Crowdsourcing - Take on Goliath

- Motivating people to participate in Crowdsourcing

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Preface

It has been quite a trial for us as students to challenge ourselves with writing a thesis of this magnitude in the time restriction that was given. The experience has been very educational and we all agree that we have learned something by undergoing the process of writing this thesis that will hopefully help us in our future carrier. Our knowledge of Crowdsourcing and its functions has increased tremendously as well as it has given us a wider perspective of what motivates people to participate in Crowdsourcing.

We would like to dedicate thanks to Lector Rana Mostaghel for her advice and guidance throughout the thesis. We would also like to thank our examiner, assistant professor Sarah Philpson for the supervision and the feedback she has given us during the seminars. We would also like to thank all the other groups in the seminar for their constructive criticisms during the process of completing our thesis. Finally we would like to thank each other for all the fun and joy we had while writing this thesis.

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Introduction: From the start-up, the Internet has allowed easier, cheaper and more widespread communication between different parties. New ways in conducting business have emerged thanks to the Internet, such as Crowdsourcing. Crowdsourcing makes an open call to a group of peers, where the peers contribute to a final product. However, motivating these peers could be troublesome. Thus, there is a question in how to engage a crowd to participate in Crowdsourcing in order to create some sort of exchange to strive for a mutually beneficial relationship that makes the crowd willing to participate in Crowdsourcing.

Purpose: The purpose of this study is to find how different motivating factors affect Participation in explicit Crowdsourcing.

Methods: The design of the research conducted in this thesis was a quantitative survey that investigated motivating factors for the members of the company Company X. The survey was sent out through Company X own site to their members and there were 82 complete answers collected. However, only 73 questionnaires were analyzable due to previous participation. The results gathered from the survey were analyzed with the help of seven hypotheses.

Results: Monetary Awards, the Challenge of Problem Solving, and Peer Pressure were found to have a positive effect on Participation. Attention, Recognition, and the Ability of completing a Problem Solving process indicated that there are tendencies of a positive relationship with Participation, but it was not possible to draw any conclusions from these concepts. The results also indicated that having a Competition, or competitive environment could have a negative effect on Participation.

Conclusion: The results show that there are some major differences between the results from studies dealing with implicit Crowdsourcing and innovation contests. The general nature of an explicit Crowdsourcing community is speculated to be more friendly and helpful than an implicit Crowdsourcing platform due to the necessary collaboration of explicit Crowdsourcing. Monetary incentives might be what draws the eye of a member in the beginning - although this is not tested - , and this is also one factor that might be motivating people the most in an explicit Crowdsourcing community. Nevertheless, the factors that could have effects on Participation in explicit Crowdsourcing were Monetary Awards, Ability, Competition, and Peer Pressure.
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## Vocabulary

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<th>Term</th>
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<tr>
<td><strong>Crowdslapping</strong></td>
<td>When the crowd/public turns against the company and starts to spread negative company data.</td>
</tr>
<tr>
<td><strong>Crowdsourcing</strong></td>
<td>Outsourcing of a task - usually online - to a group of people/the public.</td>
</tr>
<tr>
<td><strong>Explicit Crowdsourcing</strong></td>
<td>When a group of individuals interact with each other to contribute with a solution for a problem.</td>
</tr>
<tr>
<td><strong>Extrinsic motivation</strong></td>
<td>Rewards that others can notice, such as money or attention.</td>
</tr>
<tr>
<td><strong>Implicit Crowdsourcing</strong></td>
<td>When a group of people that contribute with individual solutions for a problem.</td>
</tr>
<tr>
<td><strong>Intrinsic motivation</strong></td>
<td>Inherent rewards that is only connected to an individual and her self-esteem.</td>
</tr>
<tr>
<td><strong>Open-source</strong></td>
<td>Innovation by opening a software-code to the public so they can alter and develop it.</td>
</tr>
<tr>
<td><strong>Sticky information</strong></td>
<td>The cost of transferring information from one location to another in a way that is interpretable by the information seeker.</td>
</tr>
<tr>
<td><strong>Tacit knowledge</strong></td>
<td>Inherent knowledge in people, which is hard to transfer to other people.</td>
</tr>
<tr>
<td><strong>Wisdom of the crowd</strong></td>
<td>The collected wisdom of a group of people.</td>
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1.0 INTRODUCTION

The Introduction chapter includes a background to the phenomenon of Crowdsourcing and a review of the existing discussion in the scientific community. There are definitions of key terms presented in this chapter and the key factors that make up the term Crowdsourcing are explored. Further the problem discussion is featured in the chapter, along with the formulation of the purpose of this thesis.

1.1 BACKGROUND

According to Kozinets’s (2008) study it is shown that in recent years, technology has made it easier for companies to be more creative in their interaction with customers in their innovation processes with the use of e.g. open-source software. The study is an example of a growing interest in the Internet and online communities by the scientific community. According to the website Internetworldstats (internetworldstats.com), Internet usage has grown rapidly since the year 2000 with around one fourth of the world’s population using the Internet today. The increase, large number of Internet users worldwide, along with the Internet’s possibilities to allow its users to communicate, could be argued to have made it possible to develop ideas at a very fast pace. The ability to find, share, and develop ideas can have an effect on traditional environments as companies can be forced to adapt to a changing business climate in the future. Some of this adaption can be found today, and will be discussed later in this chapter.

Enkel et al. (2009) argue that since it would be too expensive to hire the best personnel in the world, companies operating in the same industry have started to share knowledge and expertise with each other. Enkel et al. (2009) further state that if a company refuses to share expertise, the company will most likely show a negative performance in the long run, independent of how large the company is. It is possible to argue that this has led to a growing interest and importance of networks of companies, and consumers, e.g. virtual enterprise theories (Grefen et al., 2000). It is possible to assume that the employees in one company cannot combat the gathered wisdom of everyone else in the world. The human resources available in an organization are not guaranteed to be the smartest, or best qualified personal for their specific assignment. It would be improbable, or maybe even impossible for a company to hire the smartest people in the world, since they would be rather difficult to locate, and very expensive to hire. It might not be necessary for a company to have every resource directly employed within the organization in the future. Virtual networks have allowed companies to share ideas with
competitors, and also consumers (Grefen et al., 2000), and it can be assumed that if a company is involved in a large network, it will get access to an enhanced amount of information.

The largest network in the world today, with the biggest unharnessed possibilities, is the Internet (Alonso et al., 2008). As more and more users are learning how to use the massive network, more innovations and innovative ideas can be made through easy access of information, and individuals’ possibilities to collaborate with each other. It could be argued that the pool of possibilities, innovations and usages of the Internet has not even come close to being fully tapped (Alonso et al., 2008). One way of capitalizing on the opportunities presented by the Internet is the possibility to tap into the wisdom of the crowd (Robson & Rew 2010).

According to Robson and Rew’s (2010) article the wisdom of the crowd (WOC) could be explained as a new way of business thinking. The WOC is built on the thought that the collaborative efforts and thoughts of a group of individuals, will lead to a better solution than the possible solution thought off by one individual. The gathered and combined wisdom of a vast group of people can combat, and outperform the wisdom of one individual, and it can be argued that now, it has become possible to tap into the WOC with the help of the Internet.

Since the Internet has allowed easier, less expensive, and more widespread communication between companies, suppliers and consumers, it has become difficult to speculate in how the business climate will be reshaped in the future (Alonso 2008). Brabham (2009) argues that rather than using traditional transmission modes such as radio, TV, and newspapers that all lack the ability for interaction, the Internet has created a platform that encourages co-creation of innovative thoughts. Users have the ability to publish content by their own devises, which goes along with what is defined as the Long Tail by Anderson (2006), which explains that everyone can become a producer and distributer of online content, thanks to the Internet. With people becoming more advanced users of the Internet, new phenomena have emerged which force business climates to adapt to the Internets possibilities. An example of a new phenomenon that has emerged is Crowdsourcing, which will be further explored below in this chapter.

1.1.1 CROWDSOURCING

With new phenomena emerging, new possibilities for interaction and innovation online are possible to explore, and therefore the discussion regarding innovations can be relevant to explore. The innovation discussion can be traced back to von Hippel’s (1988) studies on the sources of innovations, and since then there has been numerous, studies of the sources – other
than in-house sources – of innovations (Kaulio, 1998; Gruner & Homburg, 2000; Awa, 2010). Since the time of von Hippel’s (1988) arguments, companies have begun to include other sources - e.g. users and suppliers - in product development and innovation processes, in ways that allow for a product to be shaped, fixed, and adapted to become a better product (Brabham, 2008a).

Lately companies with a new business activity have surfaced, creating new dynamics of innovations, and capitalizing on the Internet’s and people’s willingness to contribute and associate themselves through common interests, namely; Crowdsourcing (innocentive.com; cambrihanhouse.com). Crowdsourcing can be defined as an open call to a large group of people (Brabham, 2008a; Horton & Chilton, 2010). Further, it could be defined as a form of peer production, where a group of peers contribute to a final product (Horton & Chilton, 2010).

Studies, have been made on phenomena that are similar and close in definition to Crowdsourcing, but differ in some way – e.g. smart mobs (Hermanns, 2008), collective intelligence (Malone et al., 2009), wikinomics (Djick & Nieborg, 2009), crowd wisdom (Kozinets et al., 2008), mass collaboration (White et al., 2009), human computing (Ross et al., 2010), social systems (Pentland & Eagle, 2005), social search (Amitay et al., 2009; Briggs et al., 2009) and social media (Kaplan & Haenlein, 2009). One of the earliest identifications of Crowdsourcing as a term was in Wired Magazine from 2006 (wired.com), where Jeff Howe explained Crowdsourcing as a means for a company to acquire free or cheap labor. If the word is broken down into its roots, two words can be identified: crowd, and outsourcing (Brabham, 2008a). Crowd entails a group of people – the public - working towards solving a problem. Outsourcing is included in the definition of the term since a workload is outsourced to the crowd/public. Brabham (2008a) clarifies that it is only Crowdsourcing if a company puts their problem to the web, followed by a large number of users offering their solutions to the problem. The idea for the solution to the problem is then rewarded and later mass-produced by the company.

Doan et al. (2011) further distinguishes Crowdsourcing under two distinct categories: explicit and implicit Crowdsourcing. Explicit Crowdsourcing is when a group of users work together and collaborate to solve a problem, or improve a specific product e.g. Linux, where users work together to improve the operating system (linux.se). Implicit Crowdsourcing is individual work, done without collaboration between people. It is the combination of individual contributions by a group of people that help solve a specific task, e.g. the ESP game (gwap.com) where people play by matching words to images, or many efforts on Amazon’s Mechanical
Turk - M-Turk - (mturk.com). Doan et al. (2011) define a system as Crowdsourcing if “it enlists a crowd of humans to help solve a problem defined by the system owners” (Doan et al., 2011:84). In short, if a group of individuals – the crowd – works towards solving a problem, either implicitly or explicitly, it should be defined as Crowdsourcing.

As Crowdsourcing makes use of the knowledge of a large group of people, it enables the user of a Crowdsourcing platform to tap into the WOC. Crowdsourcing’s ability to make use of the WOC allows a company that is using a Crowdsourcing platform to engage users and suppliers and make use of them as innovators. In the study of Gruner and Homburg (2000) it is argued that users can be engaged in several stages of e.g. new product development processes. It is possible to engage users or suppliers as early as in the idea generation stage, or as late as in the market launch stage. By engaging the users as early as possible by outsourcing the process directly to the users, the need of hiring a third party that would have to guess or collect data to understand the users, could be rendered redundant.

One example of Crowdsourcing is when the company Doritos wanted a ready-for-TV commercial for the Super Bowl 2012 (crashthesuperbowl.com). Instead of outsourcing the development to a professional production agency, an open call was placed to the public/crowd to produce the commercial with no monetary reward. Instead the reward was having the best commercial aired on a commercial spot during the Super Bowl. The production cost of the commercial is assumed to be substantially less than it would have been if a production agency was hired, since the crowd essentially worked for free.

From the arguments presented above it is possible to argue that Crowdsourcing endeavors enable the products of smaller corporations to combat the products of big tycoons in some industries. The phenomenon enables smaller companies to acquire cheap and efficient labor for little or no pay by tapping into the WOC through e.g. open-source software, which can be a form of explicit Crowdsourcing. Hars and Ou (2002) argued that peer production processes - such as open-source software - will combat traditional software development in the future and there are real life examples of this. An example of how an organization has used open-source to allow users of the product to freely adapt and improve the base product to make it better, is the case of Firefox (Mozilla.org). By offering a source-code to the public, advanced users have the opportunity to freely adapt the product themselves, based on their own preferences. This could be argued to negate the need to transfer knowledge from users to the developers in an organization and also make users into suppliers.
The phenomenon of Crowdsourcing does enable a change in the existing business climate, and therefore the phenomenon deserves further exploration. One company that tries to capitalize on using the phenomenon of Crowdsourcing is Company Y (Company Y.com a). Company Y provides technology for companies, which allows the companies to make use of Crowdsourcing processes (Company Y.com b; appendix II). After an interview with Mr. R - a QA analyst of Company Y – (appendix II) it is clear that Company Y provides different Crowdsourcing solutions to different companies based on specific needs. One company that Company Y works closely with is the community Company X. Company X can be defined as a Crowdsourcing community built on the software provided by Company Y (Company X.com; appendix II). From Company X website (Company X.com), and from the interview with Mr. R (appendix II); the Crowdsourcing process on the Company X community can be described as a phased process, divided in four phases.

The phased process of Company X can be explained after reviewing the website (Company X.com), and with further explanation from Mr. R (appendix II). The first phase is where the members of the community submit their ideas – or inventions – based on a given theme, e.g. gardening. The second phase, is where a predefined panel of experts reviews the contributions of the members, based on four categories – mainstream appeal, marketability, competition, and ease of manufacturing - and decide on what ideas are to be moved forward to the next phase. In the third phase the members of the community get a certain set of votes, which they can cast on the ideas they find to be the best. In this stage, members can help improve other peoples’ ideas by providing feedback and input to each other i.e. the third phase is a collaborator stage. The fourth and final stage is where the final voting occurs on the crowd-favorites. The inventors of ideas that the panel decides have enough market potential, will be invited to sign a contract with Company X to have the idea brought to the market.

It is interesting that people are willing to contribute with ideas for free, and then manufacturers and suppliers might find potential in these ideas. A Crowdsourcing community such as Company X depends on the contributions of their members and thus the reasons behind why people would work for essentially nothing can be interesting to study.

1.1.2 WIN-WIN AND EXCHANGE IN CROWDSOURCING

“We live in a capitalistic society, and people don’t understand why someone would work for free when they could be making money” (bluedogwebservices.com)
Campbell (bluedogwebservices.com) presents different options and examples of companies making monetary gains from Crowdsourcing. The possibilities for monetary gain are founded in a way of mutual benefits from the company and the users. Therefore, maximizing benefits from users contributions should result in a supreme product, which in extension should create an outcome of profit for the company. An example of a company gaining revenue from Crowdsourcing is MySQL (mysql.com).

Humphrey (omgubuntu.co.uk) argues that working for free to make someone else richer is not something that is clever. Further he states that the business climate, capitalistic society, selfishness and commercial interest that can be found everywhere in the world today is so strong that somehow, someone will always make a profit. However, new companies with new ideas and new business plans always have the opportunity to emerge and capitalize on previously unknown, or unseen, opportunities (Kim, 2005). There is a question of how to engage a crowd to participate in Crowdsourcing in order to create some sort of exchange in order to strive for a mutually beneficial - win-win - relationship. From the arguments above it is possible to identify great potential with the Crowdsourcing phenomenon for organizations that want to improve their products. Still, further research is needed in order to understand what makes Crowdsourcing possible.

1.2 PROBLEM DISCUSSION

1.2.1 BUSINESS DEVELOPMENT THROUGH CROWDSOURCING

There are a limited number of studies on the phenomenon of Crowdsourcing however; the topic is gaining more attraction by researchers and practitioners (Lakhani et al., 2007; Brabham, 2008a; Brabham, 2008 b; Kozinets et al., 2008; Brabham, 2010). According to Kozinets et al. (2008) Crowdsourcing could have the power to radically change the way users contribute to the dynamics of innovation. An example of how Crowdsourcing have allowed companies to outsource the innovation process to forces outside the company is the example of Edward Melcarek, who came up with a new way of inserting fluoride powder into toothpaste tubes for Colgate, via the website InnoCentive.com (ideaconnection.com). People’s tacit knowledge could be argued to be one of the most attractive assets in many business environments, and this could make the possibility to use a crowd of more people, more vital for companies. Thus, allowing users to be involved in the value chain could make the user into a val-
uable co-producer of higher importance than in traditional business activities, where companies only tried to investigate the customer’s thoughts and opinions through surveys and observations (Kaulio, 1998; Gruner & Homburg, 2000; Mascarenhas et al., 2004). From the presented statements it is possible to argue that through Crowdsourcing processes that makes the customer into producers of ideas, and with the company as a buyer of those ideas, the traditional view of producers and consumers are rendered obscure.

From the arguments of Enkel et al. (2009) there are risks identified in investing in Crowdsourcing such as: 1) if the company lose control of the Crowdsourcing process the company might also lose control of the innovation in the long run. 2) A limitation, or danger, with Crowdsourcing is the risk that it might backfire, if users become hostile towards the company, instead of trying to help. Brabham (2008a) refers to this phenomenon as crowdslapping.

Some companies might implement Crowdsourcing simply as a tool, while others might form their entire business structure around the phenomenon. Companies such as Threadless, iStockphoto, InnoCentive, and Company Y have business models that are different from that of traditional businesses products (innovationzen.com). The companies integrate users in the business model, thus allowing the users to put up their own products for purchase or help design them. It is possible that the Internet has made traditional business models out of date in some industries with the new Crowdsourcing business models representing the future.

1.2.2 MOTIVATING PARTICIPATION

One challenge for companies is to know when and how to invite users into the innovation process. It can be difficult to put a deadline on Crowdsourcing compared to the possibility to require a finished product by a certain time from a professional organization. Forcing an answer is most likely not the best solution when it comes to Crowdsourcing, rather it might be best to let users answer when they feel inclined, without any pressure (Alonso et al., 2008).

From Doan et al.’s (2011) article it is possible to derive four challenges with Crowdsourcing: how to recruit participants, what they can do, how to combine the contributions and how to manage abuse. The first question – how to recruit participants – is one major factor in order to create the possibility for Crowdsourcing, since without a crowd there is no destination for the company to make the call for an outsourced a task. There are most likely context specific fac-
tors that need to be taken into consideration when trying to see what factors motivate Crowd-
Participation.

According to Alonso et al. (2008), there are cases where the company pays the user that is
offering the solution. But a company cannot be sure that the user has made her best effort to
provide the best possible solution. When outsourcing a task like a market survey, the user
might just click through the process to get paid as soon as possible. Some might do everything
for the product, while some just do it for the money (Bernstein, 2010). Therefore monetary
rewards might not always be the most appropriate exchange for a Crowdsourcing venture.

