

# MANAGING THE CROWD: A STUDY ON VIDEOGRAPHY APPLICATION

## Abstract

This paper examines the principles of managing groups of digital workers, known as crowds. So far empirical work on managing crowds (i.e. crowdsourcing practices) has been scarce. We present a case study in which a mobile application was utilized to gather qualitative research data. The learning from the process is reported in regards to guidance, incentives, quality and outcomes. Managing crowds is a complex process and requires managers to update their thinking and know-how. Our paper offers practical guidance based on first-hand experience.

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# 1. Introduction

The Internet has resulted in a proliferation of knowledge work, and it also facilitates interaction between firms and “digital workers” (Terranova, 2000). In particular, firms may utilize crowdsourcing platforms<sup>1</sup> to find freelancers and other individuals to carry out specific tasks which vary by complexity (Howe 2006; 2008). Although some companies have adapted crowdsourcing activities and outsourced their operations to consumers, the practice is still relatively unexploited and unknown for most firms. Examples of industries influenced by crowdsourcing include online markets, for example the online photo bank business. Recently, platforms have integrated crowdsourcing practices into mobile phones, e.g. so that consumers may sell their photos for news portals directly from their phone (Scoopshot 2011). Via mobile crowdsourcing applications firms may also offer tasks for consumers. These include information on requirements and rewards, known as task design. Crowds<sup>2</sup> e.g. upload their photos to the service where the task owner can choose which photo to use and the contributor is credited the reward defined in the task.

In addition, crowds can be utilized to collect research data quickly and cost-effectively (Pitkänen & Salminen, 2012). For example, Horton et al. (2011) study the power of “online laboratories” for conducting experiments in digital labor markets, a possibility that is much more difficult to execute in physical labor markets due to access concerns and inability to manipulate incentives (wages). In crowdsourcing, the researcher can freely set rewards and get exact data on responses of the crowd. Moreover, the popular paper by Benkler (2002) examines how physically fragmented open source communities are able to develop complex systems through efficient and timely solution of coordination problems, also strongly present in most labor markets. Benkler (2002, 369) argues that “peer production has a systematic advantage over markets and firms in matching the best available human capital to the best available information inputs in order to create information products.” Clearly, crowds have expertise and potential in many areas, especially in knowledge work. As a logical conclusion, firms that are able to leverage this potential may gain competitive advantage.

The study examines the following questions:

- 1) *What does literature tell about managing crowds?*
- 2) *What aspects should firms consider when applying crowdsourcing?*
- 3) *How can the success of crowdsourcing activities be evaluated?*

The first question aims to define the method of managing crowds, the second one to define how it could be applied, and the last one how the application of the method could be evaluated. By answering the questions this study supports the development of crowd management in theoretical and practical level. The theoretical level refers to providing definitions and description and the practical level to finding the best practices to execute tasks. Answering these sub-questions covers comprehensively what crowdsourcing is, how it is applied and how its quality could be evaluated. These definitions are a good opening for the further development of crowdsourcing practices.

This study uses literature review and evaluative research. First, the literature review defines and describes the crowdsourced videographic method, its process for empirical application, and quality criteria. Then, the evaluative research method that is applied from evaluating social programs is used to evaluate the focal study about mobile gaming that was conducted with created crowdsourced videographic method. The used data for evaluation was secondary data about the focal study including the research task, screenshots from the mobile application, videos collected

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<sup>1</sup> Some examples of these platforms include Amazon Mechanical Turk, oDesk, and Freelancer.com.

<sup>2</sup> A crowd is defined here as physically and motivationally fragmented group of individuals willing to perform tasks initiated by firms through a crowdsourcing platform.

from the participants, and evaluation by the authors. In evaluation the definitions and descriptions made during literature review are used as a basis for evaluation of the focal study and secondary data is compared to them. This study develops the crowdsourcing practices by defining and testing them.

