by professionals and amateurs alike, though it's mostly still in use by people involved with the creative industry, such as photographers, graphic designers and so on.

Firstly introduced in 2007, LR's lifecycle has reached the fifth standalone version, which was released in June 2013. The biggest rival to LR, both when it comes to the amount of users as well as market-share, comes from Apple Inc. Apple's Aperture is a rather similar solution to LR when speaking of its features and capabilities it provides its users with. Both of these software provide similar workflow possibilities and therefore can be seen to fight inside the same market segment, for the same consumers' money. The current competition these two software face in their core market segment is almost non-existent since other similar software reach only very niche sort of customer groups and haven't been able to make much noise out of themselves.

Another software that's very likely to pop up in the interview data, and therefore worth at least a brief introduction, is Adobe's Photoshop (PS). PS has achieved the status of an industry standard application during its 23-year lifespan and is a sort of a synonym to image management and manipulation worldwide. PS comes from the same manufacturer as LR, but represents a fairly different ideology as a whole. Despite of the differences between the two, they still can be seen as alternative solutions due to their various overlapping features, and are therefore expected to be compared in a way or another by the people interviewed in the research. The approach of the two applications differs, in addition to many other things, in that PS offers more of a purpose-driven design and implementation whereas LR's designers clearly have put more emphasis on the overall look and

feel and the attractiveness of the software. This previous comparison of the two software is based on the researcher's view and personal opinion on the two software.

John Nack discusses LR's success against that of Aperture in his blog post (Nack, 2009) by introducing data gathered by the independent research company InfoTrends which conducted a similarly structured survey for North American professional photographers in years 2007, 2008 and 2009. The sample size of the latest -09 survey was 1045 photographers, and it was said to have been very similar to that of the surveys conducted in the preceding two years.

Table 1 shows what percentage of the survey sample use LR and how many prefer Aperture instead. Based on these figures it's clear that LR has achieved to win over more users amongst professional photographers than Aperture and has been able to steadily increase its clientele every year. Aperture on the other hand wasn't able to achieve steady growth since between -08 and -09 the amount of users came down by 1.2%.

Table 1

<b>Application</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Lightroom	23.6%	35.9%	37.0%
Aperture	5.5%	7.5%	6.3%

## 4 MOTIVATION THEORIES

### 4.1 Motivation

Researchers have been intrigued by motivation issues for ages and the topic is very unlikely to go out of fashion in the future either, especially due to its applicability to all sorts of areas of life. This applies also to motivation research in the field of information technology as today's software manufacturers need to design their products more thoroughly than ever in order to beat the ever strengthening competitors in the race for devoted users.

According to Reeve, the study of motivation in general deals with those processes that give human behavior its energy and direction (Reeve, 2009). Respectively, a great deal of other sources describe motivation as a totality of factors that stimulate people to be committed to a certain something, no matter whether speaking of a job or a hobby, or any other area of life for that matter (R. Pintrich & H. Schunk, 1996).

So the key point is that motivation is something giving us the drive and the direction to act, to pursue a certain goal or a mission. It's widely acknowledged that motivation can, and should be, divided into two sub-categories – into intrinsic and extrinsic motivation. In other words, a person can generate motivation both from within oneself as well as from external factors that have an effect on the individual. Reeve points out that the fundamental dissimilarity between intrinsic and extrinsic motivation is the source that energizes and directs one's behavior.

### 4.2 Intrinsic Motivation

We experience this kind of internal motivation when our psychological wants, the ones that truly lie within ourselves, get nurtured. Hence intrinsically motivated people perform a certain action for passion, pleasure and interest. Intrinsically motivated people do not feel like they're being controlled or forced to do something by forces external to them, they feel like they have a choice and that they endorse whatever it is they're doing (Stone;Deci;& Ryan, 2009).

Furthermore, Reeve describes intrinsic motivation as natural motivation that arises impromptly out of human being's psychological needs for autonomy, competence and relatedness. Autonomy, competence and relatedness can also be seen as sort of core psychological needs us human beings have (Stone;Deci;& Ryan, 2009). The feeling of autonomy gets nurtured when a person does something out of his own free will and therefore isn't forced by an external factor to perform the action. The feeling of being autonomous dies out immediately, however, when an external pressure steps into play (Lickerman).

When a software user, or any other actor for that matter, does something out of genuine personal interest, he can be said to be intrinsically motivated to perform the action. Reeve discusses intrinsic motivation's greatness and points out it's worth promoting since pursuing intrinsic goals results in greater persistence and creativity, more high-quality learning and higher psychological well-being altogether.