There have been studies conducted that investigate implicit Crowdsourcing and innovation
contests and processes (e.g. Yang et al., 2008a; Yang et al., 2008b; Yang et al., 2009; Brab-
ham, 2010; Morgan & Wang, 2010). Nevertheless, explicit Crowdsourcing could also benefit
from being studied with regard to both on extrinsic and intrinsic motivations behind Participa-
tion. Extrinsic motivations refer to external rewards e.g. money or recognition. Intrinsic moti-
vations are factors internal motivations in the minds of people e.g. satisfaction from completing
a task.

The study of Hars and Ou (2002) on open-source software innovations, focused on both ex-
trinsic and intrinsic rewards. Hars and Ou (2002) found that external rewards were bigger in-
fluences than internal rewards when motivating participants in open-source software. Howev-
er, it was concluded that there was no direct external rewards offered, which might be the case
for other explicit Crowdsourcing platforms and processes. Instead of direct external rewards,
there was potential for future rewards through e.g. expanding a personal skill base, self-
marketing, and revenues from related products. Further it was argued that for that particular
study on open-source Participation, people participated for the enjoyment based on the individu-
als’ interests. The findings are not applicable to all explicit Crowdsourcing forums since
some might be shaped as contests, and others might be created for a specific assignment that
needs to be completed.

Huberman et al. (2009) conducted a study on nearly ten million YouTube videos where the
authors determined that motivation for peers providing content was based in the drive of ob-
taining attention or recognition. The research conducted by Lakhani et al. (2007) suggested
that in regard to openness in scientific problem solving, there could be motivators other than
pure monetary gains that entice openness and Participation. The study found that the most ob-
vvious motivator for Participation was monetary rewards, but there were other motivating fac-
tors such as “social and work-related motivations like career and professionals reputation concerns, and peer and work pressure to submit a solution” (Lakhani et al., 2007:10). Further, motivators like the challenge of solving a problem as well as the enjoyment received from providing a solution was identified as being motivators for Participation. Motivators that are found in Lakhani et al.’s (2007) study cannot be directly transferred to an explicit Crowdsourcing platform, since the study was conducted on participants on the implicit Crowdsourcing platform InnoCentive.com. Additionally, only highly educated individuals participated in the study. Around 65% of the participants held a Ph.D. and thus the results are not directly applicable, but they can function as a starting point for further research in another context of the phenomenon.

Further, there have been studies on motivators for Participation on creative implicit Crowdsourcing platforms, such as iStockphoto (Brabham, 2008 b), and Threadless (Brabham, 2010). From the studies conducted by Brabham (2008 b; 2010) it is apparent that other than monetary rewards as a motivator, the use of the forums as an outlet for creativity was a main motivator for the participants. Therefore the results from Brabham’s (2008 b; 2010) studies might not be directly applicable to crowds in explicit Crowdsourcing platforms that are not encouraging creativity.

Since there are studies on motivational factors on different forums, but no studies on motivational factors on an explicit Crowdsourcing platform, there could be a need to find the factors that motivate users to participate in an explicit Crowdsourcing process. Monetary rewards might not be sufficient to engage every user, and in some instances monetary rewards might even result in a lower quality contribution from users (Mason & Watts, 2009). Therefore, there might be other factors more suited to motivate users to participate in explicit Crowdsourcing activities. To map the factors that motivate a crowd to participate would most likely result in a larger and more motivated crowd. This could allow the organization making a call to the crowd, to capitalize on a motivated crowds’ wisdom.

One common theme between the studies conducted on InnoCentive.com (Lakhani et al., 2007) and the studies on Threadless (Brabham, 2010) and iStockphoto (Brabham, 2008b) is that the Crowdsourcing that was researched was implicit. The motivations behind Participation for implicit Crowdsourcing might vary, compared to explicit Crowdsourcing. Hars and Ou’s (2002) study was focused on open-source software development rather than a community or platform for explicit Crowdsourcing. Thus a study should be conducted on an explicit
Crowdsourcing platform to find how motivational factors affect Participation in explicit Crowdsourcing.

1.3 PURPOSE

The purpose of this study is to find how different motivating factors affect Participation in explicit Crowdsourcing.

1.4 DELIMITATIONS

When discussing motivating factors for Participation it is easy to cross the border from business, to psychology research. This thesis does not deal with the psychological discussion of relevant motivating factors other than measuring how the factors affect Participation.

1.5 DISPOSITION

The disposition of this thesis followed a linear design as seen below (figure 1). The Introduction chapter provided a background that introduced Crowdsourcing as a subject, and also a problem discussion of the Crowdsourcing phenomenon, in order to find the relevant theoretical room. Thus the Introduction chapter narrowed the discussion down to a purpose, which in turn lead the discussion to the Theoretical Framework. It was important to find the relevant theoretical room and a connection between the Introduction chapter and the Theoretical Framework. The problem discussion help lead the authors of the thesis into the relevant theoretical room. The theories presented in the Theoretical Framework provided seven hypotheses that were empirically tested.

Once the relevant theories were presented, the work process of the thesis, along with a description of what, and how the data would be collected was discussed in the Methodology chapter. In the Methodology chapter the population for the study was discussed along with the sample frame. The work process was described in detail along with the questions that were used in the questionnaire. The connection between the Theoretical Framework and the Methodology chapter was presented in the operationalization heading in the Methodology chapter.
When the work process was described, the data collection began and the results were presented under the Data Analysis chapter. In the Discussion chapter there was a discussion of the gathered results from the survey. In the Conclusion chapter, an answer to the purpose was featured along with Managerial- and Theoretical Implications, and suggestions for Future Research was also featured this chapter.

(Figure 1:1 - Disposition – Own, 2012)
2.0 THEORETICAL FRAMEWORK

The Theoretical Framework includes a presentation of motivational theory, which leads down to relevant motivators for Participation in explicit Crowdsourcing. Seven hypotheses are presented and based on relevant motivational theory. The framework also entails an overview of the general discussion regarding innovation, and different types of knowledge, that is taking place in the scientific community. It also contains an argumentation of where an explicit Crowdsourcing platform can be positioned in the current innovation discussion. The chapter includes a State-of-The-Art discussion of the relevant area of research in the scientific community. Finally, a model is proposed regarding the relationships between various motivational factors and Participation.

2.1 PARTICIPATION

For a Crowdsourcing platform to be successful there is a need to have a group of individuals engaged and willing to participate and contribute, since without a crowd, the platform does not fall under the given definition of Crowdsourcing. For an explicit Crowdsourcing platform to have the potential to work, there is an even bigger need to have a large crowd engaged. A larger group of people would make it possible to tap into the WOC, which could be argued to be one of the major advantages for choosing explicit, over implicit Crowdsourcing (Robson & Rew, 2010). From these arguments the conclusion can be derived that knowing what motivates a crowd can be crucial for the success of an explicit Crowdsourcing platform. In order to find motivational factors for Participation in Crowdsourcing, an overview of existing literature of motivational theories from other contexts can be examined.

When it comes to engaging Participation in different digital forums it can be important to know the context specific criteria that consumers might demand. Dholakia et al. (2004) conducted a study on Participation for online communities and found that the results varied between network- and small-group-based virtual communities. A network-based virtual community is defined as a specialized, geographically isolated community that is based on a network of relationships. This network is structured, dynamic and the participants share a common goal. It is also stated that a small-group-based virtual community is a group of people that have some kind of online relationship to each other, and tries to reach or solve goals as a group. There is a need for users to feel like there is some sort of value exchange. What kind of value the users receive is dependent on the context; for one type of community it might be getting information, while on another community it can be to interact with other people.
From Dholakia et al.’s (2004) study the conclusion can be drawn that when researching drivers for Participation and value for users, there is a need for context specific factors in order to determine the accurate drivers for Participation. It is stated in Zheng (2011) that some of the most contributing factors for motivating people to participate in a crowd is found to be; learning, direct compensation, self-marketing and social motives such as peer pressure. This is similar to the motivational factors for Participation that Brabham (2010) found important in his study: the opportunity to make money, develop one’s creative skill, the potential to find additional work, make money and the positive attitudes towards the community involved. The findings of Brabham (2008b; 2010) are similar to the findings of Hars and Ou (2002) from their study on motivational factors for open-source software, and Lakhani et al.’s (2007) study on an implicit Crowdsourcing community, as the research is largely based on the researcher of these authors.

In order to find drivers for Participation for the context of an explicit Crowdsourcing platform, drivers for other contexts can be located and tested for the explicit Crowdsourcing specific context. Firstly, a distinction should be made between extrinsic- and intrinsic motivators (Zheng, 2011). Lakhani et al. (2007) arguments are on the same line, and the authors emphasize that it is important to include intrinsic motivational factors and not only look at extrinsic factors.

2.2 MOTIVATIONAL FACTORS: EXTRINSIC AND INTRINSIC

When the issue of what motivates people’s behavior is brought up, it can be argued that Maslow’s (1987) five-level pyramid is something that often presents itself in people’s minds. The different levels describe what drives and motivates people to act, including levels between physiological needs, to self-actualization. Motivational theories are also discussed by Eccles and Wigfield (2002) who argue that, there are different theories that focus on the reasons for Participation instead of why individuals act the way they do. Schunk (1991) argues that motivational factors are important to motivate people to get them to act, and he states that people do not want to perform a task if they think it is impossible to complete it. Even if there is a positive outcome of some sort this does not motivate people if the task is considered impossible or if the goal is undesirable.
In order to elaborate on the subject of motivational theories, it can be important to further distinguish between two common types of motivational factors: extrinsic, and intrinsic motivation (Zheng, 2011). Eccles and Wigfield (2002) also discuss intrinsic and extrinsic motivation. Extrinsic motivations are motivations that are separated from the work itself, for instance recognition from other people, or rewards (Zheng, 2011). Eccles and Wigfield (2002) define extrinsic motivators as when people engage themselves because of instrumental or external reasons. Ryan and Deci (2000) found that extrinsic motivation could drive Participation, by offering the opportunity to gain monetary rewards, reputation and/or recognition. Leimeister et al. (2009) defines extrinsic motivation as: “a construct that pertains whenever an activity is done in order to attain some separable outcome” (Leimeister, 2009:60).

Regarding intrinsic motivation, Ryan and Deci (2000) claim that people are considered to be curious, active, eager to learn, and playful creatures that do not always need external incentives to dedicate their time in developing skills or knowledge. This natural motivation tendency comes from people’s inherent interests, which refers to the ability to solve tasks that were limited during childhood and later possible to solve and be satisfied during older years. Ryan and Deci (2000) further argue intrinsic motivation to be when a person simply engages and participates for the fun and/or the challenge, instead of engaging because of external rewards. Eccles and Wigfield (2002) argue that an intrinsically motivated individual engages in an activity because of personal interest or enjoyment of the activity. Zheng (2011) argue that intrinsic motivators are concerned with dedicating time into work for its own sake or because the work is interesting and satisfying. It is further stated in Leimeister et al. (2009) that intrinsic motivations often occur when an individual engages in activities - e.g. hobbies - without outer incentives. From the presented definitions, extrinsic motivation differs from intrinsic, by referring to the simple enjoyment of the activity itself.

2.2.1 MOTIVATORS IN EXPLICIT CROWDSOURCING

Both extrinsic and intrinsic motivation factors are important factors to why an individual dedicates, and makes the decision to participate in a crowd (Leimeister et al., 2009). Zheng (2011) argue that studies from different disciplines found that people’s behavior is significantly affected by both extrinsic and intrinsic motivation. In the same study it is stated that incentives and recognition may deserve a higher priority when firms try to implement an effective usage of Crowdsourcing. It is plausible that both extrinsic- and intrinsic motivating factors
affect a crowds’ willingness to participate. Therefore this thesis investigates both extrinsic- and intrinsic motivators and the relevant factors will be presented.

2.3 EXTRINSIC MOTIVATORS

2.3.1 MONETARY AWARDS

Lakhani et al. (2007) found various motivators for Participation in their research conducted on an implicit Crowdsourcing community, and one of the included motivators was winning award money.

Horton and Chilton (2010) discussed what they refer to as reservation wage. It is defined, as the smallest wage a worker in a Crowdsourcing process is willing to accept in order to complete a task. Horton and Chilton’s (2010) study was conducted on Participation in Amazon’s M-Turk platform, where the authors found that workers responded rationally to incentives to work. However, the study conducted by Mason and Watts (2009) found that increased wages do not correlate with higher quality.Rather it was found that the workers that were paid a higher wage thought of their work as being more valuable, and therefore were not more motivated to work harder than the people that were being paid less.

Further, Horton and Chilton (2010) found that for financial incentives; workers tend to set target earnings of what they want to earn from completing a task. By setting targets for financial incentive when trying to motivate crowd Participation the number of workers could increase. The arguments above are in regard to monetary rewards for Participation in work tasks on the M-Turk platform. The arguments are not directly applicable to the every industry but there is a possibility that there is similarity between Crowd-Participation in M-Turk studies and other industries. According to Zheng (2011) the general statement is that the higher the reward, the higher the number of solutions.

2.3.2 ATTENTION

Huberman et al. (2009) state that the people that contribute with files, movies, or music online, contribute to the digital common and that most of these contributors think about their contribution as a contribution of private goods. The payment for these individuals is often the Attention they get e.g. through people clicking and watching their upload, or if someone
downloads their files. Huberman et al. (2009) goes on by arguing that Attention has been shown to have such high value, that people sometimes are willing to forsake monetary rewards to obtain Attention. Huberman et al. (2004) state that in their study that it was found that people in five different cultures all valued status and that people were willing to trade off material gain to obtain it. In all the five cultures that were examined people valued status over money, but the degree varied between cultures. Lakhani et al. (2007) state that career and reputation are two things that a lot of people find important, especially when there is a chance that someone else might get the Attention if the person does not do it herself.

2.3.3 RECOGNITION

Huberman et al. (2009) lifts forward the aspect of Recognition as a very important motivator for contribution. It is stated in Brabham’s (2008a) article that Participation is under influence of producing something better, which in extension could increase the Recognition in the crowd. The way Recognition is received is dependent on the forum that is used for Crowdsourcing. On a site such as Youtube.com, Recognition can be received by a high number of views of a published clip (youtube.com), while on a site such as Threadless.com, Recognition can be received by an individual by having her design being printed and produced (threadless.com). According to Hars and Ou (2002), Recognition originates from the desire of fame and esteem, which has a strong connection to future returns. Hence, it is possible to assume that an individual reasons that through Recognition, future status or rewards might be received. Hars and Ou (2002) also argue that when an individual receives Recognition in the shape of feedback from others, the recipient will be more motivated to continue to participate and contribute.

In Zheng (2011) it is discussed that when an individual is involved in a competition: solving the competitions problem could satisfy the individual’s desire for gaining reputation within the community, or being recognized by the sponsor of the competition. It is also argued that individuals strive to get Recognition from either the sponsoring company, or the crowd, by noticing the contributions made by the individual, which in extension should result in some kind of Recognition or appreciation from the crowd or the sponsor.
2.4 INTRINSIC MOTIVATORS

2.4.1 PROBLEM SOLVING

From Lakhani et al.’s (2007) study it was found that other than monetary rewards, the challenge of solving a problem was a motivator for Participation. If solving a specific problem poses a challenge, the solver could experience higher satisfaction from solving the task than if the task did not pose a challenge. From Lakhani et al. (2007) it is possible to derive the thoughts that the possibility to win over others can be a motivating factor for people to participate in implicit Crowdsourcing. Further, Schunk’s (1991) article regarding self-motivation and academic motivation discussed how motivation to perform a task, or learn something new, is determined by the award that is imagined by the person performing the task. Schunk (1991) gave the example of a person trying to learn to spell a word in school. The person might expect praise by the teacher if the task is completed. The individual performing a task must value the rewards she expects if Participation is going to occur. The value of solving a problem will most likely be determined by the individual’s own perceived ability to solve the problem, but also from the enjoyment, or value the individual would receive from being able to solve the problem. From Schunk’s (1991) study it is possible to identify that if an individual sets a goal for herself – e.g. solving a problem – the goal will work as a motivator for completing the task.

Hars and Ou (2002) discuss how goals are linked to behavior. People act and behave in a certain way depending on personal goals. Hars and Ou (2002) argued that programmers of open-source software where motivated by feelings of competence, fulfillment, and satisfaction. Further, since people are motivated by working towards goals, it is possible to assume that when there is an ability to win a competition, people will be more motivated to participate. These arguments could be applied to explicit Crowdsourcing since the participants might experience the same feelings when participating in a challenging task.

2.4.2 PEER PRESSURE

Another topic that was touched upon by Lakhani et al. (2007) was the factor of peer- and work pressure on Participation. According to Lerner and Tirole (2002), motivation in crowds is about gaining a reputation from other peers along with the pressure of finishing tasks. From Lakhani et al.’s (2007) study it is possible to assume that participants that are not employed for the specific task they are trying to complete will not experience any work pressure from
colleagues to solve the problem. However, if a group of people with social relations to each other experience interests in participating in a task, there can be pressure within the social group to participate. From the perspective of Bourdieu (1986), it is possible to argue that if one individual within a group is able to best the others in completing a task that individual’s cultural capital can increase within the group. Thus the potential of increasing a person’s cultural capital could work as a motivational factor in an area of Peer Pressure.

Further it is possible to adapt the arguments of Hars and Ou (2002) regarding community identification. Members of the same Crowdsourcing community might feel pride to be a part of the specific community, and feel as if members of the community should help each other out.

2.5 INNOVATION

The motivational factors that are presented, deal with what motivates a crowd to participate in explicit Crowdsourcing. Once the crowd is engaged, the desired achievement that the crowd produces can be seen as a democratic innovation (von Hippel, 2005). The innovation discussion that is taking place in the scientific community can be traced back to von Hippel’s (1988) discussion dealing with the sources behind innovation. For the context of an explicit Crowdsourcing platform the participants from the crowd might be the sources behind innovation. Hence, the issue is raised with identifying where it is best to extract the innovation in a value-chain. In von Hippel (1988) it is discussed how different sources, other than in-house sources can generate useful innovations. Von Hippel (1988) explained that the party that is best suited to make an innovation is dependent on a specific industry. If there were a need for a technically advanced solution that would require a large amount of financial resources, the manufacturer or the supplier would traditionally be the most likely source of an innovation. In another situation, for instance; if it would be easy to exploit a patent, a third party would have a bigger opportunity to come up with an innovation.

Von Hippel (1988) discusses how there can be a difference in where an idea is generated, and where they are exploited. Therefore when it comes to Crowdsourcing platforms, where different products or ideas can be generated based on a theme; the main source behind an innovation might vary. The relationship between the innovator and the innovation can be discussed further to find if the innovator is a user, third party or if there is another existing relationship.
2.5.1 USER INNOVATIONS

In some instances of Crowdsourcing, the crowd or the specific innovator within the crowd might have a user relationship to the innovation. There has been studies conducted that further explore von Hippel’s (1988) discussion on users as innovators (Kaulio, 1998; Gruner & Homburg, 2000; Awa, 2010). Kaulio (1998) discussed three different interfaces of implementing users in the innovation process; design for, design with, and design by. The alternative design for, is when the only implementation of users in the innovation process are from collection of data e.g. through market surveys. The design with alternative is, when the users have the ability to select, react and reject suggestions proposed by the company. The third alternative – design by – can also be referred to as the participatory alternative. The participatory alternative is where the users are actively involved in the design process and makes the innovation, and the manufacturer then has the possibility to exploit it. The latter form of interface can be argued to be the most common form of user innovation in Crowdsourcing since the innovator designs, or comes up with the idea to the innovation herself.

