The effects of intrinsic motivation, extrinsic motivation and toolkits on user participation in User-generated content for video games:

A quantitative study of product development in online communities

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ABSTRACT

In this thesis we will discuss the subject of user participation in the development process of products, specifically video games, through a concept called User-generated content. Product development demands speed and flexibility in the development process and it has been suggested that managers should revise the process of product development to become more flexible and integrate the consumer in increasingly more steps of the process. Video games will often be modified after its release. In fact, it has been estimated that between 95% and 100% of the files in most software will be modified after its initial release. User participation, referring to behaviors and activities performed in a system development process, is a definite feature for websites that consider their content user-generated. Customers who participate in online video game UGC are actively changing games, modifying existing content and creating new content related to all aspects of the game bit by bit, while also contributing this content to others, usually over the internet through some sort of video game content sharing site.

User participation is determined by a user’s ability to participate and his motivation to do so, the latter of which is the focus of this thesis. Two major branches of study can be distinguished from motivational theory; intrinsic motivation and extrinsic motivation. The main purpose of this thesis is to examine the effects of motivational factors of intrinsic motivation, extrinsic motivation and toolkits that motivate customers to participate in UGC for video games. We examine what effects intrinsic motivational factors enjoyment, altruism and continuance commitment, as well as extrinsic motivational factors rewards, future rewards, personal need and reputation have on user participation. The toolkits approach to product development is a common user-oriented product development methods in the video game industry, which allows users to modify and create content for games. We will also study what effects the usefulness and ease of use of these toolkits have on user participation. Conducting a quantitative study, we presented a questionnaire to members of four online video game UGC communities; Steam Workshop, GameBanana, ModDB and MODSonline, in order to assess users’ attitudes of aforementioned concepts in relation to their user participation.

We have not found any relevant research that examines both motivational factors’ and toolkits’ effects on user participation in video game UGC. With recent turbulent developments in the video game industry regarding monetary compensation for UGC, we decided to put great weight on this area in this thesis, both through our review of previous literature and regarding the results of our study.

Our multiple regression analysis showed that toolkit ease of use, intrinsic motivational factors enjoyment and altruism, as well as extrinsic motivational factor reputation have significant positive effects on user participation, while toolkit usefulness showed a significant negative effect on user participation. We also find trends suggesting the positive effect of continuance commitment on user participation, and, finally, a trend suggesting the negative effect of rewards on user participation.
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TABLE OF CONTENTS

1 INTRODUCTION .................................................................................................................. 1
1.1 CHOICE OF SUBJECT ................................................................................................. 1
1.2 PROBLEM BACKGROUND .......................................................................................... 2
1.3 THEORETICAL BACKGROUND AND RESEARCH GAPS ......................................... 4
1.4 RESEARCH QUESTION ............................................................................................... 9
1.5 PURPOSE ....................................................................................................................... 10

2 THEORETICAL FRAMEWORK .......................................................................................... 11
2.1 USER PARTICIPATION IN PRODUCT DEVELOPMENT THROUGH UGC .............. 11
2.2 TOOLKITS USEFULNESS AND EASE OF USE ......................................................... 15
2.3 INTRINSIC MOTIVATIONAL FACTORS ..................................................................... 19
    2.3.1 Enjoyment ............................................................................................................. 20
    2.3.2 Altruism ............................................................................................................... 20
    2.3.3 Continuance Commitment .................................................................................... 21
2.4 EXTRINSIC MOTIVATIONAL FACTORS ..................................................................... 23
    2.4.1 Rewards ............................................................................................................... 24
    2.4.2 Future Rewards .................................................................................................... 26
    2.4.3 Reputation ........................................................................................................... 27
    2.4.4 Personal need ....................................................................................................... 29
2.5 CONCEPTUAL MODEL ............................................................................................... 30

3 SCIENTIFIC METHODOLOGY ......................................................................................... 33
3.1 ONTOLOGY .................................................................................................................. 33
3.2 EPISTEMOLOGY .......................................................................................................... 33
3.3 RESEARCH APPROACH .............................................................................................. 35
3.4 RESEARCH STRATEGY ............................................................................................... 35
3.5 PRE-UNDERSTANDINGS ............................................................................................ 37
3.6 LITERATURE SEARCH ............................................................................................... 37

4 PRACTICAL METHOD ...................................................................................................... 40
4.1 QUANTITATIVE RESEARCH ....................................................................................... 40
4.2 SELECTION OF TYPE OF DATA ................................................................................. 40
4.3 CHOICE OF METHOD FOR DATA COLLECTION ......................................................... 42
4.4 QUESTIONNAIRE CONSTRUCTION ............................................................................ 43
4.5 SAMPLING TECHNIQUE ............................................................................................ 45
4.6 DATA ANALYSIS ......................................................................................................... 48
    4.6.1 CRONBACH’S ALPHA ........................................................................................... 48
LIST OF FIGURES
Figure 1. Factors affecting user participation Own conceptual model.......................... 32
Figure 2. Gender distribution ......................................................................................... 52
Figure 3. Age distribution............................................................................................... 53
Figure 4. Education distribution...................................................................................... 54
Figure 5. Factors affecting user participation. Revised conceptual model.................... 61

LIST OF TABLES
Table 1. Hypotheses ........................................................................................................ 1
Table 3. Question construct and their sources.
Table 3. Cronbach’s Alpha.
Table 4. Descriptive statistics.
Table 6. Pearson Correlation.
Table 7. Model Summary.
Table 8. Anova Collinearity Statistics.
Table 9. Multiple regression analysis.
Table 10. Summary of hypotheses tested.
1 INTRODUCTION

1.1 CHOICE OF SUBJECT
Before explaining the choice of subject and why it is of interest, we will first introduce ourselves. We are two marketing students at the Umeå School of Business and Economics, enrolled in the Service Management Program and the Business Administration and Economics Program. We decided to research an area where companies are creating genuine value to their consumers, and after discussing which area this could be, we selected the topic of product development. Product development leads to either improved or completely new products that allow users to satisfy needs and accomplish their goals to a greater extent, or more effectively, than previously possible. To specify our study more we chose a section of product development we have encountered with increasing regularity, in an industry which is of great interest to us both. This subject is video game development through the concept of User-generated content (UGC), where users participate in creative and productive activities in order to provide, as well as gain, extra value in video games. Both authors have experience with video gaming on an amateur level, and have seen certain video games gain international success due to an extensive integration of UGC in their business model, such as DOTA 2 and Team Fortress 2. During our time growing up engaging in this hobby, we have also encountered the rise of the E-sports and gaming as a professional arena. As an exchange student in South Korea, one of us was invited to watch the 2013 Asian champions cup in the competitive video game League of Legends (developed originally as UGC for another game) with first prize of over US $1 million. The example of League of legend shows that UGC has the potential to have great impact on video game development. The video game industry is a growing market (Newzoo, 2014) and the area of UGC for video games has a high potential to keep evolving but is yet relative unknown in terms of academic studies (Jeppesen, 2004, p. 2). With this interest in video gaming, and the opportunity to find and examine a research gap in a growing industry, we decided that product development through UGC would be the subject of this thesis.

For our choice of theories, we started with the concept of UGC. From previous research (Jeppesen, 2004; Poor 2013; Scacchi 2011) we found that the concept had relevance to user participating in product development. From there we decided to focus on concepts relevant to answering why users decide to participate in video game UGC. We wished to examine what different motivational factors motivate some consumers who create and share content for video games. The concepts we finally decided upon studying were gathered from previous research suggestions and findings. Poor (2013, p. 16) found that intrinsic motivations such as community commitment and enjoyment has a positive effect on video game modding, a form of UGC, he also examined the potential monetary compensation to users for their contributions. Some companies have chosen to pay users for UGC contributions (Kroll, 2015), if they are implemented into the game, making rewards an interesting motivational factor in our study. Rewards are an extrinsic motivational factor (Ryan & Deci 2000b, p. 72). We then surveyed further for extrinsic motivational factors as concept of motivation for creating UGC in video games. Hars & Ou (2001, p. 2-3) found that user participating in open source UGC was motivated by intrinsic motivational factors and extrinsic motivational factors. Kwok & Gao (2004) divide motivations of contributing to knowledge-sharing communities into intrinsic and extrinsic motivations. Nov et al. (2010) also divide motivations for
participating in an online photo-sharing community into intrinsic and extrinsic motivations. We believe that intrinsic and extrinsic motivational factors should be examined for their effects on users participating in video game UGC. We found out early that, in order to make UGC possible, users need access to a game’s content and more specifically means to modify this content. Toolkits are essential for users to gain access and be able to create UGC, and being user-friendly is crucial for toolkit success (Scacchi 2010; Von Hippel & Katz 2002, p. 822). Davis (1989, p. 334) suggest that toolkits usefulness and ease of use determines the toolkits user-friendliness. After assessing the importance of toolkits for the successful implementation of UGC, we chose to study toolkits usefulness and ease of use for their effects on user participation as well.

1.2 PROBLEM BACKGROUND

During the development of the computer over the last 40 years, traditional leisure and other activities have partly been replaced with video gaming (Connolly et al., 2012, p. 661). The continuing development of consoles and games, and an increasing availability are key factors for this continual growth (Connolly et al., 2012, p. 661). Newzoo market report for 2014 showed 1.7 billion gamers in the 100 countries with the highest game related revenue aggregated US $81.5 billion and the PC games share of US $24.4 billion (Newzoo, 2014). Online activity has also increased as the internet has grown as a phenomenon with immense speed, the number of websites in 1995 was only 23,000 to become over 644 million in year 2012 (Pomirleanu et al., 2013 p. 166). With a high and growing number of customers, the video game industry is clearly a lucrative but highly competitive industry. Competitive advantage is critical for the success of a company; if a company can’t preserve content and technology, competitive advantage will be difficult to sustain (Barney, 1991, p. 111). But unfortunately, regarding software, content can be easily imitated and copied, reducing some of its competitive advantage (Swinyard et al., 1990, p. 655). This raises questions of how video game developers can stay competitive. Developing a better in-game experience is one way of allowing the game to have more competitive advantage and attract more customers (Choi and Kim 2004, p. 23). Attracting customers is vital in any company, as a loss of a customer also means a loss of future purchases ( Kotler & Armstrong, 2010, p. 47). Jain & Singh (2002, p. 35) claim that online customers prove to be more profitable on each return purchase they do. According to Reichheld & Schefter (2000, p. 105), the cost of acquiring a new customer is greater for an online firm than it is for a traditional firm, but customer repurchases are also more profitable for online companies; hence, customer retention and loyalty is more profitable for online companies. Choi and Kim (2004, p. 22) found that consumers would show loyal behaviors towards a video game if it provided an optimal video game experience for the consumer, and the experience was based on personal and social interactions within the video game. Choi and Kim (2004, p. 23) suggest that if online video game developers continuously improve the interaction of the video games in different areas such as design and features, their video games might provide better experiences, which will increase their advantage and gain consumer loyalty. This leads us to believe that a competitive advantage can be achieved by improving interaction and experience within the video game, and that video game companies should strive to continuously develop their games. Video game developers’ focus should be towards optimizing the game experience so that consumers stay loyal over long periods of time.
Henderson & Clark (1990, p. 11) state that products are sets of components working together, and that product development can come from changing only one of these components. Marples (1961, p. 71) argues that analyzing the sequences of components function in a product and changing some of these can lead to a differentiated product. The two studies emphasize that smaller change can be used as an instrument to improve existing products and develop new products (Henderson & Clark, 1990, p. 11; Marples, 1961, p. 71). Software programs consist of different files, and it’s estimated that between 95 % and 100 % of the files in most software are modified after their initial release, through patches and updates (Purushothaman & Perry, 2005, p. 521-522). This tells us that video games will be changed after release and also that, by continuously changing the software code, developers can give the product increased performance and even new purposes. The ongoing product development of video games therefore becomes a core principle of improving the game experience in order to ensure that consumers stay loyal. But having the capacity alter each file can be overwhelmingly time consuming. Takeuchi and Nonaka (1986, p. 137-141) write that in intense competition, product development demands speed and flexibility in the development process, and they further claim that managers should revise the way of product development to become more flexible. The concept of trial and error should also be promoted from managers since this allows workers to narrow down possible outcomes in order to find the better solutions (Takeuchi and Nonaka, 1986 p. 141). Speed and flexibility, as well as trial and error encouragement, therefore seem to be aspects important to product development. One way of being flexible and implementing trial and error during product development is by opening the information channels to different stakeholders, especially customers, so that they can help with the process, since they often have good experiences and suggestions for improvements (Takeuchi and Nonaka, 1986 p. 145). Jeppesen (2004, p. 2) suggests that video game developers should outsource some parts of the development process to users to take advantage of their creativity and knowledge. Users can work as agents for the game developers creating and testing various different constructions of files and concept allowing the game to develop in different directions (Scacchi, 2010). Video game UGC, typically through, but not limited to, a concept called modding, is one of the leading ways of customizing and developing video game software with help of the user (Scacchi, 2011, p. 5). Jeppesen (2004, p. 2) found that firms starting to realize the opportunity with UGC, but that they are less familiar to how to give incentives for users to contribute more. Some communities have implemented different methods to attract users to create UGC.

An up to date example of culture of a community being negative to implement monetary compensation to the user created content is Bethesda game studios. Bethesda Game Studios managers tried to implement paid UGC for the game Skyrim via steam community, but only a week after the implementation the function was taken away and those who already paid got their money back (Kroll, 2015). When implementing a system that would allow content creators to charge money for their content, the company received huge backlash from the community, and the program was cancelled. The major cause for the quick cancellation was an overwhelmingly negative response from the community, and the function and its implementation was perceived as being horribly bad (Kroll, 2015). Alden Kroll working on steam community stated; “it's clear we didn't understand exactly what we were doing.” and "We understand our own game's communities pretty well, but stepping into an established, years old modding community in Skyrim was probably not the right place to start iterating." He implies
that Valve Software, a company that has successfully implemented monetary compensation for UGC, understood how their users perceived monetary compensation for UGC. This failure of predicting what effect monetization has on user participation shows a need for an examination of which motivational factors actually do affect user participation in UGC for video games.

1.3 THEORETICAL BACKGROUND AND RESEARCH GAPS

User-Generated Content (UGC) or user-created content (UCC) directly refers to the phenomenon of users producing media (written text, photos, videos, audio files etc.) and sharing them over the internet. Schäfer (2011, p. 237) summarizes the organization for Economic Co-operation and Development’s (OECD, 2007, p. 8-9) definition of user-created content as: “i) content made publicly available over the Internet, ii) which reflects a ‘certain amount of creative effort’, and iii) which is ‘created outside of professional routines and practices’”. User-generated content has acquired several conceptual names and definitions (Christodoulides et al., 2012, p.54; Östman, 2012, p. 1006). We take our definition of User-generated content from Trosow et al. (2010, p. 10); “We define user-generated content as content that is voluntarily developed by an individual or a consortium and distributed through an online platform.” Generally UGC and User-created content (UCC) are considered to be the same thing (Chua et al., 2014 p. 8), but not all authors agree. According to Östman (2012, p. 1006) UCC is content originally created by users, while UGC is amateur production of original content, or alteration and editing of existing content. A commonly cited definition of UGC and UCC is that of the Organisation for Economic Co-operation and Development which we presented above. Some authors (Christodoulides et al., 2012, p. 54) consider this definition accurate but incomplete while others (Östman 2012, p. 1006) write that it is important to distinguish the two concepts. We consider UGC and UCC to be the same concepts with the distinction to the originality of the content just mentioned by Östman, and that our definition does not require participation to take shape “outside professional routines and practices”. Video game modding, a specialized form of UGC, is one of the leading ways users employ when customizing and developing video game content (Scacchi, 2011, p. 5). Poor (2013, p. 2) defines the concept: “Modding, from modifying, is the act of changing a game, usually through computer programming, with software tools that are not part of the game.”

UGC for video games, with the purpose of creating and sharing content with others, has been around since the 1960’s (Trosow et al., 2010, p. 15). The first computer game to be modded was the game Spacewar!, created by students of the Massachusetts Institute of Technology in 1961 for their newly acquired super-computer (Christiansen, 2012, p. 31). Since then, the video game industry has left its roots as playful experiments for academic computer scientists and become an interest for both serious contexts as well as for entertainment (Blumenthal et al., 2003, p. 107). UGC in video games today has evolved immensely; some games are now developed to include in-game creation modes, such as Little Big Planet and Spore, where gamers create their own vehicles, creatures and characters as a major part of the gameplay. These in-game creations, however, do not require the same time or dedication as the activities discussed in this thesis, as they are part of the game, and not an exterior part of the product development. In the PC game industry in particular, software engines and authoring toolkits are regularly made available to end-consumers (Blumenthal et al. 2003, p. 49-50). These toolkits are used by the consumer to redesign or extend the core products, sometimes in manners which are unpredicted by the publishers (Blumenthal et al. 2003, p. 50), but increasingly in
ways that are expected and planned by the publishers. For example, Blizzard Entertainment has allowed players to redesign their highly successful massively multiplayer online game (MMOG) World of Warcraft (WoW) as gamers can modify in-game files regarding visuals and audio content. WoW, in one way, depends on such mods since it is designed to be changed by the ‘player population’ (Trosow et al., 2010, p. 15). Video game software will often be modified after its release, and these changes come from improvements from smaller modifications in each file (Purushothaman & Perry, 2005, p. 521-522). These smaller changes are called patches, and, through these, the game becomes updated with a new version that might focus on updating a bug or rebalance the game. If a video game developer chooses to open up their source code to the public, allowing their users to modify the game, consumers can create UGC that have the potential to benefit the game with bug fixes or game-extending content like a new patch (Jeppesen, 2004, p. 20). The different forms of UGC can become popular or improve the game to such extents that it can increase the popularity and lifespan of the video game (Jeppesen, 2004, p. 16). Video games, especially older games, which already have an integrated system for UGC, can see new content being developed which extends game play and extends sales, creating value for both consumer and company (Jeppesen 2004, p. 16). With a large amount previous literature arguing for positive effects of user-oriented product development for video games, we decided to study the integration of users into the product development process further. We would like to understand what motivates consumers to produce UGC for video games as this could help video game developers with constructing effective strategies for developing games conjunctly with their consumers.

If a company can create something that the consumers desire and anticipate, the company will be successful (Brown & Eisenhardt, 1995, p. 343), but knowing what the customers desire and anticipate is difficult. Most innovative products stem from of already existing products, which are improved or redesigned, rather than being completely new products (Eppinger et al., 1994, p. 1; Kotler & Armstrong 2010, p. 282). The first step in the actual product development process is to identify consumers’ needs and expectations (Whitney, 1990, p. 6). Armed with research on what consumers need and expect, a new product that matches these criteria can be developed (Whitney, 1990, p. 6). Customer-oriented product development, where customers are actively engaged in the development process, is proven to give greater returns on assets and income growth than company-oriented product development (Kotler & Armstrong, 2010, p. 293; Cooper, 2006, p. 21). Christodoulides et al. (2012, p. 55) write that: “Businesses are not good at predicting consumer preference and need the help of their customers in getting their products right.” Products that were developed together with users are better than products developed without user input (Lilien et al., 2003, p. 1055). We do agree with Christodoulides, that developing a product for customers should be more successful if users of the product are consulted in the process. Customers who participate in online video game UGC are actively changing products, modifying existing content and creating new content bit by bit, and do not need to rely, to the same extent, on the game developers for new content. Through UGC, customers are able to participate in continuous product development. Thorough understanding of consumers’ behaviors and attitudes is lacking, and will be critically important for integrating customers in the product development process (Van Trijp & Steenkamp, 2001, p. 119).

In order to allow users to involve themselves in the production of a video game, the developers need to enable support for users to create UGC (Batory et al., 2002 p. 211).
Customers cannot create content for video games effectively without control over the game’s software (Scacchi 2011, p. 5). By providing software extension with the possibilities to implement changes, users can participate in product-developing UGC (Scacchi, 2011, p. 5). Users can become introduced to product development through something called the toolkits approach to product and service development, a concept which “involves transferring need-related product development tasks from manufacturers to users, and equipping the users with tools to carry out those tasks” (Von Hippel & Katz, 2002, p. 822). Von Hippel & Katz (2002, p. 825-8) state that five objectives should be fulfilled in a truly effective toolkit. It is by allowing for mistakes to be made, by being simple and by allowing users to share their creations, to name three of the five objectives, that a toolkit can become effective (Von Hippel & Katz, 2002, p. 825-8). Finding and developing means of sharing content between users, and distributing content from company to consumer is an important issue for future research (Nambisan, 2002, p. 409). One problem with development toolkits is that they are often difficult to use (Myers, 1995, p. 77). Davis (1989, p. 319) explains that research on toolkit ease of use and usefulness has been constrained by a shortage of high-quality measures. Future research is needed to address how other variables relate to usefulness and ease of use. The concepts usefulness and ease of use, introduced, conceptualized and measured by Davis (1989) are appropriate to use when researching user participation in product development and design methodologies (Davis, 1989, p. 335). We will study the concepts perceived usefulness and perceived ease of use in relation to user participation in video game UGC.

“Voluntary participation (is a) definitive feature for websites that consider their content user-generated” (Zhang & Zubcsek, 2011, p. 27). User participation refers to behaviors and activities that the target users perform in a system development process (Barki & Hartwick, 1989, p. 59) and creating, sharing and organizing UGC for video games are participatory activities (Schäfer, 2011, p. 46-50). Users' willingness to participate can be based, firstly, on their motivation to, and, secondly, their ability to participate (Cavaye, 1995, p. 314). Lin et al. (2013, p. 314) highlight previous research that has shown that customer participation offers benefits in areas like time acceleration, cost reduction and product quality improvement, which are regarded partial determinants for successful product development. Consumers should participate in the process of product development in areas where they can be productive and effective (Alam, 2002, p. 256). Hoyer et al. (2010, p. 288) explains that users choose to participate based on different motivational factors and Burnett & Rothermel (2004, p. 58) explain that firms need to help consumers participate in UGC creation by providing help and information. User participation in the innovation process is an understudied area and a more comprehensive framework is needed to further the research in this area (Hoyer et al., 2010, p. 283-284). Hoyer et al. (2010, p. 289) also emphasizes that we need a better understanding of the motivation of consumers who create content alongside companies, in order to take full advantage of these creative consumers.

Out of the concept of motivation, two major branches of study can be distinguished; intrinsic motivation and extrinsic motivation (Ryan & Deci, 2000b, p. 69). Ryan & Deci (2000a, p. 56) define intrinsic motivation as “The doing of an activity for its inherent satisfactions rather than for some separable consequence”. Intrinsic motivation comes from the satisfaction of completing or performing a task rather than getting a reward from its outcome (Ryan & Deci, 2000a, p. 56). Extrinsic motivation, in turn, is defined as “a construct that pertains whenever an activity is done in order to attain some
separable outcome” (Ryan & Deci 2000a, p. 60). Extrinsic motivation is complementary to intrinsic motivation, and is motivation to do a task for a certain goal or outcome; the performance is therefore something needed to gain satisfaction later (Ryan & Deci, 2000b, p. 71). We will now present the factors we found to be relevant from previous research in intrinsic motivation and extrinsic motivation for user participation in UGC.

Enjoyment is at the core of intrinsic motivation, an emotion that, if experienced in relation to an experience, represents the satisfaction of intrinsically motivated behavior (Deci & Ryan, 1985, p. 28, 34). Enjoyment has become an important requirement for software, both within production and consumption (Monk et al., 2002, p. 924). Enjoyment has been found to be at the top of motivational factors for contributions of UGC among wikipedians (Nov, 2007, p. 63). Enjoyment of the process accurately reflects users’ motivations for participating in free assistance and product innovation (Franke and Shah, 2003, p. 159). Enjoyment is a motivating factor for users’ participation in open source software product development (Lakhani & Wolf, 2003, p. 11), another form of user-led product development. Enjoyment has begun to be a defining requirement for successful computer software development (Draper, 1999, p. 121-122). Enjoyment has been found to be among the top motivational factors for many activities similar to user participation in video game UGC, like software development (Draper, 1999, p. 121-2), open source software development (Lakhani & Wolf, 2003, p. 11), user participation in UGC among wikipedians (Nov, 2007, p. 63), assistance for product innovation (Franke and Shah, 2003, p. 159), as well as computer game modding (Poor, 2013, p. 6). For a concept which is of such importance related to creative and or innovative work, it would not be possible for us to examine different intrinsic motivational factors for participating in video game UGC without including this concept in our model.

An altruistic act is performed when action is taken for the benefit of another, and the costs to oneself outweigh one’s own benefits (Unger, 1991, p. 77). Altruism is conceptualized within psychology as “affection and concern for others” and within sociology as “where the goal of conduct of the ego is exterior to itself” (Sawyer, 1966, p. 407). Altruists are willing to reduce their own benefits or consumption in order to increase the benefits or consumption of others (Becker, 1976, p. 818). Altruism has been shown to be the strongest predictor of UGC creation (Presi et al., 2014, p. 1612, 1615) and a motivational factor for user participation in UGC and activities similar to UGC (Oreg & Nov, 2008, p. 2061; Presi et al., 2014. p. 1617-9; Hsu & Lin, 2008; Hars & Ou, 2001, p. 6). Altruism has not played such a big role in other industries, and why it is so prevalent within the software industry is not yet known (Wu et al., 2007, p. 254). Altruism is confirmed as a motivating factor for open source software development (Oreg & Nov, 2008, p. 2061; Hars & Ou, 2001, p. 6), UGC behavior among dissatisfied customers (Presi et al., 2014. p. 617-9), as well as UGC among bloggers (Hsu & Lin, 2008), p. 76). Just as with enjoyment, the concept of altruism has been found to be a motivator of many similar participatory activities, and, by virtue of this past relevance, should be part of our research. Altruism has, as far as we have found, not been tested as a motivating factor for participation in online video game UGC, so this study should be the first to test this link.