Signs of intrinsic motivation:

- "That's fun"
- "I love it"
- "It's interesting"
- "I enjoy doing that"
- "I feel energized"
- "I look forward to each new day"

#### 4.3 Extrinsic motivation

There are many situations in people's daily lives in which they lack desire to do something, to perform a certain action they probably should in order to proceed and go forward. Working on a bachelor's thesis can be seen as a very good example of such an action. Such situations suggest that motivation to do something doesn't always get generated from within an individual and that we at times seek that motivation from our surroundings, from the environment we live in (Reeve, 2009).

Therefore, on the contrary, whereas intrinsic motivation springs from within, extrinsic motivation arises from the consequences a certain action might have. Extrinsic motivation can be spotted from things more superficial to us, such as money or a reward of some other kind. It's to say that people who are extrinsically motivated work on tasks due to the belief that performing them will result into favorable outcomes (R. Pintrich & H. Schunk, 1996). Those outcomes could be incentives such as getting a big pay check, winning a trophy in a sports contest or impressing other people with one's guitar playing skills and getting praise for doing so. Hence extrinsically motivated people are directed and energized by the reward doing something gives, the activity itself, and the joy of doing it, doesn't contribute to it being motivating.

#### Signs of extrinsic motivation

- “Because I get payed for doing so”
- “It was very affordable, I got a discount”
- “It's better I use it”
- “In this way I can get my job done”

#### 4.4 Intrinsic and Extrinsic Motivation

Pintrich & H. Schunk reflect on how these two types of motivation are related to each other and point out that this relationship isn't as black and white as one could think. In fact, dependless on the activity, a person can be high both on intrinsic and extrinsic motivation, low on both, medium on both, high on other and medium on the other – in other words the combination could be any of the possible. It can also be so that the very same action might be intrinsically motivating for one person and extrinsically motivating for the other (R. Pintrich & H. Schunk, 1996).

In other words, we can't think of these two kinds of motivation as something that's either or, neither does the kind of the activity determine whether it's intrinsically or extrinsically motivating. All this leads to a simplish conclusion that us people are different and so are the ways we get motivated by.



#### 4.5 Social norms

Social norms can also have an effect on an individual and direct and energize one's behavior. Saul McLeod describes social norms as sort of unwritten rules that direct people's behavior and say to us what kind of behavior is acceptable and what kind of behavior is not. Social norms get born inside social groups and people inside those groups must conform to them should they want to be a part of that specific group, or, should they want to be appreciated by members of that group (McLeod, 2008).

Signs of social norms:

- Peer pressure, company/school decision, industry standards, support network, brand loyalty
  - "My company uses it"
  - "I have to use it"
  - "My friends use it"
  - "Everybody uses it "
  - "It's what professionals use"

## 5 END-USER DESCRIPTION

The current chapter concentrates on describing the interviewed end-users. The purpose isn't to give an in-depth portrayal of each person, the aim is merely to introduce the end-users and put them into context by describing what they do and who they are as people in order to give the reader a better understanding of them in general. Also the reasons why they were selected to take part in this research are briefly stated.

### 5.1 Person A

Person A is currently a graphic design teacher at a higher level learning institution. Some years ago she graduated as a clothing designer but never embarked on the profession due to various reasons, one being a job offer offered by her current employer. She was asked to start teaching the use of different computer software for graphic design students in an institution of design. From there on, she started to specialize and educate herself further in the use of software of the kind. In addition to teaching, she's occasionally working for clients who are in need for website designs or other graphical material, both for web as well as for print. A big part of her current job delves around teaching Adobe's Creative Suite's software such as Photoshop, InDesign, Dreamweaver and Illustrator. Currently she's also planning to continue study full-time herself, therefore she's putting together her personal portfolio in order to apply for a masters degree study-programme.

Person A was chosen to take part in the study because of her background in teaching the use of similar applications and due to her personal experience and know-how in the creative field.

### 5.2 Person B

Person B has worked for nearly a decade now as an information systems specialist and his current tasks evolve around developing new solutions for a digital image lab, both when it comes to their production line as well as their online store. He

just recently finished his first degree photography studies which he completed alongside his day-to-day job. Currently he is also doing some paid photography assignments in his own time and also picking up the camera in his spare time as well. He is continuing to a higher level of photography studies which will begin shortly. This means that photography will continue to be a big part of his life also in the future, both as a hobby as well as increasingly in professional context.

Person B was chosen to take part in the study because of his decade-worth of experience in the IT-field and the world of digital imaging in general. He represents a person who has a short learning curve when it comes to the adoption of new computer-based tools and who understands how software work, also "under the hood", due to his long experience in programming.