2.5.2 THIRD PARTIES

In some circumstances there might be other sources than users, and in-house resources, that are better suited to innovate. One source that might be of relevance for innovations on a Crowdsourcing platform are third parties e.g. inventors, universities and independent research laboratories (von Hippel, 1988). Von Hippel (1988) states that companies can use third parties – e.g. research laboratories - in order to let others innovate and generate ideas, and then the company can buy and patent those ideas. Philipson (2010) discusses this further and categorized this kind of innovation as phenotype four in her list of phenotypes. She lifts forward the importance for a company to have needs knowledge to be able to understand and evaluate the suggested innovations from the third parties. The solution knowledge and the transformational knowledge is something that other parts of the process will need to possess. A discussion regarding needs- and solution knowledge in Crowdsourcing is featured later in this chapter.

2.5.3 EXPLICIT CROWDSOURCING INNOVATIONS

For an explicit Crowdsourcing platform the relationship between the innovator and the innovation is not always clearly defined. Since an explicit Crowdsourcing process includes collaboration in a group of people, it is not always just one innovator; rather there can be several different relationships present (Doan et al., 2011). One innovator might be an individual that
is going to be using the product and another might be an individual that simply has input that could improve the characteristics of a product without being a user, or potential user of the product. Therefore it is difficult to determine the relationship between the source of the innovation and the innovation when it comes to an explicit Crowdsourcing platform. Rather than being an either-or-relationship, there can be a mix of relationships present.

Another difficulty that can be present when discussing innovations for explicit Crowdsourcing is what type of knowledge is present in the crowd that generates an idea. Von Hippel (2005) discussed the difference between needs- and solution knowledge in innovators, and the knowledge can be different based on what type of relationship the innovator has to the innovation.

2.6 NEEDS AND SOLUTION KNOWLEDGE

Von Hippel (2005) discussed the difference between needs – and solution knowledge. From his discussion, it can be argued that needs knowledge usually resides with the users, and refer to the knowledge about the need that desires to be filled. Solution knowledge on the other hand, often resides with manufacturers that try to fill the needs of users. In order for a product development process to be successful, the innovator has to bring these two types of knowledge together in order to fill the need, with the proper solution. However, bringing the two different types of information together can often be very costly – referred to as Sticky information (von Hippel, 1994) – but might also be an effective Problem Solving strategy if the company can use the solution knowledge of people from outside the company (Lakhani et al., 2007).

Von Hippel (1994) describes Sticky information as the costs of transferring information from one location to another location in a form that is usable by the information seeker. When information is costly and difficult to transfer; the stickiness is high, and if it is easy and not very costly to transfer information; the stickiness of the information is low.

2.6.1 EXPLICIT CROWDSOURCING, NEEDS- AND SOLUTION KNOWLEDGE

Just as with the sources of innovation discussion, it is difficult to position what type of knowledge is generated where, on an explicit Crowdsourcing platform. The categorization is dependent on the platform and what type of crowd is engaged for a specific innovation. There
might be experts engaged in the crowd that possess solution knowledge, which would lead to
the crowd having a mix of the two types of knowledge. For explicit Crowdsourcing it is diffi-
cult to pinpoint a clear position in this discussion.

The innovator might have solution knowledge, but it is also possible for the innovator to pos-
sess needs knowledge. In some instances a company might possess needs knowledge and out-
source the solution problem to the crowd. In that instance the stickiness would be rather low.
In other instances the innovator has a specific need that the innovator wishes to have solved,
and might generate the solution for the need herself. Another possibility is that the solution
can be thought of with feedback and input from the entire crowd. A Crowdsourcing platform
might result in new needs knowledge to be discovered, or it might even provide new solution
knowledge.

2.7 STATE OF THE ART

The state of the art aims to give an overview of the current discussions in the scientific com-
munity regarding the relevant theories for this thesis. The most relevant theories are high-
lighted below and discussed.

When it comes to theories regarding innovation the current discussion in the scientific field
can be traced back to von Hippel’s (1988) studies. Von Hippel’s (1988) studies on sources of
innovation can be argued to be a dominant theory. It is well accepted, with 6090 citations
shown by a search on Google scholar (scholar.google.se a). The study included empirical test-
ing, and has since been empirically tested by other authors (e.g. Scott, 1997; Kaulio, 1998;
Morten, 1999; Dyer & Noboeka, 2000; Prashant et al., 2000; Gruner & Homburg, 2000; Masc-
carenhas et al., 2004; Laursen & Salter, 2006). The research by von Hippel (1988) has led to
theories on how sources, other than in-house sources, can be used in innovation processes
(e.g. Kaulio, 1998; Gruner & Homburg, 2000; Awa, 2010; Philpson, 2010). Based on the
statements above, von Hippel’s (1988) theories on sources of innovation should be regarded
as dominant theories.

Von Hippel has also presented a theory regarding what he refers to as sticky information:
needs- and solution knowledge (von Hippel, 1994; 2005). Von Hippel’s (1994) article on the
types of knowledge has been well received by the scientific society and is featured in von
Hippel’s (2005) article from 2005, which is cited 2996 times (scholar.google.se b). The argu-
ments in the book by von Hippel (2005) have been empirically tested (e.g. Gassmann, 2006; van de Vrande et al., 2009; Vanhaverbeke, 2009) and should therefore be considered as empirically validated. In the article by von Hippel (1994), sticky information is described as the costs of transferring information from one location to another, in a way where the information is usable for the information seeker. The theory can be seen as accepted by the scientific community with 2267 citations (scholar.google.se c) and is validated by empirical testing by other authors (e.g. Feldman, 1999; Simonin, 1999; Szulanski, 2000; Lakhani & von Hippel, 2003). Based on the number of citations and empirical validation received by the theories of needs- and solution knowledge, and sticky information, the theories are regarded as dominant.

The term Crowdsourcing can be traced back to Howe (2006), editor of the Wired Magazine. He explained that Crowdsourcing is a means for a company to acquire free or cheap labor in exchange for other value, by outsourcing a workload to the public. The article has been tested by the scientific community and has been referred to 623 times (scholar.google.se d). Hence, Crowdsourcing is argued to be accepted by the scientific community. The concept has been empirically tested in some contexts (e.g. Huberman et al., 2009; Horton & Chilton, 2010; Mason & Suri, 2012). However, since the term is relatively new research is still needed in different contexts to validate and explore it. Only some parts of Crowdsourcing have been explored, but e.g. explicit Crowdsourcing needs to be studied further (Doan et al., 2011). Since there is some validation for Crowdsourcing but still need to further test Crowdsourcing, in specific contexts, the phenomenon should be regarded as an emerging theory.

The motivational factors presented in this thesis focuses on what motivates individuals to participate or not in an explicit Crowdsourcing process. When in comes to motivational theories they are often founded in psychological papers (e.g. Maslow, 1987; Schunk, 1991; Eccles & Wigfield, 2002). One of the most dominant, and most cited articles on motivational behavior is written by Maslow (1987), and the article has received 22697 citations (scholar.google.se e), and has been empirically validated by several different authors (e.g. Hazel & Shinobu, 1991; Diener & Diener, 2009; Diener et al., 2009; Oishi et al., 2009). However, psychological reasons behind an individual’s decision to participate such as the link between cognition and motivation, and the translation approach are not relevant for this thesis. The general motivational theories are however relevant for this paper. Eccles and Wigfield’s (2002) give an overview of motivational theories in their article that has been cited 1401 times (scholar.google.se f). The number of citations that the article has received results in a conclusion that the discussion that is taking place in Eccles and Wigfield (2002) is accepted in the scien-
The article has received validation by empirical testing by other authors (e.g. Krabbendam & Aleman, 2003; Robbins et al., 2004; Low et al., 2005; Vansteenkiste et al., 2005; Kenney-Benson et al., 2006; Oyserman et al., 2006; Trautwein et al., 2006a; Trautwein et al., 2006b; Ang et al., 2007; Carver & Connor-Smith, 2010). With the number of citations and empirical testing that are present for motivational theories, the conclusion can be drawn that the theories are considered dominant.

2.8 HYPOTHESES

Based on the theories that are presented in the chapter, and also with the State-of-the-Art discussion, it is possible to derive seven hypotheses regarding different variables effect on Crowd-Participation in explicit Crowdsourcing.

2.8.1 MONETARY AWARD IN EXPLICIT CROWDSOURCING

The discussion regarding Monetary Awards as a motivational factor for Participation lifted the argument that: monetary incentives, such as winning award money, could work as a trigger, motivating the public to work (Lakhani et al., 2007). However Mason and Watts (2009) discussed how increased wages do not necessarily result in higher quality work. However, that specific argument was founded for the M-Turk platform, where respondents got paid based on the quantity of their work. For an explicit Crowdsourcing platform, where monetary reward is awarded to a winning solution, there should not be relation to lower quality work based on a potential high or low monetary reward, since a good quality product is more likely to be rewarded, than a low quality idea/product. Horton and Chilton’s (2010) discussion on monetary rewards, revolved around the fact that participants tended to set a target for what they wanted to earn and worked towards that goal. For a reward-awarding explicit Crowdsourcing platform, the arguments are applicable in the sense that the set goal of awards could be to become a winner, rather than a certain monetary amount.

Finally, Zheng’s (2011) study showed that the higher the potential monetary reward, the higher the number of offered solutions. Based on the discussions regarding Monetary Awards, the following hypothesis is derived:

**H1:** Monetary Awards have a positive effect on Crowd-Participation.
2.8.2 ATTENTION IN EXPLICIT CROWDSOURCING

It is stated in Huberman et al.’s (2009) article that, people that are contributing in communities are often contributing with private goods. Every so often the most valuable payment for these individuals is their peers noticing their contribution by clicking, sharing and watching their goods, resulting in people’s willingness to forsake monetary rewards as they search for status and Attention from other users. In Lakhani et al.’s (2007) article it is argued that reputation and career is important when there is a chance of gain Attention instead of another peer in the community. From the arguments above, the following hypothesis is derived:

**H2:** Attention has a positive effect on Crowd-Participation.

2.8.3 RECOGNITION IN EXPLICIT CROWDSOURCING

According to Huberman et al. (2009) another form of motivating people in Crowdsourcing is by allowing them to be recognized by their peers. Recognition originates from the desire of fame and esteem, which has a connection to the expected future outcome. It is possible to assume that individual believes that future status, or rewards, could be gained through being recognized by others in the community. Hars and Ou (2002) argued that individuals could be motivated by feedback from others, as the individual would feel recognized and therefore more willing to contribute. Zheng (2011) found that, if Crowdsourcing networks have a sponsor, then individuals could try to solve the challenge just to be recognized and appreciated by both the crowd and the sponsor. From the discussion on Recognition as a motivational factor, the following hypothesis is derived:

**H3:** Recognition has a positive effect on Crowd-Participation.

2.8.4 PROBLEM SOLVING IN EXPLICIT CROWDSOURCING

Regarding the discussion on Problem Solving as a variable for increased Crowd-Participation, Lakhani et al.’s (2007) study showed that for a specific implicit Crowdsourcing platform, the participant could experience satisfaction from solving a challenging task. Members can also be motivated by the essence of a competition in implicit Crowdsourcing as they have the possibility to beat other members. The reasons for Problem Solving working as an intrinsic motivation can be discussed based on the arguments of Schunk (1991). It is discussed how personal goals, which are set up by an individual for herself, work as motivators for performing a task, or learning something new. The personal goals work as an internal award for the partici-
pant once the task if complete. The personal goals are even more motivating dependent on if the task is deemed possible to complete by the individual.

Hars and Ou (2002) also discussed how personal goals could be linked to a specific behavior. Feelings of competence, fulfillment, and satisfaction can be derived from an individual perceiving a task to be solvable, challenging, and also later after solving the task. The ability to win a competition can also work as a goal for an individual, further motivation her to participate in a challenge.

From the discussion on Problem Solving, three concepts can be identified within the concept: Ability to solve a problem, Challenge of solving a problem, and a Competitions effect on participants motivation. Three hypothesizes can be derived when the arguments are applied to an explicit Crowdsourcing platform:

**H4:** The perceived Ability to solve a challenging task has a positive effect on Crowd-Participation.

**H5:** The Challenge of solving a problem has a positive effect on Crowd-Participation.

**H6:** The ability to win a Competition has a positive effect on Crowd-Participation.

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2.8.5 PEER PRESSURE IN EXPLICIT CROWDSOURING

Yet another topic that was discussed earlier in the Theoretical Framework was the effect of Peer Pressure on Crowd-Participation. Lerner and Tirole (2002) discussed how the ability to gain a reputation within a group of peers, combined with the inherited pressure from an individual’s peers, to solve a task could motivate Participation. The work pressure discussed in Lakhani et al.’s (2007) study does not apply for every explicit Crowdsourcing platform since the participants are not always employed to perform the task they are solving on a Crowdsourcing platform. However, there can be pressure derived from an individual’s peers in a community. Hars and Ou (2002) discussed how members of a community can feel a sense of belonging to a community, and thus might feel as if members of a community should help each other out by participating and giving feedback.

From adapting the arguments to an explicit Crowdsourcing platform, the following hypothesis is derived:

**H7:** Peer Pressure has a positive effect on Crowd-Participation.
The following model (figure 2:1) can be derived from the proposed relationships between the different variables and Participation.

**H1:** Monetary Awards have a positive effect on Crowd-Participation

**H2:** Attention has a positive effect on Crowd-Participation.

**H3:** Recognition has a positive effect on Crowd-Participation.

**H4:** The perceived Ability to solve a challenging task has a positive effect on Crowd-Participation.

**H5:** The Challenge of solving a problem has a positive effect on Crowd-Participation.

**H6:** The ability to win a Competition has a positive effect on Crowd-Participation.

**H7:** Peer Pressure has a positive effect on Crowd-Participation.
3.0 METHODOLOGY

The Methodology chapter presents the research process that took place in order to complete the thesis. The choices that were made are motivated and discussed in this chapter. There is also a description of the survey, and the case company, included in this chapter. A discussion regarding the reliability and validity of the results as well as the operationalization, which connected the theories to the questions in the questionnaire, is presented in this chapter.

3.1 ANONYMITY

Due to the participating companies, people and organizations’ wishes, the real names of the entities that contributed with information to this paper was kept anonymous. The community’s real name have been replaced with “Company X”. The company providing the software and the platform for Company X, was be referred to as “Company Y”. The authors’ of this thesis contact person was referred to as “Mr. R”.

3.2 QUANTITATIVE DESIGN

This thesis was written with a quantitative design, which according to Bryman and Bell (2007) means that it was built with linear process and a vertical structure. This refers to the structure and work process of the thesis, where one step follows the previous in a linear way. A quantitative design traditionally involves either numbers or frequencies to create a value that can be analyzed in order to find patterns. These patterns were the foundation for answering the hypotheses that the authors formulated in the Theoretical Framework. Christensen et al. (2001) argued that quantitative data is built on numbers and it focuses on quantity, amount, and frequencies by quantifiable variables. These variables can later be used to analyze objects and be worked on statistically. Christensen et al. (2001) state that the connection between different variables is the main goal with a quantitative study.

Since this thesis aimed to explore the connection between the independent variables presented (figure 2:1) and the dependent variable - Participation – on an explicit Crowdsourcing platform, there was a need to identify the variables and also test the relationship between them. Therefore a quantitative approach was deemed to be the best approach to find and test the given relationships. In order to test the relationship between the independent variables and the dependent variable – Participation -, seven hypotheses were devised and tested.
3.3 POPULATION AND SAMPLE

According to Bryman and Bell (2007), the population of a study is all the units that the research aims to investigate. The sample on the other hand is the part of the population that is being investigated and it is located/decided based on a devised sampling frame, which stands for the frame of all the units that the sample consists of. Christensen et al. (2001) states that the outline of the population/sample lays in the problem found for the research and the purpose.

3.3.1 POPULATION

For this specific paper the population was everyone that contributes with information to an explicit Crowdsourcing platform online. There are some criteria that the people have to fulfill in order to be considered to be included in the population. The criteria were that people had to have access to the Internet in some way, since Participation in an online explicit Crowdsourcing forum requires an Internet connection. There was also the need for basic computer knowledge, and skills in order to navigate, and participate in the online process. The population included everyone that participates in explicit Crowdsourcing with information sharing of some sort. In short, people are considered to be participants in explicit Crowdsourcing if they contribute with innovative ideas, if they give feedback, or if they discuss information on an explicit Crowdsourcing community.

According to Christensen et al. (2001) it would be difficult and costly to conduct a total population research, and this argument is applicable on this thesis. Since there is not list that features every member of the population. There are different explicit Crowdsourcing platforms online and it would be difficult, and costly to identify all the platforms, and then gather a list of their members. To survey all of the members would be even more costly and increase the level of difficulty greatly. Therefore there are ways of conducting a survey on a population by using a sampling frame in order to choose members of the population that should be surveyed.

3.3.2 SAMPLE

As argued in Bryman and Bell (2007): the sample is the part of the population that is being investigated. The sample should also be reflecting the population. The chosen sample for this thesis, was all the members of the explicit Crowdsourcing community Company X. Company
X is a company with around 3800 members (appendix II) and the company gave the authors of this thesis the permission to survey their members. The sample was in accordance with what Bryman and Bell (2007) argue to be a convenience sample, in the way that the company was chosen by the authors, and not based on any statistical sampling method. In the sense that not all members of the population had a possibility to be included in the sample, the method can be categorized as a non-probability sample.

3.4 THE CASE COMPANY

The design of this research shared some similarities with what is defined by many authors as a case study (e.g. Christensen et al., 2007; Yin, 2006; Bryman & Bell, 2007). Yin (2006) describes a case study as a suitable research method when the intention is to provide depth to the research. It is also appropriate to use when the case investigates an actual phenomenon in its existing context, or when the researcher tries to give an overviewing picture of one single unit or happening. It is stated in Bryman and Bell (2007) that the term case, is often associated with a workplace or an organization, which the researcher intensely studies to get a comprehensive view. According to Flyvbjerg (2006), case studies can be used to answer hypothesizes and they are not only a way to generate hypothesizes. He further states that there is not always a need to have several cases as in some scenarios one case can be enough. The major similarity between the traditional view of a case study and this thesis is that the thesis deals with one explicit Crowdsourcing community. The case of this thesis was Company X, and their network of around 3800 members. There was no investigation conducted on other Crowdsourcing participants than the members of Company X. Thus, this thesis did share similarities with a case study. Company X was found interesting due to their current business structure where the company uses Crowdsourcing as a method for developing and improving products and services (Company X.com).