Meyer & Allen (p. 82) divide the concept of community commitment into three components: Affective, normative and continuance commitment. Meyer & Allen (1991, p. 67) define continuance commitment as “an awareness of the costs associated with
leaving an organization”. Continuance commitment can be seen as commitment to a social system role and individuals who consider themselves part of the organization make cognitive continuance commitments to their roles in the organization (Kanter, 1968, p. 500, 504). Continuance commitment is a bond between member and community, based on the belief that involvement provides benefits that are not easily available elsewhere (Bateman et al., 2011, p. 843). In order to achieve commitment to continued user participation, positive cognitive orientations, which have positive valence for the user, need to be highlighted (Kanter, 1968, p. 504). All communities that expect to survive and thrive rely on their users’ continued participation (Bateman et al., 2006, p. 984) which is why we see a definite purpose in researching continuance commitment as a motivational factor for participation in UGC. In multiple studies, commitment to the sites where the users participate is confirmed as motivational factors for participation among computer game modders (Poor, 2013, p. 17), knowledge sharing (Wasko & Faraj, 2000, p. 169) and user participation in UGC (Brabham, 2010, p. 1124; Wiertz, & de Ruyter, 2007, p. 352). With the concept being shown as a motivator in these areas, especially user participation in UGC, we regard it as a highly possible motivating factor for user participation in video game UGC.

A tangible reward can be given as a payment in the form of money or prizes, a symbolic item or even a trophy that shows achievement (Sansone & Harackiewicz, 2000, p. 24). Rewards can motivate performance (MacLeod & Malcomson, 1998, p. 389) and can be used to control and strengthen behavior that otherwise would not be sought by the individual (Sansone & Harackiewicz, 2000, p. 24). Cook (2009, p. 48) argues that giving rewards for UGC will cause tension between contributors regarding free sharing of creative content versus protection of creative content. Traditionally, gamers who create content for games have not been motivated by the prospect of tangible compensation (Poor, 2013, p. 2, 16). This is because there are few video game companies that facilitate rewards to modders for the content they contribute (Poor, 2013, p. 16-17). Rewards need not necessarily be procured immediately during or after contributing UGC in order to be motivational. UGC is a way to build both connections as well as a portfolio, and the possibility of future employment in the area is a strong incentive from users to produce content (Brabham, 2010, p. 1133, 39). Many successful video game modifications have been made by users, but the value of involving consumers in the commercialization of a product has been understudied in previous research (Hoyer et al., 2010, p. 291). Those who create UGC in video games are as said currently gain little or no money for their labor, while the game developers gain billions of dollars, partially from their users content (Postigo, 2003, p. 604-605). Franke & Shah (2003, p. 170) conclude that financial compensation is completely rejected as a motive for providing assistance in a community. Poor (2013, p. 16), Postigo (2003, p. 604-605) and Arakji & Lang (2007, p. 212) state that the area of rewards for content creation needs further investigation. We believe that rewards can be a motivator for consumers to participate in video game UGC activities, and that this concept is highly relevant for our thesis.

The third extrinsic motivational factor we examine is motivation from reputation; choosing to act or not based on the reputation, status and respect that can be achieved through action (Nov et al., 2010, p. 556). Persons who are motivated by reputation desire the approval of their peers, and get an ego boost from getting acknowledged for their actions (Ryan & Deci, 2000 p. 54). The motivation of reputation can be fulfilled by earning respect and improving their status among their peers (Lerner & Tirole, 2002,
p 213), personal authority figures (Ryan & Deci, 2000 p. 54), as well as in the community as a whole (Postigo, 2003, p. 600). Feedback from others may even boost both intrinsic and extrinsic motivation, which might increase motivation for the desired behavior further (Deci et al., 1999, p. 557). Those users who focus on gaining a good reputation are found to focus less on the quantity and more on the quality of what they are doing (Nov et al., 2010, p. 564). If a user’s perception is that a contact will be repeated, his motivation to receive a good reputation would be higher (Parameswaran & Whinston, 2007, p. 342).

Personal need is an extrinsic motivation that stems out of an individual’s desire to fulfill one’s own needs (Farzan & Brusilovsky, 2011, p. 278). The meaning of personal need is that the contribution one provides will benefit oneself in some way (Lui et al., 2002, p. 5). When a product’s current state provides unsatisfactory attributes, a customer might decide to provide these attributes, motivated by a need to improve the product for his own use (Solomon 2009, p. 154). The customer needs or wants an improvement in the product and will modify it to satisfy his product need (Hars & Ou, 2000, p. 489). The consumer who engages for his personal need finds satisfaction from creating and using an improved product (Hars & Ou, 2000, p. 489). Wu et al. (2007, p. 259) find that programmers’ motivation to satisfy personal needs had a positive effect on user participation. Hars & Ou (2001, p. 7) also find that the motivational factor of personal need is correlated to participation. We have found two teams of researchers, Farzan & Brusilovsky (2011, p. 278) and Hars & Ou (2001, p. 7), who believe that personal need as a motivational factor for user participation has been insufficiently explored in academic literature. We see that personal need shows promise as a motivating factor for user participation, and we believe it should be tested specifically in the context of video game UGC.

All of our concepts in theory appear as eligible motivational factors for user participation in UGC, with some showing extra potential as possible motivational factors for software-based user participation in UGC, and a select few that show an overwhelming potential as motivating factors specifically for user participation video game UGC. We have not found any relevant research that examines both motivational factors’ and toolkits’ effects on user participation in video games UGC, even though both areas have been thoroughly investigated and presented in academic writings regarding UGC, though often not specifically focused on video games. As previous literature puts great weight on proper toolkit integration for user participation, we believe that studying this alongside the overarching intrinsic and extrinsic motivations for user participation in video game UGC should be considered highly relevant.

1.4 RESEARCH QUESTION
From the theories we have briefly introduced, a research question, which we felt was of both interest and importance, was developed:

What effects do factors of intrinsic motivation, extrinsic motivation and toolkits have on user participation in video game UGC?
1.5 PURPOSE

The main purpose of this thesis is to examine the effects of motivational factors of intrinsic motivation, extrinsic motivation and toolkits that motivate customers to participate in UGC for video games. By studying factors of intrinsic motivation, extrinsic motivation and toolkits, this study will identify and explain what affect these factors have in a creative online setting. In order to fulfill this purpose we will conduct a quantitative study addressed to find out if the motivational factors intrinsic motivation, extrinsic motivation and toolkits affect consumers’ motivation to user participation in UGC for video games. This quantitative study will examine whether key factors enjoyment, altruism, continuance commitment, rewards, reputation, personal need, as well as perceived toolkit usefulness and ease of use, affect user participation in video game UGC.

From a practical perspective this thesis will serve managers in video games with a guideline to understand what effect different motivational factors have on user participation. This these will hopefully help manager in recognizing which motivational factors might be useful to consider when implementing a strategy for user participation in creating and sharing video game UGC. Furthermore, this thesis should be able to show managers in the game development and marketing processes to understand certain customers’ needs, and what kinds of incitement they should provide creative consumers. This thesis can serve to help managers when directing users to the kinds of video game UGC which will prove favorable to video game development, allowing the manager to outsource parts of the game development process to users through participation in UGC.
2 THEORETICAL FRAMEWORK

2.1 USER PARTICIPATION IN PRODUCT DEVELOPMENT THROUGH UGC

Companies that can quickly develop new products, which the consumers are eager to purchase, are those companies that are likely to be most successful (Brown & Eisenhardt, 1995 p. 343). Brown & Eisenhardt (1995, p. 343) emphasize the importance of developing new products, and state that if a company can create something that the consumers desire and anticipate, the company will be successful. Product development has become a focal point of competitive advantage and firm growth (Clark & Fujimoto, 1991, p. 1; Kotler & Armstrong 2010, p. 282). Product development is a process through modification or improvement of existing products or R&D project creating completely new products (Kotler & Armstrong 2010, p. 282). Most innovations come from product development of currently existing products, which are improved or redesigned, rather than being completely new products (Eppinger et al., 1994, p. 1). Some estimates claim that 90% of all new products fail, and as such, completely new products should be considered risky investments (Kotler & Armstrong, 2010, p. 282). Redesigning current successful products can be a way of reducing the risk of failure, as they already are functional and desired on the market.

Szymanski et al. (2007, p. 35) argue that product innovation should be considered the ‘holy grail’ for corporate managers. Traditional realization of product development starts with identifying customer needs and comprehending the customers’ expectations for change, in order to convert these needs and expectations into product specifications and finally design a product based on these criteria (Whitney, 1990, p. 6). In the words of Christodoulides et al. (2012 p. 55): “Businesses are not good at predicting consumer preference and need the help of their customers in getting their products right”. Today’s consumers have information, knowledge and a sense of empowerment and want to be involved and participate in the product development process (Prahalad & Ramaswamy 2004, p. 6; Hoyer et al., 2010 p. 283). By letting the consumer participate in the development process, a synergetic co-operation can emerge in order for both consumer and producer to create value for the product (Prahalad & Ramaswamy 2004, p. 6). Jeppesen & Frederiksen (2006, p.47) remind us that industries for skateboarding and mountain biking have come to exist from products created originally by users. Industries like free open-source software design, which users develop themselves, has grown and is able to compete with big commercial actors (Lakhani & Von Hippel, 2003, p. 925). This tells us that consumers as users should be regarded as capable actors, and also as potential resources for innovation and product development. Before consumers participate in the product development process, however, it’s necessary to identify how the consumers’ contributions can be effective and productive (Alam 2002, p. 256).

A company-oriented product development process means that the consumer is not participating in the creation process more than that they are subject of being targeted for a product (Prahalad & Ramaswamy, 2004 p. 7). This was the new product development strategy of the 1970’s and earlier, where “manufacturers developed products and consumers bought them” (Voulgari et al., 2013, p. 369). The concept of user-oriented (also referred to as customer-oriented-) product development is characterized by having a starting point in the user’s situation and formulation of user requirements (Kaulio,
These requirements are then transformed into measurable engineering requirements, and serve as the basis of innovative design (Kaulio, 1998, p.144). User-oriented product development has been used in many industries such as clothing, military, design, public transport systems and more (Kaulio, 1998, p.144). The sharp distinction between manufacturer and user disappears as customers actively take part in the development of a product. Kaulio (1998, p.147-148) presents three lateral dimensions concerning the depth of consumer involvement in different approaches; “design for”, “design with” and “design by”. In the “design for” strategy, customers are objects from which it is possible to elucidate general requirements and data, which guides the design process. In the “design with” strategy, customers are interacted with during the design process, and can be presented with prototypes in order to collect feedback about the product. In the “design by” strategy, customers participate in the design process. Customer-oriented product development, where customers are actively engaging in the development process, is proven to give greater return on asset and income growth than company-oriented product development (Kotler & Armstrong, 2010, p. 293; Cooper, 2006, p. 21). Common customer-oriented product development methods in the video game industry include approaches such as beta testing and toolkits approach to product development (Burger-Helmchen & Cohendet, 2011, p. 325, 327; Holstroem, 2001, p. 303-304). Beta testing approach to product development occurs in the latter stages of product design, and is performed in order to test the product in its intended environment (Kaulio, 1998, p.145). In this approach, working prototypes are provided to selected customers and is then tested for experience feedback, which is then used for the development of the product (Kaulio, 1998, p.145). Beta testing is a common practice in software engineering (Kaulio, 1998, p.145). We regard beta testing as a ”design with” strategy. It involves consumers with presenting them with a prototype in order to extract feedback. The manufacturers then take this feedback and create a product with this feedback in mind. Von Hippel & Katz (2002, p.821) explain the toolkits approach to product and service development as a way for users to find their own solutions to problems they perceive within products. Participatory ergonomics is another approach to user participation in product development. In this approach users actively participate as designers in order to design their own environment, allowing an active engagement of end-users in the process of change (Kaulio, 1998, p.146). We regard the toolkits approach to product development as a “design by” strategy, as it actively involves the consumer in the design process.

For firms in fast paced markets, like the computer software industry, product development is an essential process for renewal, survival and success (Brown & Eisenhardt, 1995, p.344). Smaller innovations can help with short-term growth, while larger more profound innovations can lead to long-term growth (Szymanski et al. p 35). Being an effective product developer is difficult, and there are many examples of products that became too expensive or missed the deadline or even failed after their development (Clark & Fujimoto, 1991, p. 6; Kotler & Armstrong, 2010, p. 282). The reason for the difficulty can among some be product development can be difficult either by the products technologically complexity (Eppinger et al., 1994, p. 11). If the product design involves many smaller components and tasks that were developed previously, a final product can be fully developed from these (Eppinger et al., 1994, p. 11). In a comparison of successful and unsuccessful firms, Brown & Eisenhardt (1997, p.1, 25) found that managers who had employed limitations, clear control and priorities while simultaneously promoting extensive communication and freedom of improvisation were more successful when developing projects. They also found that the successful firms
searched and prospected the future with many different low-cost experiments in order to implement the most suited solutions (Brown & Eisenhardt, 1997, p. 25).

One way of reducing cost of experiments is to let the consumer test the performance of the current system with the purpose of giving feedback of what can be changed (Kaulio, 1998, p. 145; Alam 2002, p. 256). But firms can also seize the opportunity with UGC by handing over some of the programming to the consumer, reducing cost of development (Jeppesen, 2004, p. 2, 5). After shifting some of the labor to the consumers the firm later can provide a platforms where the UGC is stored and uploaded where they can choose components that fits the game (Jeppesen, 2004, p. 5). With correct information and help, managers can govern what creations should be prioritized by the consumer, and the mods uploaded on the platform become more relevant for the company (Jeppesen, 2004, p. 5). A video game developer can organize UGC made from users on their platform using two complimentary strategies, the first business model is to let the content be part of the current game, secondly it can find new ideas and concept to form into a new game (Jeppesen, 2004 p. 16). Letting the content be parts of the existing game is good for improving the experience by refreshing the game with new features (Jeppesen, 2004 p. 16). The firm can see what UGC is popular and introduce a new video game based on this content, and the risk of failure is reduce since it, as content for another game, proved popular (Jeppesen, 2004 p. 17). User participation in the development process has a positive outcome on the end product (Hwang & Thorn, 1999, p. 233). Blumenthal et al. (2003, p. 50) write that User-generated content can result in an increase of sales as well as the licensing new creations to third-party publishers. There are plenty of examples of video game UGC becoming popular. A few examples of video games that were originally developed from UGC are Counter strike, Quake and DotA (Morris, 2003; Blumenthal et al., 2003, p. 50; Moddb, 2015).

When discussing user participation, there are many times a misuse of the terms participation and involvement, they are mixed together and used as synonyms, where mostly the term involvement is used instead of when participation should have been used (Barki & Hartwick 1989, p. 53-54). So, to understand the terms we have chosen one of the most commonly cited separation of participation from involvement. According to Barki & Hartwick (1989, p. 59); “The term ‘user participations’ should be used instead of ‘user involvement’ when referring to the behaviors and activities that the target users or their representatives perform in the systems development process”. Leon & McLean (1991, p. 340) continue to make the distinction between user participation and user involvement, stating that the former is behavioral and that the latter is psychological. That means participation is the behavior related to the task at hand, while involvement is a psychological reflection of past behavior (Leon & McLean, 1991, p. 340). Although many authors (Jeppesen, 2004; Hars & Ou, 2001; Scacchi, 2010) do use both terms in their works and mix the usage of participation and involvement. The authors do, however, use the meaning for participation defined by Barki & Hartwick (1989, p. 53-54) participation as the basis for when the user does engage with programming or UGC. Therefore we will also accept the usage of involvement when used instead of participation, but will refer to it as participation, for the sake of continuity.

User participation in this context means mean to take part in behavior and activities which result the creation and spreading of UGC, and generating content is a part of the user participation process (Schäfer, 2011 p. 46-50). Schäfer (2011 p. 46-50) explain that
participation can take the form of constructing content, remixing content and structuring content, and that these three activities are all part of the user participation in UGC process. Schäfer (2011 p. 51-53) also makes a distinction between explicit participation (e.g. active software development, contribution to Wikipedia and creating content) and implicit participation (e.g. actively rating and sharing the content of others). Explicit participation is driven by motivation, either intrinsic or extrinsic, while implicit participation draws on user habits and is channeled by technical design (Schäfer, 2011 p. 52). Lin et al. (2013, p. 314) highlight previous research that has shown customer participation offers benefits in areas like time acceleration, cost reduction and product quality improvement, which are regarded partial determinants for successful product development. When consumers are participating in activities for joint-development, effective contribution depends on the consumer's abilities and motivations (Hoyer et al., 2010, p. 288). Consumers should be participating in stages where their contributions can be effective and productive for the product development (Alam, 2002, p. 256). If task complexity is high, the firm has to revise how to help customers and make them understand the product concept before integrating customers in the production process (Burnett & Rothermel, 2004 p. 58). The need for help and information is essential for consumers to create UGC (Burnett & Rothermel, 2004, p. 58). If a firm can guide customers to what should be prioritized and keep them informed, the UGC created can be of interest to a product development manager (Jeppesen, 2004, p. 5). Firms should guide and direct the user to which areas they want them to improve and give them help to accomplish it. Toffler (1980, p. 11, 282) is to be considered the founder of the term and theory of prosumers; a combination of consumer and producer. He argues for the rise of prosumer, that consumer would start produce their own goods rather than be only a consumer (Toffler, 1980, p. 11, 282). Furthermore he suggests that the government should and can at low cost provide tools, community workshops where the prosumer can communicate and be tutored to increase the productivity of the prosumer (Toffler, 1980, p. 347). Even though we are suggesting that consumers who develop their own UGC are contributing with product development, we are not implying that they would become their own producer and stop consume other products. As we defined UGC, it is when modifications or alterations are made to an already existing product, and so, producing like a prosumer would perhaps not fall under the definition of UGC. However, the increased effectiveness of prosumers by implementing help is something we agree should be done also for the UGC-consumer. According to Kotler (1986, p. 512-3) marketers should try to satisfy the needs of the prosumer, by finding ways to help them produce their own goods.

So what is it that drives the user to participate? What types of motivational factors are there, which motivate a user to participate? The reason to participate may be grounded on different types of factors causing motivation, and they may differ from person to person (Hoyer et al., 2010, p. 288). The user who have decided to participate, have some motivation and goals he are determined to achieve (Pollack et al., 1982 p 358). Motivation for users to participate in system development is first their willingness to participate that is based on their motivation and secondly their ability to contribute and participate (Cavaye, 1995, p. 314). This motivational factor for the user to participate can be explained with intrinsic and extrinsic motivation, which the user participates in order to satisfy (Schäfer, 2011, p. 52; Farzan, 2011). Hoyer et al. (2010, p. 290) argue that firms have two options to increase the motivation to participate, first increase the benefits to participate and secondly reduce the cost to participate. This would be done by implement tools or implement incentives that motivates the consumer, but different
incentive would be preferred by different consumers (Hoyer et al., 2010, p. 288). Relating this back to UGC for video games, when the manager plans to increase his consumer’s participation he should be aware of what needs motivates them, if it’s extrinsic or intrinsic motivation or a combination. In summation, if consumers are to participate in UGC for product development, they should not only be provided with help in the form of tools and education from the video game developers, their motivation to participate should also be stimulated.

2.2 TOOLKITS USEFULNESS AND EASE OF USE
To allow users to involve themselves in the production of a video game, the developers need to enable the video game with scripts that support UGC such as extensions and mods (Batory et al., 2002 p. 211). Means and tools to enable modding are provided through software extension with possibilities to implement these mods (Scacchi 2011, p. 5). As UGC cannot be created from scratch, self produced by the consumer, consumers who wish to start with UGC need access to an original copy of the game, its coding, and means of changing this code (Scacchi 2011, p. 5). UGC for video games is most often created using tools that give access to an unencrypted part of the video game software (Scacchi, 2010).

Further there are different levels of access and legal obligations that video game developers choose to put in their terms of condition when it comes to what and how users are allowed to create their own content (Scacchi, 2010). The legal level for UGC ranges from being completely forbidden to allowing users to develop and share the content to others who own an authorized original copy of the game, to giving permission to change and redistribute the content however the user wants (Scacchi, 2010). But as the users can create whatever they want with completely open source software, they might take inspiration from, or copy, intellectual properties of others. For YouTube (a UGC video sharing website), after Google’s purchase of the site, copyright infringement claims from major music labels became common, as users of the site had published content featuring copyrighted music (Kim, 2012, p.55). Controversy surrounding UGC and copyright, when content is authored entirely by users, there need be no worry about copyright infringement claims, but when users take pre existing content and add to it, even to the point of derivative works, users may come under fire for infringing on reproduction and adaptation rights (Gervais 2009, p.869). Some laws seem to come into question, however, as corporate interests come at odds with the participatory cultures of the online world (Postigo, 2008, p.60-61). Modding as participatory culture has evolved along with the changed paradigm of consumer and producer in digital media, and issues of ownership have come into focus as copyright law has not evolved alongside the culture (Postigo, 2008, p.60). Similar to the legal range of permission to UGC, the access from the company differs. Video game developers can choose to open their software codes for all customers to customize their own User Interface (UI) and some add-ons, but not allow changes in game mechanics or to try change the encrypted codes, as in the game World of Warcraft (Kow and Nardi, 2010 p 22). Some video game developers allow their customers to complete access to codes that allow them to change game mechanics and reverse engineer of game engine entirely (Scacchi, 2010). Burmann & Arnold (2008, p.70-71) state that a change in legal terms means has contributed to greater availability of UGC by keeping private intellectual property rights more flexible. Postigo (2008, p. 62-66) provides anecdotal evidence of customer dissatisfaction when mods they have created get taken down due to claims of breach of copyright law. For example, if a modders addition is removed...
after it is presented to the community due to claims of copyright breach, we assume that it would discourage not only this user, but others as well, from producing content in the future. As for the reverse, if rules that allowed UGC creation and usage were presented by a firm, this would be encouraging to content creators.

In order for consumers to help develop a product thoroughly, as stated, they need access to means for modifying this product on their own. Von Hippel & Katz (2002, p. 822) explain how users can become involved in the development of products and services through something called the toolkits approach to product and service development: “The toolkits approach to product and service development involves transferring need-related product development tasks from manufacturers to users, and equipping the users with tools to carry out those tasks”. The creation and implementation of toolkits for users has come from firms that have found that conventional methods of responding to users’ needs are insufficient (Von Hippel & Katz, 2002, p. 821). Toolkits allow users to innovate for themselves, through coordinated sets of user friendly design tools (Von Hippel & Katz, 2002, p. 821; Piller et al. 2004, p. 3). The toolkits approach is becoming more prevalent in computer-based production as it reduces the costs associated with the design of these products (Von Hippel & Katz, 2002, p. 830). Even for developers, toolkits are made available in the form of computer-aided design tools, and due to them being user friendly, costs and time is reduced in the production process (Von Hippel & Katz, 2002, p. 830). Von Hippel & Katz (2002, p. 832) do explain that toolkits may not be of interest to all consumers, especially in markets characterized by homogenous needs. For customers with heterogeneous needs, on the other hand, who use toolkits to customize their own product, show significantly more satisfaction than users of the standard product (Franke & Von Hippel, 2003, p. 1212). Toolkits should be offered to users who feel a need to improve the product, but this does not exclude other benefits, as toolkits can also be made available as a complement to product development efforts, reducing the cost of delivering extra software essentially to zero (Von Hippel & Katz, 2002, p. 831). Effective toolkits should include ways of implementing UGC without major revisions from official engineers, and also ways of sharing this content so that the most effective and appreciated UGC can be used by other customers (Von Hippel & Katz, 2002, p. 825, 828). This content can just as easily picked by developers and, with proper legal preparations, be implemented into the product (Jeppesen, 2004, p. 16).

Nearly half of managers interviewed by Franke & Piller (2003, p. 581) in charge of toolkits customization programs said their implemented system did not perform interaction between manufacturer and customer properly. Myers (1995, p. 77) comment that one problem with development toolkits is that they are often difficult to use, and Franke & Piller (2003, p. 581, 590) emphasize the crucial role of interaction between manufacturer and consumer for an effective system. The process of using toolkits for product development starts with the interaction between manufacturer and consumer (Franke & Piller, 2003, p. 590). All other points of contact occur either later or do not occur at all due to customer dissatisfaction, which is why it is such an important step in the process (Franke & Piller, 2003, p. 590). Thus simply having a toolkit available does not guarantee effective user participation in product development. The customers who create content are often mainly self taught in the subject and organize the learning themselves by practicing (Scacchi 2011, p. 5). In order to make this process successful the system should be easy to learn and use, thereby the proving the need of usability and ease of use from the toolkit (Hoyer et al., 2010, p. 289). Burnett & Rothermel (2004 p. 58) argue that providing access and tools that are user-friendly is important to help with
user participating in UGC. Implementing tools that are used by professional developers can be counterproductive as they may be too advanced for a consumer interested in creating content (Burnett & Rothermel, 2004, p. 58). If game developers want consumers to become part of the product development process, it is clear that they must offer user-friendly equipment that helps. These two concepts that are affecting the customer interaction with product development are usefulness and ease of use (Davis, 1989, p. 320). The usefulness and ease of use for a program is affecting the users’ behavior to use the program and to carry out his task (Venkatesh, 2000, p. 345). If a program is useful for performing a task it will be used for it, if a program is ill-suited for a task it will not be used again (Davis, 1989, p. 320). Usefulness is how a person can use a particular system with advantage that can increase his performance to carry out a specific task (Davis, 1989, p. 320). The professional developers may not create enough useful programs for the end-user, they program in one way which may be other than the users’ way (Landauer, 1995, p. 96). This means usefulness of program can be low for the users, and not be allowing them to do what they want. Testing for usability is important to know whether the program have the right applications to carry out the task (Landauer, 1995, p. 96). Usefulness, as we can see, is important for computer programs, and, since it affects the user’s behavior based on the program’s performance, we argue that it’s from motivation from cost reduction. If this helps the user to create UGC, it is by reducing the cost of participating, so the need for other motivational factors to participate will be less apparent (Davis, 1989, p. 320).