### 5.3 Person C

Person C is a newly employed visualist whose visualist's studies are almost completed. She doesn't have much background in information technology.

Person C was chosen to represent a user who has recently adopted the application and is still figuring out its use. Being a visualist who hasn't a very technical background, she provides the study valuable information on how a person whose knowhow on IT is rather low experiences the application. She's also a person who most probably approaches the application first and foremost from a visual point-of-view.

## 6 USER STORIES

This chapter contains all the relevant data gathered in the interview sessions. The aim here is to build up a user story for each of the interviewees and through that get data for later analysis. These three user stories vary when it comes to their structure since the purpose of the interviews was to let the interviewees speak as freely on the topic as possible.

### 6.1 Person A

Though LR has never been a part of Person A's repertoire in formal teaching, she has years of experience in using and helping others to use it. LR-specific courses aren't currently being given at her institution but the application can be found on each of the school's computers and the use of it is nevertheless being encouraged in several courses and by several teachers. She thinks that it's quite possible that in the near future LR-courses will be available also in her institution.

She started to use the software first and foremost due to her older colleague's recommendation, some 6 years ago. She describes this colleague as a "Lightroom Evangelist", as someone who is hugely enthusiastic about the software and makes sure everybody close to him knows about the possibilities and advantages of it. According to Person A, he is genuinely interested in LR and very well aware of the application's development, such as latest updates, new features and versions. All in all this so-called LR-evangelist had a great influence on her when it comes to adoption of the software, she reckons.

Person A says to have always wanted to keep herself up-to-date when it comes to computer based design tools and that she's very interested also in photography and image manipulation. When she first heard about LR from her colleague and understood what it was all about, she felt she had to get familiar with it in order not to fall behind in professional terms. Partly due to the recommendations given by her colleague, but also due to the early use experience of the software, she realized the advantages in using the software, especially the advantages in using the RAW-format (the so called raw, uncompressed and unedited image data captured by most digital cameras) and editing such files inside LR. She also saw

much potential in LR's file management and sorting features and thought them to become useful in the future as the amount of images was going to get bigger and bigger.

She took a LR-specific course in the early days of using the software, in order to better comprehend what it was all about, but was disappointed with its offerings and decided to study more on her own. It resulted to be the right choice for her since through that she got a more thorough understanding of all the features and capabilities and the ways the application could improve her personal workflow. Lately she has used multiple online resources to study LR further and to help with problems from time to time. She likes the fact that today there's a wide assortment of online tutorial videos available for free, or for a reasonably small monthly fee.

When it comes to LR's rivalling products, Person A doesn't know a lot about the alternatives to the application but says Apple's Aperture to come first into mind. She says to have read about other similar software in the magazines of the field but never quite found anything that would offer a solution matching LR's capabilities.

When discussed about what's most appealing about the software, Person A immediately points out two things; affordable price and ease of use. She says the application to offer a sort of a shortcut to good quality print-ready images, as oppose to a more tedious workflow she used to go through when using PS in the past. Also the price of the product appealed to her greatly, she found it very affordable and even cheap in relation to its features and capabilities. Had the application cost, say 500\$ (around what PS cost at that time), she wouldn't have necessarily bought it at all, or at least, the choice of purchase would've been far more difficult and taken more time and consideration.

Person A finds LR's user-interface to look attractive and sophisticated. According to her, the application's stylized design gives a sort of a promise, "an oath of the good quality of the product" – she says. According to her everything seems to have been thought out thoroughly, from the start until the finish. She says that this attention to detail speaks for the devotion of the developers to create the very best

product for the client. She also thinks that this factor plays an important part in LR's success.

Person A's husband is a photographer who's mainly focused in nature and wildlife photography. Her husband started to use the application due to her recommendation and has been a user since, though with a rather varying regularity as using it has resulted quite difficult for him. The main reason for him to start using LR was the fact that the amount of stored images on his hard drive started to grow too big and too difficult to handle – some sort of a management solution was therefore needed. For her husband, learning to use the software has been rather difficult and he has needed a lot of help from her wife. In addition to her husband, she has also a colleague who she's been helping to use the software. The colleague has almost given up with LR though because she finds it too complicated to use and comprehend. Person A thinks that both her husband as well as colleague need so much help from her since they've never trained themselves with the use of the software and therefore lack a deeper understanding of what it's all about and what it has to offer. In other words, they've never had the initiative themselves to start learning the software's workflow and have leaned too much on Person A's expertise and help. She doesn't believe LR to be a very complicated software, she thinks it just needs some groundwork to be done before it starts to make sense and feel logical to use.