In Bryman and Bell (2007) it is argued that what separates a case study from other research designs is the researchers’ interest to examine specific tendencies in a special case. In Christensen et al. (2001) a case study is describes as either an investigation in one specific time, or repeatable over time. With a case approach, the possibility of making the results statistically generalizable is difficult, because the researcher is not searching for a sample that is statistically representable. However it is possible to conduct an analytical generalizability and lift
general patterns and explain complex connections when discussing the findings. A case study is traditionally done with a qualitative approach (Yin, 2006), but this study contains quantitative data collection. Therefore the connection between various variables can be measured for this specific case since the causality between different variables is shown, which is one of the possibilities with a quantitative study (Bryman & Bell, 2007). These arguments are applicable to the research that has taken place in this thesis to the extent that: since the data collection is done on the members of one case company, the results cannot simply be transferred to every Crowdsourcing platform. This is the same reason as to why the studies conducted by Brabham’s on iStockphoto (Brabham, 2008b) and Threadless (Brabham, 2010) cannot be applied on the members of Company X.

In order to conduct the investigation on motivating factors for the crowd of an explicit Crowdsourcing platform, the authors deemed it necessary to find individuals that had participated in explicit Crowdsourcing. Thus the members of Company X were considered suitable, as they were argued to have firsthand knowledge of what motivates them to participate in explicit Crowdsourcing communities. The validity of the results could be argued to have become higher with the use of a case company instead of submitting the survey to various individuals without a guarantee of previous Participation in explicit Crowdsourcing. Investigating only the case of Company X does make the investigation somewhat narrow in the way that the research focuses on what the relevant motivating factors are for this specific explicit Crowdsourcing community. However, as other explicit Crowdsourcing communities ought to motivate their members in similar ways; the conclusions drawn from the members of Company X could be applicable to other communities with similar characteristics.

In extension, a set of questions were sent to the authors contact person - Mr. R, a QA analyst at Company Y - in order to get a background discussion to the Crowdsourcing community and how they operate in the market. This was done in order to get a deeper understanding of how Company X operate (appendix II).

3.5 PRIMARY DATA COLLECTION

From Bryman and Bell’s (2007) arguments it is possible to explain primary data as; data that is collected for a specific purpose by the authors that are going to use the data, i.e. it is not data that is collected by other authors, or entities for another purpose; rather the information is
collected for the specific purpose of the study. Christensen et al. (2001) state that there can be different kinds of primary data that can be gathered e.g. surveying attitudes or motives behind a behavior. The authors of this thesis argued that the collection of primary data was necessary to get fresh information specific for the working topic of this thesis, since the thesis was based on data on motivation behind a behavior; Participation.

### 3.5.1 SURVEY DESIGN

The primary data collection for this thesis was collected with the use of a questionnaire in order to survey the target population. According to Svenning (2003), surveys are often connected to human attitudes and patterns of behavior. Surveys are also a way to measure conditions in a population at a given point of time. Since the authors of this thesis wanted to measure the connection between various motivating factors and Participation in explicit Crowdsourcing, a survey was deemed to be a proper method for collecting primary data. Surveys were argued to be a good method of measuring the attitude of the public/workers/crowd towards the motivating factors and their connection to Participation in explicit Crowdsourcing. Surveys allowed the authors to collect information and analyze it with the use of the statistical program SPSS in order to find patterns and test the hypotheses.

According to Bryman and Bell (2007), a survey is a form with commonly closed questions that are answered by respondents, without any influence from an interviewer. Surveys are beneficial in the way that they are quick to administrate and they are a cheap method to collect information compared to other data collection methods. For this specific thesis, the authors wanted a high number of respondents from the sample of the explicit Crowdsourcing community. Therefore the authors thought it would be best to submit the survey online in order to allow the respondents the possibility to answer the questionnaire when they had time, and in a way that was fast, without the hassle of posting the survey back to the authors. Christensen et al. (2001) argue that some of the benefits associated with a web-based questionnaire are the low costs, simplicity of distribution, no processing of the answers, and the speed. Although Christensen et al. (2001) also discussed the disadvantages with a web-based survey, namely; the fact that respondents have to have access to a computer and the Internet, the respondents has to have a certain set of computer skills, and there is no way of monitoring who answers the survey. However, since the sample frame was an online explicit Crowdsourcing
community it was assumed that the respondents were experienced users of computers and digital programs so there should be little, or no, problem filling out the questionnaire online. The fact that it is difficult to tell whom the person answering the questionnaire is, happens to be a disadvantage that is difficult to overcome. However, for this thesis it was assumed that, since the questionnaire that was used (appendix IV) did not bring up a sensitive subject, there would not exist an apparent reason to hide one's identity other than mischief or concerns regarding privacy.

Before the questionnaire was published to the members of the case company, it was tested through a pilot study.

3.5.1.1 PILOT STUDY

Bryman and Bell (2007) argue that in regard to the design of a questionnaire, it is important to design it in a way that makes sure all the questions are formulated in a correct manner in order to avoid misleading or complicated questions. A pilot study was conducted in order to decrease missing data, to increase the response rate, to have an appealing layout, and also to decrease the possible confusion of the respondents. Christensen et al. (2001) argue that a pilot study is a way of testing the survey before it is distributed on a full scale to the sample. The pilot study for this particular thesis was sent out to 15 people, and feedback was retrieved on how to improve the form. The tutor and examiner of this thesis were included in the pilot study as well as other staff members of Linnaeus University that are experienced in devising surveys.

3.5.1.2 DESIGN OF THE QUESTIONNAIRE

The survey was designed in the web-based survey program Key Survey (keysurvey.com). According to Christensen et al. (2001), it is good to include an introducing text in the top of the questionnaire. Thus, before the respondents got to the questions in the survey there was a text explaining the purpose of the survey, who the authors of the thesis were, the assessed time it would take to complete the survey and contact information to the authors (appendix IV).

When constructing questions for a questionnaire it is important to make sure the questions that are featured are in accordance with the purpose (Christensen et al., 2001). An operationalization was done (appendix III) in order to make sure that the questions that were used had a theoretical connection and that they would fulfill the purpose.
The design of the questionnaire included a layout of three pages (appendix IV). The reason for the chosen design of the questionnaire was to have a layout that was spacious and easy to follow and read. The design was adapted based on feedback received from the pilot study. The independent variables were featured on pages two and three, lumped together based on theoretical category. Instead of naming the categories by the concept name – e.g. Monetary Awards for the hypothesis dealing with Monetary Awards – the categories were named part 1, part 2, and part 3 etc. in order to avoid influencing the respondents.

The first page of the questionnaire (appendix IV) included six questions dealing with demographic control variables that were formulated with either open-ended answers, check the boxes that apply, or either-or choices. The first page also included one question dealing with the dependent variable of Participation. Dependent of the answer to the first question dealing with the dependent variable - “Have you contributed with ideas or feedback to this community before” – the respondents would answer three following questions regarding the dependent variable, on the start of page two if they answered “yes”. If they answered “no”, they would jump to question ten.

On the second page of the questionnaire (appendix IV), nine statements dealing with control variables based on innovation and knowledge - with alternatives on a seven-point likert-scale - followed the questions dealing with the dependent variable (appendix IV). A likert-scale is commonly used to measure attitudes by taking a stand in regard to a given statement (Christensen et al., 2001). Christensen et al. (2001) argue that a likert-scale is usually built on an interval-scale, which means that there is a relationship with a given distance between the options that are given. For this particular study a likert-scale was concluded to be an appropriate way of having the respondents take a stand towards given statements of what motivated them to participate on the case company’s community. A seven-point likert-scale was used to give the respondents the possibility to have more variety in their options than a five-point scale would have given them. Further, a nine-point scale was argued to be excessive and would most likely have resulted in confusion by too many options for the specific statements.

The second page of the questionnaire (appendix IV) concluded with six statements divided into two parts, dealing with independent variables and alternatives on a seven-point likert-scale. The final page featured 20 statements - all with alternatives on a seven-point likert-scale - aimed at answering the independent variables that remained. At the bottom of the final
page the respondents were provided with the opportunity to add additional comments or thoughts in a free text area.

### 3.5.1.3 DISTRIBUTION OF THE QUESTIONNAIRE

The distribution of a questionnaire can be done in various ways e.g. through an e-mail, a link or published on a website (Christensen et al., 2001). The best alternative for this survey was argued to be through publishing a link to the case companies’ members. This was done by submitting a link to the questionnaire in an email to the authors’ contact person handling the contact between the case company and the authors. The community managers then sent an email where they asked their members to take part in the survey along with the link (appendix V).

The authors discussed whether or not to apply a restriction on how many times the questionnaire could be completed from each IP-address. By restricting a maximum of one completed survey from the same IP-address it would have been possible to reduce the risk of the same person filling out the questionnaire more than once. However, by preventing more than one completion of the questionnaire from the same IP-address some members might have been excluded from the survey since there might be more than one member of the case company in the same household. Thus, there was no IP-address limitation exerted.

In order to have a reminder, and also reach the members of Company X that did not check their email continuously, or did not use the email address which they had registered their account to; a reminder was posted in the forum of Company X (appendix VI). In the reminder there was a link that sent the members to the questionnaire along with information about the reason for the questionnaire and information about the authors of this thesis.

In order to try to make sure that as many members as possible was contacted and aware of the survey the authors of the thesis went through the most active members of the forum of Company X and sent a personal message from a registered account with the same text as in the forum post (appendix VI). The authors also went through the most active members followers and tried to randomly find members in order to reach as many members as possible.

### 3.5.2 CONTACT WITH MR. R

The contact person connecting the authors with Company Y and Company X was Mr. R a QA analyst at Company Y (appendix II). Mr. R acted as a middleman, handling information from
both parties in order to allow the questionnaire to be sent out. Further Mr. R agreed to answer a set of questions, which allowed the authors to gather information regarding the background of Company Y and Company X, and better understand how the two companies interact with each other. In order to gather information about Company Y and Company X, as well as general information of Crowdsourcing and the competitive field, the authors deemed it necessary to get the opinion of someone that could be argued to be an expert of the field of Crowdsourcing. Therefore, Mr. R was a suitable person to contact and gather information from, since he possessed hands-on information of the field of Crowdsourcing, and the two concerned companies.

Due to time limitation and the nature of the questions it was deemed best for both parties – Mr. R and the authors of the thesis – to send the questions that was originally intended to be the foundation for an interview, to Mr. R via email. This way of gathering the background data, allowed Mr. R to answer the questions to the best of his abilities when he had the time. According to Bryman and Bell (2007) this way of conducting data gathering negates the interviewers effect of the interviewee. Nevertheless, there are also negative effects of choosing this type of data gathering, e.g. it does not allow the persons gathering the data to ask follow-up questions if there are some matters that needs to be explored further (Bryman & Bell, 2007). However, due to the authors’ constant contact with Mr. R there was a continuous information flow between the two parties, which would have allowed follow-up questions to be gathered on a later occasion if it would have been needed. Thus sending the questions in an attachment via email was argued to be a sufficient information gathering method.

3.6 OPERATIONALIZATION

The operationalization aimed to show how the theory chapter is connected to the questions in the questionnaire. The most important facts from the operationalization are summarized below. Additional information such as coding, options, and the complete questions can be found amongst the appendixes (Appendix III; Appendix IV).
3.6.1 OPERATIONALIZATION TABLE

In the operationalization table, the operationalization is illustrated in order to give a clear connection between each question, theory and concept (Table 3:1).

<table>
<thead>
<tr>
<th>Concept</th>
<th>Type of Scale and its construction</th>
<th>Items used</th>
<th>Adopted from</th>
<th>Intent of question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td>6 items, with alternatives as, Open-ended questions, single choice.</td>
<td>(DM1) Age</td>
<td>Lakhani et al. (2007); Hars &amp; Ou (2002)</td>
<td>These questions were asked in order to investigate if members with different background participate in different ways.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(DM2) Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(DM3) Country of residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(DM4) Educational degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(DM5) Field of study</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(DM6) Field of employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solution Knowledge</td>
<td>3 items (statements) with alternatives positioned on a seven-point likert-scale.</td>
<td>(SO1) When I can help solve a problem.</td>
<td>Hars &amp; Ou (2002); Lakhani et al. (2007)</td>
<td>These questions tried to discover what type of information respondent contribute with. The term solution knowledge derived from von Hippel (1994; 2005)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(SO2) Knowledge required to solve a problem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(SO3) I know how to solve a problem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs Knowledge</td>
<td>3 items (statements) with alternatives positioned on a seven-point likert-scale.</td>
<td>(NE1) Find a solution to something that I, or someone else, needs.</td>
<td>Hars &amp; Ou (2002)</td>
<td>These questions tried to discover what type of information respondent contribute with. The term needs knowledge derived from von Hippel (1994; 2005)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(NE2) Alter an idea to fit my, or someone else’s, specific need.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(NE3) Existing products to meet existing needs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Innovation</td>
<td>2 items (statements) with alternatives positioned on a seven-point likert-scale.</td>
<td>(UI1) Feedback to others, want to use it.</td>
<td>Gruner &amp; Homburg (2000); Awa</td>
<td>These questions tried to discover why members contribute with different kind of information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(UI2) Feedback to others, intend to buy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The term user innovation was derived from (von Hippel 1988).

<table>
<thead>
<tr>
<th>Third Party Innovation</th>
<th>1 item (statements) with alternatives positioned on a seven-point likert-scale.</th>
<th>(TI1) Feedback/idea to problem I haven’t experienced myself.</th>
<th>Von Hippel (1998); Philipson (2010)</th>
<th>This question was adapted from von Hippel (1998); Philipson (2010) research. The question aimed to view how third parties can innovate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Participation</td>
<td>2 items with alternatives as multiple choices.</td>
<td>(TP1) Why participate.</td>
<td>Hars &amp; Ou (2002); Lakhani et al. (2007); Brabham (2008b)</td>
<td>There was a need to measure how Participation was effected by different motivating factors and therefore questions specified to define Participation as a dependent variable were used.</td>
</tr>
<tr>
<td>Participation</td>
<td>3 items (statements) different questions types with answers ranging from, Yes or No, checkboxes to multiple choices.</td>
<td>(PA1) Contributed before.</td>
<td>Hars &amp; Ou (2002); Lakhani et al. (2007); Zheng (2011)</td>
<td>There was a need to measure how Participation was effected by different motivating factors and therefore questions specified to define Participation as a dependent variable were used.</td>
</tr>
<tr>
<td>Monetary</td>
<td>3 items (statements) with alternatives positioned on a seven-point likert-scale.</td>
<td>(MN1) Win money.</td>
<td>Lakhani et al. (2007); Zheng (2011)</td>
<td>The questions were used in order to measure the effect of Monetary Awards on Participation. These questions were connected to hypothesis 1, and tested if Monetary Awards have impact on Participation.</td>
</tr>
</tbody>
</table>
| Attention               | 3 items (statements) with alternatives positioned on a seven-point likert-scale. | (MN1) Attention from outside Company X.                       | Lakhani et al. (2007) | The questions were used in order to measure the effect of attention on Participation. These questions were connected to hypothesis 2, and tested if at-
<table>
<thead>
<tr>
<th>CompX</th>
<th>Attention</th>
<th>tention has impact on Participation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC1</td>
<td>Recognition from within the Company X community.</td>
<td>Hars &amp; Ou (2002); Zheng (2011)</td>
</tr>
<tr>
<td>RC2</td>
<td>Recognition from outside the Company X community.</td>
<td>The questions were used in order to measure the effect of Recognition on Participation. These questions were connected to hypothesize 3, and tested if Recognition has impact on Participation.</td>
</tr>
<tr>
<td>RC3</td>
<td>Recognition from others is my greatest award.</td>
<td></td>
</tr>
<tr>
<td>PS1</td>
<td>Participating for the feeling of competence.</td>
<td>Hars &amp; Ou (2002); Lakhani et al. (2007)</td>
</tr>
<tr>
<td>PS2</td>
<td>Participating for the feeling of effectiveness.</td>
<td>The questions were used in order to measure the effect of the Ability of Problem Solving on Participation. These questions were connected to hypothesize 4, and tested if Ability has an impact on Participation.</td>
</tr>
<tr>
<td>PS3</td>
<td>Participating for the feeling of accomplishment.</td>
<td></td>
</tr>
<tr>
<td>PS4</td>
<td>I participate due to others suggestion.</td>
<td></td>
</tr>
<tr>
<td>PS5</td>
<td>Participation, important activity for myself.</td>
<td></td>
</tr>
<tr>
<td>PS6</td>
<td>Fun to contribute.</td>
<td>Hars &amp; Ou (2002); Lakhani et al. (2007)</td>
</tr>
<tr>
<td>PS7</td>
<td>Intellectual challenge</td>
<td>The questions were used in order to measure the effect of the Challenge of Problem Solving on Participation. These questions were connected to hypothesize 5, and tested if Challenge has an impact on Participation.</td>
</tr>
<tr>
<td>PS8</td>
<td>Enjoy coming up with ideas.</td>
<td></td>
</tr>
<tr>
<td>PS9</td>
<td>Try to beat others</td>
<td>Hars &amp; Ou (2002); Lakhani et al. (2007)</td>
</tr>
<tr>
<td>PS10</td>
<td>Because I already know the</td>
<td>The questions were used in order to measure the effect of the Competition of Problem Solving on Participa-</td>
</tr>
</tbody>
</table>
3.7 RESPONSE RATE AND MISSING DATA

According to Bryman and Bell (2007), the response rate is affected by a source of error and can occur due to respondents’ unwillingness to cooperate, an inability to locate the respondents, or by some mean the respondents are unable to leave a response. The response rate for this thesis was rather low, with 82 responses. From these answers, 73 meet the requirement of having participated before, which resulted in a response rate of 1.9% based on 82 responses divided on approximately 3800 that should have got the questionnaire- total completed questionnaires, and can be the cause of many different factors. It is possible that the members of Company X were simply unwilling to participate in a survey. Unwillingness to respond is possible rather difficult to combat as it could be based in members’ perceptions and attitudes toward surveys. It was thought that since the nature of the email that was sent out to the members (appendix V) was encouraging and urging, the response rate would increase. However, it is possible that the members of Company X had registered an email to their account that was not used frequently. The click-through rate was also rather low, which can be an indicator that not all of the community’s members read the email. In order to reach the members
through another channel, an open request – and reminder - was posted in the forum of Company X in order to get active members of the community to take the time to answer the questionnaire. Although posting in a forum of a community with the characteristics of Company X does not guarantee a high response rate. Every member of the crowd will not read a post in a forum; rather it is the most active members that are most likely to read posts in a forum. Thus the post was most likely mostly a reminder noticed by the most active members of the community that also was most likely to have received the email.