Another aspect the user will examine before engaging the program is perceived ease of use (Davis, 1989, p. 320). Ease of use concern about how much effort the user need to put in to use the system, if (Davis, 1989, p. 320). The amount of effort a user can produce is limited and should be allocated with responsibility (Radner & Rothchild, 1975, p. 358). Since the effort is limited the user who perceive the ease of use to be low, the effort the use is too high, will not use the program (Venkatesh, 2000, p. 343). According to cost-benefit theory, if a user believes that the effort of learning or using a program is higher than the benefits of using it, he wouldn’t use it (Davis, 1989b, p. 320). The user’s choice whether he will use the program or not finally decides if the cost of learning and using the program is higher or lower than the benefit he can create with it (Davis, 1989, p. 321). Programs that are perceived high on both usefulness and ease of use are far more likely to be used currently, and receive a higher intention to be continued to be use in the future (Davis, 1989, p. 333). This implies that for UGC toolkits that make it possible to modify the content should be effective and easy to use, in order to promote a higher rate of use and higher intentions to use. We believe that a toolkit that is perceived as useful and easy to use has the potential to heighten any user’s willingness to produce content and share it with others. Thus it’s an important factor for us to examine what the users believe of the current toolkits and what effect it has on participating in UGC.

The usefulness and ease of use is highly relevant to Self-efficacy and cost-benefit concepts where focus on the cost of involvement is considered (Davis, 1989, p. 321). Self-efficacy research argues that the user’s perception of usefulness and ease of use works as a predictor of users’ behavior to carry out a task (Davis, 1989, p. 321). Self-efficacy can be explained as the user perceptions whether he can participate efficient or not, ground his motivation, his ability to perform well increase the motivation (Zimmerman, 2000, p. 89). The knowledge about whether you are able and if you can perform the task needed to carry out therefore function as a motivation for the user to
participate (Bandura, 1977, p. 193). This means that when the user feels he can with the toolkit create UGC he will be more motivated, thus usefulness of the toolkit should motivate user participation. But also if the user feels his skills are able to use the toolkits in an efficient way should motivate the user to participate thereby should the toolkits ease of use function as a motivational factor. Cost-benefit concerns for toolkits concern the cost of learning to handle the toolkit and when using the toolkit if it’s can also perform the task for a certain level of input effort (Davis, 1989, p. 321). The cost-benefit aspect motivates the users to participate when his cost of for participating and contributing is less than the benefits he will receive from participating. Therefore if it’s easy to use the given toolkit the cost of learning and handling should be lower and increase the motivation to use it. Similar when the toolkit is useful, then the effort put in really allows the user to create good content and the cost of production is low since the end product becomes good.

A descriptive summary of aspect that creates a toolkit that is both useful and easy to use are given by Von Hippel & Katz (2002). Toolkits are most effective when they are easy to use for the user, this comes from having and functions in the toolkits which allows the user to do things “his way” (Von Hippel & Katz (2002, p. 827). Von Hippel & Katz (2002, p. 825) propose five objectives that effective toolkits should enable for the user to be more useful and easy to use: First, effective toolkits allow users to perform trial-and-error learning (Von Hippel & Katz, 2002, p. 825-6). Trial-and-error cycles begin with designing of possible solutions, which are then tested and evaluated (Von Hippel & Katz, 2002, p. 825-6). The evaluation will show what improvements are needed and the cycle will repeat (Von Hippel & Katz, 2002, p. 825-6). Second, effective toolkits provide users with a “solution space” where the capabilities and restrictions of solutions are quantified, which allows the company to control which kinds of designs are made (Von Hippel & Katz, 2002, p. 825-7; Jeppesen 2004, p. 9). Third, effective toolkits are “user friendly” (Von Hippel & Katz, 2002, p. 825, 827). This means that users should be able to operate the system using skills they already have, without having to engage in much additional training (Von Hippel & Katz, 2002, p. 825, 827). Fourth, toolkits should be effective and useful for the user, practical solutions which allows users to expand on existing works, instead of spending time creating variations of similar solutions (Von Hippel & Katz, 2002, p. 825, 828). Fifth, effective toolkits allow users to implement their solutions practically without requiring revisions from manufacturer-based engineers (Von Hippel & Katz, 2002, p. 825, 828). These five objectives highlight that users are not experienced producers, and need a specialized process when producing content. It is by allowing for mistakes to be made, by being simple and by allowing users to share their creations that a toolkit can become effective. Further the five objectives focus on areas which optimize the usefulness of the toolkits and also make it easier to use. If the experience with the toolkit is positive it may stimulate the customer’s motivation and effort to create UGC (Piller et al. 2004, p. 4). To conclude a toolkit is a necessary in order to allow users to generate content, as well as use the content of others, since it is needed for enabling UGC. For UGC toolkits it is needed that these actually allow the user to modify content in effective and easy ways. Offering toolkits that are user friendly can have the possibly of reducing the effort cost and enhancing the benefits of participating in video game UGC by providing effective platforms, using which, the user can take an active part in the development of games.
H1: Perceived usefulness of toolkits has a positive effect on user participation in video game UGC.

H2: Perceived ease of use of toolkits has a positive effect on user participation in video game UGC.

2.3 INTRINSIC MOTIVATIONAL FACTORS

If a person is motivated, it means that he is inspired to do something or to accomplish a certain act or task (Ryan & Deci, 2000a, p. 54). Different people have different levels of motivation and those shifts depending on what task is focus on to carry out (Ryan & Deci, 2000a, p. 54). There are not only different amount of motivation for a task, but as well different kinds of factors creating the motivation which summarizes and become the total motivation to carry out a task (Ryan & Deci, 2000a, p. 54; Maslow, 1943, p. 370). Maslow (1943, p. 394) argues that motivation comes from different levels of needs; it can be basic needs for survival or, higher up on the hierarchy, self-actualization. When one need is fulfilled, another level of needs need to be fulfilled (Maslow, 1943, p. 394). Need thus causes a motivation that decides a behavior aimed to satisfy the need (Maslow, 1943, p. 370). On the question why is motivation important Ryan & Deci (2000b, p. 69) answers “motivation produce”, thus it’s should be highly valued for managers to capture (Ryan & Deci, 2000b, p. 69). This statement shows the important aspect of motivation for UGC, since UGC is to producing content thus motivation for UGC would produce UGC based on Ryan & Deci (2000b) answer that motivation produce. There is a difference between where motivation origin from, as said it can come from difference sources those can be external or internal (Ryan & Deci, 2000b, p. 69). Individual causality is self determined when its internal motivation, while external motivation is regulated by an outer determined force (Ryan and Deci 2000b, p. 72). This implies that a motivation can come from the individual’s own interest or from an external reward or threat (Ryan & Deci, 2000b, p. 69).

With the different types of motivations researchers have started to label and categories sources of motivation (Ryan & Deci, 2000b, p. 69). Two key labels can be pointed out; intrinsic motivation and extrinsic motivation (Ryan & Deci, 2000b, p. 69). Those can be used to explain what motivates a person to cause a behavior (Hars & Ou 2001, p. 2; Ryan and Deci, 2000b, p. 70-71). Intrinsic motivation can be explaining that motivation comes rather from the satisfaction, interest or enjoyment of completing or performing the task rather than getting a reward from its outcome (Ryan & Deci, 2000a, p. 56). Ryan & Deci (2000a, p. 56) defines intrinsic motivation as “The doing of an activity for its inherent satisfactions rather than for some separable consequence”. Meaning that by just doing the task itself, are what satisfying you. Extrinsic motivation is on the other hand motivation to do a task for a certain goal; the performance is therefore something needed to get later gain the satisfaction (Ryan & Deci, 2000b, p. 71). The causality for intrinsic motivation are to be considered internal motivation (Ryan & Deci, 2000b, p. 72). As predictor of a phenomena, intrinsic motivation is as one of the most important and strongest, it is pervasive force for human behavior (Ryan & Deci 2000a p. 56). The intrinsic motivation is based on the interest and curiosity for a task; it comes from within the individual but interacts between the participation of activities and the individual (Ryan & Deci 2000a p. 56). The engagement in an activity therefore is from gains in satisfaction from participating in it where enjoyment is strong factor (Ryan &
Deci 2000a p. 56-57). So users who would create UGC would with intrinsic motivational factors be pleased and satisfied from the process of participate to creating the content rather than the actual product they create. Then which intrinsic motivational factors would affect user to create UGC? Altruism and community reason is found to be and motivation for programmers of open source software (Hars & Ou, 2001, p. 3). The close nature of UGC for video games with other UGC or UCC in allows us to believe these can be affecting the motivation for creators of UGC in video games.

2.3.1 ENJOYMENT

The emotion of enjoyment in relation to an experience represents the reward of intrinsically motivated behavior, and is at the core of intrinsic motivation (Deci & Ryan, 1985, p. 28, 34). Unfortunately, there seems to be no tradition of studying fun or enjoyment within psychology related to technology, where study objects like stress and anxiety are well-developed in comparison (Monk et al., 2002, p. 924). As of recently, with the rise of new computer-based industries, enjoyment has become important requirements for software, both within production and consumption (Monk et al., 2002, p. 924). Draper (1999, p. 121-2) states that enjoyment is becoming a defining requirement for computer software development. Learning, which is involved in much of computer use, has also an important connection to enjoyment, and this makes enjoyment an increasingly important aspect of software development (Draper, 1999, p. 121-2). Fun has been found to be at the top of motivations for contributions of UGC among wikipedians, a group of volunteers who contribute to the online encyclopedia Wikipedia (Nov, 2007, p. 63). Franke and Shah (2003, p. 159) find that enjoyment of the process accurately reflects users motivations for involvement in free assistance and product innovation. Enjoyment is one of the factors of intrinsic motivation that Lakhani & Wolf (2003, p. 11) conclude have a positive effect on open source software developers, another group of creative and producing users. It can be that enjoyment that arises from engagement in the task makes individuals relate to participation and contribution in a more positive way (Franke and Shah, 2003, p. 173). Users view their contribution and participation, not as costs that need to be compensated, but rather as activities that are enjoyable in and of themselves (Franke and Shah, 2003, p. 159). The more an activity serves both physical as well as social improvement goals, the more intrinsically motivating that activity is (Lindenberg, 2001, p. 339). In terms of user participation in video game UGC, this means that if creating content for video games serve both goals in terms of what the content can do, as well as social goals, this will lead to an increased enjoyment of the UGC activity.

H3: Enjoyment has a positive effect on user participation in video game UGC.

2.3.2 ALTRUISM

Another factor of intrinsic motivation is the urge to increase other people’s welfare. Altruism is conceptualized within psychology as “affection and concern for others”, within sociology “where the goal of conduct of the ego is exterior to itself” (Sawyer, 1966, p. 407). A pro-social act performed in anticipation of reciprocity or rewards, or even good feelings, seems to not be motivated by altruism (Unger, 1991, p. 77). In other words, only helping when benefits outweigh the costs is not altruistic behavior. Altruistic behavior is displayed when an action is taken for the benefit of another, and
the costs to oneself outweigh one's own benefits (Unger, 1991, p. 77). So, to clarify, an altruist is willing to reduce his own benefits or consumption in order to increase the benefits or consumption of others (Becker, 1976, p. 818).

Altruism have proved to be prevailing motivation in open software industries such as programming (Wu et al., 2007, p. 254). But altruism has not played such a big role in other industries, and why it is so prevalent within the software industry is not yet known (Wu et al., 2007, p. 254). Altruism has generally been downplayed within social science as a motivation for pro-social behavior, and the western view of altruistic acts have been regarded as ultimately self-serving (Unger, 1991, p. 75). There are a few possible bases for how altruistic motivation has come to exist (Unger, 1991, p. 75-9). Biology has been suggested as a basis for altruism (Unger, 1991, p. 76-7). The mere act of self-sacrifice would seem counter-intuitive to basic evolutionary biology, where it would seem logical that natural selection would favor self-serving behavior rather than altruistic behavior (Unger, 1991, p. 76). If we look at a reason as to why altruism may have an evolutionary basis, we need look no further than the relationship we have with children. Parental care is a case of altruism that has evolved over time and is incredibly common in nature, and the step from performing altruistically within the family to performing altruistically to closely related species is not far, but can evolutionarily be very beneficial (Dawkins, 2006, p. 100-105). Users in communities might consider his fellow users as his “kind” and be motivated to increase his benefit on his own cost (Hars & Ou, 2001, p. 3). If the user that participate in video game UGC sees a connection with the other members he might then feel motivated by altruistic needs.

Empathy, which is defined as the ability to take another person’s role, shows much promise as the basis for helping behavior (Unger, 1991, p. 76). As we have touched on before, there are elements of costs and benefits at play regarding altruistic motivation. Behavior is altruistic when costs outweigh benefits, and anticipation of reciprocity, good feelings or social rewards negate altruistic motivation (Unger, 1991, p. 77). From a cost/benefit analysis there is no reason to act altruistically (Unger, 1991, p. 77) but with empathy as an underlying motive, altruistic goals are still pursued (Batson et al., 1988, p. 70). Content creators want to share their contributions with the community (Oreg & Nov, 2008, p. 2061). Altruism has been established as a motivator for open source software development (Oreg & Nov, 2008, p. 2061; Hars & Ou, 2001, p. 6), UGC behavior among dissatisfied customers (Presi et al., 2014, p. 617-9), as well as UGC among bloggers (Hsu & Lin, 2008), p. 76). Just as with enjoyment, the concept of altruism has been found to be a motivator of many similar participatory activities, which is why we include it in our conceptual research model.

\[ H4: \text{Altruism has a positive effect on user participation in video game UGC.} \]

2.3.3 CONTINUANCE COMMITMENT

When the culture of community values its participants, they will in turn value the culture and can come to show overwhelming commitment to the community behind this culture (Chaloofsky & Krishna, 2009, p. 199). According to Buchanan (1974, p. 533) “commitment is viewed as a partisan, affective attachment to the goals and values of an organization, to one's role in relation to goals and values, and to the organization for its
own sake, apart from its purely instrumental worth”. Since the information kept in online communities is often not exclusive, but free to the public, it has become possible for individuals to surf from site to site, consuming accessible information without building commitment to any community (Bateman et al., 2006, p. 984). But members of online communities are not groups of passive spectators but instead groups of active volunteers who keep the community and its functions operational (Bateman et al., 2006, p. 984). Meyer & Allen (1991, p. 82) conceptualized commitment as a psychological state and explains deeper the concept of continuance commitment. Continuance commitment reflects a need to remain in the organization through recognizing the costs of leaving (Meyer & Allen, 1991, p. 82-3). As switching between competing groups has become easier than ever, choosing to return to one online community when superior sites are surely available, should seem counterintuitive (Bateman et al., 2006, p. 984). All communities that expect to survive and thrive rely on their users’ continued participation (Bateman et al., 2006, p. 984). As users invest their effort into one community, and believe that its resources have unique value to them, they develop a dependence on that community from which a continuance commitment may arise (Bateman et al., 2006, p. 987).

Meyer & Allen (1991, p. 67) define continuance commitment as “an awareness of the costs associated with leaving an organization”. Kanter (1968, p. 504) defines continuance commitment as “profit associated with continued participation and a cost associated with leaving”. Stebbins (1969, p. 527) defined continuance commitment as "the awareness of the impossibility of choosing a different social identity". Continuance commitment is a psychological state that arises from the presence of penalties associated with leaving a specific position (Stebbins, 1969, p. 527). Continuance commitment, which engages primarily cognitive orientations, can also be seen as commitment to a social system role (Kanter, 1968, p. 500). From what we have gathered, commitment to a community means to involve oneself, both practically and emotionally, with the goals, values and practices of that community. Achieving commitment to continued participation involves creating positive cognitive orientations, which have positive valence for the user (Kanter, 1968, p. 504). Commitment to an organization can be driven by identification with the organization’s goal and values, sharing individual and organizational goals and internalization of the organization’s values and mission (Chalofsky & Krishna, 2009, p. 198). The individual who makes a cognitive continuance commitment commits himself to a role and considers himself a part of the organization (Kanter, 1968, p. 504). A member’s level of continuance community commitment positively influences how active that member is in the online community (Bateman et al., 2011, p. 845, 848). The development process for continuance commitment is relatively straightforward, as anything that increases the cost associated with leaving the community has a potential to generate continuance commitment (Meyer & Allen, 1991, p. 77). Many times, the commitment is increased by the user through actions which deepens the user’s commitment to the community (Meyer & Allen, 1991, p. 77). It seems, however, when communities become very large, participants appear to have difficulty keeping to information and subjects pertinent to their own interests and needs, as novices and intellectually arrogant people become more common (Wasko & Faraj, 2000, p. 169).

Continuance commitment is a bond between member and community, based on the belief that involvement provides benefits that are not easily available elsewhere (Bateman et al., 2011, p. 843). This commitment leads users to remain with the
organization because of the unique benefits they personally derive from the community (Meyer & Allen, 1991, p. 71). Commitment to the sites where they participate is confirmed as motivational factors for participation among computer game modders (Poor, 2013, p. 17), online knowledge sharing (Wasko & Faraj, 2000, p. 169) and user participation in UGC (Brabham, 2010, p. 1124; Wiertz, & de Ruyter, 2007, p. 352). Continuance commitment has been found to positively affect user participation (Bateman et al., 2006, p. 993). Kollock (1999, p. 235) suggests that it is commitment that motivates members to contribute content online. We pose that continuance commitment is a motivating factor for user participation in video game UGC.

\[ H5: \text{Continuance commitment has a positive effect on user participation in video game UGC.} \]

2.4 EXTRINSIC MOTIVATIONAL FACTORS

Intrinsic motivation comes from the satisfaction in performing an activity (Ryan & Deci, 2000b, p. 71). Extrinsic motivation can be seen as complementary to intrinsic motivation (Ryan & Deci, 2000b, p. 71). Extrinsic motivation is described as when the performance of an activity has the goal of retaining something other than simply the satisfaction from the performance (Ryan & Deci, 2000b, p. 71). There are many different types of motivation that fall under the category of extrinsic motivation, what should be included depends on situation and the definition of the current motivation (Ryan & Deci 2000a, p. 55). A definition we “Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome” (Ryan & Deci 2000a, p. 60). Thus the behavior the person are performing is the gain something else that benefits him, through the current activity.

Extrinsic motivation can and sometimes does have negative effect on intrinsic motivation (Deci et al., 1999, p. 658-9). Intrinsic motivation is usually undermined when extrinsic motivation is introduced, and the individual’s behavioral reasoning is altered (Deci et al., 1999, p. 658-9). It is important to note, however, that the effect may be very small, and of course it has not been found that extrinsic benefits always undermine intrinsic motivation (Deci et al., 1999, p. 659). In light of this information, why would you introduce extrinsic motivation if it reduces a person’s internal motivation to perform an activity? By implementing extrinsic motivation you can engage the sum of a person’s motivation towards a certain behavior (Calder & Staw 1975, p. 605; Deci et al., 1999, p. 657). Further extrinsic motivation allows to control and direct favorable behaviors so that a certain outcome is more likely to happen (Deci et al., 1999, p. 657). Extrinsic motivation can be used to increase motivation and guide user’s behavior to benefit the organization. So what are the underlying extrinsic motivations, for user when they create content for video games? We present four extrinsic motivational factors which we have reason to believe affect participation among UGC creators. The extrinsic motivational factors we present will be rewards, future rewards, personal need and reputation. The extrinsic motivations do in comparison with intrinsic motivation have different causality from the source of determination (Ryan & Deci 2000b, p. 72). Rewards and other compensations is externally determined (Nonself-Determined), while reputation is internal self-determined (Ryan & Deci 2000b, p. 72). This cause a variation of cause, reputation is
driven from the individual self to accomplish, while the three other concept are driven by impersonal drives.

The majority of open source programmers don’t receive direct compensation for the content they contribute, but although they don’t get a direct reward they still can receive indirect compensation (Hars & Ou, 2001, p. 3). Direct rewards can be distributed through wage and payments, or other direct tangible rewards the person can get (Hars & Ou 2001, p. 3). But even if they don’t get paid directly for the creating the content they may receive some future returns such as being able to sell the created content afterwards or being able to use the content they gaining experience for future opportunities (Hars & Ou 2001, p. 3). Personal need is another extrinsic motivation we believe affect user participation in video game UGC, and it revolves around the user creating content for his own use or for a need of his own (Hars & Ou, 2000, p. 489). Reputation is the final extrinsic motivational factor we study, where an action can be performed in anticipation of establishing a reputation among fellow peers, and a reason for participating in UGC (Postigo, 2003, p. 600).

2.4.1 Rewards
A tangible reward can be received as a payment in the form of money or prizes, but it can also be a symbolic item or a trophy that shows achievement (Sansone & Harackiewicz, 2000, p. 24). For an individual receive payment or other rewards for a performance it can motivate them to do the task in exchange for the reward (MacLeod & Malcomson, 1998, p. 389). These rewards can be used to control an individual’s behavior or strengthen an existing behavior, so the instance that individual is given the reward, one can try to motivate the individual to do something he otherwise wouldn’t do (Sansone & Harackiewicz, 2000, p. 24). A currency depend on the user beliefs in, it to have its value, the same goes for online currencies, as they might be useless outside the community but have a real value inside, making it valuable to some but not to others (Zichermann & Linder, 2010, p. 72). Items or in-game currencies can work for the user as monetary rewards instead of cash payment (Zichermann & Linder, 2010, p. 72-73). This means that monetary rewards can come from both real cash and fictional currencies. Scacchi (2010) question who is getting paid from the UGC, stating that the game developers profit from UGC but that the user who does the UGC might not be fully compensated. Therefore rise a question are rewards like monetary or other direct compensations a motivational factor for user participation in video game UGC? There are scholars like Cook (2009, p. 48) who argue that a commercialization of creative efforts may impact the creative efforts in communities negative. Cook (2009, p. 48) goes on to argue that there exists a fundamental tension in the dynamic between free sharing of creative content and protection of creative content. In short, those UGC-creators who are commercially oriented may decide to limit editing of their content, and they may choose to not contribute their work to the community (Cook, 2009, p. 48). Professionally-generated content (PGC) is characterized by the creation of commercially viable content (Kim, 2012, p. 60). In the context of the video sharing site YouTube (with its focus on allowing users to broadcast themselves through UGC), as PGC becomes more prevalent, it does not force out UGC, but dominance of PGC tends to marginalize UGC, and it’s users are reacting negatively to this (Kim, 2012, p. 60-61). This leads us to believe that amateur creators might feel marginalized as professionals come in to provide content, as there is monetary incentive to do so. But also, allowing for monetary compensation of creations, amateur creators can, by definition, becomes professional if they receive a wage for their content creation (Postigo 2007, p. 310).
In contrast to Cook (2009), other authors Poor (2013, p. 16), Postigo (2003, p. 604-5) and Arakji & Lang (2007, p. 212) state that there is a lack of monetary compensation for modders in terms of ‘free labor’ is an area that needs further investigation. Poor (2013, p. 16) continue to suggests that the paid/unpaid framework in terms of financial payment could be revised regarding modding. Where Poor implied that there are few structures that allow rewards to the modder from the video game company for the labor they contribute with (Poor 2013, p. 16 -17). Traditionally as said before, gamers who create content for games have not been motivated by rewards compensation to create mods, but majorly for other reasons, like fun, learning and social interaction (Poor, 2013, p. 2, 16). In communities studied by Franke & Shah (2003, p. 168) assistance and information is provided by innovators to the community (and from the community to innovators) for free. Franke & Shah (2003, p. 169) concludes that community members who provide innovation-related assistance rarely are paid for their assistance, and in fact hold a belief that community members should help each other free of charge. Cook (2009, p. 48) argues that a commercialization of creative efforts may impact the creative efforts in communities, and that there exists a fundamental tension in the dynamic between free sharing of creative content and protection of creative content. Cook (2009, p. 48) concludes that commercialization of UGC limit sharing of creative content, in opposition to traditional community practice. As we have seen earlier, Franke & Shah (2003, p. 170) conclude that ‘community motives’ more accurately reflect users’ motivations and that financial compensation is completely rejected as a motive for providing assistance in a community. This gives us an inclination that monetary compensation should be rejected as a possible means of stimulating UGC for games.

Though some of the negative aspect of monetization, one video game developer that has implemented monetary compensation for UGC is Valve software, with its service the Steam Workshop, a central hub of “player-created content” for games on the Steam Store (Valve Software, 2015a). According to Valve (Valve Software, 2015b) since the launch of the Steam Workshop more than 57 million $US has been paid out to thousands of contributors of the Workshop. The paid contributions have been made by individuals for three of Valve’s own games Team Fortress 2, DOTA 2 and Counter-Strike: Global Offensive, and now the first non-Valve games have recently implemented the same strategy through this medium (Valve Software, 2015b). We see the implementation of monetary rewards for UGC in the example of Valve (Valve Software, 2015b) in three of their most successful games, two of which rank number three and four of the most played PC-games as of January (Statista, 2015). They also have implemented a function for sharing profit which allows the contributors to get their share from the commercialization of the UGC (Valve Software, 2015c). A contradiction to Valve own successes, Bethesda Game Studios, in cooperation with Valve Software, implemented paid UGC for their game The Elder Scrolls V: Skyrim via the Steam Workshop, but only a week after its implementation, the function was taken away and all who had already paid for content got their money back (Bethesda Game Studios, 2015; Kroll, 2015). This is an example of when implementing monetary rewards for video game UGC is unsuccessful. Those who create UGC are as said currently gaining little money for their labor, while the game developers gain billions of dollars for the UGC (Postigo, 2003, p. 604-5). So it can be argued that it is not more than rational for in the future more money will go to the users who created the content rather than to the game developer (Postigo, 2003, p. 605). This leads us to believe that there is great commercial potential in implementing monetary rewards for UGC. However, commercial success does not equate to an appreciation among UGC creators. We want
to examine what effect rewards have on user participation in video game UGC, and if it actually affects their participation. We believe that one possible reason as to why UGC creators have not been shown to be motivated by rewards is because that simply has not been an option. With the innovative change that companies like Valve Software is doing, we see that the possible reward of UGC-creators, non-monetary and monetary, might be important aspects to the business-end of the video game industry. We argue that rewards can be a motivator for consumers to become involved in creating digital content for companies and therefore that it is highly relevant for our thesis.

\[H6\]: **Rewards have a positive effect on user participation in video game UGC.**

2.4.2 Future Rewards

Some users may participate with the expectation of receiving some future reward (Hars & Ou, 2000, p. 489). Brabham (2010, p. 1133, 39) writes that one incentive from users to produce content is the possibility of future employment in the area, and that producing UGC is a way to build both connections as well as a portfolio. Human capital theorists Schultz (1961 p. 2) and Becker (1962, p. 48) argue that training and education will improve the individual’s knowledge and performance. An individual that invests in the present in training and practices is likely to achieve a better performance in the future (Becker, 1962, p. 48). Training and performing problem solving tasks during leisure time is a common practice to increase knowledge and improving skills in different areas (Schultz, 1961, p. 1). There is sometimes the cause that these improvements are committed to improve the individual’s future performance, depending on what area he is practicing (Schultz 1961 p. 1).