Person A uses LR mainly in her personal projects but says to have used it also when working on paid projects she does for her clients occasionally. Currently she uses the software mostly when she works on building up her personal portfolio. She says that LR has been the only tool she has needed with this personal project of hers and that she has really been happy she's been able to use solely one software and one software only, all the way from importing images into her computer until printing them on paper. She continues by saying that she loves the fact there's no need anymore to jump between different applications to get the job done.

According to Person A, using LR has never been compulsory for her, in other words there have been no demands neither from the clients' nor the institution's side.

## 6.2 Person B

Person B started to use LR in the beginning of his photography studies, some two years ago to be more exact. He points out two main reasons why he ended up in purchasing specifically this software, not any other alternative. In addition to the recommendations given by his peers at his school (both fellow students as well as teachers), he was faced with a problem that needed a solution, a project that needed a tool. He was offered a job, a wedding photography session to be more specific. After the wedding day he realized he had taken almost a thousand photos he now had to organize, rate, edit and deliver to the client. None of the solutions he was using at that time would have offered a workflow straight-forward enough to go through all of the content in reasonable time limits. He knew LR was the only option to get things done since the PS-based workflow he'd used in the past wasn't just efficient enough. He also knew that such job offerings were going to repeat increasingly in the future. Hence he made the decision of purchase very quickly, without much hesitation.

In addition to such paid photography projects, he wanted a tool that would make it possible to complete his school assignments with as good results as possible. According to him he really wanted to succeed in his studies and though the application to offer means to reach that goal. Speaking of that goal, he finds to have reached it and that LR has helped him to raise the quality of his work to a higher level.

Person B says he had no idea how holistic a workflow application LR really was before he started to study its functionalities further by using the software. He has studied and got to know the application mostly in a trial and error kind of way, which he says has not probably been the best kind of way going about it. He hopes he had studied the program beforehand in a more theoretical and thorough manner, in that way he believes he could have avoided many of the mistakes he

has done with the application and, through that, saved a lot of time and maybe some money as well wasted in correcting them.

When asked about his opinion on the software's visual appearance, he firstly says that the application "looks very pleasing to the eye". He goes further by saying the application's looks to give a sort of a promise of its good quality. In addition to that he points out that the simple and stylish looks puts his photos into limelight and make them actually look better, or at least "creates an illusion of them looking better", as he describes it. He thinks that the dark colored theme of the GUI plays a significant role in giving emphasis to his images and according to him this is the direction many graphic software seem to be heading to at this very moment in time.

He also likes the fact that the application can be extensively modified to his preferences and to better support his workflow, and that, the application's looks can also be changed to meet his visual preferences. In his opinion all the previously mentioned things give a better feeling for him on what he's doing and also encourage starting on new projects. This sort of gratification the application gives its user plays a role in the application's success too, Person B discusses. Though he has been a user of PS for a long time, he finds it great that now it's heading to LR's direction in its development, both when it comes to its functionality as well as its visual appearance. He also says that his use of PS has diminished greatly since he started to use LR and that PS's role in his workflow has formed into being more of a supporting one.

Person B has several people in his social circles that use the software, including co-workers, fellow students, teachers and friends. He at times gives advice to them on using the application and sometimes also asks for help in return but says to have rather little discussion with them on the topic. He says this is probably due to the fact almost all of them are already rather experienced with it and have the ability to solve problems on their own, with their own kinds of workflows and needs. He says that the application is currently a very widely used tool in his industry and partly because of that he feels he needs to know it and use it. He also finds it very important that he has a wide support network in reach should there be



a need for help. He continues to speak about online support and says that there are a couple of internet resources he visits on daily basis to learn more and to find solutions to problems that still appear from time to time.

When speaking of the software's pricing, Person B comments the software's price to be "next to nothing, almost free" and that Adobe's pricing policy feels very tempting. He goes on by saying that it is one of the best applications out there when it comes to its quality to price ratio. He goes even further than that by stating he had actually paid a considerably higher price for this very same application, even many times the current retail price if that had been the case, that's how much he says to have needed it and found use for it both in his personal as well as professional life.

Person B also mentions that it's a very positive thing that if the software's default features lack something, there are many so called third-party plugins available to match such needs that Adobe yet haven't addressed. Person B has currently three different plugins bought and installed into LR. He says to frequently use two of them and that their use has furthermore made his workflow more efficient and improved the quality of his work.

Person B says to use the application for three purposes. He spends most hours with it when working on paid photography assignments, second most time when he uses it for spare time purposes and least time when he uses it in his main job. Though he uses LR on many occasions, he has never had any demands to use it from anyone, neither from his school's nor his working place's side.