The argument of Bryman and Bell (2007) pointing to how an inability of locating respondents could be a contributing factor to a low response rate of a questionnaire, are applicable for this thesis. It was initially thought that since the authors of the thesis chose to use a case company in order to get a complete list of active explicit Crowdsourcing participants, there would be a complete list of updated contact information to all the members of the community. Nevertheless, if the members of Company X registered an email address, which was not used often, and they were not frequent participants in the forum they were most likely not contacted. Thus, if this was the case for the members of Company X, there was a high probability that a large portion of the members were not contacted. There is no way of checking if the email sent by Company X to their members was read, or even opened, and therefore this could be a likely contributing factor to the low response rate. The nature of the members of Company X might be that the members log on every now and then to check the latest ideas, or post own ideas, or maybe just cast a vote.

Respondents’ inability to answer is something that should not have been a contributing factor to the low response rate of the survey. Unless failing to receive the request for the members to take part of the survey in included in the definition of inability to answer, the respondents should have had no problems filling out the questionnaire once they had received the email. It could be possible that the members of Company X opened the email and did not have time to answer the survey at that time and then forgot– or did not care – to answer the questionnaire on a later occasion.

The design of the survey was divided into three parts, where one part was not accessible by the respondent until the respondent clicked next on the bottom of each part. Therefore the amount of questions should not have decreased the number of respondents, based on the number of click-through clicks, and responses. There were 20 questionnaires that were not completed, where the respondents had stopped filling in the questionnaire before it was com-
pleted. It is possible that the number of incomplete questionnaires was affected by the amount of questions in the questionnaire. However, in order to get results for the hypotheses, the questions that were used were argued to be necessary to get sufficient results.

According to Christensen et al. (2001) it is important to take response rate into consideration since there is no clear evidence if the part of the population that did not participate in the study, differs from the ones that did participate. Further, if there were a low response rate, it would indicate that results from the respondents do not reflect for the entire population. Christensen et al. (2001) go on by stating that if the missing data is high this might lead to misguided results. That is why it is important to analyze missing data, to see and find these differences between the ones that answer and the ones that have not. They also state that the missing data often is connected to the engagement in the research of the respondents. According to Mr. R (appendix II), Company X has around 3800 registered accounts. From the arguments of Christensen et al. (2001), it can be assumed that it is the 300-400 members of the 3800 that are likely to respond to a survey.

3.8 RELIABILITY

According to Bryman and Bell (2007), reliability concerns the questions of whether or not the results of a study are repeatable. Christensen et al. (2001) state that reliability is important to show that research is not built upon random samples. Yin (2006) states that reliability in a case study takes more time and needs more attention than a regular study. However, since this thesis did not follow a qualitative design, all of the reliability measures of a case study are not all relevant for this thesis. The data collection stage was of importance for this thesis since this is where it was decided to what degree a study is replicable (Yin, 2006). It can be important to add that, the thesis would not be replicable for another case, but for exactly the same case. In this thesis there were no part of contacting the case company, get them to deliver the questionnaire, or collecting the data that would not be repeatable. Every step should be clearly stated in the Methodology chapter and easy to repeat. The major issue with reliability for this thesis was the answers from the members of Company X, since the members can change depending on when the study is repeated. The questionnaire was sent out to the around 3800 members of Company X, and as the site grows in the future, the members may change, and the attitude of the members may also change over time. This is however an issue that all ad hoc studies have to deal with.
Regarding the questionnaire that was used; it is possible for anyone to become a member on the webpage Key Survey with an email address, and Key Survey’s members’ gets a 30 days free trial (keysurvey.com). There are also guides of how to use and make a survey and therefore there should be no problem to do an exact copy of the questionnaire that was used in this thesis. The questions and layout used for the questionnaire can also be found as an appendix (appendix IV) in order to increase the reliability of the thesis. The program SPSS was used in order to conduct the data analysis. How the data was coded was discussed and explained in a thorough way in the operationalization text of this thesis.

First of all, all of the questions that were aimed at representing a specific concept were tested together after computing the variables in SPSS. Afterwards, a reliability test was conducted in order to get the cronbach’s alpha value, which showed if the questions could work together in order to represent a concept that was needed to answer the hypotheses (Bryman & Bell, 2007).

According to Bryman and Bell (2007) the most important aspect to consider when it comes to reliability in a quantitative study is the consistency of a measure of a concept, which in turn stands for repeatability, i.e. if the study can be repeated with the same results. A cronbach’s alpha coefficient was something that could help determine the reliability of the thesis. This coefficient is accepted when it is higher than .6 but should preferably be higher than .7 (Bryman & Bell, 2007). Every hypothesis in this thesis, except for one, got a result over .6, which means that they received a high reliability.

3.9 VALIDITY

Regarding the validity of the results of this study there are some aspects that should be raised. It is important to keep in mind the fact that for quantitative studies, the term validity refers to if the measure for a concept does in fact measure what it intends to measure (Bryman & Bell, 2007). In order to make sure that each question measure what it intends to measure an operationalization was conducted to connect the relevant theories to each question. Most of the questions, specifically the question regarding the independent- and dependent variables, were adopted from other researchers’ previous research on motivating factors.

There are some aspects that might have affected the results of the study. For instance, there was no limitation on the number of questionnaires that could be filled out from the same IP-
address. Thus there was no way of determining if the same person took the survey more than once. This was an issue that the authors were aware of and after a discussion it was determined that the possibility of having more than one member being connected through the same IP-address was too big to exclude these members. Nevertheless, the fact that there was no way of determining who really filled out the survey did have a negative effect on the validity of the results.

The steps that were taken in order to improve the questionnaire ought to have increased the validity of the results. The collection of feedback from the pilot study regarding the questions formatting, the layout, the formulation, and the questions that were used should have worked in preventing the mistakes that were discussed by Christensen et al. (2001).

The way in which the questionnaire was distributed to the respondents is argued to increase the validity of the results. The fact that the community managers of Company X sent out an email to every member of the community where they urged the members to participate should have had a positive effect on the respondents desire and level of seriousness when answering the questionnaire (appendix V). The possibility that the respondents would have dismissed the survey would most likely have been bigger if the authors would have sent a link themselves. Further, the fact that there was contact information and a link to the Linnaeus University’s website could have had a positive effect on the respondents’ perception of how valid the study was. However, the fact that the email came from Company X could also have had negative effects on the responses of the respondent. The respondents might have glorified their answers and thus not given righteous answers.

In order to determine the face validity of the research - which refers to if the information in a measurement can reflect the concept (Bryman & Bell, 2007) - is affected by the received help and feedback from the tutor, examiner and seminar group of this thesis. The questions, operationalization and survey went through several seminars, pilot studies, and tutoring to make sure that the face validity would be increased.

3.10 HYPOTHESIS TESTING

In order to test the seven different hypotheses, the authors of the thesis decided to conduct reliability testing for the concepts that were included in the hypotheses. At least three questions were asked for each concept. There was one concept – independent variable – and one
A dependent variable in each of the hypotheses. According to Bryman and Bell (2007), a cronbach’s alpha value over .6 indicates that the questions that were used to reflect a concept are reliable. Thus a reliability test presenting a cronbach’s alpha value was conducted for each of the concepts. There was one concept - Monetary Awards - that did not get a value above .6 and thus the authors deemed it necessary to use only two of the three items – questions - for that specific concept in order to get at least the recommended cronbach’s alpha value.

When the cronbach’s alpha value was determined, the relevant questions were put together and computed into one variable for each concept. When it came to testing to what degree the hypotheses could be answered, there was a regression test conducted. A regression test gives values of R Square, b, and significance of the connection between the dependent and the independent variable (Bryman & Bell, 2007). The regression test was a linear regression with all seven independent variables put against the dependent variable. The R Square value showed how, and to what degree the independent variables affected the dependent variable.

A b value can be looked at in order to see if hypotheses are confirmed or dismissed (Bryman, & Bell, 2007). The value showed if there was a positive, or negative relationship between the variables. There were also significance – sig. - values present in the regression analysis. If the sig. value was below .05 the results are significant enough to be generalizable to the case company (Bryman & Bell, 2007).
The data analysis chapter presents the gathered data from the questionnaires that were sent to the members of Company X. The chapter starts with frequency tables showing demographic data, and also presents tests for cronbach’s alpha and linear regressions, measuring the hypotheses that were derived from the Theoretical Framework. The data was tested in the statistical program SPSS.

LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
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<td>Descriptive Data</td>
<td></td>
</tr>
<tr>
<td>4.1.1</td>
<td>Descriptive Demographic Data</td>
<td></td>
</tr>
</tbody>
</table>

4.1 DESCRIPTIVE DATA

4.1.1 DESCRIPTIVE DEMOGRAPHIC DATA

The number of respondents that filled in the questionnaire was 82. However, only 73 of these respondents answered that they had participated in Company X with information before, and thus only these respondents were interesting to investigate in the tests that was ran.

Frequency tables were conducted in SPSS in order to get information about the demographics, and more specific about the questions that were asked about these aspects. Descriptive tests were performed to get an overview of demographic questions.

All of the following demographic statistics can be found amongst the appendices (appendix VII). On the first demographic question – DM1 -, the results showed a spread in the age groups of respondents, varying between 1949 and 1990. One cluster of different age groups was found in the data which where people born between, 1960-1970. On the second demographic question - DM2 -, the respondents were asked if they were male or female. The results show that 75.3% of the respondents that contributed were male, and 24.7% were female. After the question concerned with gender, the respondents were asked to answer in what country they were currently residing - DM3 -and 78.1% were residing in the United States, 8.2% of the respondents were from Canada and 13.7% were from other countries. Question number four focused on what level of degree the participant had - DM4-. The results showed that 11% has a degree from grammar school, 15.1% associate degree, 5.5% doctoral degree,
13.7% other degree, with the biggest portion of 54.8% holding a university degree. From the question of what field the participants had studied in school – DM5 -, three fields of study had a higher percentage than the rest; economics 6.8%, psychology 8.2%, and engineering 16.4%. The last demographic question – DM6 - was concerned with what field the respondent was currently employed in. The results showed that a somewhat higher percentage of participants – 9.6% - were employed in the data/it field, and 11% in technical work. The other fields of employment were evenly divided amongst the remaining alternatives.
Table 4:1 – Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO1</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>5.07</td>
<td>1.751</td>
</tr>
<tr>
<td>SO2</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>4.53</td>
<td>1.733</td>
</tr>
<tr>
<td>SO3</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>5.26</td>
<td>1.642</td>
</tr>
<tr>
<td>NE1</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>4.97</td>
<td>1.795</td>
</tr>
<tr>
<td>NE2</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>4.60</td>
<td>1.762</td>
</tr>
<tr>
<td>NE3</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>4.23</td>
<td>1.940</td>
</tr>
<tr>
<td>UI1</td>
<td>72</td>
<td>1</td>
<td>7</td>
<td>5.56</td>
<td>1.443</td>
</tr>
<tr>
<td>UI2</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>5.33</td>
<td>1.546</td>
</tr>
<tr>
<td>TI1</td>
<td>73</td>
<td>1</td>
<td>7</td>
<td>4.58</td>
<td>1.810</td>
</tr>
</tbody>
</table>

As seen in the table above, all the questions for Solution knowledge - SO1, SO2, SO3 - had 73 responses. SO1 had a mean of 5.07 and a standard deviation 1.751. The second question, - SO2 - got a mean of 4.53 and a standard deviation of 1.733. The last question for Solution knowledge - SO3 - got a mean of 5.26 and a standard deviation of 1.642.

There were also three questions for Needs knowledge -NE1, NE2, NE3- which were all answered by 73 respondents and the first question - NE1 - got a mean of 4.97 and a standard de-
viation of 1.795. The second question - NE2 - got a mean of 4.60 and a standard deviation of 1.762, while the last question - NE3 - got a mean of 4.23 and a standard deviation of 1.940.

User innovation had two question connected to it - UI1, UI2 -. The first question - UI1 - had 72 responses and a mean of 5.56 and a standard deviation of 1.443. The second question had 73 respondents and a mean of 5.33 and a standard deviation of 1.546.

The last part of the table handled Third party innovation - TI1 - and this question had 73 responses a mean of 4.58 and a standard deviation of 1.810.

4.3 CRONBACH’S ALPHA

Different test were made to be able to show that the different questions were working together and could answer the hypotheses. A reliability test was made for each hypothesis and the questions behind the concept that was used to determine the hypothesis was also tested to see how they interacted and to what degree the questions reflected the concept. The test that was conducted was a cronbach’s alpha test. According to Bryman and Bell (2007), the cronbach’s alpha value should be above .6, in order to show that the questions are representing the concept. When the value of a cronbach’s alpha test is over .7 it is excellent.
Table 4:2 – Cronbach’s Alpha

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Cronbach’s Alpha</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monetary Award</td>
<td>.763</td>
<td>2</td>
</tr>
<tr>
<td>Attention</td>
<td>.696</td>
<td>3</td>
</tr>
<tr>
<td>Recognition</td>
<td>.865</td>
<td>3</td>
</tr>
<tr>
<td>Problem Solving - Ability</td>
<td>.670</td>
<td>5</td>
</tr>
<tr>
<td>Problem Solving - Challenge</td>
<td>.746</td>
<td>3</td>
</tr>
<tr>
<td>Problem Solving - Competition</td>
<td>.713</td>
<td>3</td>
</tr>
<tr>
<td>Peer Pressure</td>
<td>.757</td>
<td>6</td>
</tr>
</tbody>
</table>

4.4 REGRESSION ANALYSIS

Regression analyses were conducted for each of the hypotheses and the test showed three important values: R Square, b value, and the sig. value. From the arguments of Bryman and Bell (2007) it is possible to find definitions of the values. First of, the R Square explains how much the independent variables can explain the dependent variable. The second value is the b – beta – value, which stands for the positive or negative gradient of a curve i.e. words how much the dependent variable is affected by the independent. The last value that is important is the sig. value, which stands for if the answers can be generalized to the population. This value should be below 0.05 - 5% -.

There were comments left in the “Additional Comments” field at the end of the questionnaire (appendix IV). The comments can be found in the appendixes (appendix VIII).
As seen from the table below, the hypotheses got an R Square value of .427, which means that the hypotheses, or the independent variables, could explain 42.7% of the dependent variable.

Table 4:3 – Regression Analysis

Model Summary

<table>
<thead>
<tr>
<th>Model</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>.653&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.427</td>
<td>.361</td>
<td>1.437</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), PPH7, PSH6, PSH5, MNH1, RCH3, PSH4, ATH2

Coefficients<sup>a</sup>

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-2.426</td>
<td>1.361</td>
<td>-1.782</td>
</tr>
<tr>
<td></td>
<td>MNH1</td>
<td>.177</td>
<td>.079</td>
<td>.265</td>
</tr>
<tr>
<td></td>
<td>ATH2</td>
<td>-.107</td>
<td>.079</td>
<td>-.218</td>
</tr>
<tr>
<td></td>
<td>RCH3</td>
<td>-.004</td>
<td>.060</td>
<td>-.009</td>
</tr>
<tr>
<td></td>
<td>PSH4</td>
<td>.102</td>
<td>.057</td>
<td>.223</td>
</tr>
<tr>
<td></td>
<td>PSH5</td>
<td>.188</td>
<td>.073</td>
<td>.289</td>
</tr>
<tr>
<td></td>
<td>PSH6</td>
<td>-.127</td>
<td>.061</td>
<td>-.244</td>
</tr>
<tr>
<td></td>
<td>PPH7</td>
<td>.130</td>
<td>.043</td>
<td>.350</td>
</tr>
</tbody>
</table>

<sup>a</sup> Predictors: (Constant), PPH7, PSH6, PSH5, MNH1, RCH3, PSH4, ATH2
4.5 CONCEPTS

4.5.1 MONETARY AWARDS

For the concept of Monetary Awards, the cronbach’s alpha showed a value below .6 when all three questions were used to check the reliability of the concept. When one of the items - MN2 - was subtracted from the formula, the cronbach’s alpha value rose above the recommended .6. It can be argued that a rule of thumb is to use at least three questions in order to determine each variable, but in order for the reliability value to be above the recommended value by Bryman and Bell (2007), it was argued necessary to use only two of the three questions dealing with the concept of Monetary Awards.

The independent variable Monetary Award - MNH1 - was tested against the dependent variable Participation. The regression analysis gave a b value of .177. The significance for the hypothesis was .029.

73 respondents answered the question and the two items that should stand for the hypothesis had a cronbach’s alpha value of .763 when a reliability test was made.

4.5.2 ATTENTION

The independent variable Attention - ATH2 - was tested against the dependent variable Participation. The regression analysis gave a b value of -.107. The significance for the hypothesis was .179.

73 respondents answered the question and the three questions that should stand for the hypothesis had a cronbach’s alpha value of .696 when a reliability test was made.

4.5.3 RECOGNITION

The independent variable Recognition - RCH3 - was tested against the dependent variable Participation. The regression analysis gave a b value of -.004. The significance for the hypothesis was .948.

73 respondents answered the question and the three questions that should stand for the hypothesis had a cronbach’s alpha value of .865 when a reliability test was made.

4.5.4 PROBLEM SOLVING
The independent variable of Ability under Problem Solving - PSH4 -, was tested against the dependent variable Participation. The regression analysis gave a b value of .104. The significance for the hypothesis was .082.

73 respondents answered the question and the three questions that should stand for the hypothesis had a cronbach’s alpha value of .670 when a reliability test was made.

The independent variable of Challenge under Problem Solving - PSH5 -, was tested against the dependent variable Participation. The regression analysis gave a b value of .188. The significance for the hypothesis was .013.

73 respondents answered the question and the three questions that should stand for the hypothesis had a cronbach’s alpha value of .746 when a reliability test was made.

The independent variable of Competition under Problem Solving - PSH6 -, was tested against the dependent variable Participation. The regression analysis gave a b value of -.127. The significance for the hypothesis was .043.

73 respondents answered the question and the three questions that should stand for the hypothesis had a cronbach’s alpha value of .713 when a reliability test was made.

4.5.5 PEER PRESSURE

The independent variable Peer Pressure - PPH7 - was tested against the dependent variable Participation. The regression analysis gave a b value of .130. The significance for the hypothesis was .003.

73 respondents answered the question and the three questions that should stand for the hypothesis had a cronbach’s alpha value of .757 when a reliability test was made.
### Table 4.4 – Hypotheses Results

<table>
<thead>
<tr>
<th>Hypothesis No.</th>
<th>Hypothesis</th>
<th>B value</th>
<th>Sig.</th>
<th>Supported/Not supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Monetary Awards have a positive effect on crowd-participation</td>
<td>.177</td>
<td>.029</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Attention has a positive effect on crowd-participation.</td>
<td>-.102</td>
<td>.179</td>
<td>Not supported</td>
</tr>
<tr>
<td>H3</td>
<td>Recognition has a positive effect on crowd-participation.</td>
<td>-.004</td>
<td>.948</td>
<td>Not supported</td>
</tr>
<tr>
<td>H4</td>
<td>The perceived ability to solve a challenging task has a positive effect on crowd-participation</td>
<td>.102</td>
<td>.082</td>
<td>Not supported</td>
</tr>
<tr>
<td>H5</td>
<td>The challenge of solving a problem has a positive effect on crowd-participation</td>
<td>.188</td>
<td>.013</td>
<td>Supported</td>
</tr>
<tr>
<td>H6</td>
<td>The ability to win a competition has a positive effect on crowd-participation</td>
<td>-.122</td>
<td>.043</td>
<td>Not supported</td>
</tr>
<tr>
<td>H7</td>
<td>Peer Pressure has a positive effect on crowd-participation.</td>
<td>.130</td>
<td>.003</td>
<td>Supported</td>
</tr>
</tbody>
</table>
5.0 DISCUSSION & CONCLUSION

The discussion chapter presents a discussion of the results from the Data Analysis chapter. The hypotheses are discussed based on the results and the theories. A general discussion is also provided when discussing terms such as innovation, and different types of knowledge.