Computer and programming skills are considered important tools in the software industry, so users practice their programming skills in order to become more competitive in computer based professions (Postigo, 2007, p. 310). These users, participating in content creation, may expect to become more skillful at programming and understand game development better through their participation (Hars & Ou, 2000, p. 500). The user who participates may consider it as an opportunity to advertise himself to the industry, considering it an opportunity to show his skills and knowledge (Hars & Ou, 2000, p. 500). Thus a force of motivation can be deducted from the perceived opportunity to retain a job or skills that later leads to a job (Hars & Ou, 2000, p. 500). It’s found that some people who dream of becoming a game developer are testing and practicing their skills, and can test if these activities are something they actually like and have a potential for (Postigo, 2003, p. 600). UGC creation can be perceived as a natural window of opportunity to practice video game development, the user can, by creating content, show and improve their skills (Postigo, 2003, p. 600). Poor (2013, p. 16) states that further research should be done about UGC whether it’s for the personal needs or for the cause of a profession. However there have been many examples over the last decades where UGC creators become video game developers, transitioning from hobbyists into paid workers (Postigo, 2003, p. 603-604). Users that create good UGC could be headhunted or show their skills in programming to get a job (Postigo, 2003, p. 603-604). Three other examples are Icefrog, Neichus and Guinsoo, the founders of DotA, a user-generated game mode for WarCraft III, all three of whom were hired by different companies to create three stand-alone games based on the same concept. These
games became Heroes of Newerth, League of Legends and DOTA 2. Further, Minh Le, the creator of Counter Strike, which also became a stand-alone game, was hired by Valve Software, owning company of the engine the mod was created for, to continue develop the game (Kücklich, 2005; Postigo, 2008, p. 72). We therefore believe that getting knowledge and experience in programming and game developing can be a motivating factor to create UGC, as the user hopes, with his participation to get a future job or improve his current position.

A second aspect future return is the opportunity to commercial UGC or services associated with content creation (Hars & Ou, 2000, p. 489). A user can sell the created content on an organized market with the hope that someone will purchase it (Hars & Ou 2000, p. 489; Valve Software, 2015b). So even if the user is not directly compensated with rewards for creating content, he may be motivated by the chance that he will be paid after his work is done. Epic game have a system where the user can freely create content and after reviewing the potential commercial success for the game, the user can choose to sell it with paying royalty fees to Epic games (Postigo, 2010). This concept of a marketplace allows the user to set a price and sell his content to other users, with the anticipating of receive profit (Hars & Ou 2000, p. 489; Valve Software, 2015b). We therefore believe that the opportunity to sell content influences a user to create commercial content which is useful for various users, and his participation in UGC will also lead to the possible development of profitable products for the game developer.

H7: Future rewards have a positive effect on user participation in video game UGC.

2.4.3 REPUTATION

There are individuals who chose to act with a certain behavior motivated by the possible gain of reputation, status and respect that one will receive from others when performing that action (Nov et al., 2010, p. 556). When contributing content to programs or communities, some of the creators consider peer recognition as an incentive to contribute (Lerner & Tirole, 2002, p 213). They get an ego boost from getting acknowledged by their peers and a desire to get their peers’ approval (Lerner & Tirole, 2002, p 213). Further creating or completing a task can also have the added benefit of getting recognized and approved from a personal authority (Ryan & Deci, 2000 p. 54). Thus the motivation could come from a user’s desire for both peer and authority figures acknowledging the user’s contribution. Others participate in video game UGC for the purpose of getting reputation and acknowledgement in the community (Postigo, 2003, p. 600). They retrieve their motivation by gaining statues among other in the community, and that other user like and use his content (Postigo, 2003, p. 600; Postigo, 2007, p. 309). Further unexpected feedback from others may not at all reduce intrinsic motivation but rather amplify it (Deci et al., 1999, p. 557). This could mean that feedback from others may even boost both intrinsic and extrinsic motivation, which might increase motivation for the desired behavior further. But if the feedback is repeated and become a habit where the person expects to be complimented, it can like tangible rewards also be deleterious for intrinsic motivation (Deci et al., 1999, p. 557). Therefore if the person expects to get positive feedback and compliments motivation for the behavior is increased extrinsic and reduced intrinsic (Deci et al., 1999, p. 557. Is the feedback for an UGC would be surprisingly positive, where the user wouldn’t have
expected it can work very effective as motivation. Joyce & Kraut (2006, p. 741) found that if created content on communities were given responses from other members, the user would become more likely to continue to contribute. In the case of UGC for games we assume that the same founding mechanism apply, if the user would get response from other members for creating content to a game, he’s more likely to continue with it.

A user who is motivated by reputation and a user who is motivated by future job opportunities show similarities in their activities (Lerner & Tirole, 2002, p 214). They both could participate in similar project, where they can show their skills and get attention (Lerner & Tirole, 2002, p 214). These individuals would be more motivated to participate in the project if it would have the following three aspects developed by Holmström (1999, p. 177, 181): First, the user’s performance should have high degree of visibility to the target audience such as peers and authorities. Second, the performance and outcome of the project depends on the user’s input effort. Finally, the performance should show off talent. These three conditions can be the cause of why some users are attracted to bigger programming project, or why some areas of open source have more programmers than others (Holmström, 1999, p. 177, 181; Lerner & Tirole, 2002, p. 214). Users who focus on gaining a good reputation are also found to focus less on the quantity and more on the quality of what they are contributing (Nov et al., 2010, p. 564). The users may choose more carefully what they will share with others and will try to show, as well as improve, on their existing works (Nov et al., 2010, p. 556). Lerner & Tirole (2002, p 214) continue to argue that the same principle can be applied for researchers; some fields are popular and can give a boost to one’s reputation, while other fields are not can have the opposite effect. The impact of reputation as motivating factor seems to increase if the users expect to interact with the same persons again (Parameswaran & Whinston, 2007, p. 342). Thus, if the user’s perception is that the contact will be repeated, his motivation to receive a good reputation would be higher (Parameswaran & Whinston, 2007, p. 342). This implies that a person who is engaging in a UGC community or team and know that he will again meet those other members would probably stronger need for good reputation. Postigo (2008) refers to modders such as LiQUiD8OR and Roo_the_Almight, which are the usernames of famous modders and they are considered experts in the field of video game modding. They receive a great reputation in the community not only for the games which they involved themselves with but also in the larger video gaming community. As for the success story of Minh Le, who have become a celebrity from his UGC project; his creation Counter-Strike allowed him to become a legendary game creator (Kücklich, 2005). Minh Le may be an extreme case, since CS not only became a stand-alone game, but also became one of the most successful video games ever. It shows that they can build reputation beyond their peers’ recognition. We believe that reputation is a positive motivator for participation in UGC activities. We understand that the user has an opportunity to gain an ego boost from seeing that others are using the content he has created, as much as from the positive feedback and responses among his peers, authorities or community. The opportunity has been shown to exist to establish a well perceived reputation from video game UGC; therefore we believe user can take this into consideration as a positive incentive for participating in UGC for video games.

H8: Reputation has a positive effect on user participation in video game UGC.
2.4.4 PERSONAL NEED

Personal need is an extrinsic motivational factor which should be considered as an alternative to the extrinsic motivational factors rewards and reputation (Farzan & Brusilovsky, 2011, p. 278). The implication of personal need is that the contribution one provides will benefit or be useful to oneself in some way (Lui et al., 2002, p. 5). Personal need may motivate consumers to engage in virtual versions of new product development (Fuller, 2006, p. 641). Thus fulfilling personal needs is an immediate payoff resulting from participation (Lakhani & Wolf, 2003, p. 6). Personal/user need has also been a source of innovation in fields ranging from scientific instruments and industrial products to sports equipment (Lakhani & Wolf, 2003, p. 7). Wu et al. (2007, p. 259) find that programmers’ motivation to satisfy personal needs had a positive effect on participation. Hars & Ou (2001, p. 7) also find that the motivation of personal need is correlated to participation. Personal need as a motivator for participation has been insufficiently explored in academic literature (Farzan & Brusilovsky, 2011, p. 278; Hars & Ou, 2001, p. 7). Finding that programming for personal need is a motivational factor, and that programming open source is very similar to UGC in games, makes us want to examine it further for game UGC. The consumer might have a need or goal that he wants to achieve; this could be to gain practical benefit or other functional improvement (Solomon 2009, p. 154). But when the current state doesn’t provide the necessary attributes to accomplish this goal, the consumer feels a motivation to accomplish the goal by obtaining a product or service which can solve the problem (Solomon 2009, p. 154). The users’ decision to participate can thus be explained to be a very rational behavior; if he feels the need for an improvement he will carry out a performance to satisfy the need (Hars & Ou, 2000, p. 489).

The user’s personal needs can be argued to be a strong motivational force to participate in UGC creation (Hars & Ou, 2000, p. 489). UGC can be used as a complementary to the current game experience for the gamer; it focuses on changing something that didn’t satisfy his need (Hars & Ou, 2000, p. 489). It even can be said that fundamental UGC is that it changes the game in some aspect, these changes are important for the user’s game experience (Scacchi, 2010). User participation in programming such as open source and UGC can be a form of solving their own problems, where they feel the need to change something to improve their experience and have the own capability (Hars & Ou 2001, p. 489). With high personal needs user can have high motivation to create their unique experience; those users can with practical equipment and knowledge is willing to self-produce content to settle their needs (Jeppesen, 2004, p. 7). The user is thereby motivated to create content so that they later can reap the fruit from it, boosting their games either by improve the game experience or providing new game content (Scacchi, 2010). Hence many projects within open source programming start because the programmers have not been able to find a program needed to perform a particular function (Wu et al., 2007, p. 255). Hars & Ou (2001, p. 7) argue that the user that create UGC can feel that his demand for a solution is not getting the attention it should from the commercial developers so he experience that creating it himself is the best option. In an interview with Valkonen, leader of the battlefield 1942 Finn Wars mod (2004, cited Postigo 2007, p. 309), he said the reason they created their mod was because the lack of commercial games focusing on the Finnish wars despite consumer interest. With the focus on personal need for improvement, there is also the aspect of changing the game to a different, some UGC is recreations of nostalgic games which the user want to play
on an updated/ modern game engine (Postigo, 2008, p 62-63). This want to play an old game in a new context can motivate them to create UGC which resembles the old game in a new setting; the user can do so if he feels no update for the game is coming in a near future (Postigo, 2008, p 62-63). A downside with the personal need could be the fact that the user might write cheat codes or other content which would give him a benefit against other user, thus ruin the game experience for other users (Jeppesen 2004, p. 19; Wirman, 2007, p. 380). The theory for personal need as motivation to participate in UGC creation can be concluded that if the user feels that he have a problem that not been focused on by the developers. He might feel that from that point that a best option solution would be to solve the problem himself, and therefore participate to the extent needed.

\[H9: \text{Personal Need has a positive effect on user participation in video game UGC.}\]

2.5 CONCEPTUAL MODEL

Our literature review has shown that there are many aspects which are affecting and can help in explaining user participation in UGC. Previous literature explains that it’s the consumers’ degree of motivation that regulates whether he will be participating in UGC or not (Hoyer et al., 2010, p. 288; Schäfer, 2011, p. 51). Von Hippel & Katz (2002, p. 822) showed that the toolkits attributes are the key to success, the consumer would use it based what it contributes to his needs. Toolkits are needed for users to become involved in UGC (Batory et al., 2002 p. 211) and video game UGC (Scacchi 2011, p. 5). Previous literature argues for the importance of toolkits that are useful and easy to use in this process (Davis, 1989, p. 321). Therefore we believe that hypotheses H1 and H2 are important when studying user participation in video game UGC. Intrinsic and Extrinsic motivational factors are argued, by Ryan & Deci (2000b, p. 69), to be two of the main causes for individuals to engage in any behavior or task. Therefore, these are important concepts when examining user participating in any activity, with certain factors affecting, in particular, user participation in video game UGC. Hars & Ou (2001, p. 2-3) tested programmers’ intrinsic and extrinsic motivations for participating in open source software development. The intrinsic motivational factors tested were altruism, community goals and own satisfaction such as enjoyment. The tested extrinsic motivational factors were personal need, rewards and future rewards (Hars & Ou, 2001, p. 3-4). Nov et al. (2010) also divide motivations for participating in an online photo-sharing community into intrinsic and extrinsic motivations. Nov et al., (2010, p. 556) test intrinsic motivational factors enjoyment and commitment and extrinsic motivational factors self-development and reputation in their study. We believe, from our theoretical framework, that the intrinsic and extrinsic motivational factors we have presented have positive impacts on user participation in video game UGC. From the theory we have deduced the following 7 hypotheses (H3-H9) from intrinsic and extrinsic motivation and they believed effect on participation.
Table 1. Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Toolkits</th>
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<tbody>
<tr>
<td>H1</td>
<td>Usefulness has a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td>H2</td>
<td>Ease of use has a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td><strong>Intrinsic Motivational factors</strong></td>
<td></td>
</tr>
<tr>
<td>H3</td>
<td>Enjoyment has a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td>H4</td>
<td>Altruism has a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td>H5</td>
<td>Continuance commitment has a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td><strong>Extrinsic motivational factors</strong></td>
<td></td>
</tr>
<tr>
<td>H6</td>
<td>Rewards have a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td>H7</td>
<td>Future Rewards have a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td>H8</td>
<td>Reputation has a positive effect on user participation in video game UGC.</td>
</tr>
<tr>
<td>H9</td>
<td>Personal need has a positive effect on user participation in video game UGC.</td>
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We therefore suggest that a conceptual model where the consumer's intrinsic motivation and extrinsic motivation together with the perception of the cost benefit with toolkits affect participation in UGC. This model (see figure 1) will give answers to managers which factors motivates users to create content. From the result can therefore the managers know if they are focusing on stimulating the right factor to motivate user participation?
Figure 1. Factors affecting user participation Own conceptual model
3 SCIENTIFIC METHODOLOGY

3.1 ONTOLOGY
Ontology is concerned with the assumptions researchers have about the way the world operates, as well as their commitment to particular views of reality (Saunders et al. 2009, p. 110). The important question for ontology is whether social entities are considered to be as objective parts in absolute reality, or whether they are considered to be constructions of social acts and interpretations (Bryman & Bell, 2013, p. 41-42). There are two main aspects of ontology; objectivism and subjectivism (Saunders et al 2009, p. 110, 111; Bryman & Bell, 2013, p. 42). Objectivism represents the view that social phenomena exist in reality, separate from social actors (Saunders et al., 2009, p. 110). We as persons meet social phenomena as external information, existing outside of our intelligence and capability to affect it (Bryman & Bell, 2013, p. 42). This means that social objects have an existence independent from the social actor (Bryman & Bell, 2013, p. 42). Subjectivism represents the second aspect where social phenomena exist in direct relationship to the actions of social actors (Saunders et al., 2009, p.111). Through the continual process of social interaction these social phenomena are being revised constantly (Saunders et al., 2009, p.111). Subjectivism is often associated with the term constructionism which views reality as being socially constructed, with social actors placing different interpretations on the same situations (Saunders et al., 2009, p.111; Bryman & Bell, 2013, p. 43-44). Different actors will see and interpret situations different based on their view of reality and this will affect their interaction and actions with others (Saunders et al., 2009, p.111). This view implies that a researcher constructs his own version of the social reality and that his specific version, nor any others’, be consider to be the definitive version (Bryman & Bell, 2013, p. 43-44). Thus in contrast with objectivism where the social interaction is pre-existing phenomena separated from the actors, subjectivism is an ongoing phenomena from the social actors (Bryman, 2012, p. 34).

Objectivism is the ontological position we adopt in this thesis. We study what user participants of online video game UGC hold as motivations for participating in video game UGC. We see objectivism as the most relevant ontological stance to take for this thesis, as we regard social constructs, as well as local entities within the construct, as independent of social actors concerned with their existence. In other words, holding an objectivist view means that we believe these motivations would be the same whether we perform this research or not. Our study will examine the pre-determinate motivational factors for user participation, and we hold the belief that these factors exist outside the video game developer’s and, indeed, our control as researchers. Furthermore, we hold the belief that the motivational behavior we study is exhibited exists outside the realm of video game UGC, that the attitudes we examine are quite general in terms of other similar activities as well.

3.2 EPISTEMOLOGY
Epistemology is concerned with researchers’ philosophical stances regarding what constitutes as acceptable knowledge in a field of study (Saunders et al., 2009, p. 112). An important question that emerges with epistemology is whether the social reality can or should be studied with the same principles and methods as natural science (Bryman & Bell, 2013, p. 35; Bryman 2012, p 27). There are three main branches of epistemological philosophy, with differing research paradigms; positivism, realism,
interpretivism (Saunders et al., 2009, p. 113-116). Positivist researchers regard only phenomena that can be observed as a source of credible data (Saunders et al., 2009, p. 113). This view, argues the researcher, should follow the way of natural science when studying social reality (Bryman & Bell, 2013 p. 36). Commonly, the research strategy of positivists is to test theories by generating hypotheses based on previous data which will be confirmed, in whole or part, or refuted (Saunders et al., 2009, p. 113; Bryman & Bell, 2013, p. 36; Bryman 2012, p. 27). Further the positivist stance is that research should be concerned with facts rather than impressions to make the research objective (Saunders et al., 2009, p.114). When conducting the study the researcher needs to be external to the process of data collection, which must be free of value and feelings (Saunders et al., 2009, p. 114; Bryman & Bell, 2013, p. 36). Realism is the philosophical stance that objects have an existence independent of the human mind (Saunders et al., 2009, p. 114). Realism is similar to positivism in that it has a large focus on data collection and keeping of a scientific approach to the development of knowledge (Saunders et al., 2009, p. 114). Within realism there is two forms; direct realism and critical realism (Saunders et al., 2009, p. 114-115). Direct realism implies that we experience the world through our senses correctly, and that what we can see is reality (Saunders et al., 2009, p.114). Critical realism implies that we experience the world with sensations, and argues that it is the sensations of the object that we experience, rather than the object itself (Saunders et al., 2009, p.115). The critical realism means that the researchers’ perception is one of many ways to interpret reality, differentiating itself from positivistic view which argues that researchers’ descriptions are mirror images of reality (Bryman & Bell, 2013 p. 37). Finally there is the interpretivist position that emphasizes a difference between conducting research on humans and objects, and puts significance on the term ‘social actors’ (Saunders et al., 2009, p.116). The interpretivist view argues that natural science method of research on objects cannot be transferred to a study of human social behavior and that the researcher should have a strategy which understand the different between them two (Bryman & Bell, 2013, p. 38; Bryman 2012, p. 30). Interpretivism asserts that we interpret our own actions, as well as the actions of others in accordance with our own sets of meanings (Saunders et al., 2009, p. 116). The social science researcher should be able to capture the subjective act of a social action and then interpret it (Bryman & Bell, 2013, p. 38). The challenge within interpretivism is to enter the social world of research subjects and understand their world, behavior and actions from their point of view (Saunders et al., 2009, p. 116; Bryman & Bell, 2013 p. 38).

We are taking the stand of the positivist view of epistemology, since we are conducting a quantitative study for our thesis. As the quantitative study approach is usually seen as the natural science approach of social phenomena (Bryman 1984, p. 77). Positivism emphasizes the objectivity and externality of any data collection for the purposes of research. In order to ensure we analyze facts rather than impressions, we do not conduct structured interviews, but instead conduct a survey which collects data on attitudes (admittedly subjective evaluations). Structured interviews would have required subjective interpretation for analysis, while a survey which collects data on in an objective manner, which is then analyzed as objective data (Saunders et al., 2012, p. 134; Bryman 1984, p. 77). In addition, the survey will be constructed from previous scales that have used proper definitions, allowing replication of the study and in other situation to check externally for the objectivity and causality (Bryman, 1984, p. 77).
3.3 RESEARCH APPROACH

The concern about how researcher should approach and work with the relation between theory and empirical data is the researcher’s choice between a research approach of deduction or induction (Patel & Davidson, 2011, p. 23). Deductive approach is commonly thought of as the go-to-approach for natural scientific research (Saunders et al., 2009, p. 124; Bryman & Bell, 2013, p. 31). Deductive research is based on theory and then hypotheses are developed and tested from the theory, where theories stand as predictions of phenomena, and it’s the dominated approach in natural science (Saunders et al., 2009, p. 127; Bryman & Bell, 2013, p. 31). Through the deductive approach, a researcher aims to, based on previous general rules and theories, explain individual phenomena (Patel & Davidson, 2011, p. 23). The researcher must deduct a hypothesis from the theories and then specify how the collection of data should be conducted (Bryman, 2012, p. 24). With the result of the data the researcher would then support or reject the given hypothesis and from the given result be able to revise the theory (Bryman, 2012, p. 24). The last step of deductive approach involves induction, as the implications of the findings are integrated into the theory (Bryman, 2012, p. 24). The deductive research approach can be perceived as very linear, where the researcher follows a logical and clear path when conducting research. Though, after the data collection process, the researcher’s view on theories can be changed, so this linear process may not always be the case (Bryman, 2012, p. 25). Deductive approach is most often associated with quantitative research (Bryman, 2012, p. 25), and we will also choose this approach for our thesis because our study will be quantitative. The quantitative survey we will conduct is based on previous research and theories.

Induction is the second alternative; those researchers with the study direction of induction pursue the way of discovering (Patel & Davidson, 2011, p. 23). The idea of inductive research is to collect data and analyze it so that, from the analysis, new theories are constructed (Saunders et al., 2009, p. 125-126). The research object can be studied without an existing theory or principle from which a hypothesis been deducted, and instead be based later on the findings of the gathered data which can aid in formulating a new theory (Patel & Davidson, 2011, p. 23). In short, theory becomes the result of the research, and conducting research allows the researcher to draw generalizing principles from observations (Bryman, 2012, p. 26). Just as the deductive approach in the later stages can be influenced by induction, induction can also be influenced by deduction (Bryman, 2012, p. 26). The researcher may, when done with the analysis and construction of theory, want to test the given theory if it true or not, this with a deductive approach. In our thesis we have taken our base assumptions from previous theory, from which we are deducing and testing hypotheses. In other words, we employ a deductive research approach in this work. It is practical to recognize the relationship with conditions of deductive and inductive strategies between theory and empirical data (Bryman, 2012, p. 27). As discussed the both strategies do mix within them inductive and deductive, so they could maybe rather be thought of as an inclination rather than fixed approaches to theory and data (Bryman 2012, p.27). With this in mind we will have the deductive approach for our thesis but be aware of the possibility to learn about subjects previously unexplored in previous research, our interpretation of which could also be implemented in the later stages of this work.

3.4 RESEARCH STRATEGY

Within business research there are two main research strategies that are distinguished and can be used; qualitative and quantitative strategy (Bryman & Bell, 2013 p. 21, 61;
Bryman 2012, p. 35). They are often exemplified with that a quantitative research strategy is associated with surveys and experimental studies, while qualitative research strategy on the other hand is associated with observations and in-depth interviews (Bryman, 1997, p. 8). The choice of research strategy is crucial when approaching theory and research design, whether theory influences choice of research design or vice versa (Bryman & Bell, 2013, p. 21). Bryman (2011, p. 40) wants to make clear that qualitative and quantitative research strategies differ in more aspects than that quantitative design measures phenomena while qualitative design does not. The qualitative and quantitative research designs can be separated in terms of chosen view of knowledge and reality, such as epistemology and ontology (Bryman 2011, p. 40). In fact, ontological and epistemological views of reality and knowledge affect many aspects of qualitative or quantitative research design and the choice of qualitative or quantitative research design heavily depends on assumptions made about epistemology and ontology (Bryman & Bell, 2013, p. 21). Quantitative research strategy general principle can be said to have and deductive approach where testing theories are the focal point of the study (Bryman 2012, p. 35). A quantitative research begins with previous theory from which a hypothesis is deduced, thus employing the deductive approach (Saunders et al., 2012, p. 162). Further, the norms of natural science should be used when conducting the study (Bryman 2012, p. 35). Present in positivism is the view of social reality as external to the object, and that reality is objective to the social actor (Bryman 2012, p. 35). One of the key aspects of quantitative research is that it has the possibility of being generalized; meaning the conclusions from the samples can be generalized to other populations to (Bryman 1997, p. 20). In contrast with natural sciences, the qualitative research emphasizes on the meanings of words and expressions rather than variables like numbers (Saunders et al., 2012, p. 163). Qualitative research continues to emphasize an inductive approach to theory and data, and argue against positivist approach when analyzing the preference of individuals’ interpretation of social phenomena (Bryman, 2012, p. 36). The qualitative strategy is thought many times to be the opposite of quantitative strategy (Bryman, 2011, p. 40). The qualitative strategy relation to data and theory is to generate theories from the data (Bryman, 2012, p. 36).