## 2. Theoretical framework

Based on an earlier literature review Pitkänen and Salminen (2012) propose a conceptual model for videographic crowdsourcing, consisting of four themes: 1) guidance, 2) incentives, 3) quality, and 4) representation (outcomes). The model is illustrated in Figure 1.

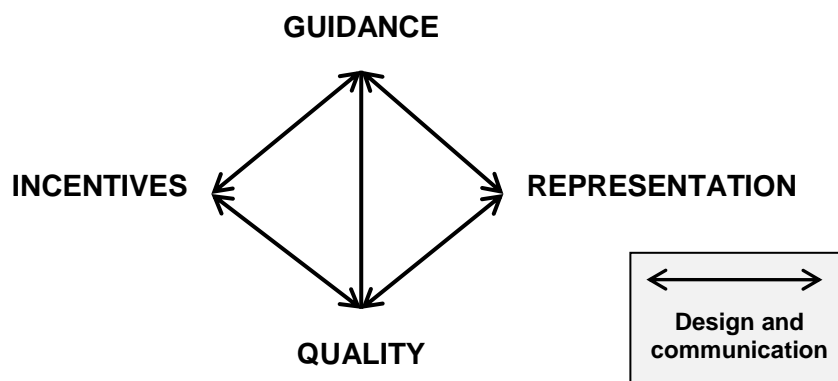


Figure 1 Model for videographic crowdsourcing (Pitkänen & Salminen 2012)

Two-way connections occur in the model between guidance and incentives, incentives and quality, quality and guidance, guidance and representation, and representation and quality (Pitkänen & Salminen 2012, 342). Incentives have only indirect connection to the representation, via guidance and quality. Connections between themes vary based on the perspective the connection is approached from. ‘Design and communication’ refers to designing the research tasks and communicating them to consumer participants. Although consumers are able to create context-rich data that can be used in consumer research (Hein et al. 2010), they depend on guidance by researchers. Therefore, the creation process is influenced by interaction with the researcher. The researcher is, in fact, framing the crowd’s activities through task design, delegation, and guidance. This framing will necessarily affect the quality of outcomes. The following sections discuss the dimensions of the conceptual model.

### 2.1 Guidance

Utilizing crowds involves a risk: Will the crowd respond in a desired way, and will the quality of their contribution be satisfying? Guidance includes methods to improve communication, reduce the risk of poor quality due to misunderstanding, designing tasks in a parsimonious way and, in sum, guide the crowd before and during the task. Transparency relating to requirements and rewards increases consumers’ awareness of the study goals<sup>3</sup> and the importance of their input which is aimed at generating trust (Prahalad & Ramaswamy 2004). Too much control, however, can become

<sup>3</sup> The notable exception is the experimental design, in which case the research goal may be kept private to ensure social desirability bias.

counterproductive. For example, strict guidelines may reduce richness of the crowd-originated data (Zheng et al. 2011). Communication with consumers consists of delegating tasks, which is followed by consumers responding by sending back the results of their work. The task delegation effectively creates an agency relationship between the firm and participants (Eisenhardt 1989), as the firm is unable to monitor participants' behavior to the full extent. However, most crowdsourcing platforms release rewards only after approval of the work which may curb opportunistic behavior, although it does not solve poor quality due to lack of skill<sup>4</sup>. Therefore, the crowds' properties such as autonomy and self-guidance may decrease, even hinder the firm's ability to guide them and extract the desired outcomes. Nevertheless, Schenk and Guittard (2011) maintain that "if the request is ill defined, the crowdsourcing process is very likely to lead to non-satisfactory contributions." Zheng, Li, and Hou (2011) suggest that crowdsourced tasks should "preferably be highly autonomous, explicitly specified, and less complex, as well as require a variety of skills". Since complexity and skills are both relative terms (skill levels of individuals differ), also communication may be more or less intense depending on the proficiency of individual members of the crowd. In summary, guidance involves task design (before crowds start working) and communication (during the task execution, e.g. answering to questions). Through task design, it is linked to incentives which are rewards from the perspective of crowds. It is also assumed that there is a relationship between guidance and outcome, so that task design influences what type of results the firm receives (i.e. what is asked from the crowd) and communication affects quality; that is, how well is the chosen type of task carried out.