5.1 EXTRINSIC CROWDSOURCING

When discussing the different motivating factors – concepts – that were investigated through the questionnaire, it is easier to divide the discussion into the extrinsic- and intrinsic motivating factors. Firstly, the extrinsic factors – Monetary Awards, Attention, and Recognition – will be discussed.

5.1.1 MONTEREY AWARDS

Both Zheng (2011) and Lakhani et al. (2007) state that the possibility to get a Monetary Award/reward will increase the Participation of members or actors in Crowdsourcing. In the survey that was conducted in this thesis, the hypotheses regarding Monetary Awards received a b value of .177, indicating that there is a positive incline for the concepts effect on Participation. For an explicit Crowdsourcing community it is possible that the attraction of being able to get a Monetary Award is what initially appeals to members. An extrinsic motivation of this nature is a form of award that can be received and physically noticed by the recipient. The sig. value indicated that the results could be significant, and it is possible to draw conclusions from the values. Monetary Awards can be argued to be something that will always motivate people. The possibility to make easy money is something that probably would motivate a lot of people. No matter what incentives there are with a task, the possibility to make money will most likely always be a benefit that people would value. This is no different from implicit Crowdsourcing communities, although the nature of the community might be more competitive and more value might be motivating in other ways. Perhaps it is more the main focus of an implicit community than an explicit community, since there is no need to help others, or collaborate.

The amount of money that would be received is not surveyed in this thesis, but could change the results. Zheng’s (2011) argued that the higher the Monetary Award, the higher number of participants there would be. It is possible that the high amount of possible earnings on Company X is what initially attracts members. However, due to the nature of Company X, the
members cannot be sure of what amount of money they could receive since there is no fixed value that winners would receive. The possibility to get a high Monetary Award is present, and the hope might reside within many members. The possibility to make money is probably one of the most attracting aspects of the community, but what makes them stick around could be different. Due to the low response rate, and the number of assumed active members it is possible that members do not receive Monetary Awards in their first couple of tries, and do not value the other aspects of community. The members that stay active seem to have high regards of the community, and some of them might even have earned money.

Mason and Watts (2009) argued that from their study on the M-Turk platform; a high financial reward would not guarantee a high quality product. How the amount of the award affects the quality of work on Company X is difficult to say. What constitutes a high quality idea could be interesting. It would not be the amount of time put into the idea, since a good idea might spring from a single moment, therefore the amount spent on the community would not decide the quality of an idea. For Company X, if an idea is of a higher quality than others, it is more likely that the idea will earn money and thus the arguments of Mason and Watts (2009), which focused monetary exchange from completing a task, would not be applicable. However, this is not tested, it is merely speculation.

5.1.2 ATTENTION

From the empirical data gathering it is shown that the questions that were representing the concept of Attention had a value, which showed that the questions are reflecting the concept. The b value showed that there was a negative relationship between the independent, and dependent variable. The results are interesting, but of course due to the small amount of respondents the results could differ if there was a greater number of respondents. The sig. value was too high to be able to say that the results were significant.

It is possible that the arguments of Huberman et al. (2009), which argue that people see attention as a sort of payment for their contributions, are applicable on this thesis. However, the b value indicated that attention had a negative effect on Participation, so it is impossible to say based on this survey. The arguments of Lakhani et al. (2007), referring to people being motivated to participate and gain attention, if their lack of Participation would result in someone else gaining the attention instead, are interesting to discuss. It could be that if this result would be the same if a larger population was surveyed, this could be the cause of people not having a selfish attitude on a collaboration focused community such as Company X. In this commu-
nity it might not be the attention that people seek, thus people would not be bothered if some-one else got attention. However, due to the high sig. value, and low number of responses, this is not determined.

### 5.1.3 RECOGNITION

From the results of the survey it is possible to identify a slight tendency to there being a nega-tive relationship between Recognition and Participation. I.e. Recognition does not have a pos-itive effect on Participation, according to this study. However, the results are not significant due to a high sig. value, so the results should be applied with caution.

The argument from Hars and Ou (2002), discussing how feedback could be one sort of pay-ment that motivates people to participate, is not proven from the results. The authors of this thesis thought that the members of Company X would be motivated by gaining feedback from other members, since an explicit Crowdsourcing community is collaboration based. However, due to the low sig. value, this might still be the case, but there is a need for further investiga-tion. Although, if the results would be the same with a higher number of respondents, it could be that members of Company X are acting rather selfless, and are very motivated by the pos-sibility to help others. It is also possible that the only extrinsic motivation that is required for an explicit Crowdsourcing community is Monetary Awards.

### 5.2 INTRINSIC CROWDSOURCING

For the discussion on the intrinsic motivating factors, there were two major concepts that were investigated: Problem Solving, and Peer Pressure.

#### 5.2.1 PROBLEM SOLVING

The concept of Problem Solving was tested in three different parts, with three different hypothesize, and therefore it will be discussed in three separate parts: Ability, Challenge, and Competition.

##### 5.2.1.1 PROBLEM SOLVING: ABILITY

There were five questions used for hypothesis number four, and the questions showed to re-flect that part of the concept based on the cronbach’s alpha value of .670. There was a posi-
A positive relationship between the hypothesis dealing with a person’s perceived ability to solve a task, and Participation. The sig. value was slightly to high to be deemed significant, standing at a 0.082, and therefore the discussion should be taken with restraint.

The arguments found in Lakhani et al. (2007), based on research conducted on an implicit Crowdsourcing platform, are applicable to this explicit Crowdsourcing community in some sense. The people that are involved in Company X do most likely experience feelings of delight when they are able to solve a task that they deem challenging. If the goal that the individual perceives to gain once the task is completed is attractive for the individual, and the individual perceives it realistic to complete the task, it will motivate the individual to participate. What the individual’s inherent goals are can be discussed in the way that they might be personal goals, competitiveness, or they might be in accordance with a person's perceived ability to solve a task. The members of Company X are most likely perceiving a rather high likelihood of having their ideas become a top pick due to the many phases that are occurring, and also the fact that there are constantly new themes introduced. The process is probably perceived as democratic and fair due to the many different areas of input, judging, and voting and thus the members feels there is a possibility to have an idea being chosen as a top pick.

5.2.1.2 PROBLEM SOLVING: CHALLENGE

When it comes to the part of Problem Solving that deals with the Challenge of solving a task’s effect on Participation, the fifth hypothesis is the hypothesis of importance. From the results of the collect data it is possible to identify a positive relationship between the challenge of solving a task and Participation. It is also possible to generalize the results to the Company X community, based on the sig. value. Hars and Ou (2002) discussed how an individual’s satisfaction could be increased once a task is completed, if the task is challenging. The feelings that a member of Company X might gain if their idea is voted as a top pick from either the crowd, or panel of experts, would be greater if the person thought it challenging to be able to become a top pick. The different phases, number of ideas that are submitted, and the overall challenge of coming up with a plausible and marketable idea, does increase the level of challenge for a community of this nature. Thus, the goal of becoming a top pick is probably deemed as challenging enough to be enticing for the members.

5.2.1.3 COMPETITION
The sixth hypothesis is rather interesting in the way that it differs from the other two hypotheses dealing with the concept of a Competition in Problem Solving. The questions that were used for this specific part of the concept do have a value that makes them analyzable. What differs is the negative relationship between the ability to win a competition and Participation in explicit Crowdsourcing. The results showed a sig. value that makes the results significant, and thus there are some implications that are interesting.

The fact that other studies have shown that the winning a competition, or beat other competitors has a relationship to Participation that is positive, is rather interesting. It is interesting because this survey found a negative relationship between Competition and Participation. On implicit Crowdsourcing platforms the nature of the community is most likely more competitive than on an explicit Crowdsourcing community. If the contributions are implicit, members might perceive the process as being a competition. In explicit Crowdsourcing however, there is constant collaboration between the members. A member of Company X is not likely to look at the situation as being her against the rest of the members. It is more likely that the person looks as the community as being a teamwork-oriented process, since the concept is based on collaboration between members. The nature of the people taking part of explicit Crowdsourcing would be very different if the members looked at the situation as being a competition between everyone. The contributions would not be as good due to lack of input and feedback from others. As discussed in the Introduction chapter, the gathered wisdom of a large group of people is going to be better than the wisdom of one individual. The members of Company X do probably view the community as being rather helpful, friendly, and positive, something that is reflected in the comments left in the questionnaires (appendix VIII). The perspective of competition and teamwork is probably one of the major differences in how people are motivated in implicit-, and explicit Crowdsourcing communities.

### 5.2.2 Peer Pressure

From the cronbach’s alpha value it is apparent that the concept of Peer Pressure can be reflected in the questions that was asked in the questionnaire. Since the results show a sig. value that allows for generalization, and a positive relationship between the concept and Participation, Peer Pressure can be argued to be a relevant motivating factor for Participation in explicit Crowdsourcing. It is interesting to discuss the difference between the negative relationship between the Problem Solving concept dealing with members’ motivation to participate in a competition, and the motivation of Peer Pressure. Since the members of Company X do not
feel motivated by competing with each other, the effects of Peer Pressure could be stronger due to the nature of the community, and explicit Crowdsourcing. Lakhani et al.’s (2007) arguments on the pressure to participate due to colleagues are not applicable unless the view of the members of Company X is that they are a team, or colleagues in a sense. If a team member expects a person to help out, or to draw his straw to the stack, a person will probably be more motivated to contribute. The arguments of Hars and Ou (2002) referring to how people feel a sense of belonging to a community are applicable to Company X. From the results of the survey, and the answers left in the additional comment field (appendix VIII) it is apparent the members feel a sense of belonging to the Company X community. The feeling of belonging is probably important in order to be able to have constant collaboration, and people helping each other out by providing feedback and input to others ideas. If the members did not feel a sense of belonging to the community, they would most likely not feel the need to help others within the community. Rather they would do their best to best the others by having the best ideas. In Company X there is a sense of competition since there is a panel of judges – experts – and voting taking place, but what makes the collaboration and helping out possible, is the nature of the explicit Crowdsourcing community.

5.3 INNOVATIONS

The results from the questionnaire dealing with the sources of innovation, and the different types of knowledge are rather interesting to discuss. From the results of the questionnaire it is shown that both potential users of the ideas that are thought of by the members of Company X, and people with third party relationships with the ideas possess both needs- and solution knowledge. The main focus of the survey was not to investigate this area; it was more to get an idea of if there is a need to investigate this further. Von Hippel’s (1988) arguments that alternative sources of innovation can be implemented in the innovation process seem to have been capitalized on in Crowdsourcing communities. Users could be implemented in a participatory way, which is one of the ways of implementing users discussed by Kaulio (1998). The members of Company X have the possibility to both recognize a specific need, and come up with the solution to the need. The relationship between the innovator and the innovation is not static. The relationship might be that the innovator is a potential user of a product in one instance, and a third party in another instance.
The results show that there is a positive relationship between needs- and solution knowledge. From this result it is possible to speculate if this is because on Company X, the innovator usually have both types of knowledge, but not the connections or drive to manufacture and distribute the products by themselves. Company X allows their members to get an idea to the market with minimal effort, which does encourage easy innovations. The result of a process such as the one on Company X is that the stickiness of the information is rather low. There might be big potential in investigating this phenomenon of different types of innovation further.

The discussion of innovation and types of knowledge is interesting, but should be read with caution. There is a need to further test these relationships, as this thesis only showed a tendency towards this phenomenon; further testing is needed to validate the discussion.

5.4 DISCUSSION OF DEMOGRAPHIC DATA

It is quite interesting that the respondents on Company X are spread over different age groups. The oldest participants were around 60 years old, and the youngest 20 years old. Not shocking was the fact that the largest amount of users of the community were from United stated because the site is from the U.S and the language of the community is English. It was a little bit surprising that 75, 3% were men and only 24, 7% women that responded to the questionnaire. It could be as so that the high percentage of men in the questionnaire, reflects the in what fields of work and education the participants have. The results show that the respondents are mostly employed in technical work or data/it with a university degree with specialization in economics, engineering or psychology. The high number of respondents with an education in psychology is hard to find any real explanations for. It could be that the somehow low number of respondents could make it possible for one field to become more exposed in the data than the group in fact is within the community. On the other hand, people with a psychology education are maybe interested in collaborating with others peers and innovate products and services. However, we find more support to the fact for the participants that hold a university degree from economics or engineering, who are working with data/it or technical work. We want to argue that the community of Company X main focus is to develop products from a given product theme. This should be in line with what people with a background from engineering and that works with technical work, uses the site for. Thus, developing products that could be mass-produced is corresponding with the background of these participants. What is
interesting is, the percentage of for example engineers is not more prominent than 16.4 %, which could mean that now specific background is needed in order to participate on Company X. However the results indicate that people that hold some kind of university degree find the site more attracting than those who do reach that level of education. But still the fact remains that all ideas are valued on the site resulting in that all ideas could become a top pick independent in the complexity is has. Another interesting view point is that the product themes are changed every time, which means that if the product theme, was “cars” one time, the next time it could be “gardening”. An assumption could be as so, that the knowledge required to come up with an idea for the car theme demanded a little bit higher knowledge about the functions of a car. This could make participants with some kind of expertise from that field more willing to participate, and those who lack knowledge less willing. However for the gardening theme, the knowledge needed ought to be little bit lower due to the complexity of tools and similar thing used for gardening is lower. This could mean that expertise from education is somehow irrelevant and that it is the product theme and the participant knowledge about that theme that is interesting.
6.0 CONCLUSION

In the Conclusion chapter, the purpose is answered based on the empirical results from the survey. The authors own reflections of the thesis can also be found in this chapter along with suggestions for Future Research, Managerial- and Theoretical Implication.

The purpose of this study is to find how different motivating factors affect Participation in explicit Crowdsourcing.

Seven hypotheses were created and tested to find an answer to the purpose.

**H1:** Monetary Awards has a positive effect on Crowd-Participation

In order to answer the hypothesis, three questions were asked to the respondents but only two of them were used as items. These two questions gave a cronbach’s alpha of .763, which is representable. The hypothesis was also significant, with a b value that indicated a small positive relationship between the concept and Participation.

**H2:** Attention has a positive effect on Crowd-Participation.

The hypothesis regarding Attention did not give the positive effect on participation according to a b value of -.107. The result was neither supported because of a significance value of .179.

**H3:** Recognition has a positive effect on Crowd-Participation.

The hypothesis regarding Recognition was also measured by three questions that worked together and could stand for the motivator Recognition according to a strong cronbach’s alpha value of .865. The hypothesis was not supported as seen in the significant value of .948 and a negative b value of -.004.

**H4:** The perceived ability to solve a challenging task has a positive effect on Crowd-Participation.

The motivator Problem Solving was divided into three different hypotheses, and three different concepts – Ability, Challenge, and Competition -. The first concept – Ability - had five questions in order to see if there was any positive effect on Participation. This part of the concept received a positive cronbach’s alpha value of .670, which showed that they could represent the Problem Solving motivator of Ability. The b value was also positive, (.102) which
showed the positive effect on Participation and that the hypothesis was supported though the significance value of .082 was slightly too high to be able to generalize.

**H5: The challenge of solving a problem has a positive effect on Crowd-Participation.**

The second hypothesis for the motivator Problem Solving dealt with the Challenge of solving a problem, and had three questions that tried to explain the concept. These questions all worked together and could be seen as reliable questions for the concept with a cronbach’s al-pha value of .746. The hypothesis also got the intended incline with a b value of .188 and the results could be generalized because of a significance value of .013.

**H6: The ability to win a competition has a positive effect on Crowd-Participation.**

The last hypothesis for the motivator of Competition under Problem Solving, was dealing with the ability to win a competition. This concept had a negative incline with a b value of -.127, which was rather unexpected. The generalizability on the other hand for this concept was like the first two parts of the concept around the 5% goal with a value of .043. The ques-tions had a positive connection with a cronbach’s alpha value of .713.

**H7: Peer Pressure has a positive effect on Crowd-Participation.**

There were six questions for the concept Peer Pressure and they had a good connection and could stand for the concept due to of a cronbach’s alpha value of .757. The concept also got a positive incline as needed to get the expected effect on the dependent variable of Participation, with a b value of .130. The results could also be generalized with a significance value of .000.

All the hypotheses combined got an R square value of .427, which show that the independent variables, the motivational factors, explain 42.7% of the dependent variable Participation.
In order to summarize the results, and answer the purpose, it can be stated that Peer Pressure, Monetary Award and the fifth hypothesis of Problem Solving - the challenge of solving a problem - do affect Participation in a positive way. There are also tendencies that hypothesis 4 of Problem solving - the perceived ability to solve a challenging task- to have a positive effect on Participation. This thesis does not find any evidence for that Attention, Recognition and the ability to win a competition - part of Problem Solving - has any positive affect on Participation in explicit Crowdsourcing. The results show that there are some major differences between the results from studies dealing with other types of Crowdsourcing. The general nature of an explicit Crowdsourcing community is speculated to be more friendly and helpful than an implicit Crowdsourcing platform due to the necessary collaboration of explicit Crowdsourcing. Monetary incentives might be what draws the eye of a member in the beginning - although this is not tested -, and this is also what seems to be the thing that motivates people the most. Implicit- and explicit Crowdsourcing communities are likely to draw different types of people, or perhaps people adapt to the accepted conduct of a specific community: shaping them to be more competitive and focused on Monetary Awards, in an implicit Crowdsourcing community, and more willing to help others and contribute with feedback to their fellow members.
6.1 REFLECTIONS

In this thesis an Internet survey was conducted on the members of an explicit Crowdsourcing community, consisting of closed questions. The theoretical foundation was built on an investigation of what previous research has concluded in the subject of Crowdsourcing and other similar areas dealing with motivating factors. The researches of this thesis reached a level of theoretical saturation that was argued to be sufficient.

The method for data collection was suitable for the thesis even though the response rate was rather low. The chosen case company was suitable from the boundaries of what the authors wanted to investigate, although the response rate was disappointing. The community Company X was found to be suitable as their community was already involved in explicit Crowdsourcing. The authors of this study realized that the choice of method used, has an impact on the gathered results and as well as the amount of responses. By sending out a questionnaire to the community we had little or no chance to affect the amount of responses that were sent back. This resulted in a quite low amount of responses. However, we also realized that the amount of active members of the network was far less than expected and more reflected the amount of clicks the questionnaire got. We have understood that independent of how eager members of a community are, there is still a limit of how long and extensive a questionnaire can be. Still, we wonder about the effects and reason behind why people were curious to open the link and just look at the first page, consisting of 7 questions. It seems like people were willing to participate, but may be not willing to complete the entire questionnaire. It is probably the case that this is a common phenomenon related to web-based surveys, where people can be curious enough to open a link without being intrigued enough to answer questions. Therefore another method could be suitable in order to enhance the response rate. However, since the authors were not granted direct contact with the members of the community, it would have been difficult to choose another method for data gathering.