As we have surmised, the choice of research strategy should reflect the ontological and epistemological stances we as researchers have taken in this study (Bryman & Bell, 2013 p. 62). The choice of research design should work as a frame of reference for each of the research methods you chose, such as the method chosen to collecting data (Bryman, 2011, p. 48). According to Bryman (2011, p. 45-46) something that also affects the decision for shaping the research strategy and design is the practical implications for the thesis, such as what the research question should answer. If the purpose is to describe the relative meaning for multiple causes of a phenomenon, then quantitative design should fit the research best (Bryman 2011, p. 45). Qualitative design should be used instead, for example, when the researcher wants to understand the particular worldview of social group (Bryman 2011, p. 46). The practical implications we want to be able to show with our thesis is to find out what effect different motivational factors have on the user participation in video game UGC. Through our research question we decided we want to know whether certain motivations factors have an effect on the user participation in UGC for video games. We therefore assert, with our philosophical assumptions, and the purpose of our study, that quantitative design is best suited for our research. The main purpose of this thesis is to show motivations for participating in UGC for video games. With quantitative strategy we will be able to
ascribe the phenomena of user participating in video game UGC to a few motivational factors as well as toolkit features. Further we increase our chances of being able to generalize the study findings to other populations with a quantitative study, which would increase the area around which we can argue practical and managerial implications.

3.5 PRE-UNDERSTANDINGS
We never see the world without presumptions (Gilje & Grimen, 2007, p. 179). Every person’s pre-understanding is unique, and different kinds of insights and values can have influenced this process, such as language, expressions, personal beliefs and individual experiences (Gilje & Grimen, 2007, p. 180). When we approach information that seems beyond our understanding, this is only because our understanding of the area is incomplete (Gilje & Grimen, 2007, p. 179). Without pre-understanding, understanding itself cannot exist, and it is necessary in order to adequately interpret the information we receive (Gilje & Grimen, 2007, p. 179). Understanding itself has a deep connection with language (Gadamer, 2004, p. 397). When we explain a concept or idea, we use words that we feel represents reality, which in turn might reveal our unconscious biases (Gadamer, 2004, p. 397). For us, when writing about video games we most definitely hold preconceptions since we have had many experiences involving video games, and some of these preconceptions are included in our writings. In fact, according to Gadamer (2004, p. 397) despite a scientist’s want of impartiality and scientific method, his preconceptions will make him behave “as a child of his time who is unquestioningly dominated by the concepts and prejudices of his own age”. When we chose to study new product development through UGC creation and user participation in UGC, we made this choice based on our pre-understandings. Both authors have knowledge as hobbyists in video game culture and have long been part of different video game communities. One of the authors has previously been a hobbyist participant in an online UGC community, while the other is a hobbyist competitive DOTA 2 player. Our own experiences and knowledge in these areas is the reason why we chose to study motivation for consumers to participate in online UGC video game communities. Despite our personal involvement in video gaming, we have less experience, and thus fewer preconceptions, regarding user participatory activities in UGC, the main area of study. During our time writing on this subject, our knowledge and understanding has increased from reading previous research, leading to new conceptions of reality based on the previous research. Regardless of previous knowledge, our dedication to objective research is one of our primary concerns, and we have several discussed between ourselves how to avoid personal preferences in exchange for theoretical objectivity.

3.6 LITERATURE SEARCH
Patel & Davidson (2011, p. 69) argue for the importance of searching for literature which covers a large part of the subject, in order to incorporate a diverse overlook of the subject and previous literature into the research. The researcher should not only focus on theories which are supportive for his own arguments but rather include all aspects to get a complete view of the subject (Patel & Davidson 2011, p. 69). If the researcher only displays, in the theoretical part, findings which support his agenda, it will give a false picture of the phenomena (Patel & Davidson 2011, p. 69). We have tried to make a substantial literature review before deciding our theories and which aspect we would want to research. We have sought, to a great extent, to use literature found through search sites that have been published in peer-reviewed journals. But in some cases we
also have used working papers and conference papers, though when those have been used it’s because they are commonly appearing as the source and reference in other articles. When choosing working papers and conference papers we required that they would be cited by other researchers, and we chose rather to use an original source rather than a secondary, peer-reviewed source, which refers to the conference. In some few instances we were not able to find the original source and chose to use a secondary source as reference, though, of course, explained in the reference. There can emerge some issues when referencing secondary sources; the researcher might have misinterpreted the first source, or he might have written it skewed in order to fit his research better (Bryman, 2011, p 120). The content can therefore lose its original meaning and be an incorrect interpretation of the research, and one must rely on the interpretation of the secondary source (Bryman, 2011, p 120-121). Referencing the original source is also an act of acknowledgement, and gives credit to the first author and his original work (Bryman, 2011, p 118). We have also constantly sought to acquire the original work from which we gather information. Since we have chosen to use original text to the greatest possible extent we have several times chosen not to cite at all, rather than cite a secondary reference. We have taken a stance where if we were not capable to find the first hand source then it should be discouraged from using it due to the risk of misinterpretation.

During the search of literature, a researcher also needs to assess whether the source is objective or has a personal agenda (Patel & Davidson, 2011, p. 68-69). This concerns the quality and the validity of the literature and will also reflect the quality for the work (Patel & Davidson, 2011, p. 68-69). Since everyone can upload content on the internet a researcher needs to be cautious towards where the information is gather (Bryman, 2011, p 113). Our literature search was conducted with searches on the Umeå University library online search engine which gives access to most of all electronic databases who handle e-journals. We also extensively used the search engine Google Scholar which allows a broader search, with the additional feature of coordinating access given from Umeå University so that articles which require a subscription to the journals can be read. One common criterion for judging the quality of the literature is from the perceived reputation of the journal the article is published in (Bryman, 2011, p 120-121). Some journals, with a lesser reputation, can be of relevance for some fields, as they might be specializing in that particular topic (Bryman, 2011, p. 120-121). The choice of articles and other sources have been a mixture of well cited authors many of whom, most commonly come from well-known journals. Unfortunately, and in some aspects fortunately, the area of UGC for video games not been extensively covered in previous research. Thus we have also been searching in more nished journals, like First Monday. First Monday is an openly accessible peer-reviewed journal on the internet, which has a solid focus their articles towards computer and online issues (First Monday, 2015). Further we turned also to well known conference papers such as Hars & Ou (2001) and Lampe et al. (2009) from which relevant information about the subject of user participation in UGC was related to both motivation and online communities was gathered. The usage of conference papers, sometimes referred to as symposia, can, according to Saunders et al., (2012, p. 90), supply one with a “wealth of relevant information”. Conferences most often focus on being specialized toward one particular field, which means the conference literature is commonly very specific within a particular subject (Saunders et., 2012, p. 90). We see that the concepts of UGC in video games and other activities such as open source software development and online
communities have a relatively short history in academic writing. However, these areas are accumulating an ever-growing base of theoretical knowledge.

The usage of keywords is an important and useful tool when searching for literature (Bryman, 2011, p. 116). It can be reappearing words throughout the read literature and should be formulated towards your own problem (Bryman, 2011, p. 116-117). In our search we began with what we knew from course literature and other previous knowledge and used those words, but with the reading the literature they were change and shaped to better fit the problem of our thesis. Some of the keywords we used for searching our literature where, for example; extrinsic motivation, intrinsic motivation, toolkits, ease of use, usefulness, online community, participation, user participation, product development, UGC, user generated content, user lead product development, modding, mods, monetization, motivation, rewards, personal needs, reputation, enjoyment, altruism, community continuance commitment. The literature that been found also have reference and literature list, those can and should be used to find relevant articles and books (Bryman, 2011, p 113). We have, for our thesis, searched and scrutinizing for re-appearing authors in the reference list in order to be able to find the most relevant and eminent researchers in the fields. Authors such as Von Hippel, Ryan & Deci, Franke and Jeppesen have been recurring as references and we have found great use from finding articles in the references list. These authors have also provided us with a solid base for some of our concepts.
4 PRACTICAL METHOD

4.1 QUANTITATIVE RESEARCH
Quantitative research generally concerns itself with studying the relationship between different variables, using measurements that can be subject to statistical analysis (Saunders et al., 2012, p.162). The most important step in quantitative research is to construct a research design based on theory and hypotheses (Bryman, 2008, p. 141). A survey can be constricted in a variety of ways, i.e. cross-sectional design using interviews or longitudinal surveys (Bryman, 2008, p. 141). After choosing a design, creating measurements for the questions is the next step in the process, followed by picking a suitable research site and sample respondents based on the population in question (Bryman, 2008, p. 141). The choice of research design affects how concerns about validity and reliability should be thought about in the study (Bryman, 2008, p. 141). According to Bryman (2008, p. 155) there are three critical aspect of quantitative research; measurement, generalization, replication. Measurement provides the researcher with tools to find different characteristic between people (Bryman, 2008, p. 144). Construct indicators can, with either a series of questions or observations, measure a concept (Bryman, 2008, p. 144). Thus with measurement and construct of indicators the researcher can distinguish difference between people which can explain the concepts. Concerns with measurements is that they are supposed to detect small differences, thus they need to be reliable and valid (Bryman, 2008, p. 155-156). This means that concerns about the research reliability and validity are important to be able to describe the concept correctly. The quantitative researcher wants to explain a phenomenon, and with findings he wants to be able to generalize (Bryman, 2008, p. 156). But in order for a researcher to be able to generalize his findings the sample need to be representative for the population, which force the researcher to put greater emphasis on how he gets his sample (Bryman, 2008, p. 156).

4.2 SELECTION OF TYPE OF DATA
Cross-sectional studies and longitudinal studies concern two different data collecting methods that focus on the time aspect when collecting the data (Babbie, 2004, p. 101-102). Cross-sectional studies are researching phenomena at one time period at a certain point (Saunders et al., 2012, p. 190). Longitudinal studies involve studies that observe the same phenomena more than once over an extended period of time (Babbie, 2004, p. 101). The researcher using cross-sectional studies takes a figurative snapshot of the phenomenon and describes its current state (Babbie, 2004, p. 101-102). Longitudinal studies allows for many snapshots to be taken over a period of time, thus making it possible to see any development that might have taken place (Saunders et al., 2012, p. 190). As we found out in our literature review, the concept of paying users for video game UGC has not been around that long. For example, Valve Software first implemented their model of monetizing UGC just a few years ago (Valve Software, 2015a). If the resources are not enough for conducting a study over longer periods of time, there can often be secondary data available (Saunders et al., 2012, p. 191) though this limits the research to the items included in the study. The idea of paying for video game UGC would be interesting to know study over a longer period, to see if user’s motivations for creating UGC changes over time, since the concept of paying and
getting paid has been recently introduced for video game UGC. However we will not perform a longitudinal study, as time would not allow us to perform this kind of study ourselves.

We decided what type of data we would use in our study, whether to use secondary data, collected from other researchers or databases, or whether to collect our own primary data. The choice of data should be based on its ability to answer the research question (Patel & Davidson, 2011, p. 67). Existing data which has been collected by researchers or institutes with a different purpose than for the present study is called secondary data (Bryman, 2011, p. 300; Saunders et al., 2012, p. 304). Upsides of using secondary data is it’s cheaper and faster to collect, the amount of time and money needed to use secondary data is barely a fraction of the time-consumption and cost of conducting the same yourself (Bryman, 2011, p. 301). Further secondary data can many times be of very good quality; if it is collected by a large institute it will have been conducted by experienced and skillful research teams, which is superior to what a student can do (Bryman, 2011, p. 301). Additionally, if the data has been continuously collected over time it allows for longitudinal examination, allowing the researcher to compare changes over time (Bryman, 2011, p. 301). The benefits with secondary data for our theses would be that the quality of the data has the potential to be better, as it would, most likely, be collected using greater resources and skills than we have access to. As with most things, there are also downsides and limitations when using secondary data (Bryman, 2011, p. 304). As mentioned earlier, since secondary data has been collected with a different purpose than the current study, the constructs studied and the data collected may be differently interpreted by the researcher than originally intended by those who constructed the study (Bryman, 2011, p. 304-305; Saunders et al., 2012, pp. 319-320). In other words, when using secondary data, the researcher does not have control over the quality of data and it may also lack some variables needed for the present study (Bryman, 2011, p. 304-305). When collecting new data, specifically for the purpose of the study at hand, primary data is used (Saunders et al., 2012, p. 304). This data is usually new and gathered by the researcher for his own research purposes (Saunders et al., 2012, p. 304). Primary data can be costly and time-requiring to gather compared to secondary data (Saunders et al., 304). With the mentioned differences between primary and secondary data, we decided to use primary data. Though we, in the beginning of writing the thesis, contacted a company about the thesis purpose and whether they could help us with the data collection by providing their data. This company was not inclined to share secondary data, much due to considerations of user confidentiality and user agreements, so we decided to consider primary data. As the data this company would be able to provide would almost definitely not regard the same concepts studied in this thesis, the choice of collecting primary data had its definite upsides. Collecting primary data allowed us to not be limited in our thesis by what data the company would be able to provide, we therefore asked for permission to collect our own data via their community forums instead. We were allowed by Valve to post our own survey to members on their video game platform and community Steam. Further we were also able to post our survey onto the three other communities (MODSonline, ModDB, GameBanana). From that we successfully retain allowance to upload or own survey we finally decided us to use primary data for our thesis.
4.3 CHOICE OF METHOD FOR DATA COLLECTION

There are many different methods how to gather the data needed to answer the given research question, those can be; existing documents, tests, interviews, observations or surveys (Patel & Davidson, 2011, p. 67). None of the above mentioned methods can be said be superior to the other, but rather depends on the research question and what means the researcher has to collect the data (Patel & Davidson, 2011, p. 67). The researcher needs because of that weigh the differences and opportunities for each method and decide which seem to be best fitted for the research question. For quantitative research the most associated types of studies is experimental or surveys (Saunders et al., 2012, p. 163). The options we have found to be more suited for our study is through a survey. Surveys are usually associated with structure interviews or questionnaire (Saunders et al., 2012, p.163). Further the structured interviews and questionnaires are the dominating tools researcher use when doing a study with a survey (Bryman & Bell, 2013, p. 245). The fact that they are the two most common ways of conducting a survey gives us the insight that they are valid as a choice. Structure interviews is a standardized interview the question is pre-made and will be the same for all interviewees and they will often get a given numbers of answer for each question (Bryman & Bell, 2013, p. 215). Interviews are also as the name tells associated with an interviewer which is in contact with the respondent, while questionnaires does not have it (Patel & Davidson, 2011, p. 73). Questionnaires are similar to structured interviews a certain degree, but a questionnaire are filled and answered by the respondent himself; the survey is a fixed set of question with usually fixed answers or scales the respondent can choose from (Bryman & Bell, 2013, p. 245). Both questionnaires and structured interviews are based on questions (Patel & Davidson, 2011, p. 73; Bryman & Bell, 2013, p. 246).

The biggest difference between structured interviews and questionnaires is the presence of an interviewer (Bryman & Bell, 2013, p. 245). Other differences between structured interviews and questionnaires are not too substantial, however those differences that origins from structured interview having an interviewer is important (Bryman & Bell, 2013, p. 245). The Interviewer can help explain and answer questions about the form the respondents may have (Bryman & Bell, 2013, p. 245). The lack of an interviewer in questionnaires creates a difference in shape of the questions, they need to be easier to understand and have questions that are easy to answer (Bryman & Bell, 2013, p. 245). Time and money should also be considered when deciding proper data collecting method for the given research question (Patel & Davidson, 2011, p. 67; Bryman, 2011, p. 228). Thus depending on the financial and time the researcher has he should choose the most suitable method. Questionnaires are cheaper than structured interviews and are also easier to administrate (Bryman, 2011, p. 228). That the time cost of interviews is greater for interviews than questionnaires, but also in either phone cost from calling or travel cost if the researcher would go visit the subject or vice versa (Bryman, 2011, p. 228). The fact that questionnaires can be distributed in a large quantity simultaneous makes it both faster and easier to administrate, where interviews would demand a great deal of effort and time to reach the same amount of respondents. A choice of questionnaire would be both cheaper and faster, for our degree project as said we have a low budget, though we choose the primary data over secondary even though it’s more expansive. We do not want our result be affected on by our budget, so as a decider how survey technique we know that we have low budget and little time. So if we would conduct interviews we would have to spend much time and money, maybe even more than we could afford risking being in need of reducing our sample size or the target
population to be able to achieve our timeframe and budget. Where a questionnaire can be sent out and with only some remainders not demand any extra time from us. This would therefore allow us to focus on other important aspect of the study and simultaneous reduce the risk of running out of time and money.

In some areas questionnaires are better such as reaching more respondents while interviews compensate by being able to explain and help the respondent. Though we have found one issues for us with conducting interviews is the relative anonymity of people online (Friedman et al., 2000, p. 40). For example, we would never be given phone numbers or email addresses of Steam Workshop users thus not be able to reach them on our own, since it would be a breach in their user terms and agreements. It seems for us most logical to post our survey online in communities where the user are active so that we don’t breach any rules, we also believe it is the best opportunity to find the sample we want to ask. To reach those online we agreed it would be best with questionnaires, because the impractical implementation of structured interviews would be to conduct in online forums. Our decision is therefore to use a questionnaire because we believe it would be the best way of reaching our target segment and get a suitable sample.

4.4 QUESTIONNAIRE CONSTRUCTION

The survey strategy for data collection is common and popular within business and management research (Saunders et al., 2012, p. 176). Surveys using questionnaires have gained popularity due to its usefulness in collecting standardized data from large populations, and the relative ease of its use (Saunders et al., 2012, p. 177). If a questionnaire is laid out improperly, this can confuse and anger respondents, leading to inaccurate data or questionnaires left unfilled (Babbie, 2004, p. 250). We have kept a few guidelines in mind as we developed the questionnaire in order to mitigate possible weaknesses of the data collection strategy. In many respects, a survey shares many similarities with a structured interview, but the two data collection strategies differ in communication between researcher and respondent (Bryman, 2008, p. 228). When conducting a questionnaire respondents have to read, interpret and answer all questions by themselves, making both procedures and possible uses of the data quite different from structured interviews (Bryman, 2008, p. 228). Questions cannot be clarified; meaning that when respondents fill in a questionnaire there is no one available who can clarify questions or constructs if needed (Bryman, 2008, p. 228). We have tried to mitigate this by going through all questions several times and make sure there is as little ambiguity in them as possible. When constructing the questionnaire we also made sure to use closed-ended questions, in order to ease the processes of answering, and in turn interpreting the answers. The Likert scale is perhaps the most used and most recognizable way to measure attitudes (Patel & Davidson, 2011, p. 88). When taking measures using the Likert scale the respondent is asked to indicate on a scale how strongly he or she agrees or disagrees with a series of statements (Saunders et al., 2012, p. 436). We chose to use a 7-point Likert scale in our survey, where 1 represents ‘Strongly Disagree’ and 7 represents ‘Strongly Agree’. By adapting questions used in other questionnaires we can collect data more efficiently than if we would develop our own constructs (Saunders et al., 2912, p. 431). All items in the survey were derived from previous research and some items were modified to fit the research context. Table 1 below displays the constructs we adapted for each of the concepts and from which previous research it has been adapted.
We divided the survey into 4 parts: Introduction letter and demographics, Participation, Motivation and Content creation tools. In the introduction we started by thanking the participant for taking part and continued with explaining details about the questionnaire, such as number of constructs, approximate time required and anonymity of all respondents. We explained, in basic terms, what the research regarded and, perhaps optimistically, what we hoped would result from this research. The contact information (student university email) to both authors was provided at the end of the introduction letter. Saunders et al. (2012, p. 235) explain that researchers can improve their safety when conducting internet-mediated research by using a university email address instead of a personal one. Providing contact information was done for two reasons; 1) to ensure that we as researchers are seen as serious and trustworthy and 2) so that any discrepancies in the questionnaire can be reported to us directly.

We created the questionnaire with Google Forms, a service provided by Google, we found it really useful to use. It’s allows the user to create an online survey for free, then the questionnaire receives its own URL address. From receiving a unique URL address it enables a very good way to distribute the questionnaire since the link to the URL is all that's needed. The answers are summaries with both graphs and tables, but also provide all the data in a spreadsheet. These functions ease the data collection and summary of data. Google form allows you to have anonymous respondents, further they give you the

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### Table 2. Question construct and their sources

<table>
<thead>
<tr>
<th>Item construct:</th>
<th>Question number:</th>
<th>Number of items:</th>
<th>Literature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>User participation</td>
<td>3-6</td>
<td>4</td>
<td>Casaló, L. V., Flavián, C., &amp; Guinalíu, M. (2010)</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>7-9</td>
<td>3</td>
<td>Venkatesh, V. (2000)</td>
</tr>
<tr>
<td>Continuance commitment</td>
<td>14-18</td>
<td>5</td>
<td>Bateman, P. J., Gray, P. H., &amp; Butler, B. S. (2011)</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>43-48</td>
<td>6</td>
<td>Davis, F. D. (1989)</td>
</tr>
</tbody>
</table>
option a function which prevents the respondents from progress with the survey if they
do not answer all questions. We opt to use this function for all questions except
demographics questions. This preventing that we have would have missing data from
question not been missed to be answered. Since we thought that our sample is heavy
computer user we also believe reaching our sample online would be natural. The
questionnaire can be seen in appendix 1.

4.5 SAMPLING TECHNIQUE

As Bryman (2008, p. 167) says: “The need to sample is one that is almost invariably
encountered in quantitative research”. It is quite rare within research to collect and
analyze data from every possible member of a population (Saunders et al. 2012, p. 258).
Although this does happen, for many research questions it would simply be impossible
to collect and analyze all potential data, as there are often restrictions of time, money
and access (Saunders et al. 2012, p. 258-61). What researchers tend to do instead is to
collect and analyze data from a subgroup that is considered as representative of the
larger population (Saunders et al. 2012, p. 258). Sampling techniques can be divided
into two types; probability sampling and non-probability sampling (Saunders et al.
2012, p. 261). With probability sampling, the probability of each member to be selected
from the population is equal (Saunders et al. 2012, p. 261). Probability sampling
requires a sampling frame, “The complete list of all the cases in the population, from
which a probability sample is drawn” (Saunders et al. 2012, p. 261). However, common
within business research, acquiring a sampling frame may not be possible, which means
that which means that a sample must be selected some other way. Non-probability
sampling provides alternative ways to select samples (Saunders et al. 2012, p. 281) and
this approach is adopted when researchers target a specific group, but are not
necessarily looking to generalize findings to the overall population (Somekh & Lewin,
2011, p. 224). Self-selection sampling is a volunteer sampling technique where the
researcher invites each case to identify their desire to take part in the research (Saunders
et al. 2012, p. 289). Self-selection is a non-probability sampling technique and is the
sampling technique we used in our research (Saunders et al. 2012, p. 260, 290).

When preparing to collect data for this study, we were initially interested in sending out
our questionnaire via e-mail to participators in the Steam Workshop, a community for
UGC users, creators and contributors. We contacted Valve Software, one of the major
game development companies, and the company that facilitates the online video game
UGC community Steam Workshop, and exchanged a few mails with them before
concluding that sending out our questionnaire through them would not be possible. We
instead agreed to post our questionnaire on the Steam Workshop website, in the forums,
where members could see our survey and fill it out at will. Our contact person at the
company would ensure that the post would not be taken down. After this we decided to
also post our questionnaire on other online video game UGC communities, motivated to
make our findings become more generalizable and to gain a larger sample. We got the
idea of recruiting respondents via online community forums from Poor (2013), where he
posted his video game modding survey on online community forums. The online
community sites where we chose to post our study are the Steam Workshop,
GameBanana, ModDB and MODSonline.

In order to study this population we first need to reach them. Video game UGC creators
are a group that we could come in contact with through the internet, but as we have no
personal connections to seek for advice in this area, reaching a large enough sample for
our survey was not easy. As acquiring a mailing list proved unsuccessful we decided to take another approach to the research. Internet-mediated questionnaires are commonly presented to respondents through either email or through a website (Saunders et al. 2012, p. 454). Internet-mediated questionnaires can be delivered via a website, where respondents are invited to access the questionnaire via hyperlink (Saunders et al. 2012, p. 455). It is important to advertise the research and ask respondents to take part through appropriate media, and internet discussion groups are one of several ways to in which to do this (Saunders et al. 2012, p. 289). There are a few reasons as to why we chose self-selection sampling. One major reason is that we could not acquire a sampling frame, without which we cannot select a probability sample (Saunders et al., 2012, 262). Another reason for our choice of research technique is that individual cases are not difficult to identify or reach. We could identify members of our desired population through their engagement in online communities, and so, decided to advertise our self-selection sampled questionnaire in the most relevant communities. We also have found in previous research that samples through online forums, Sotamaa (2010, p. 4) and Poor (2010, p. 5) both conducted their questionnaires about UGC in official forums. This with our own identification of our population we found it where reasonable to post our questionnaire on online forums. Advertisements can be used on a wide range of media to advertise the survey, but respondents have to take extra steps to locate and complete the questionnaire (Saunders et al. 2012, p. 455). Advertising in this sense makes estimations of sample frame variables like response-rate and non-response bias difficult to estimate (Hewson, 2003, p. 291). Making generalizations becomes difficult when advertisement is used to gather responses for a survey (Saunders et al. 2012, p. 455). We decided not to advertise our survey in any other forum than those specifically for members of these four communities in order to keep consistency and to ease calculating our response rate.

So what is the population we are studying; of whom does it consist? The data presented in this paper was gathered from members of online video game UGC communities during spring 2015. All respondents are members of one of the four online video game UGC communities. This means that all respondents have at the very least an interest in the area of content creation for video games.

**Steam Workshop**
The Steam Workshop is a community of video game content creators, “a central hub of player-created content and tools to publish, organize, and download that content into your games” (Valve Software, 2015a). Game developers and content creators use this forum to improve game experiences, and user contributions can be made available for other members to download (Valve Software, 2015a). The Steam Workshop has just over five hundred thousand members (Valve Software, 2015d).

**GameBanana**
“GameBanana is a community of gamers who customize their games with content submitted by amateur and professional game designers” (GameBanana, 2014a). The GameBanana community is made up of gamers who discuss, download and share user-created game content. GameBanana is, according to their own site, the largest community of this type (GameBanana, 2014b). GameBanana has over four hundred and fifty thousand members (GameBanana, 2014b).