### 6.3 Person C

Person C started to use LR mainly because she needed a tool to build up her school portfolio that she needed to finish in order to graduate. She also thought the software to support her new job and her professional workflow there. Her intent in using the application was to produce better quality images, both when it comes to their quality as well as their visual offering, she says. She also thought the application to offer good features she could use with the photos she takes on her spare-time, on vacations and in all sorts of social gatherings. She says to be

generally very interested in new graphic applications and that she's keen on trying out new ones, now more than ever due to her new profession and new line of work. She says that she wants to study new applications in order to stay up-to-date professionally speaking, in order not to fall back when it comes to the general know-how that's needed in the creative industry she's in.

What ultimately got her to purchase just this specific application, not any other alternative, were the recommendations given by a couple of friends who had already used LR for many years. She actually wasn't aware of the software before her friends started to recommend it to her. She first installed the free trial-version in order to find what LR was all about, but quickly, actually before the free period reached its end, made the decision to update to the full version.

She continues to speak about the pricing of the software. She describes its price to be very tempting and low and says that it is one reason why she ended up purchasing it so quickly. She says that "purchasing it didn't feel like much of a commitment financially speaking". She also points out that the low price was probably the single biggest reason of purchase. Though she bought the application with a student discount, she feels that even the normal price feels justified and fair for such variety of features she gets to use. Therefore she believes she will continue upgrading to newer versions in the future as well, also when she's not entitled to the student discount anymore – with the assumption that no other noteworthy competitors come to the market and give a stand-out alternative to LR.

Her first impressions of the software were positive and she says she was kind of hooked with it from the very beginning. She found it easily approachable, logical and fun to use. For these reasons she started to use the software without studying it theoretically beforehand. According to her, this trial and error kind of way of learning hasn't been very wise, but it came so natural for her since trying things out felt enjoyable and "not scary", as she describes it. She hopes to have studied it in a more theoretical manner though, since she still often times gets a bit confused with the different features and has to consult her more experienced friends. She says that having those people close by, those who are also very interested in the application and have extensive know-how on its use, really help her and take her

further with her work. Using LR has become more and more pleasing of an experience for her due to the help she's been given. Though she has had help from the ones close by, there are still many features in the application she's yet to fully understand and take advantage of. When discussed further, she comes to a conclusion that there are actually some very fundamental features she has been omitting altogether due to their complex nature. She also mentions that she has recently found many good online resources that help her understand the software more thoroughly and also help with the difficulties that arise from time to time.

Person C says that for a visual person like her, the rather simplistic and clean looks of the software's GUI are appealing and make her own content sort of stand out from the dark-colored background and tabs. She likes the fact that the visual appearance can also be modified in many ways to better match her own preferences.

She has been using LR mainly at work, but she has also now started to use the application on her own time by importing and editing holiday pictures and other images of that sort. Person C hasn't had any demands from her employer nor school to use this specific software, neither have they supported its use financially speaking. In other words it has been up to her own free will to take it as a part of her workflow.

## 7 SIGNS OF MOTIVATION

The current chapter compartmentalizes the the interviews transcribed in the previous chapter by splitting the data into three entities. The purpose of this step is to describe separately how the case software motivates the interviewees intrinsically and extrinsically, and what kind of an effect do social norms have in the mix. This separation is presented first verbally and afterwards with with a bulleted list that contains separate motivators and/or signs of motivation spotted in the data.

### 7.1 Person A

#### **Intrinsic motivation**

The fact that Person A has been a user of the software for whole 6 years now says something about her commitment to this very tool. Since it has never been demanded from her to use the software, she clearly wants to use it for personal reasons, and for professional reasons as well. She has also had initiative and will to learn more and more how to use LR and she has been active in teaching other people to use it. Due to the fact that there have never been any demands to use or teach LR, there clearly has to be something that drives her internally to continue its use.

She also seems to feel genuinely happy about the fact that her workflow has got a lot simpler and more enjoyable as a result of using LR, it also came clear that she's very satisfied by the extensity of features LR has built in and that there's no need for her to use multiple tools anymore to get the job done. She also seems genuinely happy about the results she gets with this software.

Motivators / signs of motivation:

- Enjoyment
- Ease of use
- Wealth of features
- Quality of results

- Visual appearance

### **Extrinsic motivation**

Person A found LR's pricing very tempting from the beginning and the perceived low price was clearly a big factor that got her to use this software, and has got her to update to newer versions as they came to the market. LR has also made her work more efficient and the results better, it also has formed a part of her professional toolset.