The authors of the thesis were aware of the risks of using a single company as case company for the study. In this study it was hard to make any real definitive conclusions based on the results. On the other hand we believe that the respondents that took time to answer the questionnaire are the ones that are most important for driving the community and therefore important to investigate. Nevertheless, we are aware that there could be other factors that motivate those that did not answer the survey, which makes the thought about a complementing method highly relevant.
6.2 THEORETICAL IMPLICATIONS

This thesis contributes to the literature in several ways. The thesis is considered, to our best knowledge to contribute to the Crowdsourcing literature by reaching the gaps in what motivates people in explicit Crowdsourcing. Previous studies have often focused in motivational factors concerned with implicit communities. This thesis, however, is trying to add knowledge about what motivates people in explicit Crowdsourcing and how with what types of knowledge they are collaborating with each other. The results drawn from the questionnaire indicate that Monetary Awards, Problem Solving – Challenge, Competition -, and Peer Pressure could increase Participation in the context of explicit crowdsourcing when a community functions in similar ways as Company X. However the relationship between attention, recognition and Problem Solving – ability did not show to have a positive impact on the dependent variable. This is quite interesting due to that previous studies on similar communities indicate that these variables also are important for the participant. Thus, the contribution concerned with these variables could be questioned even though the results point to a negative connection. The contribution found in this thesis could also work as a basis for the motivating factors that could affect Participation in explicit Crowdsourcing. This research does not give any suggestion about the balance between extrinsic - and intrinsic motivators. However, it does show which motivators that could affect and to which degree. This could be interesting for other researches to know, as if they are searching for mediating variables from within the model presented in this paper or when trying to use the findings in this research and apply it on another context.

6.3 MANAGERIAL IMPLICATIONS

The managerial implications derived from this thesis can be rather interesting. Even though the numbers of respondents were rather low, there was shown tendencies towards different findings, compared to studies conducted in other contexts. There are different factors that could be important to motivate a company’s crowd, when the company is dealing with explicit Crowdsourcing, than if the company would be dealing with implicit Crowdsourcing. Companies that want to make use of implicit Crowdsourcing process could focus on more extrinsic factors, than companies focusing on explicit Crowdsourcing processes. In this thesis it was
shown that there is a possibility that extrinsic motivating factors such as Attention, and Recognition might not be effective in motivating a crowd. The only extrinsic motivating factor that showed a positive tendency with a significant value was Monetary Awards. Monetary Awards could be a very useful way of attracting members to participate, and in order to have a successful explicit Crowdsourcing process; there is a need to attract a crowd. The more people there are that are actively contributing and collaborating, the better the use of the WOC.

If a company wants to be successful with an explicit Crowdsourcing venture, and there is a possibility to have some sort of Monetary Awards, Rewards, or Exchange with the crowd, the company should try to implement this type of reward. However, focusing on paying the participants with different types of Attention or Recognition would not be helpful due to the collaborative effort of the crowd. There is not one single person that can take the whole credit, rather it is the community, and therefore factors like creating a sense of belonging might be more important.

When it comes to intrinsic motivating factors, they might be very important for a company to implement in an explicit Crowdsourcing venture. Based on the results of this thesis, there is a positive relationship with some parts of the Problem Solving concept, and with the concept of Peer Pressure.

When it comes to Problem Solving, the concept can be discussed in three different parts: Ability, Challenge, and Competition. It was shown that when the members felt they had the ability to complete the task that is being outsourced to the crowd, the members would feel more motivated. What makes the crowd perceive an ability to complete a task is not investigated, but for companies trying to implement explicit Crowdsourcing, focus should be put on this aspect. Even though the results for the Ability part of the concept did not show a strong sig. value, it was close to being significant. For the concept of Challenge, there was a positive relationship with Participation implying that if people feel the task to be challenging, the rewards the inherent rewards they will receive will be greater. On a closer look at these two parts of the concept it is possible to conclude that there needs to be a balance between the level of challenge the members perceive - in order to increase the inherent rewards -, and the perception to being able to solve the task.

When it comes to the last part of the Problem Solving concept – Competition -, this aspect could be best to eliminate, or keep rather low, for explicit Crowdsourcing. By making members feel as if they are competing, it could be the case that they would not want to help each
other out. If the aspect of Competition should be implemented to a strong degree, it would probably be better to try to use an implicit Crowdsourcing process, or make the explicit Crowdsourcing community into different teams. By making the process into a Crowdsourcing a team Competition, the level of motivation might be raised.

The last motivating factor that was investigated was the concept of Peer Pressure. From the results of the study it could be argued that by pushing the importance of increasing the sense of belonging, and making members feel proud to be apart of a community, the motivation to take part of an explicit Crowdsourcing community would be increased. When a task is going to be solved thanks to collaboration, the members should feel comfortable, and willing to discuss and help each other in order to come up with the best possible solution, by tapping into the WOC.

### 6.4 SUGGESTIONS FOR FUTURE RESEARCH

The results found in this research could be quite interesting for other researches to use as base when investigating functions of explicit Crowdsourcing. The results would benefit from further testing due to the limited amount of responses that was collected through the questionnaire that was sent out. The results, though interesting, are not generalizable to a larger population. This thesis tried to measure independent variables – motivating factors - on the dependent variable – Participation – with the use of a questionnaire. For the future, it could be interesting to explore a larger set of motivating factors or try to examine if there are any independent variables that are affected by a moderating variable.

Another interesting way of researching explicit Crowdsourcing in the future could be, by comparing a range of communities, and examine if there are any product/service specific context that effect Participation in an explicit Crowdsourcing community. Suggesting that there exist specific contexts for products/services could also mean that there exist specific motivating factors for every community. Conducting research on different communities could strengthen the possibility of generalizing the results to other communities since the results would be gathered from additional sources. An additional thought for the future is to change perspectives and view Participation from manufacturers view and by that research how a company could optimize the participants’ motivation. By observing Participation from manu-
facturers view, the use of experiments could be interesting in order to find the best mix of incentives for all communities.

It would also be possible to examine what makes people participate by exploring the psychological aspect of motivations.
REFERENCES

PUBLISHED WRITTEN SOURCES


**ELECTRONIC REFERENCES**


http://scholar.google.se/scholar?hl=sv&q=the+sources+of+innovation+von+Hippel+1988&btnG=S%C3%B6k&as_ylo=&as_vis=0. Accessed: 19-04-12. time: 10.06.


The rise of crowdsourcing Jeff Howe. (2006):


Company X (Company X.com) is an online-based company that is working on the Internet in the sense that they bring in innovation ideas from users for different themes and then let the best ones hit the markets. The products are community based and Company X highlights this on their homepage with the quote “Let’s create great products together!” (Company X.com 2012-04-12).

How it works

The process is divided into four different stages; submit, panel review, collaborate & improve and last crowd favorites.

Submit

Submit is a stage that lasts for two and a half weeks. In this stage can the users submit their ideas and also help other improve their ideas. The last part of this stage is that the users can vote for the ones that they think is best and in that way vote this ones to the next stage.

Panel Review

The next stage is were the company’s experts come into play. They get the ideas that are moved forward by the users and are influenced by them because of that. Then they measure the idea in different ways to see which ones that are the best ideas and are ready to be shipped to the next stage, the collaboration and improvement stage. The things that are measured in this stage are:

- Marketability: Can it be sold for a reasonably price and do it fill any need?
- Mainstream Appeal: Do the mainstream seems to like the product and are they already involved in the idea inform of comments and etc.
- Competition: Is the product unique or are there other products but this one might be better?
- Manufacturing: Is it hard to produce and engineer the product?
- Innovation (the “X” factor!): Does the product fill the criteria according to Company X... “I wish I’d thought of that!”

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<thead>
<tr>
<th>COLLABORATE &amp; IMPROVE</th>
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<tr>
<td>In the next stage, the collaboration and improvement stage, is it back for the users to decide. The experts have chosen their favorites and now are it up to the customers to comment, vote and improve the ideas and make them better. Participation in this stage might lead to gift cards and the best ideas move forward to the last stage.</td>
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<th>CROWD FAVORITES</th>
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<td>All the users have three votes to put on their favorite products in the final stage. The crowd favorites receive gift card and a chance to be put on the shelf.</td>
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EMAIL INTERVIEW WITH MR. R AT COMPANY X

What is your position in the Company?
I am employed in Company Y as a QA analyst.

How many members does Company X have that would be possible to contact via email?
It is hard to say how many active members there are, but I can tell you that there are just over 3800 registered accounts.

What is the connection between Company X and Company Y?
Company Y is the company behind the technology that drives Company X. We offer Crowdsourcing solutions for a number of different clients. Company X was an initiative that approached us to use our technology and expertise, and we have since developed a close relationship with them where we create and test new Crowdsourcing strategies in response to the community. We work closely together, and Company Y provides many services critical to the continued success of Company X.

Can you give some basic information regarding company facts for Company X and Company Y? (E.g. size, number of employees, start up date, business idea)
I do not have specific information about Company X. However, my understanding is that they were going to use Crowdsourcing to develop new products for market. Company Y was founded approximately 4 years ago, as Cambrian House. The focus was always Crowdsourcing. We currently have about 20 employees, and our goal is to create self-sustaining Crowdsourcing software that allows for a wide variety of applications to be designed and implemented easily.
Please tell us a little about how the service works:

I believe you are referring to Company X. The Company X platform is designed as a phased approach. First, a topic is selected. This usually centers on a category, such as “Spring Cleaning.” In phase 1, inventors are invited to submit their invention ideas related to the category. In Phase 2, a team of pre-selected experts reviews all ideas and moves the potential ideas forward to the next round. In phase 3, members are invited to vote for their favorite ideas. The panelists decide which ideas have enough votes to move on to phase 4, where a final phase of limited voting occurs. Users get a limited number of votes to cast on their favorite ideas. The top voted ideas from this round are awarded gift cards. Any ideas that the panel finds to have market potential are brought into a separate process, where the inventor is asked to sign a contract with Company X to have the idea prototyped and potentially brought to market. Additional royalties are available for this.

You are able to find all of this information at http://www.Company X.com/howitworks.

What are the unique selling points for Company X (What makes the platform unique compared to others)?

For the crowd, Company X is a free site. It has many of the features present on other sites, but does not charge users to submit ideas. It allows inventors to get their ideas seen by people who are capable of creating something from those ideas, for no charge. For manufacturers or retailers, ideas produced on Company X have already had some preliminary market research done. They have feedback from a crowd before they ever make it to the prototyping stage.

In what way has Company X expanded over the years?

X has had major site overhauls at various times, where new technologies were integrated and old technologies upgraded. The community has been growing steadily for a long period of time, and the functionality of the site has become more detailed. We have developed new Crowdsourcing practices with the community, and used their feedback to improve existing services.

We are curious of how similar this service at Company X is compared to other Crowdsourcing platforms on the Internet?

Company X is not a Crowdsourcing platform. Company Y is a Crowdsourcing platform. The Company X application of the Company Y platform is a good proxy for a generalization of innovation communities. Of the current Crowdsourcing platform applications, Company X maintains a very esteemed role as containing much of the important technology that allows Crowdsourcing to be successful. I would say this on a scale of 1-5 of generalizability, Company X ranks as a 4 for innovation communities.
Keep in mind that there are many other types of Crowdsourcing, market research, brand loyalty, crowdfunding, microtasks, contests, etc.

In what way do you believe that Company X, and other Crowdsourcing platforms will evolve in the future?

This is incredibly difficult to predict. I would say that in general, they will develop a stronger feature base, they will have better reporting metrics, and they will be capable of handling larger groups of users intelligently.

How is the current Crowdsourcing field? (In regard to similarities, intensity of competition, characteristics, who participates etc.)

Volatile. There are many competitors, and everyone realizes how powerful this technology will be in the immediate future. There are many companies all trying to perfect technologies and communications approaches that will allow for successful Crowdsourcing, but no clear winner has been identified.

How do you view the competition, both now and in the future?

Volatile. Some companies are getting huge cash injections from Venture Capital without a good plan as to how to spend that capital. Some companies are launching Crowdsourcing campaigns with major brands that end up failing miserably because they haven’t understood the field. Many companies are wary to get into Crowdsourcing for this very reason: many companies performing Crowdsourcing these days are volatile.

Can you please give some examples of innovative ideas that the members of Company X have generated?

Yes, we have a few on our blog: http://www.Company X.com/blog/2011/08/please-welcome-back-the-prototype-contenders/

Or perhaps, you would be able to observe them yourselves by creating an account and watching the process as it happens.

APPENDIX III – CODING MANUAL
For this thesis there were X questions that surveyed as control variables dealing with issues of demographics, innovation and the types of knowledge. All questions that had missing data were coded with a “.”. The questions dealing with demographics were:

**(DM1) - What year were you born?**

This question was coded by the given answer in free text by the respondent. This question was derived from Lakhani et al.’s (2007) study.

**(DM2) - Are you male or female?**

Another free text question coded as 1: male, and 2: female. This question was derived from Lakhani et al.’s (2007) study.

**(DM3) - In what country are you currently a resident?**

This question was coded by the given answer in free text by the respondent. This question was derived from Lakhani et al.’s (2007) study. The questions were coded as follow; 1: USA, 2: Canada, 3: U.K, 4: Germany, 5: Netherlands, 6: Sri Lanka, 7: Iran, 8: South Korea, 9: Brazil, 10: Mexico, 11: Puerto Rico, 12: Indien.

**(DM4) - What is your highest education degree?**

This question is coded as follows: 1: Grammar school, 2: High school, 3: Associate degree, 4: University degree, 5: Doctoral degree, 6: Other. This question was derived from Hars and Ou’s (2002) study in order to specify what level of education the respondent had.

**(DM5) – What was/is your field of study (if any)?**

This question was aimed at specifying what the respondent has studied. The phrase “if any” as included to make sure that the individuals that had not studied a specific field did not feel the need to answer. The question was coded as follows; 1: economics, 2: sociology, 3: Psychology, 4: engineering, 5: chemistry, 6: data/it, 7: medicine: 8 music, 9: educational science, 10: craftsmanship, 11: art, 12: other. This question was derived from Lakhani et al.’s (2007) study in order to get a more specified demographic answer of what type of education the respondent held.

**(DM6) - In what field are you currently employed?**
This question was aimed at finding the respondent’s current field of employment. It was coded as 1: Construction, 2: Craftsmanship, 3: Culture, media and design, 4: Data/IT, 5: Economics/law, 6: Healthcare/hospital, 7: Hotels/restaurants, 8: Industrial manufacturing, 9: Installation maintenance, 10: Land management, 11: Managers other leaders, 12: Military, 13: Pedagogic work, 14: Sales and marketing, 15: Sanitary cleaning, 16: Social work, 17: Security work, 18: Transport, 19: Technical work, 20: Unemployed, 21: Student, 22: Other. This question was derived from Lakhani et al.’s (2007) study but the alternatives were collected from Arbetsförmedlingen, the Swedish employment office (ams.se).

**STATEMENTS**

The following statements served to answer control variables regarding types of knowledge and the innovator.

**(SO1)** *I give information (ideas/feedback) for a product theme when I can help solve a problem.*

This question aimed to answer what type of knowledge the respondent possessed. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Rarely, 4: Sometimes and 7: A lot. The statement was derived from Hars and Ou’s (2002) study regarding but also based on von Hippel’s (1994) discussion on different types of knowledge.

**(SO2) - I give feedback to others' ideas because I have the knowledge required to solve a problem.*

This question aimed to answer what type of knowledge the respondent possessed. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Rarely, 4: Sometimes and 7: A lot. The statement was derived from Lakhani et al.’s (2007) study but also based on von Hippel’s (1994) discussion.

**(SO3) - I come up with a product idea because I know how to solve a problem.*

This question aimed to answer what type of knowledge the respondent possessed and to see if the respondent had the required solution knowledge needed to make the solution. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Rarely, 4: Sometimes and 7: A lot. The statement was derived from Lakhani et al.’s (2007) study but also based on von Hippel’s (1994) discussion.
(NE1) - I have participated to find a solution to something that I, or someone else, needs.
This question aimed to answer what type of knowledge the respondent possessed. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Rarely, 4: Sometimes and 7: A lot. The statement was derived from Hars and Ou’s (2002) study but also based on von Hippel’s (1994) discussion.

(NE2) - I participate to find or alter an idea to fit my, or someone else's, specific need.
This question aimed to answer what type of knowledge the respondent possessed. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Rarely, 4: Sometimes and 7: A lot. The statement was derived from Hars and Ou’s (2002) study but also based on von Hippel’s (1994) discussion.

(NE3) - I participate because it is difficult for existing products to meet my, or someone else's, specific need.
This question aimed to answer what type of knowledge the respondent possessed. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Rarely, 4: Sometimes and 7: A lot. The statement was derived from Hars and Ou’s (2002) study but also based on von Hippel’s (1994) discussion.

(UI1) – I have come up with an innovation, or given feedback to someone else's idea, because I intend to use it.
This question aimed to answer what type relationship the respondent had with the information he/she contributed with. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree. The statement was based on von Hippel’s (1988) discussion on sources of innovation.

(UI2) - I have come up with an idea, or contributed with feedback to an idea, because I intend to buy it.
This question aimed to answer what type relationship the respondent had with the information he/she contributed with. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree. The statement was based on von Hippel’s (1988) discussion on sources of innovation.
(TI1) - I have given feedback or come up with an idea to a problem I haven’t experienced myself.

This question aimed to answer what type relationship the respondent had with the information he/she contributed with. The alternatives were in a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree. The statement was based on von Hippel’s (1988) discussion on sources of innovation.

The dependent variable of this study was the concept of participation. There was a need to measure how participation was effected by different motivating factors and therefore questions specified to define participation as a dependent variable were used.

(TP1.1, TP1.2, TP1.3, TP1.4, TP1.5, TP1.6, TP1.6.) - Why do you participate on Company X?

This questioned aimed to find the respondents’ perceived exchange from the community by putting singled out words in front of the respondent. The question was coded with 0 and 1 for each of the alternatives since the respondents had the choice to check as many alternatives as applied: 0: not checking “Because it is fun”, 1: checking “Because it is fun”. 0: not checking “It is for a good cause”, 1: checking “It is for a good cause”. 0: not checking “I can find and contribute with ideas that fit my specific needs”, 1: checking “I can find and contribute with ideas that fit my specific needs”. 0: not checking “Monetary rewards”, 1: checking “Monetary rewards”. 0: not checking “To build a network of peers”. 1: checking “To build a network of peers”. 1: checking “It is a creative outlet for me”. 0: not checking “It is a creative outlet for me”. 0: not checking “Other” 1: checking “Other”. The question was used in Brabham’s (2008b) study but was originally derived from Hars and Ou’s (2002) study.