**ModDB**

ModDB provides ways for developers to interact with others, to share their skills and learn new ones, in their aim to make video game UGC contributions. At the heart of the ModDB community are developers’ needs to make game customization as simple as possible (ModDB, 2015). ModDB is a community dedicated to supporting “user generated game content” for the benefit of developers and players alike (ModDB, 2015). ModDB has 3.2 million members (ModDB, 2015b), a relatively high number, which means that members of this community are under-represented in this study.

**MODSonline**

“MODSonline is a community of modders, developers and gamers each supporting the other in their endeavors” (MODSonline, 2015). MODSonline is a community centered on gaming that has, for over 10 years, acquired talented members who help each other in both competitive and non-competitive video game UGC creation (MODSOnline, 2015). MODSonline has just over one hundred thousand registered users (MODSonline, 2015), a relatively low number, which means members of this community are over-represented in this study.

Before posting, the questionnaire was pre-tested on two groups if individuals. Pre-testing allows the researcher to refine the questionnaire before use (Saunders et al. 2012, p. 258). One group consisted of hobbyist competitive video gamers and a smaller group consisted of hobbyist programmers. All respondents in pre-testing were male. These two groups hold similar characteristics as, but are not representative of, the sample we study. The questionnaire was posted on Steam Workshop, GameBanana and MODSonline on April 1 and on ModDB on April 4, 2015. Two reminders were posted, one after one week of publishing, at April 8, and another three weeks after publishing, on April 20. The question of sample size is not as complicated as perhaps data collection or analysis, but acquiring a suitable sample size helps with a study’s validity, and can improve the researcher’s insight (Saunders et al. 2012, p. 283).

The power of a sample determines whether the researchers can reject or confirm the hypotheses (Stevens, 2002, p. 6). Large sample with over 100 respondents have enough power, this means sample over 100 respondents the power is no longer an issue (Stevens, 2002, p. 6). This means samples with over 100 respondents may be enough for the study. On the other hand there is a rule of thumb that can be used for by the researcher to calculating the needed sample size if using a standard/enter regression analysis (Tabachnick & Fidell 2014, p. 159). This rule is a formula calculating the N respondent based on how many independent variables the study has, the formula is $N > 50 + 8m$, $m$ = number of independent variables (Tabachnick & Fidell 2014, p. 159). For our study we have 8 independent variables, using this formula to estimate needed respondent would give $N=50+8*8= 114$ respondents. For our survey we require more than 114 respondents to be sure our sample is large enough. Unfortunately We received a total of 96 responses to our questionnaire, meaning that our sample size does not fulfills the required amount for us to reject or confirm our hypotheses according to Tabachnick & fidell (2014, p. 159) formula. However we will still test the number respondents in the test to see if we can get any result. A high response rate reduces the risk of non-response bias and ensures that a sample is representative (Saunders et al. 2012, p. 267). A total response rate is calculated by taking the total number of responses divided by total number of eligible candidates in a population (Saunders et al, 2012, p. 268). Considering our total population makes up of millions of people a total response
rate would not be significant. Active response rate is calculated by taking the total number of responses divided by the number of eligible and, more importantly, reachable respondents (Saunders et al., 2012, p. 268).

Our survey was open from 30/3 - 15/5 (2015) links to the questionnaire was posted on four different forums, Steam workshop, MODSonline, ModDB, GameBanana, with a total of 96 respondent answered the survey. In two of our four forum threads we can see the number of views our posts have received, aka how many of our eligible respondents we have reached. Our thread on GameBanana had amassed 349 views and our thread on MODSonline 329 views at the time we closed the questionnaire. A rough calculation can give us a hypothetical total number of eligible and reachable respondents: ((349 + 329) / 2) x 4 = 1356. If we allow this number to represent our number of eligible and reachable respondents, we should be able to calculate an approximate active response rate: 96 / 1356 ≈ 0.7079 ≈ 7.01%. Since the nature of online forums is that post often gets many views, we feel it is natural that our response rate is low. Further the and the questionnaire had been constructed so that the respondents were required to answer all question to proceed. This allowed us to have all questions answered from all respondents without any missing answers.

4.6 DATA ANALYSIS
The first step of analyzing our collected data was to export the data from Google Sheets to an .exl file and import it to statistical analytics software, in our case this was SPSS statistics. It is in this section we will present what kind of analyses we have will performed in order to test the scientific result from our study.

4.6.1 CRONBACH’S ALPHA
In basic terms, reliability concerns consistency; whether a particular research technique, when applied repeatedly to the same object, yields the same results each time (Babbie, 2004, p. 141). Reliability also concerns whether a research technique is robust enough to produce consistent findings under new conditions (Saunders et al. 2012, p. 430). Cronbach’s alpha is a very common measure used when measuring internal reliability (Bryman & Bell, 2013, p. 172). It measures the average of all possible reliability coefficients by splitting up all questions in two groups and then measuring them against each other (Bryman & Bell, 2013, p. 172). Cronbach’s alpha provides a value between 0 and 1 where a higher alpha value indicates a stronger reliability (Pallant, 2005, p. 6). More specific coefficients 1 (indicating perfect reliability) and 0 (indicating no reliability) and a coefficient measure of >0.7 is usually considered the lowest acceptable levels (Bryman & Bell, 2013, p. 172; Nunnally, J., & Bernstein I, 1994, p. 211-212).

4.6.2 DESCRIPTIVE STATISTICS
Descriptive statistics enable us to describe and compare two general aspects of our data, the central tendency of our respondents, and the dispersion of the answers among our respondents (Saunders et al. 2012, p. 502-3). The central tendency of descriptive statistics is to find the typical value for a variable in an entire sample (Bryman & Bell, 2013, p. 351). To measure the central tendency for quantitative analysis we can choose between the value that occurs most frequently (mode), the value represented in the middle (median) or the value that displays the average of all values (mean) (Saunders et al. 2012, p. 503-4; Bryman & Bell, 2013, p. 351). Mean is the most frequently applied central tendency measure, as it is the building block for many statistical tests regarding relationships (Saunders et al. 2012, p. 506), and is therefore the measure we have
chosen to describe the central tendencies of our data values. Standard deviation allows us to measure how the data values are dispersed around the central tendency, “the extent to which values differ from the mean” (Saunders et al. 2012, p. 506) and is the measure we have chosen to describe the dispersion of our data values.

4.6.3 BIVARIATE ANALYSES

Bivariate analyses are performed in order to show how two variables are related to each other (Bryman & Bell, 2013, p. 353). A possible relation between two variables is tested by searching for signs or evidence that variations in one variable coincide with variations in the other variable (Bryman & Bell, 2013, p. 353). Testing the probability (p) that such a relationship has come about by chance is known as significance testing (Saunders et al., 2012, p. 512). If the probability of this relationship having occurred by chance is very low (p < 0.05) a statistically significant relationship can be observed (Saunders et al., 2012, p. 512). Testing the significance of our constructs this way will be part of our statistical analysis. Pearson’s product moment correlation coefficient (Pearson’s r) is a correlation coefficient which enables us to measure the strength of the linear relationship between two numerical values (Saunders et al., 2012, p. 521). The correlation coefficient (r) will take any value between 1 and -1, where 1 represents perfect positive correlation, -1 represents perfect negative correlation and 0 represents perfect independence (Saunders et al., 2012, p. 521). We test the strength of the relationship between some of our independent variables using Pearson’s correlation coefficient.

4.6.4 MULTIVARIATE ANALYSIS

Pearson’s r is an example of a correlation coefficient, which means causal links cannot be tested using this method, only correlations (Bryman & Bell, 2013, p. 353). In contrast to the correlation coefficient, the coefficient of determination $r^2$ (R-square) allows us to test a cause-and-effect relationship between one dependent variable and several independent variables (Saunders et al., 2012, p. 523). The coefficient of determination measures “the proportion of the variation in a dependent variable that can be explained statistically by the independent variable or variables” (Saunders et al., 2012, p. 523). Testing two or more independent variables for causal links to a dependent variable can be done using a multiple regression analysis (Saunders et al., 2012, p. 523). The coefficient of determination will take on a value between 0 and 1, where 1 signifies that the value of the dependent variable is completely determined by the value of the independent variable and 0 signifies complete independence (Saunders et al., 2012, p. 523). This means the higher R-square the stronger the relationship is and the dependent variable is more explained by the dependent variables. We will perform a multiple regression analysis when testing our hypotheses in order to see possible causal links between our multiple independent variables and our single dependent variable. This allows us to examine the effect of our dependent variables intrinsic motivational factor, extrinsic motivational factors and toolkits factors effect on user participation. This test will give empirical evidence determine whether the hypotheses are supported or not (Saunders et al., 2012, p. 523).

4.7 ETHICAL CONSIDERATIONS

Saunders et al., (2012, p. 208) argues that the ethical aspect of a research is very important for the future success of the research project. The research should not only be about getting the result you want with a straightforward strategy, the study needs also to imbue research ethical considerations inbouded in the research strategy (Patel &
Davidson, 2011, p. 62). We have touched this area already in our study, earlier this chapter we showed that we wouldn’t want to constraint the anonymity that exist on the internet, nor would Valve be able to give us access to all their information. This cause arises from the ethical considerations from both us researchers and Valve Corporation. The goal with research ethics is to create a trustworthy reliable research; ethical research is associated with also being high quality research (Patel & Davidson, 2011, p. 62). The Reseachers have the ethical responsibility to prevent any harm for the respondents, and research which harms respondents should be considered unacceptable (Bryman, 2011, p. 132). Harm can come from physical or psychical, such as stress, lowered self esteem or forcing the respondent to do something wrong (Bryman, 2011, p. 132). The respondents should have the right to be anonymous and their privacy should be protected throughout the whole study (Bryman, 2011, p. 134). In our study we have determined that all respondents will be anonymous. We will not force anyone to respond and have not demanded to take part of any information from the four communities we have posted our survey on.

Providing false deceptions about the reason of the study for the respondent is not only wrong from an ethical standpoint but also it harms the trust between social researchers and the general public (Bryman, 2011, p. 138). The researcher needs to establish trust and reliability between him and the respondent (Saunders et al., 2012, p. 231). With high trust the respondents are more likely to answer and corporate with the researcher (Saunders et al., 2012, p. 231). Thus the researcher needs to think of how he should get access to data and information throughout the whole research projects (Saunders et al., 2012, p. 208). Cause if there is lack of concern of the ethical aspect, there might be problems that arise during or after the collection of data (Saunders et al., 2012, p. 208). This because if the respondents are not sure about the reason why they should cooperate and give responses they may feel that it’s waste of time or have a cautious attitude against the research and researcher (Saunders et al., 2012, p. 222). With a well described purpose and description of what the respondents are expected to contribute with, they may feel more willing to cooperate (Saunders et al., 2012, p. 222). “The information principle” is the principle of always give respondent’s information about the study, why it’s conducted, why they should answer and how their answers will be used (Patel & Davidson, 2011, p. 63). On example of this is to the introduction letter written to the respondents or formal introduction which states the purpose and how and what the respondents answer will be handled (Saunders et al., 2012, p. 222). We wrote in our introduction letter a short explanation about the study we are conducting, further how long the questionnaire would take and what type of question that was expected to be answered. We explained that the survey would be anonymous so that we would not be able to trace back respondents. We also provided contact information if they had any questions, further we thanked the respondents in the opening post, the questionnaire and in a final post in where we thanked all who responded. The software we chose to use, Google forms, does not allow tracking the participants, ensuring extra protection for the respondents’ privacy. Respondents’ right to privacy would still be safe if their computer or account would be stolen/hacked as even they themselves cannot review their own responses after closing their internet browser. Much of the ethical considerations are concerns about the respondents and that they should not be harmed or exposed in any way, but it’s also important to think about the researcher (Saunders et al., 2012, p. 232). The researcher should conduct the research in a safe way, keeping his privacy apart from the research, one example would be using official emails (Saunders et al., 2012, p. 232). So not only for a professional look, but also so
that our private emails would remain hidden to keep our privacy intact, we used our Umeå university email.

We have during this thesis had a great emphasis on ethical concerns which may arise from different methods and strategies we could use. In each step we made we wanted possible unethical steps to be eliminated, so that our study would in all aspect be considered an ethical high quality thesis. This has caused trouble for us in terms of getting the samples we wanted and knowledge of the populations, giving our result a little chance to be generalizable. But we find it worth, the internet is considered to be an anonymous platform. The users are hidden behind pseudonym in form of usernames and that is something we respect.
5. EMPIRICAL FINDINGS AND ANALYSES

5.1 DEMOGRAPHICS

The first demographic question we pose in our study is concerned about the gender of respondents, and we received, in our sample, a distribution of 4.17% females and 95.83% males (Figure 2). This is a clear dominance of male respondents, where the number of female respondents was only 4 out of 96. To assess whether this is representative of the population, we need to know the gender distribution of our studied population. The community GameBanana (GameBanana, 2015a) has a gender distribution of 97% males and 3% females; our distribution is very similar to their population. Further, previous research about UGC had gender distributions is similar to ours; Poor (2013, p. 9) had in his study 4.5% females respondents. Another study, conducted by Sotamaa (2010, p. 5), about UGC also shows a numerical dominance of males, as he received zero responses from females. Unfortunately, we could not obtain data on demographics from all four of the communities where we collected responses due to user agreements policies, which will not allow for the sharing information about their members to third parties. Based on previous research and information from one of the forums that allowed us to see the distribution, we argue that our sample is representative, concerning gender distribution, to the population we study.

![Figure 2. Gender distribution](image)

Continuing with the second demographics question we look on the age distribution and compare it with previous research to see if they are representative. The distribution can be seen in figure 3. The largest groups of the respondents were between 20-24 years old, second largest category was 15-19 years, this could explain why high school education was the highest education for a majority in our sample. The groups' 25-29 and 40+ had a similar percentage of respondents, the same for age groups 30-34 and 35-39. Younger than 15 had the fewest amount of respondents. A weighted average age of our sample gave us a mean of 24 years of age of the respondent in our study. Similar studies about video game UGC is Poor (2013, p. 5) and Sotamaa (2010, p. 5) had means of 31 years of age for the former and 23 years of age for the latter. Our respondents' demographic
characteristics were very close to those found by Sotamaa (2010) in terms of age mean, while it is differentiated from Poor's (2013). With both similarities and variances with previous research we find it plausible that our sample has an age distribution representative to the population.

![Age distribution](image)

**Figure 3. Age distribution**

The education level and distribution for the respondents can be seen in the form of a pie chart, (figure 4). A high school degree was the most common highest education level with 42.71 %, while postgraduate degree had the lowest with number of respondents 3.13 % for specified education degree, the non-specific answer; others had 4.17 %. We computed the education level high school with also less than high school, and second we computed all respondent stated higher than high school degree. For our study high school or less was 54.17% and higher than high school degree was 41.67%. We pooled these education levels to be able to compare it better with Poor (2013) which used slightly different answer options. In Poor’s 2013 study, 47.7% had a high school degree or less as their highest level of education and 52.3 % with a higher education than high school (Poor 2013, p. 16). The education level was slightly lower for our study than Poor (2013), but with since our sample had a age mean that was substantially lower, the lower education level can be naturally expected.
From the questions regarding demographic we conclude through previous research and the populations’ information we could retrieve, that our sample seems to be representative for the population of online video game UGC community members, though this is, unfortunately, difficult to assess due to the unfortunate nature of the sensitivity of personal information on the internet. Our demographics are distributed similarly to previous research and to the population of one of our selected forums. We will continue with our analyses and describe the empirical results we received via our questionnaire.

5.2 CRONBACH’S ALPHA
Since we used constructs developed in former research it’s important for us to establish whether those constructs are reliable or not. The first test we performed in our analysis of the result was therefore to control that our items measure the same concept within each construct. As described in the our practical method we are using Cronbach’s alpha for testing the items which are creating each construct for correlation and reliability. Cronbach’s alpha is one of the most commonly used methods to test the reliability of the items that make up each construct (Nunnally & Bernstein, 1994, p. 212). It can be argued that testing construct reliability is one of the most important test for reliability, because it gives an actual prediction of the reliability of the components (Nunnally & Bernstein, 1994, p. 212). We understand the importance of having legitimate values of the Cronbach’s alpha for each construct. For an Cronbach alpha analysis values greater than 0.7 could be considered reliable and to be usable, for lower values the construct should be revised (Nunnally, J., & Bernstein I, 1994, p. 211-212). Although in our review of literature we found that this value of alpha is frequently discussed and not completely decided, Pallant (2005, p. 6) suggest the value depends on what purpose the scale has.
All researchers agree that achieving a value as high as possible is desired. Our values can be seen in Table 2. The Cronbach's alpha was above 0.8 for nine constructs with the exception of rewards which had an alpha value of 0.74, higher than 0.7 that was considered the absolute limit in the research we found. Usefulness had the highest alpha value with 0.97 which is a great value, enjoyment and ease of use also provide very high values with 0.96 respectively 0.95. We therefore conclude that our scales are reliable; however, for a future study improvements of the scale for rewards should be revised to create a more reliable research. With the Cronbach’s alpha being reliable for all constructs, we can continue to test the constructs and describe them.

<table>
<thead>
<tr>
<th>Construct</th>
<th>N-items</th>
<th>Question Nr.</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>User participation</td>
<td>4</td>
<td>3-6</td>
<td>0.90</td>
</tr>
<tr>
<td>Usefulness</td>
<td>6</td>
<td>37-42</td>
<td>0.97</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>6</td>
<td>43-48</td>
<td>0.95</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>3</td>
<td>7-9</td>
<td>0.96</td>
</tr>
<tr>
<td>Altruism</td>
<td>4</td>
<td>10-13</td>
<td>0.92</td>
</tr>
<tr>
<td>Continuance commitment</td>
<td>5</td>
<td>14-18</td>
<td>0.89</td>
</tr>
<tr>
<td>Rewards</td>
<td>4</td>
<td>19-22</td>
<td>0.74</td>
</tr>
<tr>
<td>Future Rewards</td>
<td>5</td>
<td>28-33</td>
<td>0.80</td>
</tr>
<tr>
<td>Reputation</td>
<td>3</td>
<td>34-36</td>
<td>0.93</td>
</tr>
<tr>
<td>Personal Need</td>
<td>5</td>
<td>23-27</td>
<td>0.84</td>
</tr>
</tbody>
</table>

5.3 DESCRIPTIVE STATISTICS
After testing for the constructs reliability, we looked on the mean and standard deviation and tested Pearson correlations for the constructs. The mean and standard deviation can be seen in Table 3. With the mean and standard deviation we can see the distribution we can see the average value for each construct. We used a seven point Likert scale for our items, where the value 1 indicated 'strongly disagree' and 7 'strongly agree', thus a mean of 4 is an average of neutral for the construct, mean lower than 4 is negative while means above 4 is positive. The highest mean was found in enjoyment, with 5.76 followed by usefulness (5.45). The two lowest were rewards (3.00 and future rewards (3.70) which also were the only two that had a mean lower than 4 which was the neutral point on our scale. Overall the mean of all constructs was laying around 5, which is skewed slightly toward 'strongly agree'. This gives a brief insight that the two rewards construct are not motivational factors, while the other 7 construct are potential motivational factors for user participation, though before the regression analysis this link cannot be assessed. The standard deviation values were between 1.31-2.01 where future rewards had the lowest and reputation had the highest standard deviation. The standard deviation shows that the answers are spread around the mean to quite some
extent for reputation but also for the other construct the variance in answers seems to be notable, with the exception of future rewards which had the lowest standard deviation of 1.31, a low figure for a seven point Likert scale. This standard deviation implies that motivation to shifts among the respondents. The respondents are, if analyzing only the mean, mostly motivated by enjoyment and altruism, with all intrinsic motivations receiving high values. Extrinsic motivational factors rewards and future rewards show a substantially lower mean than the other constructs.

Table 4. Descriptive statistics

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>User participation</td>
<td>4.63</td>
<td>1.66</td>
</tr>
<tr>
<td>Usefulness</td>
<td>5.45</td>
<td>1.64</td>
</tr>
<tr>
<td>Ease of use</td>
<td>4.80</td>
<td>1.60</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>5.76</td>
<td>1.67</td>
</tr>
<tr>
<td>Altruism</td>
<td>5.16</td>
<td>1.68</td>
</tr>
<tr>
<td>Continuance commitment</td>
<td>4.52</td>
<td>1.63</td>
</tr>
<tr>
<td>Rewards</td>
<td>3.00</td>
<td>1.52</td>
</tr>
<tr>
<td>Future Rewards</td>
<td>3.70</td>
<td>1.31</td>
</tr>
<tr>
<td>Reputation</td>
<td>4.85</td>
<td>2.01</td>
</tr>
<tr>
<td>Personal Need</td>
<td>4.62</td>
<td>1.56</td>
</tr>
</tbody>
</table>

5.4 PEARSON'S PRODUCT MOMENT CORRELATION COEFFICIENT ANALYSIS

Before moving on to our final analysis, the multiple regression analysis, we conducted correlation tests between all ten construct. The used method and test was Pearson's correlation coefficient. Pearson's correlation analysis can be used to assess the strength of two variable relationships (Pallant, 2005, p. 95). If it's a positive relation it implies that when one value increase the other also increase while for negative relationship if one value decrease the other would increase (Pallant, 2005, p. 95). Our Pearson’s correlation analysis showed, with a significant level of p < 0.05, to be positively correlated for all constructs. The values ranged from 0.096 to 0.766 which can be read in table 5 is a big variance, 0.096 is the correlation between rewards and continuance commitment, this implies that they are not affected by each other. The strongest relation of .766 was between usefulness and enjoyment. Cohen (1992, p. 99) suggest that the correlations strength for the different construct to be according to the table 4. According to Cohen's (1992, p. 99) suggestions all construct are correlated positively with user participation. Altruism has the strongest correlation with 0.692 followed by reputation 0.678, enjoyment 0.672, ease of use 0.624 and usefulness 0.521. These five construct are all considered to have a large correlation with user participation, meaning that if they vary in one direction, then there is likely that user participation also will go toward the same direction. Three constructs have a medium strength level; continuance
commitment 0.452, personal need 0.494 and future rewards 0.498. The lowest correlation with user participation was rewards with 0.264; this tells us that rewards have a small correlational strength. Though there can become a problem that many of the construct have large correlation between themselves, such as usefulness had high correlation with enjoyment, altruism, personal need and ease of use. This implies that there is strong relationship between some of our independent variables.

Table 5 Correlation and strength, Cohen (1992, p. 99)

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>r=.10 to .29 or r=−.10 to −.29</td>
<td>Small</td>
</tr>
<tr>
<td>r=.30 to .49 or r=−.30 to −.49</td>
<td>Medium</td>
</tr>
<tr>
<td>r=.50 to 1.0 or r=−.50 to −1.0</td>
<td>Large</td>
</tr>
</tbody>
</table>

Table 6. Pearson Correlation

<table>
<thead>
<tr>
<th>Construct</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>User participation (1)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment (2)</td>
<td>.672</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altruism (3)</td>
<td>.692</td>
<td>.724</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuance commitment (4)</td>
<td>.452</td>
<td>.236</td>
<td>.375</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewards (5)</td>
<td>.264</td>
<td>.373</td>
<td>.313</td>
<td>.096</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future reward (6)</td>
<td>.498</td>
<td>.565</td>
<td>.445</td>
<td>.339</td>
<td>.592</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Need (7)</td>
<td>.494</td>
<td>.615</td>
<td>.591</td>
<td>.423</td>
<td>.354</td>
<td>.556</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reputation (8)</td>
<td>.678</td>
<td>.608</td>
<td>.536</td>
<td>.429</td>
<td>.459</td>
<td>.705</td>
<td>.512</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usefulness (9)</td>
<td>.521</td>
<td>.766</td>
<td>.663</td>
<td>.278</td>
<td>.341</td>
<td>.490</td>
<td>.678</td>
<td>.555</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ease of Use (10)</td>
<td>.624</td>
<td>.761</td>
<td>.658</td>
<td>.326</td>
<td>.376</td>
<td>.584</td>
<td>.661</td>
<td>.540</td>
<td>.757</td>
<td>1</td>
</tr>
</tbody>
</table>

All Correlation is significant at 0.05 level (2-tailed).

5.5 REGRESSION ANALYSIS

In this section we finally describe the result from our regression analysis between our independent variables and our dependent variable according to our conceptual model. With the regression analysis we aim to measure what effect our independent variables enjoyment, altruism, continuance commitment, rewards, future rewards, personal need, reputation, usefulness and ease of use have on our dependent variable user participation. The analysis can also give information if our construct have a significant effect on
participation. We used SPSS multiple regression, with the Standard/Enter method, the result for R, R-square and F-value can be seen in table 6 respective Table 7, where actual regression result can be seen in table 8. Before we can describe our result we will give information about the reliability of the test. We can show from table 7 that the regression analysis was significant, F=20.256; p<0.001. The same table also shows that the R-square was 0.682 and the adjusted value was 0.648, this value implies that the variation of our dependent variable participation can be explained by 64.8 % with our independent variables. The given R-square had a relative high value which implies that the conceptual model is strong as a predictor of participation. For the controlling for multicollinearity, we analyzed our vif and tolerance values. This is controlled to make sure that the independent variability are not explained by other independent variables, hence that it’s independent, vif>10 and tolerance<0.10 should be cautiously approached (Pallant, 2005, p. 150). As can be seen in table 8, we found that all variables vif values was substantially below 10 and no construct were close to be below a tolerance of 0.10. This concludes that we don’t have multicollinearity that we need to consider in the continuing analysis of our regression. For the regression analysis we decided that the significance level would have a minimum value of p< 0.05 as criterion for the study for the effect to be significant. Table 8 shows the result from the regression analysis; five of the variables were significant while four variables were insignificant in the test. That the variables were significant means that the results are unlikely to be from chance, and therefore should actually have a real effect on participation. From the five independent variables that had a significant effect on participation (p<0.05), four had positive effect and one had negative effect. Starting with the variables with the strongest positive effect (highest Beta value) and moving stepwise to the lowest; Reputation (β=0.408), altruism (β=0.330), enjoyment (β=0.264), ease of use (β=0.250). The one independent variable with significant negative affect was; usefulness (β=−0.258). The four not significant independent Continuance commitment (β=0.132), rewards (β=−0.106), future Rewards (β=−0.062) and personal needs (β=−0.046) were not proven to be significant and therefore we cannot use the result from those to support our hypotheses. However for Continuance commitment (β=0.132) it would have been significant at p<0.1 and had a notable effect, similar with rewards (β=−0.106) the significant level was 0.18 meaning with a larger sample the effect could have been significant. But the Beta values for personal need and future rewards state that even if they would have been significance they would have had very little effect on participation and the significance was far from p<0.1. The strength does not depend whether there is negative or positive but rather from the distance from 0 (Pallant, 2005, p. 153). This means that reputation have the greatest effect on participation (β=0.408) cause it had the highest Beta value. Corresponding the regression analysis shows that ease of use (β=0.250) have the least effect of the significant variables.