Motivators / signs of motivation:

- Low price
- Efficiency
- Professional applicability

### **Social norms**

The so called "Lightroom Evangelist" obviously had a big influence when it comes to Person A's decision to adopt and use the software in the very beginning. It can be therefore said that there was a clear social influence that lead her to this very software. It also seems so that she partly uses the software in order to comply with the expectations the creative industry sets to people who work in this particular field of profession.

Motivators / signs of motivation:

- Recommendators
- Industry pressure

## 7.2 Person B

### **Intrinsic motivation**

The enthusiasm with which Person B talked about the topic showed a great amount of genuine interest towards the application, and hence spoke for intrinsic motivation's strong existence and effect. Furthermore, the way in which he

described how the application made his own image content look good and how it brought them into the limelight show signs of internal satisfaction he gets when working with it.

Yet another reason that speaks for intrinsic motivation's existence is that he is also motivated by the visual appearance of the application. The fact that he stated himself that the visual appearance of the software made him feel good about what he's doing, furthermore highlights intrinsic motivation's affect.

Person B has the energy and will to use the same exact tool on his spare time he uses also at work and on paid projects. It can be concluded hence that there's a real enjoyment he gets from using it, and that the energy to do it springs from inside.

All in all Person B was undoubtedly excited to share his experiences and opinions on the topic.

Motivators / signs of motivation:

- Enthusiasm
- Self gratification
- Applicability (work/spare-time)
- Visual appearance of the software
- Enjoyment
- Positive use experience

### **Extrinsic motivation**

The very most decisive thing that lead into buying this specific software was to be able to carry out his paid photography assignments as effectively as possible – hence making money with it was clearly an intension from the very beginning, and continues being so in the future as well. Also his will to perform well in his studies with the help of such a tool speaks for an external reward's affect. For these reasons an outside reward plays an important motivational role in Person B's case.

Though the product's low price didn't play a hugely important role in his decision to buy it – since he really didn't find there was an alternative for it and was willing to pay more for it – he was clearly content with how small of an investment buying the application was.

Motivators / signs of motivation

- Income
- Grades
- Low price

### **Social norms**

Social norms played an important role in the decision to buy just the specific application, not any other that was on the market. After all, the social circle at school got him to be aware of and know the software in the first place. The industry Person B is in has guided him towards the application and speaks for the pressure the community creates to use certain tools.

In spite of the so called support networks he's surrounded by, and though he sometimes uses it to get and give advice on the software's use, he's rather independent with the software and therefore doesn't seem to be so dependent on other people. This is quite possibly due to his vast experience on IT and, as a result of that, due to his ability to internalize new software quickly.

Motivators / signs of motivation:

- Recommendations
- Industry pressure
- Support network (friends/online resources)

### 7.3 Person C

#### **Intrinsic motivation**

For person C using the application felt good from the beginning and she has found it enjoyable. She used the word “fun” contiguously in her speech and was

evidently excited about the topic and eager to share her experiences. Though she has had some difficulties with it, most probably due to lack of theoretical knowledge, she has had the energy and interest to overcome them and to continue using LR in her workflow. She likes the software's visual appearance and that clearly has an important influence on her.

Motivators / signs of motivation:

- Enjoyment
- Visual appearance
- Results

### **Extrinsic motivation**

For Person C the low price of the software seemed to have influenced greatly and it's quite possible she wouldn't use LR if the price had been higher.

Motivators / signs of motivation:

- Low price

### **Social norms**

Other people had a decisive effect on her when speaking of acquisition of the software. Had there not been such strong recommendations coming from her social circles, she wouldn't necessarily have started to use the application at all – in her case the real need for such a software wasn't that big in the first place. Furthermore, as an end-user Person C is rather dependent on other users and their experience and needs advice from them on regular basis. This is very likely caused by her rather limited experience. Other people quite possible keep her more involved with LR.

Motivators / signs of motivation:

- Recommendations
- Support (people close-by and good online resources)



## 8 RESULTS SUMMARY

The current chapter focuses on summarizing the results presented in the previous two chapters. This summary aims to pinpoint, based on the interview data, concrete examples regarding how LR motivates its end-users.

### 8.1 Extrinsic motivators

#### **Price**

All of the interviewees found the software's purchase price low and tempting, that was actually one of the very first things they commented about. It even seemed that for some the software is unbelievably cheap, almost free as person B described it. Free or not, the software has been priced so that the threshold to buying it and continuing to upgrade to newer versions is low. It also should be said that the price was seen low both when reflected against the software's quality as well as its features. For all of the interviewees purchasing the software wasn't too big of a financial commitment, this clearly resulted to be an important extrinsic motivator.

#### **Professional applicability**

As the interviewed end-users proved, LR can be used to run a business and to earn income, in addition to its spare-time applicability. Based on the user stories, this specific software can be an important part of someone's professional workflow and through that have an impact on one's financial issues.