(TP2.1, TP2.2, TP2.3.) - What type of information do you contribute with?

This question aimed to find out what information the respondent contributed with on the community. The coding was 0: not checking “Feedback to other’s ideas, 1: checking “Feedback to other’s ideas”. 0: not checking “Own ideas” 1: checking “Own ideas”. 0: not checking “Other”, 1: checking “Other. The question was aimed at further developing the answer attained from a question derived from Lakhani et al.’s (2007) study.

(PA1) - Have you contributed with ideas or feedback for a theme on Company X before?
This question aimed to determine if the respondent had participated in the community before since without existing participation by the respondent, the answer would vary. If the respondent had not participated prior to the point of the completion of the survey there would have been no motivation great enough to result in participation. The question was coded with 0: No, 1: Yes. The question was derived from Lakhani et al.’s (2007) study.

(PA2) - How often would you say that you participate with information to a product theme on Company X?

(The definitions of information in this survey are ideas, feedback or both)

For this question a seven-point likert-scale was used in order to get the respondents subjective thoughts on how often he/she had participated prior to the point of the survey. The given alternatives were coded as 1: Rarely, 4: Sometimes, and 7: A lot. The question was derived from both Hars and Ou’s (2002), and Lakhani et al.’s (2007) study that measured the devotion level and how much time a specific submission took respectively. When applied to this thesis, the question was better formulated the question in this fashion in order to measure the devoted effort of the respondent.

(PA3) Do you think that you will participate in a product theme on Company X in the future?

This question aimed to find out if the respondents felt motivated enough to potentially contribute to the community after the time of the survey. It was coded as 0: No, 1: I don’t know, 2: Yes. The question was derived from Zheng’s (2011) study.

The following statements aimed to find out how the dependent variable of Participation was affected by the independent variables. The independent variables were tested through seven hypotheses.

MONETARY AWARD

In order to answer the first hypothesis: Increased potential for higher financial reward, has a positive effect on crowd-participation; the following four questions were used:
(MN1) - I participate to win money.
This statement was adopted from Lakhani et al.’s (2007) study in order to measure the effect of Monetary Awards on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 7: Strongly Disagree, 4: Neutral and 1: Strongly Agree.

(MN2) – I seldom think about the Monetary Award when participating in a product theme.
This statement was adopted from Zheng (2011) study in order to measure the effect of Monetary Awards on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(MN3) - I am concerned about the Monetary Award potential from a product theme.
This statement was adopted from Zheng (2011) study in order to measure the effect of Monetary Awards on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

ATTENTION
In order to determine the second hypothesis: Attention has a positive affect on crowd-participation; the following three statements were used:

(AT1) - I participate to gain attention from outside Company X.
This statement was adopted from Lakhani et al.’s (2007) study in order to measure the effect of Attention on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(AT2) - I participate because I would like people to see my solution.
This statement was adopted from Lakhani et al.’s (2007) study in order to measure the effect of Attention on participation. The alternatives were coded on a seven-point likert-scale in or-
order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(AT3) - I participate to get attention from within Company X.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the effect of Attention on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(RECOGNITION)

In order to determine the third hypothesis: Recognition has a positive effect on crowd-participation; the following four statements were used to determine the relationship between Recognition and participation.

(RC1) – I participate to gain recognition from within the Company X community.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the effect of Recognition on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(RC2) - I participate to gain recognition from outside the Company X community.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the effect of Recognition on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(RC3) - recognition from others is my greatest award.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the effect of Recognition on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PROBLEM SOLVING)
The part of the thesis focused on Problem Solving resulted in three hypotheses. In order to determine the fifth, sixth, and seventh hypothesis, X statements were used to determine the relationship between Recognition and participation.

**PROBLEM SOLVING - ABILITY**

In order to answer the fourth hypothesis: The perceived ability to solve a challenging task has a positive effect on crowd-participation; the following five statements were used:

**(PS1) - Participating with an idea for a product, which I think can become a top pick for a product theme, gives me a feeling of competence.**

This statement was adopted from Hars and Ou’s (2002) study in order to measure how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point Likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

**(PS2) - Participating with an idea for a product, which I think can become a top pick for a product theme, gives me a feeling of effectiveness.**

This statement was adopted from Hars and Ou’s (2002) study in order to measure how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point Likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

**(PS3) - Participating with an idea for a product, which I think can become a top pick for a product theme, gives me a feeling of accomplishment.**

This statement was adopted from Hars and Ou’s (2002) study in order to measure how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point Likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

**(PS4) - I participate because someone suggested I should try to come up with a product for a specific product theme.**

This statement was adopted from Lakhani et al.’s (2007) study in order to measure how the challenge of solving a problem had a positive effect on participation. The alternatives
were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PS5) - I rate my participation with a product idea, which I think can become a top pick, as an important activity for myself.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

PROBLEM SOLVING - CHALLENGE

In order to answer the fifth hypothesis: The challenge of solving a problem has a positive effect on crowd-participation; the following three questions were used:

(PS6) - I think it is fun to contribute with product ideas for different themes on Company X.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PS7) - I have participated due to the intellectual challenge of coming up with a product idea.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PS8) - I participate because I enjoy coming up with product ideas on Company X.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.
PROBLEM SOLVING - COMPETITION

In order to answer the sixth hypothesis: The ability to win a competition will increase crowd-participation; the following three questions were used:

(PS9) - I participate to try to beat other Company X members.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the how the challenge of beating other member in a competition had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PS10) – I usually participate because I already know a solution or a product idea that I think can become a crowd favorite.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the how winning a competition can have a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PS11) - I prefer to contribute if there is a clear winner.

This statement was adopted from Hars and Ou’s (2002) study combined with the discussions of Lakhani et al. (2007) and Schunk (1991) that discussed how people are motivated by goals that are set up. A competition with a clear winner could work as enticement through a goal. Therefore this question aimed to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

PEER PRESSURE

In order to answer the seventh hypothesis dealing with Peer Pressure: Peer Pressure has a positive effect on crowd-participation; the following five statements where used.
(PP1) - Members of Company X should help each other.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PP2) - Members of Company X are like a big family.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PP3) - I am proud to be part of the Company X community.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PP4) - I enjoy helping others in the Company X community, even if I have to make sacrifices.

This statement was adopted from Hars and Ou’s (2002) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PP5) - I participate because others I know are participating.

This statement was adopted from Lakhani et al.’s (2007) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.

(PP6) - I participate because others I know have participated before.
This statement was adopted from Lakhani et al.’s (2007) study in order to measure the how the challenge of solving a problem had a positive effect on participation. The alternatives were coded on a seven-point likert-scale in order to give the respondents room to answer with a neutral response. The coding was 1: Strongly Disagree, 4: Neutral and 7: Strongly Agree.
Crowdsourcing

Dear participant,

This survey is created by three master students studying at Linnaeus University in Växjö, Sweden. We want to assure you that your response will be completely anonymous. Your answers will help us in our research and hopefully allow GeniusCrowds.com to develop their website even further.

The purpose of this study is to find factors that motivate participants to contribute with information in crowdsourcing communities. Please answer the questions based on your participation on GeniusCrowds.com.

The survey will take approximately 5 minutes to finish.

If you have any questions or thoughts regarding the survey you can contact us at:
Klas Linknuss - klhn02@student.lnu.se
Klasan Nilsson - klnh06@student.lnu.se
Andreas Westberg - awse08@student.lnu.se

Thank you for your participation.

1. What year were you born? (example: 1987)
2. Are you male or female?
   - Male
   - Female
3. In what country are you currently a resident?
4. What is your highest education degree?
   - Grammar school
   - High school
   - Associate degree
   - University degree
   - Doctorial degree
   - Other
5. What was/is your field of study (if any)?
   - Economics
   - Sociology
   - Psychology
   - Engineering
   - Chemistry
   - Data/IT
   - Medicine
   - Music
   - Educational science
   - Craftmanship
   - Art
   - Other
6. In what field are you currently employed?
   - Please select one...
7. Have you contributed with ideas or feedback for a theme on Genius Crowds before?
   - Yes
   - No

NEXT
8. Why do you participate on Genius Crowds?

Check all that apply:
- Because it is fun
- It is for a good cause
- I can find and contribute with ideas that fit my specific needs
- Monetary rewards
- To build a network of peers
- It is a creative outlet for me
- Other

9. What type of information do you contribute with?

Check all that apply:
- Feedback to others' ideas
- Own ideas
- Other

10. How often would you say that you participate with information to a product theme on Genius Crowds? (Information including: ideas and feedback)

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11. Do you think that you will participate in a product theme on Genius Crowds in the future?

- Yes
- No
- I don't know

12. Part 1 - Check the alternative on the scale that best represents your attitude towards the statement.

I give information (ideas/feedback) for a product theme when I can help solve a problem.

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I give feedback to others' ideas because I have the knowledge required to solve a problem.

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I come up with a product idea because I know how to solve a problem.

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I have participated to find a solution to something that I, or someone else, needs.

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I participate to find or alter an idea to fit my, or someone else's, specific need.

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I participate because it is difficult for existing products to meet my, or someone else's, specific need.

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13. Part 2 - Check the alternative on the scale that best represents your attitude towards the statement.

I have come up with an innovation, or given feedback to someone else's idea, because I intend to use it.

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<th>Strongly Disagree 1</th>
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<th>Neutral 4</th>
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I have come up with an idea, or contributed with feedback to an idea, because I intend to buy it.

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I have given feedback or come up with an idea to a problem I haven't experienced myself.

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14. Part 3 - Check the alternative on the scale that best represents your attitude towards the statement.

I participate to win money.

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<th>Strongly Disagree 1</th>
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I seldom think about the monetary award when participating in a product theme.

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<td></td>
<td></td>
</tr>
</tbody>
</table>

I am concerned about the monetary award potential from a product theme.

<table>
<thead>
<tr>
<th>Strongly Disagree 1</th>
<th>2</th>
<th>3</th>
<th>Neutral 4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Part 4 - Check the alternative on the scale that best represents your attitude towards the statement.

Participating with an idea for a product, which I think can become a top pick for a product theme, gives me a feeling of:

<table>
<thead>
<tr>
<th>Strongly Disagree 1</th>
<th>2</th>
<th>3</th>
<th>Neutral 4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Competence
Effectiveness
Achievement
### 16. Part 5 - Check the alternative on the scale that best represents your attitude towards the statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Neutral</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I participate to gain attention from outside Genius Crowds.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate because I would like people to see my solution.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate to get attention from within Genius Crowds.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 17. Part 6 - Check the alternative on the scale that best represents your attitude towards the statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Neutral</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I participate to gain recognition from within the Genius Crowds community.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate to gain recognition from outside the Genius Crowds community.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Recognition from others is my greatest reward.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 18. Part 7 - Check the alternative on the scale that best represents your attitude towards the statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Neutral</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I participate because someone suggested I should try to come up with a product for a specific product theme.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I rate my participation with a product idea, which I think can become a top pick, as an important activity for myself.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I think it is fun to contribute with product ideas for different themes on Genius Crowds.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I have participated due to the intellectual challenge of coming up with a product idea.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate because I enjoy come up with product ideas on Genius Crowds.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate to try to beat other Genius Crowds members.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I usually participate because I already know a solution or a product idea that I think can become a crowd favorite.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I prefer to contribute if there is a clear winner.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 19. Part 8 - Check the alternative on the scale that best represents your attitude towards the statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Neutral</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members of Genius Crowds should help each other.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Members of Genius Crowds are like a big family.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I am proud to be part of the Genius Crowds community.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I enjoy helping others in the Genius Crowds community, even if I have to make sacrifices.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate because others I know are participating.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I participate because others I know have participated before.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 20. Additional Comments (optional):

[Blank space for comments]
Researchers are polling the Genius Crowds Community!

Hi [Name],

As another way to engage with Genius Crowds while our Panelists are reviewing, we’d like to ask you to participate in a survey that will advance the study of Crowdsourcing. A group of researchers from Linnaeus University in Sweden have asked us to work with them to learn more about the motivation and rewards of crowdsourcing, specifically at Genius Crowds. The survey is anonymous and will take you only 5 minutes to complete. Please “help us help them” advance the data and cumulative knowledge about crowdsourcing by serving as a stellar community in one of the earliest peer-reviewed studies.

Let’s show what makes this community so special, and of course, share your genius!

Take part in the survey here!

Sincerely,
Community Managers
commgs@geniuscrowds.com

Need help? Contact commgs@geniuscrowds.com
Want to change the email updates you receive? Edit your preferences.

You have received this email because you have signed up at Genius Crowds. If you no longer wish to receive Genius Crowds emails, please click here and submit your request.
Text for the post in the Company X forum and direct messages:

Hello X’s!

My name is Kim Linkruus and I - along with two of my fellow students of Linnaeus University - are conducting research on what motivates YOU to participate in this community. There was a link sent to you from the admin of Company X with a link to a questionnaire. I'll attach the link below again.

Please help us, by taking 5 minutes of your time to answer a few short questions regarding what motivates you to participate in this community. The results will be sent to the people of Company X to help them improve the community even further.

Again: please take the time to fill out the questionnaire in order to help improve the results! http://www.keysurvey.com/xxxxx

Thank you for your time!
Best regards,

Kim Linkruus -
Email: klihm08@student.lnu.se

Hello X’s!

My name is Andreas Westerberg and I - along with two of my fellow students of Linnaeus University - are conducting research on what motivates YOU to participate in this community. There was a link sent to you from the admin of Company X with a link to a questionnaire. I'll attach the link below again.

Please help us, by taking 5 minutes of your time to answer a few short questions regarding what motivates you to participate in this community. The results will be sent to the people of Company X to help them improve the community even further.

Again: please take the time to fill out the questionnaire in order to help improve the results! http://www.keysurvey.com/xxxxx

Thank you for your time!
Best regards,

Andreas Westerberg -
Email: adweew08@student.lnu.se
APPENDIX VII – DESCRIPTIVE TABLES

**DM1**

<table>
<thead>
<tr>
<th>Year Range</th>
<th>No answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-1959</td>
<td>0</td>
</tr>
<tr>
<td>1960-1970</td>
<td>25</td>
</tr>
<tr>
<td>1971-1980</td>
<td>10</td>
</tr>
<tr>
<td>1981-1991</td>
<td>15</td>
</tr>
<tr>
<td>No answer</td>
<td>1</td>
</tr>
</tbody>
</table>

**DM2**

<table>
<thead>
<tr>
<th>DM2</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Respondent Number</td>
<td>Comment</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>Company X has the best of both worlds when it comes to Crowd Sourcing. They have a fun competitive feature, but the real focus stays on true collaboration and the spirit of helping one another with our ideas without any financial gain for ourselves. The community members and the staff members at Company X are the most friendly and helpful community on the web.</td>
</tr>
<tr>
<td>8</td>
<td>I dislike any type of game playing IE&gt; Skill Contest in the area of product development. Non competitive Sweepstakes is fine.</td>
</tr>
<tr>
<td>11</td>
<td>I love the making the prototypes for my innovations in my own workshop.</td>
</tr>
<tr>
<td>14</td>
<td>There are Bad impressions created by other sites. I also hear of legal actions coming for Quirky.com, Illegal gaming and civil fraud - They have become known as a scam site that rips off peoples ideas. Company X needs to avoid making their mistakes.</td>
</tr>
<tr>
<td>16</td>
<td>My favorite aspect of Company X is the panel. I like that even if the community is not excited about my submission it doesn't preclude it's evaluation by the panel.</td>
</tr>
<tr>
<td>18</td>
<td>Company X is one of the first online environments I've experienced that places collaboration ahead of competition. It is a site that brings out the best form of civil discourse with the single goal of helping each other create viable products for the marketplace. Yet it has found a way to reward its members without creating animosity among those who participate because everyone seems to be here for the sake of fostering good ideas rather than gaining prestige. It's nice to see that we are all about creating products rather than heroes...which makes us all better people in the end. NICE!</td>
</tr>
<tr>
<td>21</td>
<td>This is what I like to do like a video game</td>
</tr>
<tr>
<td>22</td>
<td>I participate because the ideas come to me very easy. And I'm a dreamer.</td>
</tr>
<tr>
<td>23</td>
<td>All of my inventions are aimed at helping people. I don't like creating inventions just to make money or gain fame. I genuinely want to create inventions that help mankind for the better and it's great to interact with people that want to do so as well.</td>
</tr>
<tr>
<td>26</td>
<td>We wan't to get our products on the shelf. We want an alternative to Quirky.com. If you get products on the shelf I will go drag thousands of Quirky and Facebook inventor to X. Please just get one going and shout it from the</td>
</tr>
</tbody>
</table>
roof tops. We are all here for the money and not coupons.

Company X is a great idea to jump-start new products that solve problems. I like the whole concept and like to participate--even if can't get my idea on the site--after 3 tries!

My views on Crowdsourcing have changed over the past 2 years. I am very reluctant to submit good ideas, because of the "open book" nature of the business. Ideas can be ripped off and modified, then resubmitted by someone else. I have seen many examples of this happening on Social Product Development websites. Thus, I rarely participate anymore.

I just would like to say to the Company X panel and moderators thank you for all the help and giving up your time to work with all of us.

I kno't get much time to do anything for myself, so anytime I get, I try to do as much as possible and participate in as many projects as I can.

I want to contribute to the future of mankind

GREAT WEB SITE

I enjoy being a part of X, but do not participate in trying to "fake" a product. If I have an idea, which I have submitted some and have many more-I do not like wasting my time on "an idea just to post something".

We need more feed back from X panel on status of winning ideas, where do idea stands in the process of ewther it is to be developed, manufactured, evaluated for development or it is not goint to be considred. This is very important to us the community.

I love this community

I mainly come to see if I can license my own products, I don't have a ton of time to discuss other product ideas.

I find the 'influence sharing' aspect in a competitor's site much more enticing for Participation (but I hate the general mood of that site) ... Would be smart to allow some sort of 'skin in the game' for participants who contribute more than shallow praise or support to a successful product.

I believe Crowdsourcing is X in itself and the wave of the future to advance innovation in many industries.

In your survey, you group together submitting an idea and participating in someone else's idea. These are 2 separate things and I participate in each of
them differently. Example: You asked us to rate this sentence: "I participate (either by commenting or submitting an idea) for money." You can't group these together. I submit ideas because I am interested in money, but I comment on others' ideas to help people out. There is no monetary benefit to commenting. Hope your research goes well.
On 1 January 2010 Växjö University and the University of Kalmar merged to form Linnaeus University. This new university is the product of a will to improve the quality, enhance the appeal and boost the development potential of teaching and research, at the same time as it plays a prominent role in working closely together with local society. Linnaeus University offers an attractive knowledge environment characterised by high quality and a competitive portfolio of skills.

Linnaeus University is a modern, international university with the emphasis on the desire for knowledge, creative thinking and practical innovations. For us, the focus is on proximity to our students, but also on the world around us and the future ahead.