Table 7. Model Summary

<table>
<thead>
<tr>
<th>Model a</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.826a</td>
<td>0.682</td>
<td>0.648</td>
<td>0.98715</td>
</tr>
</tbody>
</table>

a Predictors: (Constant), ease of use, continuance commitment, rewards, reputation, personal need, altruism, future rewards, usefulness, enjoyment
Table 8. Anova Collinearity Statistics

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>177.647</td>
<td>9</td>
<td>19.739</td>
<td>20.256</td>
<td>0.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>82.830</td>
<td>85</td>
<td>0.974</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>260.476</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: User participation

Table 9 Multiple regression analysis

<table>
<thead>
<tr>
<th>Coefficients a</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.221</td>
<td>0.446</td>
<td>0.496</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>0.264</td>
<td>0.120</td>
<td>0.264</td>
</tr>
<tr>
<td>Altruism</td>
<td>0.326</td>
<td>0.096</td>
<td>0.330</td>
</tr>
<tr>
<td>Continuance commitment</td>
<td>0.135</td>
<td>0.076</td>
<td>0.132</td>
</tr>
<tr>
<td>Rewards</td>
<td>-</td>
<td>0.086</td>
<td>-0.106</td>
</tr>
<tr>
<td>Future Reward</td>
<td>-</td>
<td>0.131</td>
<td>-0.062</td>
</tr>
<tr>
<td>Personal Need</td>
<td>-</td>
<td>0.101</td>
<td>-0.046</td>
</tr>
<tr>
<td>Reputation</td>
<td>0.339</td>
<td>0.082</td>
<td>0.408</td>
</tr>
<tr>
<td>Usefulness</td>
<td>-2.62</td>
<td>0.114</td>
<td>-0.258</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>0.261</td>
<td>0.117</td>
<td>0.250</td>
</tr>
</tbody>
</table>

a Dependent Variable: Participation
5.6 HYPOTHESES AND REVISED CONCEPTUAL MODEL

We developed the conceptual model in the chapter 2.5 based on our hypothesis deduced from the theoretical framework. The purpose of conducting the analysis is to examine whether our hypotheses can be supported and thereby also confirm our model. With the purpose to test our hypotheses we conducted a multiple regression analysis to examine what affects our different concepts have on participation. The multiple regression analysis has given us empirical evidence reevaluates our conceptual model and finds support or dismissal for our hypotheses. The four concept Continuance commitment (p=0.08), rewards (p=0.18) future rewards (p=0.546) and personal need (p=0.626) was not significant and the hypotheses that they had a positive effect on user participation were not supported because of these not significant result. There is four variables that had a significant positive effect on user participation; reputation (β=0.408), enjoyment (β=0.264) altruism (β=0.330), ease of use (β=0.250). These four concepts have each of their hypotheses supported from our regression analysis significant result. The concept Usefulness (β=0.258) had negative effect and the hypothesis that usefulness have a positive effect on participation will not be supported. An overview of hypotheses that were supported or not supported can be seen in table 9. Total of four hypotheses were supported while five hypotheses were not found to be supported. For the given categories two hypotheses about intrinsic motivational factors, enjoyment and altruism, were supported while one, continuance commitment, was not found to be supported. One extrinsic motivational factor (reputation) were supported while the other three was not supported, rewards, future rewards and personal need. While the factor of toolkits was one supported and one not supported, usefulness was shown to have a negative effect while ease of use had a positive effect.

Table 10. Summary of hypotheses tested

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Toolkits</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Usefulness has a positive effect on user participation in video game UGC.</td>
<td>Not supported</td>
</tr>
<tr>
<td>H2</td>
<td>Ease of use has a positive effect on user participation in video game UGC.</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td><strong>Intrinsic Motivational factors</strong></td>
<td></td>
</tr>
<tr>
<td>H3</td>
<td>Enjoyment has a positive effect on user participation in video game UGC.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>Altruism has a positive effect on user participation in video game UGC.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>Continuance commitment has a positive effect on user participation in video game UGC.</td>
<td>Not supported</td>
</tr>
<tr>
<td></td>
<td><strong>Extrinsic motivational factors</strong></td>
<td></td>
</tr>
<tr>
<td>H6</td>
<td>Rewards have a positive effect on user participation in video game UGC.</td>
<td>Not supported</td>
</tr>
<tr>
<td>H7</td>
<td>Future Rewards have a positive effect on user participation in video game UGC.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H8</td>
<td>Reputation has a positive effect on user participation in video game UGC.</td>
<td>Supported</td>
</tr>
<tr>
<td>H9</td>
<td>Personal need has a positive effect on user participation in video game UGC.</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

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**Figure 5. Factors affecting user participation. Revised conceptual model**

Our empirical findings have led to support four of our hypothesis and reject five, this has allowed us to review and revise our conceptual model. The following figure 5, is our new revised conceptual model based on our empirical result. We can show shows that enjoyment, altruism, Reputation, ease of use have a positive effects on users participate in creating video game UGC. The hypothesis that was not supported has two different reasons, first usefulness was significant but the effect was negative, we therefore suggest that they have a negative effect on participation in the revised model. We argue that they should still be in the model but its effect will have a negative effect on user participation rather than positive as it had in our first conceptual model. Secondly continuance commitment, future rewar ds and personal need was proved to have a not significant effect and the hypotheses were not supported thus, they have therefore been excluded from our conceptual model.

Figure 5: Revised conceptual model

**5.7 RESULT**

In this section we will review and summarize and analyze our results. Reviewing our results, we found that, in our demographics, that a majority of respondents were 24 or younger, and the weighted mean was 24 years. We also found that that the education level among our respondents was 54.17 % high school or lower. Respondents whose highest education was more than high school represented 42.71%. Further, the gender distribution was heavily skewed towards males, who consisted of almost all respondents with a 95.83% dominance over a 4.17% representation of females. With combination of previous research and the little information we received from the forums, we would argue that our sample is representative of the population of participants in video game UGC. We have similar distribution of age and gender as Sotamaa (2010), with Poor
(2013) our gender distribution is very similar, but education is slightly lower while age is also lower. We argue that the reason for the lower education level achieved in our survey is simply because of our lower age mean. Further, the fact that both education and age are lower in our results gives us reason to believe that neither age nor education are critical factors for user participation in UGC. As the theory told us that user are self-taught and learn by trial and error rather than from a formal education (Scacchi 2011, p. 5). Our sample seems to be representative for the population; the description we have been able to find about the communities matches closely those of our results. We wanted to test if our constructs were reliable or not. Since each construct was taken from previous studies and then to adapted to fit our research area, it was important to know that our changes still made the construct reliable. As the Cronbach’s alpha showed high correlation for all construct, we could conclude that our used constructs for each concept had items that measure each of their concepts well. From the Cronbach’s alpha analyses we can state that our constructs are reliable. Though a small exception for rewards ($\alpha = 0.74$) should be mention and looked for improvement. The nature of the scales question creates the dependence for the alpha value (Pallant 2005, p. 6). Rewards assessed whether the user participated in video game UGC for aspects of compensation, and also asked whether they were currently compensated for their UGC. The items asked about rewards as a motivational factor, from both perceptions and whether they got paid, and thus the nature of the lower alpha may be expected. This might also be the reason why the construct was not found significant, as will be presented. However we were hoping for all construct to reach $\alpha \geq 0.8$ but rewards did not succeed in this. The construct of rewards should therefore be considered to be revised and changed for more consistency in future studies.

We found, from the Pearson product moment correlation coefficient analysis, that there were large correlations between some of the independent constructs; these constructs were reputation, usefulness and ease of use. This can affect our multiple regression analysis; since the multiple regression analysis analyzes independent variables’ effects when considering the other independent variables. Firstly, this gives us the hint that we should use different constructs or perhaps separate them for future studies. We also found that continuance commitment and rewards had lower correlation with all variables, meaning that their own effect on participation will be shown more clearly. But, for the multiple regression analysis we could see that the vif and tolerance values were not crossing acceptable limits within the two tests. The vif and tolerance values were within reasonable margins for all constructs, thereby stating that the large correlations between some construct were of no great effect in the regression analysis.

When determining an appropriate sample size the formula $50 + 8m = N$ can be used, where $m =$ number of independent variables (Tabachnick & Fidell 2014, p. 159). This study, with 8 independent variables, would, using this equation, assert the minimum sample size needed to be 114. Our questionnaire received only 96 respondents and this suggests that our sample size was too small. Despite this, we still receive results significant f value $p < 0.05$ from the multiple regression analysis. We could thus continue with our multiple regression analysis with participation as dependent variable, and found that five out of the nine independent variables had significant ($p < 0.05$) impact on user participation. These constructs were enjoyment, altruism, reputation, usefulness, ease of use. Future rewards and personal need were not proven to be significant and their effects were very low, beta for the former $\beta = 0.062$ and the latter we concluded therefore that H7 and H9 could not be supported. Continuance
commitment and rewards had and $p = 0.08$ respectively $\beta = 0.106$ and $p = 0.18$ so hypotheses H5 and H6 were also not supported. However, due to p-values of these constructs not being far from achieving significance, most probably due to a small sample, we still argue that trends can be observed from these constructs, though their effects would be very low at $\beta = 0.132$ and $\beta = 0.046$ respectively. Two of the intrinsic motivational factors showed significant positive effect on user participation, allowing us to support H3 and H4. We can interpret that there is a positive effects of the two significant intrinsic motivational factors enjoyment and altruism but also the trend from continuance commitment, and therefore argue that intrinsic motivation overall has a positive effect on user participation in video game UGC. The motivational factor of enjoyment is, according to Draper (1999, p. 121-2) a requirement for the user when creating software. The theory suggested that enjoyment would have positive effect and had a positive effect from our regression analyses and from the result we therefore conclude that there is a relationship that if the user finds it fun and stimulating to create UGC he will be motivated to do it. Secondly altruism showed the second strongest effect on user participation, it confirms the beliefs that users engage to solve and help the other community members, and want to give back to a community where they once received help. The final intrinsic motivational factor of continuance commitment had the lowest effect on participation of all the intrinsic motivational factors, and proved to be not significant with $p = 0.08$. Even though its effect may be the lowest and not significant, the result shows a trend that user participation is affected by the user’s continuance commitment. Since UGC increases the lifetime of video games (Jeppesen 2004, p. 16), it may also increase the communities’ lifetime, thus making it a motivating factor for users to create UGC. Ryan and Deci (2000b, p. 70) stated that intrinsic motivation is the one of the phenomena that affects human behavior the most, and that it is a strong motivational force. According to our result it does in fact seems that the various intrinsic motivations are strong predictors of user participation in video game UGC with the exception of continuance commitment.

Extrinsic motivation had only one out of four hypotheses confirmed where the three which are not confirmed showed non-significant. Though the one exception of rewards had a non-significant effect on user participation, its effect, though weak, was still somewhat notable and the $p = 0.18$ tells that it might be significant in a larger sample, we suggest that there is still an interesting trend showing that rewards has a negative effect on user participation. Previous research (Postigo, 2003, p. 604-605; Cook, 2009, p. 16) suggests both that rewards have positive and negative effects on activities similar to user participation video game UGC. Cook (2009, p. 16) suggested that because the fundamental ground of UGC creators culture of free sharing, rewards would effects user participation negative. According to our result Cook (2009, p. 16) suggestion that rewards would have a negative effect should be considered plausible, and the trends we can identify would confirm this. But the different suggestions of the theory might also be the answer to our results not proving significant. As shown, future rewards and personal need were not found significant, which is evidence of these constructs not having an effect on user participation in video game UGC. What we find is that the Hypotheses H7 and H9 are not supported and are not a predictor of users participation in video game UGC. The descriptive statistic can show that mean for future rewards 3.70 and personal need 4.62 is among the closes to 4, the middle of our 7-point scale, but more interesting is that the standard deviation is 1.31 for the former and for the latter 1.56. This shows that the means and standard deviation is the most neutral for these two constructs, showing that respondents have similar and neutral attitudes about
these constructs in particular. This could be the reasons why they did not prove to be significant. The theory suggested that the users would create content for their own needs to improve the game, likewise that they would engage to gain skills that can give them future returns. But the empirical result did not prove this, meaning that users are not motivated to participate in video game UGC for retaining useful content for their game, nor that they are motivated to create content to increase their skills for future returns, like job offerings, or to sell products or services associated with their content. Reputation had the highest beta value $\beta = 0.408$ and the effect was positive predictor of user participation. Users who want to achieve fame and good reputation would participate more frequently in activities if it’s visiona and if he would meet the same peers continually (Parameswaran & Whinston, 2007, p. 342). The trend suggested in the construct of continuance commitment was towards having a positive effect, and we would suggest that the users are loyal to the community and keeps coming back, this being a motivational factor for their participation. These findings show that we should not rule out extrinsic motivation as predictor for user participation and that there not only intrinsic motivation should be assumed to have positive effects on participation. Tangible rewards and directions may negate the intrinsic motivation for an individual, reducing his motivation to participate freely, and instead expect some compensation for participating (Ryan and Deci 2000b. p. 70). The theory suggests that extrinsic motivation can reduce the intrinsic motivation to perform an activity (Deci et al., 1999, p. 658-9). We found that the users have no extrinsic motivation to participate with the exception of extrinsic motivational factor reputation.

To summarize our empirical findings, our quantitative study has shown and confirmed significant effect on user participation for five of our variables; enjoyment, altruism, reputation, ease of use, usefulness. The first four mentioned variables showing significant positive effect while the last one showing a significant negative effect on user participation in video game UGC.
6. DISCUSSION

We will here discuss the empirical results and, to the best of our ability and knowledge of previous research, provide explanations of the results presented. The findings of our study show that intrinsic motivation has a positive effect on user participation, the two intrinsic motivational factors enjoyment and altruism showed to have positive effects on user participation. Enjoyment may be the most fundamental motivational factors, and there is no surprise that this has a positive effect on user participation. Users participate because the activity is fun, the user gets satisfaction while testing his knowledge and carry out the task. This is understandable since the users need to commit their free time in order to participate in UGC, where, in general, there are no substantial rewards for participating. Previous research (Nov, 2007, p. 63; Franke and Shah, 2003, p. 159) shows that enjoyment has a strong impact on user participation and we can only concur with these, based on our own findings. If a user finds participating in video game UGC to be an enjoyable process it seems likely that this user will continue to participate in the activity.

The first concepts we will discuss in relation to video game UGC are perceived toolkits ease of use and usefulness. The result we found are puzzling and we have a difficulty assessing why perceived usefulness might have a negative effect on user participation while perceived ease of use has a positive effect. As toolkits have the purpose of to lowering the costs and increasing the benefit for the user when engaging in UGC (Von Hippel & Katz, 2002, p. 822), we argued that the user participation would increase if provided with toolkits which they perceived to be useful and easy to use. We argued for this due to the potential of lowering the costs of learning and using the toolkit and by reducing the effort of production. The positive effects of perceived ease of use also shows that self-efficacy is increased, and the users become more effective when using a toolkit that requires less effort for production (Zimmerman, 2000, p. 89). Users are mostly self-taught in their content creation (Scacchi, 2011, p. 5), which also helps to explain why ease of use has a positive effect on user participation. A user’s decision to participate comes from many different aspects, one of which is their motivations, and another is their assessment of their own ability to participate (Cavaye, 1995, p. 314). We argued that if participating is difficult, something which can, to a great extent, be determined by the usefulness and ease of use of the toolkits, participation will be less likely. Toolkit with the concept ease of use and usefulness should help the user possibility to participate in creating UGC (Burnett & Rothermel, 2004 p. 58). We argued also that if toolkits are perceived as easy to use and useful, the user’s efficacy level should increase and he will feel more confident in his ability to perform the task. The toolkits usefulness and ease of use should increase the user benefits and self-efficiency thereby motivates him to participate (Davis, 1989, p. 321). Due to these facts, thus it can be argued that it’s contradictory that if the toolkits are perceived to be more useful, they will have a negative effect on user participation. One possibility would be that the user wants to be challenged when creating UGC or those they want to be unique and therefore wants it to be difficult to produce UGC. But the fact that ease of use was positively affecting participation makes us believe these arguments to be untrue and, quite frankly, erroneous. Instead, the most logical argument we can present is that the demands users put on toolkits increase with their level of participation. For example, an inexperienced user may have produced little content, and so feel that the tools were very useful, while more experienced users have noticed limitations in the usefulness of the toolkits. By taking a look at the descriptive statistics, we can see a high mean of 5.41, well over the neutral point of 4, meaning usefulness achieved the second highest mean
of all tested constructs. Final assessment for toolkits usefulness we can argue is that the toolkits provided by developers are already very well perceived in terms of function for users, but that, as a user’s level of participation increases, their demands for useful tools increase.

The intrinsic motivational factor altruism shows a strong positive effect on user participation, which suggests that users are motivated to participate for the benefit of others at one’s own cost. Theory states that an altruistic act is when someone sacrifices his own welfare for benefit others (Unger, 1991, p. 77). Our results suggest that users are motivated to participate for the benefit of other members of their communities, since altruism has a positive effect on participation. The user’s connection to the other members motivates the user to act through altruistic motivation (Dawkins, 2006, p. 100-105; Hars & Ou, 2001, p. 3). The positive effect of altruism can suggest that the user feels a strong connection with the other members and therefore want them to have greater benefits. As assessed from one of our construct items regarding altruism, users feel that the content others had contributed was crucial for their own content, and so, want to provide content for others. With this in mind, the users might feel that they are obligated to give back content to the community where they have previously taken content, and this obligation of reciprocity motivates them to participate in the community. Anyone can typically use content uploaded by anyone on these communities, meaning that there should always be more content available to download than one can ever hope to upload oneself. As many others provide content, even if just a little, there will be a substantial amount of content to browse from and use. Given this, in a culture where one provides content for the in community, even at a net cost to oneself, there will be substantially more content, which we would argue negates the costs of contributing. User participation should therefore, according to us, not be regarded as an altruistic act unless the individual’s costs exceed his benefits, which might vary from day to day depending on the nature of the members’ participation. Nevertheless, altruistic motives are found to positively affect members’ participation in these video game UGC communities.

Regarding the intrinsic motivational factor continuance commitment, we find a trend showing in our multiple regression analysis, suggesting that continuance commitment might be positively affecting user participation, the beta value was positive and the $p = 0.08$. The small sample might cause the results to not be significant to support our hypothesis regarding this construct. We believe that a larger sample would possibly give continuance commitment a significant positive effect on user participation. This means that users are motivated to participate out of feelings of benefits from the continued participation, and costs from leaving the community. One reason why continued participation in the community is relevant may come from users seeing other member as peers, and seeing that the culture in the community is to conform and form a commitment to the community. If the user values the community culture, this can create strong commitment to continued participation, since the user find the community to be important based on both culture and persons beliefs (Chalofsky & Krishna, 2009, p. 199). The sense of belonging might create unique attachment for the users, resulting in feelings that benefits received from the community are hard to find elsewhere, and that the transaction cost to find another community would be greater than the benefits. The communities’ future relies on user participation to keep it alive (Bateman et al., 2006, p. 984). Since the user’s feelings are that the community is important, he feels that his participation, we would argue, has the potential to increase the lifespan of the games
associated with the community therefore also increase the community’s lifespan. UGC can increase the lifespan of a video game from adding content and features for the game (Scacchi, 2011, p. 5; Jeppesen 2004, p. 16). And, though this might not be the user’s conscious intention, both the user and game developer will benefit from user’s continued participation. Since UGC can be integrated as a part of the video game development process, we argue that continuance commitment has great potential for keeping a loyal user base of user participants in UGC who can test and develop new and existing products. Since the user presumably wants to prolong the lifespan and value of the community, his efforts might be more focused on quality than pure enjoyment of the process, and accordingly, be more relevant for developing the game. We believe continuance commitment can be a motivational factor for user participation and, though having a very low, non-significant effect, the meaning of this continuance commitment to those who participate has the potential to be useful for developing video games, from our view, especially for its potential to increase the lifespan of both the community and the game.

With continuance commitment we have discussed all three intrinsic motivational factors and we confirm previous theory and support that our hypotheses match our findings for enjoyment and altruism. Continuance commitment showed non-significant positive effect, the result suggest however that it might possible be significant with a larger sample. We therefore argue that intrinsic motivational factors enjoyment, altruism have positive effects on user participation in video game UGC and suggest that continuance commitment has a positive effect on user participation in video game UGC as well.

Reputation is the only extrinsic motivational factor that proved to have a significant positive effect on user participation, but its effect was also the strongest among all tested independent variables. Since reputation has such a great effect on participation, we would argue that, even though the communities operate on a nickname basis, where users are hidden behind usernames like pseudonyms, users are still motivated to increase their respect, status and reputation among fellow community members. Users participate in video game UGC to gain a better reputation in the communities (Postigo, 2003, p. 600). The individual finds getting acknowledged through reputation and approval from his peers has great internal satisfaction (Lerner & Tirole, 2002, p 213). Parameswaran & Whinston (2007, p. 342) argue that repeated interaction with peers and fellow users increases the need for the user to have a good reputation, and will focus more on retaining it. As previously discussed, regarding continuance commitment, we found that the community culture was important for users when creating UGC. This would indicate that the users do come in contact with the same users over time and expect to do so continuously in the future as well. According to Parameswaran & Whinston (2007), this phenomenon, where the user meets the same peers over again, should create motives to establish a well perceived reputation. Through the user’s need to gain and keep a good reputation toward their peers, they will presumably participate in more qualitative UGC projects, which will help him to attain that goal. Reputation is an extrinsic motivational factor, but it is also a self-determined, internal, motivational factor, like the three tested intrinsic motivational factors. We therefore suggest that self-determined motivational factors generally have a positive effect on user participation on video game UGC.

The results of our data showed two non-significant extrinsic motivational factors with also very low effect; personal need and future rewards, both of which depend on the end
result of the user's created content. We would argue that both of these concepts require the created content to be of high quality, though future rewards does this especially, as they will be used for a specific purpose, separate from the process. When a user creates content motivated by personal needs, he does so in order to use the UGC to improve their video game experience (Lui et al., 2002, p. 5). When a user participates motivated by future rewards, he does so in order to attain some sort of job, or raise his skill level for future endeavors (Hars & Ou, 2000, p. 500). We would argue, with a basis in our results, that the user does not participate to get a result that will be used in future endeavors, but instead finds motivation in the process itself. We do believe that these motivational factors have the potential to affect the quality of UGC positively for some users, but user participation in video game UGC is not motivated by these factors. Content for personal need might also be content that improves only the experience of specific users, by creating overpowered weapons and cheats (Wirman, 2007, p. 380). A user that creates content for personal need such as cheats might reduce the other members’ game experience. If a player encounters one other member who uses a cheat, the first user might report him or complain, which can harm the reputation of the second user. Further cheats that ruin the game experience for other members reduce their benefits from the game. With reputation and altruism being important factors for user participation, an individual that create content for personal need might feel that it is affecting those two factors negatively and therefore chose not to create content for these purposes. We find some solace in the idea that personal need and future rewards, both being non-factors, do not put pressure on users to start participating in video game UGC. The individual that learns and perform task during his leisure time might not use it in the future (Schultz 1961 p. 1). For a self-taught person, creating content on his spare time, it might be hard to expect his content to be of high enough quality for practical implementation into the video game. This means that users are more likely to participate even if they believe they will not produce content of high quality, which should allow for more ideas and suggestions to come into fruition. The fact that the quality concern might be low should be subject for deep consideration before motivating product development through UGC. We suggest that a review of uploaded UGC may prove to be helpful when sifting through new UGC for further product development.

The final extrinsic motivational factor we will discuss is the motivational factor of rewards, which showed a non-significant negative effect on user participation. The significance level was $P = 0.18$ for this construct, we believe it could be significant with a larger sample. The negative effect was above 0.1 stating that, even with significant results, the effect would be small. Therefore we think there is a trend affecting user participation, which was not proven in the multiple regression analysis. But previous research (Deci et al., 1999, p. 659), also states that extrinsic motivational factors might reduce the intrinsic motivational factors and it is therefore the total balance of the different factors what will determinate the behavior of the user (Ryan & Deci, 2000a). We believe the core reason for why rewards might have a negative effect on participation is its effect on reducing intrinsic motivational factors. Stimulation and incentives with rewards to control behavior means the individuals will concentrate their efforts on activities that they would not have if these incentives were not present (Sansone & Harackiewicz, 2000, p. 24). The fundamental thought here is that; if you pay someone well enough they will do what you ask them. We believe that receiving rewards for participating has the potential to create demands that focus on the quality of the game content the user creates, which is good from a company's product
development standpoint. This could, however, coerce the user to focus on aspects he might not consider important but that either the company or other users consider important. A user who does not care about producing high-quality content, could, by being offered money, feel coerced to improve the quality of his work. This might demand more of his participation, increasing pressure and reducing the intrinsic motivations, where enjoyment and altruism were proven significant. Further, Cook (2009, p. 48) finds that the culture in communities is generally negatively inclined towards monetization of UGC. The user desires reputation, to get approval and respect from his peers for with his behavior and therefore does what he believes his peers would approve of (Ryan & Deci, 2000 p. 54). Rewards may therefore also have negative effect on participation in this certain context because it affects the reputation of paid UGC creators negatively. If this is the case, then users who strive to achieve high reputation in the community might take steps away from these ill-perceived rewards, in fear it will negatively affect their reputation. Reputation, altruism and enjoyment were the three concepts with strongest effects on user participation in video game UGC, and, considering that rewards might reduce these two motivational factors, it is not difficult to imagine that it has a negative effect on user participation in video game UGC. We can further conclude that none of the externally driven motivational factors had positive effects on user participation. However, since reputation did have a positive effect on user participation, we cannot rule out extrinsic motivational factors, but we assess that externally driven extrinsic motivational factors have only very slight negative effect or no significant effect at all on user participation in video game UGC.