#### **Educational applicability**

All of the interviewees have also in some point in time used the case software in educational context and LR has been such a tool for them that has helped them to better succeed in their personal studies and probably, through that, achieve better grades. Person B specifically thinks that the software has improved his results at school.

## **Wealth of features**

Another strong aspect of LR was seen to be its extensive list of features. For some, LR has made PS rather useless, or at least, decreased the need for using it as a part of their workflows. This all-in-one kind of a solution was found as something very positive since there isn't anymore so much need to jump between multiple applications to get the job done. This probably makes it possible for the end-user to better focus at the task at hand and hence be more efficient overall.

## 8.2 Intrinsic motivators

### **Ease of use**

Especially those who were more experienced in using computer based tools, found LR easy to use. Person C, the interviewee with clearly the least know-how in IT, clearly struggled the most with its use, but has overcome the difficulties with the help of her support network. For the rest of the interviewees, however, there hasn't been hindrance caused by the usability of the software.

### **Approachability**

In addition to easy to use, LR was found easily approachable since all of the interviewees kind of jumped right into the middle of using the software, without too much of theoretical studies. It seems that, though the software probably has been designed keeping professional users in mind, LR is easily approachable and starting to use it has a low threshold. It was quite expectable that Person B, being a seasoned IT-professional, didn't find the software difficult to approach. What speaks for the software's approachability the most is probably the way Person C, who without a doubt has least IT-knowhow of them all, found it easy to use and to comprehend. Though she surely has struggled with getting in terms with LR, there have been no such big obstacles that would have been in the way of working with it.

## **Enjoyment**

All of the interviewees who use the software to earn money, also use it in their spare time. Due to this fact it's obvious that they enjoy using it, otherwise they probably wouldn't spend also their free-time in using it. There was also quite a bit of enthusiasm amongst the interviewees when they spoke of the software and it is a very straight-forward a conclusion that intrinsic motivation is therefore involved. All of the interviewees said themselves, in one way or the other, that they enjoy to work with the software. Even the word "love" made an appearance when Person A talked about how this specific software has made her professional workflow much simpler and focused.

## **Self-gratification**

Based on the user stories it came clear that the software achieves to give its user self-gratification. All of the interviewees were pleased by the way the software makes their image content look and they were seemingly pleased by the quality of their work.

## **Visual appearance**

There was a common consensus amongst the interviewees of the software's looks. LR's look and feel was found uncompromised and well thought out and everybody seemed to be pleased about the visual aspects of it. This attention to detail was embraced by the interviewed end-users and they even thought it made their work look better, which was most evident in Person B's case. In LR's case the rather simplistic dark-themed GUI seems to work quite nicely and at least in this point in time visually aware users seem to appreciate such approach. It seemed like a common consensus that LR's visual appearance spoke of the good quality of the product.

## **Personalizability**

LR was found to be a software that can be adapted to the user's needs, both when it comes to its look as well as its features. None of the end-users found all of the features necessary but, on the opposite, there didn't seem to be anything lacking

when it comes to what the software can actually do. Person B was the only one who mentioned to have installed third-party plugins into LR in order to further enhance its capabilities. This possibility to add such plugins can also be seen as an intrinsic motivator because they give the user a feeling that they can further affect on what the software can do for one's workflow. Also the fact that the user interface can be made to better match one's preferences was well received by the interviewees.

### **Price to quality ratio**

Though all the interviewees found the price low, none of them was disappointed about the quality of the product, hence it can be said that the price to quality ratio was seen very good and the users don't feel like they are underestimated as customers.

### **Spare-time applicability**

LR was found to be a useful software both for work and for spare-time purposes. All of the interviewed end-users use LR both at work as well as home.

### **Wealth of features**

Specifically Person A was pleased by the wide range of features the case software has to offer. As a result of these multiple possibilities the use of PS and other tools has diminished and she clearly find it something very enjoyable. It can be derived based on the three interviews, that LR-users feel more motivated to work with the software because they can better focus on the task and hand and feel more capable to finish the work when there are no unnecessary distractions.

## 8.3 Social norms

### **Recommenders**

It seemed that all of the interviewees had someone in their social circles who recommended to start using the software and those recommendations proved very powerful in making the decision of purchase, and therefore, proved to be effective

motivators. It seems that LR-users tend to be rather passionate about the software and feel committed to it. They also seem to be very active in recommending it to others and in that way gather some sort of a support network around them. The so called “Lightroom Evangelist” Person A talked about, can be an example from the other extreme, but it can just as well be that many other such enthusiastic users exist and influence other people to become users of the software. All in all it seems, though only based on the three interviews, that LR-users form quite a strong group whose recommendations have weight.