To summarize, motivation to participate according to our findings is determined internally from the individual user, meaning that motivation for participating comes from self-determined motivational factors. These findings put greater emphasis on the word ‘voluntary’ in our definition of User-generated content as “content that is voluntarily developed” (Trosow et al., 2010, p. 10), since externally determined motivation proved to be either negative or non-significant. Factors of both intrinsic and extrinsic motivation had positive effects on user participation, but, while self-determined motivational factors may positively affect user participation, external motivational factors seem to have only slight negative effects or no significant effect at all on user participation in video game UGC. We argue that this allows us to make the assumption that managers might not be able to successfully incentivize users to participate through external motivations, at least for the population we study. As we have described, there are some game developers that have implemented payments for UGC successfully, but the results from our study suggest that it would be a troublesome task to motivate users to participate in video game UGC using external motives. We argue that focus should be put on stimulating users’ internal motivations if the aim is to increase user participation in video game UGC.
7. CONCLUSIONS AND RECOMMENDATIONS

The first section will aim to answer both our research question which the thesis is built on and the purpose of the study. Following sections will give an explanation of theoretical contribution this thesis research have provided, further we will explain what practical implication these findings have, and to give recommendations on how managers for game developing should focus onward when considering improvement of user participation in UGC. Finally we will discussion limitation that the study has had and what future research we have found to be complementary to our study and should be conducted.

7.1 GENERAL CONCLUSIONS

The main purpose of this thesis is to examine the effects of motivational factors of intrinsic motivation, extrinsic motivation and toolkits that motivate customers to participate in UGC for video games. We have examined factors from intrinsic and extrinsic motivation together as well as toolkits, and what affect these have on user participation in UGC for video games. To answer this purpose and research question a quantitative study has been conducted on users in four different online video game UGC communities. This quantitative study has examined the effects of intrinsic motivational factors enjoyment, altruism, community commitment and the extrinsic motivational factors rewards, future rewards, personal need, reputation, as well as usefulness and ease of use of toolkits on user participation in video game UGC. The data collected from our study have given us empirical results about the effect of the different variables on user participation we have, therefore, been able to address our purpose and our answer our stated research question;

What effects do factors of intrinsic motivation, extrinsic motivation and toolkits have on user participation in video game UGC?

We developed our own conceptual model which was based on theories about participation and its motivational factors; enjoyment, altruism, continuance commitment, rewards, future rewards, personal needs, reputation, usefulness and ease of use. From our empirical results we conclude that enjoyment, altruism, reputation, usefulness and ease of use do have significant effect on participation. Four variables were proven to have significant positive effects on participation, these were; enjoyment, altruism, reputation and ease of use. The toolkit variable usefulness showed a significant negative effect on participation. This allowed us to review our model and create a new revised model. Because enjoyment, altruism and continuance commitment had positive effect on participation we can conclude that intrinsic motivation has positive effect on participation UGC. Intrinsic motivation should be promoted as a key aspect for users to participation in UGC creation and we therefore suggest that it should receive substantially more focus in order to be optimally facilitated to improve the intrinsic motivational settings. For the extrinsic motivation we can only state that one of our tested concepts had a significant effect on participation; Reputation, which in contradiction with the other extrinsic motivations, has a significant positive effect on user participation and therefore argues for that it is self-determined motives that affect participation positively. However, rewards had a slight negative, though non-significant,
effect and should not be completely excluded to have a possible negative effect on user participation. As these findings suggest, users’ internal motivations reflect their motivation to participate in UGC for video games. In contrast with our theoretical framework, we found that toolkits usefulness had a significant negative effect on user participation. Usefulness had high mean on the descriptive statistic, meaning that the respondents might already be satisfied with the level of usefulness that a toolkit provides. More probably, the negative effect of perceived usefulness comes from a need of increasingly useful tools as user participation increases. In contradiction with usefulness, ease of use did have significant positive relationship with participation. Since toolkits ease of use did show positive effect we can conclude that learning and teaching how the toolkits work should be managed more than its usefulness when performing complex tasks. We can conclude from our findings that internal and external motivational factors affect user participation in video game UGC differently. We could detect and show that internally self-determined motivational factors are proven to have significant and substantial positive effect on participation while external motivation showed only non-significant negative effect on participation.

7.2 THEORETICAL CONTRIBUTIONS
Previous research, conducted by Poor (2013) and Sotamaa (2010), studied different types of motivations users have for creating UGC. Though these mixed-method studies addressed motivations and in which areas they participated, they found that areas such as enjoyment, get a job (future rewards) and community (commitment) were significant motivational factors. Neither Poor (2013) nor Sotamaa (2010) categorized their findings in any specific way, like our division between intrinsic and extrinsic or external and internal motivational factors. Rather, the authors examined these motivations without categorization. Kwok & Gao (2004) divide motivations of contributing to knowledge-sharing communities into intrinsic and extrinsic motivations. Nov et al. (2010) also divide motivations for participating in an online photo-sharing community into intrinsic and extrinsic motivations. Hars & Ou (2001) researched factors from extrinsic motivation and intrinsic motivation for open source programmers, open source programming being a similar activity, but not same as video game UGC. These studies, combined with Poor’s (2013) and Sotamaa’s (2010) suggest that these populations are similar, and the motivational factors to create UGC should be similar as well. We aimed with our study to examine intrinsic and extrinsic motivational factors effects for user participation in video game UGC. Von Hippel & Katz (2002) argue for the great importance of toolkits in user product development and stated what usefulness and ease of use was needed in this process. Davis (1989) and Scacchi (2010) emphasized the importance of toolkits for users to start with the activities like programming and creating UGC. Even though this great dedication and focus on providing toolkits by Scacchi (2011, p. 5), we have not yet found any previous research aimed to examine the impact of toolkits, nor a combination of toolkits and motivation for creating video game UGC. Through this study, we strive to be able to show the effects of these different motivational factors combined.

By combining extrinsic and intrinsic motivation together with toolkits to our study, we are able to show differences in factors from extrinsic motivation and intrinsic motivation on user participation in video game UGC. We have been able to show that intrinsic motivations are important as positive factors for UGC, while reputation is the only significant extrinsic motivation. The conceptual model we presented in our result states that five of our concept has significant effect on user participation. Therefore we
argue that within UGC for video games, extrinsic motivational factors rewards, future rewards, personal need are currently not motivating factors for users to participate in video game UGC, but can, perhaps have small non significant negative effect on user participation. In our literature review we did not find any previous research about video game UGC that examined the combined effects of intrinsic motivation, extrinsic motivation and toolkits. This research gap allows our study to make a contribution to the theory by examining the effects of intrinsic motivational factors, extrinsic motivational factors and toolkits for participation in video game UGC.

7.3 MANAGERIAL IMPLICATIONS

As stated in our purpose, this thesis we examined effect the combined effects of intrinsic motivational factors, extrinsic motivational factors and toolkits have on user participation in video game UGC. One of the thesis main purpose was to examine the effect of these above mentioned concepts in order to help managers of game development apply user-generated content to their product development. With the empirical results from our study we can give following recommendations for managers in the video game industry.

We suggest a focus on internal self-determined motivation, since three out of four self determined internal motivations factors were found to have a significant positive effect on participation. These should be supported by the community and systems that can be affected by managers. Managers should focus on improving the settings for stimulating intrinsic motivation. Since reputation is the strongest predictor of user participation in video game UGC, and is also a self-determined internal extrinsic motivation. Manager that are providing optimal challenges, feedback and free the user from demanding evaluations, have found to favor internal motivations (Ryan & Deci, 2000b, p. 70). We suggest that the manager should facilitate challenging assignments for users to complete that can be enjoyable, this would allow the manager to direct the flow of UGC towards certain direction, where identified improvements are needed, but, more importantly, in ways that stimulate the users. A concrete suggestion would be to facilitate challenges and competitions, aimed to improve the game interface for all users, this would both satisfy the user need for reputation where he can see his work be functional and used by the community. Simultaneously the motivation of altruism would be included, as a user who accepts the challenges does so at his own cost, in order to improve the experience for other users. Finally, we have the motivation of continuance commitment to the community. Facilitating good systems for feedback and communication between community members is a way in which commitment to the community can be built. Showing that the firm holds values that correspond to the community members will build trust and increase continuance commitment, so communication between firm and consumer is important in this aspect. As it has been suggested that users who are motivated by reputation are more likely to create content of higher quality (Nov et al., 2010, p. 564), we believe that with better options to promote their content and get feedback, more users who are motivated by reputation will contribute, and the overall content may see an improvement in quality. For managers it's been described that there are two ways of handling UGC. The first way is to just let the content be spread freely in the community, without any certain aim or goal with UGC other than the activity itself, and the second way is to source out well-made UGC that shows potential, and develop it even further (Jeppesen, 2004, p. 16). By implementing feedback into the process, managers can locate popular and frequently used UGC, and more easily find content that could improve the product. Poor (2013, p. 16) stressed the importance to
handle the substantial amount of unfinished UGC. The managers should also try to with this feedback system find these ideas that constructs from uncompleted UGC, to take advantage of the ideas some users given up simply case creating them didn’t give them any satisfaction. Since our research results show that external motivation in form of future rewards and personal need do not affect participation, these are areas which should not be focused on by video game developers.

As the motivational factor of rewards had a non-significant negative effect on participation, we suggest that rewards, monetary or otherwise, should not be part of most strategies when implementing UGC. We hereby suggest for managers who are planning to implement payment for UGC to reconsider. As Cook (2009) explains, it might be the inherent culture of the community that is foundational when examining why users are against rewards for UGC. As we study members of four communities, we are inclined to say that this attitude is based deeper than social culture. Before considering an implementation of monetary rewards for UGC, the manager needs to understand and examine the attitudes of rewards for UGC in the community. If the perception of the community is that UGC should be free, the community may oppose the decision and the entire ordeal can have a negative effect on not only user participation but also the community as whole. For the example given example with Bethesda in the problem background, they have had free UGC for several years suggesting that it become a cultural aspect for the user, the community perceived the UGC as it should be freely contributed. And this might be the reason of the failed monetization. With the result from our study we could have suggested that a implementation of monetization should be have study more before implementing, the fact of long history in the community should be considered and analyzed, whether it become a fundamental culture to provide the content for free or not. This should be done in order to prevent a reduction of video game UGC. The Bethesda example stresses the importance of a manager’s need to identify the current culture of the community before making any changes.

The findings of toolkits was interesting, were perceived toolkit usefulness had a significant negative effect on participation, while perceived toolkit ease of use had significant positive effect. We interpret these results as following: the high means of both constructs suggest, as discussed, that most users do perceive the toolkits provided to be useful. If anything, these results would suggest that managers should reduce the focus on the performance of toolkits, as they are already perceived to be useful. Rather than developing more useful toolkits, managers should start emphasizing on improving the learning part of the toolkits, and make sure they are easy for the consumer to use. Ease of use has a significant positive effect on user participation in video game UGC, and improving how easy the tools are to use, the more users will contribute with their creations. Making tools easier to use could be achieved by providing technical support. We believe that developing a toolkit in which creations are made with less effort (ease of use), rather than one that has extensive functionality (usefulness) should be prioritized by managers who want to increase participation. Managers that can improve the ease of use of their toolkits should be able to see an increase of user participation in video game UGC, but this can come at the cost of content quality.

7.4 LIMITATIONS AND FUTURE RESEARCH
For our study a main concern is that our sample size was lower than preferred, this gave our analysis limitation in confirming or dismissal our hypotheses. Tabachnick & Fidell
(2014, p. 159) formula for suitable sample size with 8 independent variables suggested a minimum of 114 respondents. We only received 96 responses and this limited our multiple regression analysis where it could not prove significance for rewards and continuance commitment. We believe that these two concepts might in a sample be able to prove its significant effect on user participation in video game UGC. Therefore we suggest a further this study with a larger sample to address further if the two motivational factors continuance commitment and rewards do have significant effect on user participation in video game UGC. Secondly a notable limitation for the studies is also the chosen sampling technique, using a non-probability sampling technique rather than a probability sampling technique, which makes it harder for us to generalize the result of our study. This is because a sample chosen through a non-probability sampling technique can resemble the population, without representing it, and limits the research’s contribution and validity. However in accordance with Poor (2013) and Sotamaa (2010) two studies, our sample was found to be representative of the population based on their respondents demographics and with the distribution of GameBanana. Due to of this, we suggest for future studies to try using a probability sample. The personal identity of the users in the communities we study are hidden behind anonymous usernames, and, for reasons such as trust and anonymity, lists of users are rarely given to third parts from the community. This made it difficult for us to choose a probability sample, which is why a non-probability sampling technique was employed.

Third, our low amount of female respondent did not allow us to control whether there are any significant differences in motivation between males and female, and this is a question that would have been interesting to know. Since there is shown to be an extreme difference in gender composition in user participation in video game UGC. Our study together with previous research has shown that there is great dominance of male users participating in UGC, video game UGC and similar activities. Poor (2013, p. 16) found in his review that, within modding communities, female tend to be heavily underrepresented. Also Sotamaa (2010, p. 15) argues, based on his and previous findings, that males are heavily dominating the scene of UGC in video game. This area should, therefore, be researched in order to understand why there is such an extreme dominance of males in video game UGC. With large enough samples, researcher should be able to assess whether females are currently driven by different motivations to participate or if social culture accounts for the variance. The lack of females participating in UGC could, in some sense, should be considered a loss of possible productive capacity, and we therefore see it as important to research how to get more females to participate in UGC.

Our final suggestion for future research is to understand the how user culture affect communities, as this can be used to help managers when they are choosing what to implement to increase user participation in UGC. Future research should question if the culture of those who create UGC and those who only use it show any significant differences in attitudes. As researchers like Cook (2009) argues that the culture of communities decides whether a reward is acceptable or not. Contra the actual success of Steam workshop were monetization has been successfully integrated in the community. This could answer whether you can motivate the producers with extrinsic rewards, and where the cost should not be directly on the user, grazing into concepts of voluntary payment, willingness to pay and as well as donations. The research purpose could be to study whether extrinsic motivation in form of rewards would have positive effect on
user participation if the contributors have the opportunity to be paid but the content would still be available for free.
8. TRUTH CRITERIA

8.1 RELIABILITY

Even if reliability and validity are important for both quantitative and qualitative research, it may, in some respects, be considered especially important within quantitative research (Bryman, 2011, p. 51). This is because researchers are concerned with how accurate and meticulous a measurement is, which is of great focus in quantitative research (Bryman, 2011, p. 51). Reliability concerns whether the measurement is consistent and whether the measurement is stable (Bryman, 2011, p. 160-161). Validity on the other hand is the description of how well a measurement really does measure the concept it suppose to measure (Babbie, 2004, p. 141-143). To ensure both reliability and validity, checklists have been developed in order to evaluate measurements of concepts (Bryman, 2011, p. 160). Quantitative studies tend to be more reliable while qualitative studies instead are more thought of as having higher validity (Babbie, 2004, p. 146). Our study is quantitative and thus should provide a higher degree of reliability than validity.

Reliability focuses on the measurement quality, whether the data is collected with measurements that are reliable and consistent (Babbie, 2004, p. 141; Bryman, 2011, p. 161). Babbie (2004, p. 141) gives an example of two observers estimating the weight of his body, the difference between their estimations may be large, while standing on a scale twice it would give the same answer. The point of this is that properly designed measurements should be regarded as more reliable than observers’ estimations (Babbie, 2004, p. 141). The terms reliability is concerned with how reliable the result from study is and whether the same result would be repeated if the study was conducted again under the same circumstances (Bryman, 2011, p. 48, 161). It concern if you would have the same result again from new testing of the concept or if the study can be affected by random or temporary disturbance (Bryman, 2011, p. 48).

There are three main issues or meanings of reliability; test re-test, internal consistency and researcher reliability (Babbie, 2004, p. 142-143; Bryman, 2011, p. 160; Saunders et al., 2012, p. 430). Test re-test is performed in order to assess the reliability of the study over time (Bryman 2011, p. 161). With a test re-test, meaning that you test the same subject twice within a specific period of time, if the result is highly correlated the study is reliable in time while if it's not the study is not reliable (Babbie, 2004, p.142). One problem with test re-test is that the respondent can learn from the first test and change the answers from what he learnt, thus the first test affecting the second (Bryman 2011, p. 161). We do not have the time to conduct a test re-test for our study, since our thesis and study are written and performed during one semester. Internal consistency concerns the reliability of a group of indicators that are measuring the same concept (Babbie, 2004, p. 143; Bryman, 2011, p. 161). If you have multiple indicators measuring a social phenomenon there is a risk that the indicators are not related (Bryman, 2011, p. 161). A common approach is to split the indicators by random and test them for correlation; a high correlation implies high reliability (Babbie, 2004, p. 143). Researcher reliability depends on the how different researchers or observers interpret observational data differently, this occur mostly when using open ended questions and interviews (Bryman, 2011, p. 160). We have been discussing concepts and ideas between ourselves constantly, and aimed to have the most homogenous view of subjects as possible. There is always a risk that the interpretation can cause different results for different observers.
This is an important issue in social science and it’s something researchers need to think about and work to prevent for research reliability (Babbie, 2004, p. 141).

Similar to reliability is replication, a way of testing the results of a study by simply performing it again (Bryman, 2011, p. 49). Replication of a study can only be performed if the researcher has been transparent about the conducted research (Saunders et al., 2012, p. 193). This will allow for other researchers to analyze the steps made and be able to replicate the study if they want to (Saunders et al., 2012, p. 193; Bryman, 2011, p. 49). Quantitative research should be non-biased, something which can be tested by performing a secondary test to assess whether the first study was biased or not (Bryman, 2008, p. 157). Since the main concern for reliability was whether the result would be the same if the study was conducted again, possibility for replication is need for the reliability (Bryman 2011, p. 49). We present the survey in the appendix, so that anyone can examine it and reuse the constructs if they wish to do so. Further we have described how the sampling was conducted, how the survey was constructed and which choices we made when collecting the data.

8.2 VALIDITY

Discussing the validity of a study is to assess if the conclusions generated are related or not (Bryman, 2011, p. 50). Measurement validity is mainly for quantitative research, it strives for finding measurements that correctly measure a concept (Bryman, 2011, p. 50). Similar to reliability, validity is also divided into a few different terms we will go through; face validity, construct validity and content validity (Babbie, 2004, p. 144; Bryman, 2011, p. 163). When constructing a new measurement one must be able to show some validity that it really does measure the concept (Bryman, 2011, p. 163). This is called face validity and helps to assess whether a construct seems to be measuring the relevant concept (Babbie, 2004, p.144). One of the main criticisms against quantitative research regards face validity, assessing whether the respondent interprets the terms correctly and similarly, which will affect their responses. The validity of the measurement may be questioned if a measurement measures the putative picture than the real picture of the concept (Bryman, 2011, p. 171). One reason this could happen is because the responses of a survey, especially a questionnaire, may interpret the words and meanings of the important terms in different way than the researcher had in mind (Bryman, 2011, p. 172). In other words, it is beneficial for both researcher and respondent to agree with the meanings of questions and concepts. In order to clarify what the respondents were asked, in every section of the questionnaire we presented a short description of the following questions and what they were measuring. Construct validity concerns whether the the measurements are logically related to other variables, if the theory suggests it to be related to a similar variable (Bryman, 2011, p. 163; Babbie, 2004, p. 144). A correlation should appear when testing those two variables, if not the measurement may not be valid (Babbie, 2004, p. 144). Content validity concerns whether the measurement measures the whole concept or if it only covers a smaller part of it (Babbie, 2004, p.145). Thus if the measurement doesn’t covers everything some aspect of the concept will be left out and provide lower validity (Babbie, 2004, p. 145). When measuring a concept, our questions should cover the full theoretical aspect of this concept. The different items that are included in a construct can be thought of as a general measurement of the concept (Saunders et al., 2012, p. 430). For example, our survey construct participation includes items that assess the respondent's’ participation in community activities, content contribution, information-sharing, as well as
communication. Internal validity questions if a relation between two or more variables truly do have relationship or if there is some other hidden variable that are causing the perceived relationship (Bryman, 2011, p. 50). The variables that are thought to affect the others are called independent variable and the ones believed to be affected by the others are called dependent variables (Bryman, 2011, p. 50). In our case, participation is the dependent variable, while, intrinsic and extrinsic motivational factors, as well as toolkits factors ease of use and usefulness, are the independent variables thought to affect participation.
REFERENCES


Raymond, E. S. (2001). *The Cathedral & the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary.* " O'Reilly Media, Inc."


Sotamaa, O. (2010). When the game is not enough: Motivations and practices among computer game modding culture. *Games and Culture*. 1-17


APPENDIX 1.

QUESTIONNAIRE
Studying Motivations for Content Creation

Thank you for taking part in this study measuring motivations for creating and sharing content for video games. This survey consists of 51 questions and will take approximately 5-10 minutes to complete. Be assured that this survey is completely anonymous and all respondents will remain unidentifiable.

About this study:

We are two students from the University of Umeå in Sweden, studying Business Administration and Service Management. This study will be part of our master’s thesis, the goal of which is to examine the motivations of content creation, content sharing and participation in video game content online communities. The results of this study will hopefully help to improve the way modding and content creation is looked upon by video game developers.

Thank you for participating!

Contact:
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First three questions will ask demographic questions
Gender:
Male
Female

Age
40 or older
35-39
30-34
25-29
20-24
15-19
14 or younger

Highest educational degree
Less than high school
High school
Professional training
University degree
Postgraduate degree
Other

Part 1 of 3: Participation
Please answer the following questions regarding the video game content creation/sharing community you are most active within. Content can be any modding of a game or addition made to a game. This includes items, sprays, textures, sound files, maps, scripts etc.

Q1. How long have you been a member of this content sharing community?
Never
Less than 1 year
1-2 years
2-3 years
3-4 years
4-5 years
6-7 years
7 years or more

Q2. How long have you been creating content for video games?
Never
Less than 1 year
1-2 years
2-3 years
3-4 years
4-5 years
6-7 years
7 years or more

For the following questions indicate how much you agree with the statements on a scale from 1-7
Where 1= strongly disagree and 7= strongly agree

**Participation 3-6**

Q3. I participate actively in the online community activities.
Q4. I actively contribute content to the online community.
Q5. I usually provide useful information to other community members.
Q6. I post messages and responses in the community with great excitement and frequency.

**Part 2 of 3: Motivation for creating video game content**

Please rate how much you agree to the following statements. Content can be any modding of a game or addition made to a game. This includes in-game items, sprays, textures, sound files, maps, scripts etc.

**Enjoyment 7-9**

Q7. I find engaging in content creation for video games to be enjoyable.
Q8. The actual process of creating content for video games is pleasant.
Q9. I have fun creating content for video games.

**Altruism 10-13**

Q10. I want to help other people by sharing my content.
Q11. Content shared by other users helped me and I wanted to return the favor.
Q 12. I want to contribute to a pool of content, that previously assisted me.
Q 13. I benefit from others' content, and therefore want others to benefit as well.

**Continuance commitment 14-18**
Q14. I am sure that there are no other sites where I could find the same content and services that I get at this site.
Q 15. I keep coming to this site because there are few alternative sites available.
Q 16. If I stopped coming to this site, it would take me a long time to find a site that could replace it.
Q 17. There are very few other places where I could find the kind of useful content and services that I get from this site.
Q 18. The content of this site is too valuable for me to stop visiting.

**Rewards 19-22**
Q 19. I am paid to work on creating content.
Q 20. I receive some form of explicit compensation (e.g. items, achievements) for content creation.
Q 21. For me, creating content is very tangibly rewarding.
Q 22. Comparing to other content creation domains, game content creation is very tangibly rewarding.

**Personal Need 23-27**
Q23. I often use the created content for my own benefit.
Q24. The content I create is critical for my game experience.
Q 25. My content creation ensures that the software provides functionality that matches my unique and specific needs.
Q 26. It is hard for commercial games to meet my ever changing needs.
Q 27. Being able to fix problems with the game myself is one of the great advantages of content creation.

**Future rewards 28-33**
Q28. Experience from creating content raises my skill level for creating content.
Q29. Because of my involvement in creating content, I will be able to get a better job.
Q 30. In one way or another I will benefit from my content creation activity.
Q 31. Creating content makes me more marketable.
Q 32. I will sell products related to my content creation.
Q33. I will sell consulting, training, implementation or customization services related to my content creation.

**Reputation 34-36**
Q 34. I earn respect for my content creation by posting my content publically in this community.
Q 35. I feel that posting my content in this community improves my status as a content creator.
Q 36. I post my content publically in this community to improve my reputation as a content creator.

**Part 3 of 3: Content creation tools**
These questions regard your perception of programs and/or toolkits for content creation if they would be provided to you by game developers. Answer the following questions
with the content creation tool you have used most frequently the last 4 weeks. Please rate how much you agree to the following statements.

**Usefulness 37-42**
Q37. Using toolkits in creating content enables me to accomplish tasks more quickly.
Q38. Using toolkits improves my creation performance.
Q 39. Using toolkits in my creation increases my productivity.
Q 40. Using toolkits enhances my effectiveness while creating content.
Q 41. Using toolkits makes it easier to create my content.
Q42 . I find toolkits useful in my content creation.

**Ease of use 42-48**
Q43. Learning to operate the toolkit was easy for me.
Q 44. I find it easy to get the toolkit to do what I want it to do.
Q45. My interaction with the toolkit is clear and understandable.
Q46. I find the toolkit to be flexible to interact with.
Q 47. It is easy for me to become skillful at using the toolkit.
Q 48. I find the toolkit easy to use.