### **Support network**

All of the interviewees who use LR had a support network of other LR-users, some just bigger than others. The vast amount of end-users seems to be one of LR’s strong points since its users feel they have support and help available. None of the interviewees seemed to have felt alone or lost with the software’s use, actually quite opposite of that. This support network forms a rather strong social group.

### **Online support**

In addition to the support network some of the interviewees have around them, all of the interviewees have found help online as well. Being a market-leading software solution of the kind, there are a lot of good resources online to help in learning new things about LR and to overcome the possible difficulties. This wide and easily accessible support network was seen also to have an empowering affect on the interviewees.

### **Industry pressure**

All of the interviewees mentioned something about keeping themselves competitive in the industry and up-to-date when it comes to their professional know-how. Therefore it can be said that LR falls into the category of tools the creative industry sort of expects people to know and utilize, or at very least, some of the people in the industry seem to see it as such. In this case it seems that the creative industry is such a social group that directs and energizes these users’ behavior.

### **Adobe's reputation**

Adobe's strong and respected reputation in the creative field should also not be overlooked as a directive power. Both Person A and Person B said they use also other products from the same manufacturer. Person A has actually been very much involved with also other Adobe-software, even through teaching courses that consist exclusively of their use. The manufacturer can therefore also be said to energize users' behavior.

### **Third-party plugins**

Person B pointed out that he has also bought extra plugins for LR and has found them to help his workflow and furthermore enrichen the software's offerings. The fact that also other software manufacturers desire to link their products into LR can also have an effect on the user.

## 8.4 LR as a motivator

Based on the conducted interviews, LR succeeds to trigger all three of the studied types of motivation and motivators from each of the different types were clearly visible in the research data. In other words, in every one of the four interviewees cases both intrinsic and extrinsic motivation, as well as the influence of social norms, were clearly visible and it was straight-forward to find examples of each.

However, it seems apparent that LR succeeds in triggering intrinsic motivation more than anything. This can be derived only based on the number of motivators found for this specific category but also based on the enthusiastic way the interviewees spoke about their experiences. The interviewees were seemingly enthusiastic when it comes to the use of the software. In addition to that, they experienced the software easy to use, easily approachable and visually pleasing. These aspects speak for intrinsic motivators' effect. In addition to the intrinsic motivators, the case software's applicability to both professional and personal life was very apparent.

## 8.5 Suggestions

Has LR achieved something unusual and almost impossible to achieve or could there be something other software manufacturers could learn from? Though a lot of the software's success can be based on Adobe's good and long reputation as a software manufacturer for the creative industry, the software itself clearly holds within such features and characteristics that appeal to its users in many ways, and more specifically, motivates in many ways.

Due to the fact that the interviewees were so high on intrinsic motivation, it seems wise to really give a thorough thought to those aspects that feed people's internal desires and energizes and directs their behavior from inside. In addition to that, visually oriented users should be taken as a user-group of their own. What other software manufacturers could learn from is that the end-user, should not be underestimated in any circumstances and shortcuts in designing the implementation should be avoided.

## 9 SUMMARY

### 9.1 Discussion

The research methods chosen can be seen valid in finding out the answers for the research questions, which were to be addressed in qualitative terms. The unstructured nature of the research's data gathering produces reliable data and the variance seen in case selection furthermore enhances the reliability of the study. All in all motivation study is highly generalizable; it can be used to study various phenomena in various fields, not just explicitly in the IT-field. Since the trend in computing applications, and especially in imaging software, seems to invoke intrinsic motivation increasingly, such a research structure can be valuable in the future. The results are generalizable to some extent when speaking of the users of the application in question. The research focuses only on one specific application and its users. Furthermore, the results can only be said to be valid in the case of the three interviewees and the results can't therefore be generalized to other software users.

### 9.2 Thesis overview

The research in question studied end-users of a specific market leading software product (Adobe Photoshop Lightroom) with the aim of building up an end-user motivation structure. The existence of different types of motivators was studied; namely intrinsic motivation, extrinsic motivation and social norms; through conducting face-to-face interview sessions. The purpose of the interviews was to produce descriptive user stories of the interviewees and then analyze them from motivation theories' perspective. The results of the research highlight the strong existence of intrinsic motivation among end-users, but also show that the case software triggers motivation in a rather large scale. In other words, though intrinsic motivation was the most apparent type of the studied motivation types, also extrinsic motivation and social norms were clearly apparent when it comes to directing and energizing end-users' behavior. The great success of the case software can be seen to be based on this very finding.



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