## 2.2 Quality

Dow et al. (2011) assert that "requesters often struggle to obtain high-quality results, especially on content-creation tasks, because work cannot be easily verified and workers can move to other tasks without consequence." Although we do not rule out the possibility that this be an inherent problem between an anonymous and distant crowdsourcing platform and the required degree of intensive guidance, lasting relationships between the researcher and informant are possible over the Internet<sup>5</sup>. Following this line of thought, non-verifiability becomes a more crucial issue when dealing with micro-tasks of superficial nature. In fact, consumers may be tempted to "game" the system in hopes of easy payoffs, e.g. by providing "nonsense answers in order to decrease their time spent and thus increase their rate of pay" (Kittur, Chi, & Suh 2008). Although the lack of definite answers may hinder the researcher's ability to identify opportunistic participants (Kittur et al. 2008; Eickhoff & de Vries 2011), we argue that videographic data is fairly easy to screen for malicious users, as the researcher can quickly interpret the match between guidance and representation provided by the consumer. However, pre-assessing the motivation of participating consumers should be considered already when designing the task and incentives. Complementary suggestions have been made; e.g., Bao, Sakamoto and Nickerson (2007) proposed using Likert scales and prediction voting to evaluate the quality of crowdsourced material. However, using the crowd to evaluate quality adds complexity to the research design (e.g., requirements of competence, coordination costs), and therefore we do not recommend it. However, considering the quality criteria before, during and after research gives the right directions for an effective and reasonable research. Further, decisions on what is included and excluded in the final outcome are important for *usefulness* of the project (Kozinets & Belk, 2006). Finally, solving the quality challenge requires finding and motivating suitable crowds. Although current mobile phones are sufficiently advanced to produce decent raw

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<sup>4</sup> Consider a benevolent but incompetent participant – it is easy to see that a large number of incompetent participants quickly erode efficiency benefits as the crowd manager is forced to spend an excessive amount of time separating low-quality work from high-quality work.

<sup>5</sup> Such as in any relationship, the quality of online relationships is influenced more by its relative importance to parties than by distance of the parties (Cummings, Butler, & Kraut, 2002).

material, issues may relate to consumers' ability and willingness of using crowdsourcing platforms. For example, Hein et al. (2010) studied a group of *young males* in Scotland. Their research was possible to carry out with mobile phones, but if the target group would have been *pensioners*, finding a proper user group might have been more difficult<sup>6</sup>. Overcoming these obstacles requires previous understanding of the target consumers as well as creating effective incentives when necessary. The scope of the research is likely to influence the process to a great extent. For example, Hein, Ryan and Corrigan (2010) found that the use of mobile phones during the ethnographic research not only reduced the disruption resulting from the research situation, but also revealed insights of the consumers otherwise hard to capture<sup>7</sup> (Hein et al., 2010). In contrast, Belk and Kozinets (2005) observe that the presence of video cameras affects informants' behavior, denaturalizing the research situation. Hein et al. (2011) report that taking notes, photographs and video during both participant and non-participant ethnographies tended to disrupt informants. In participant ethnography, taking notes may disrupt the interaction between researcher and informant, whereas in the non-participant ethnography it may result in less natural behavior (Hein et al., 2010). In contrast, using mobile phones for observing requires less technical skills, which leads to more natural field notes and representation of the context.

### 2.3 Incentives

Consumers typically contribute to crowdsourcing projects for "little or no money" (Howe, 2008). Financial incentives offered tend to be low<sup>8</sup>; however, there are other motives for participation (Kaufmann & Schulze, 2011). The question of motives is a complex one since customers are very different, and there are many alternative general theories explaining motivation. We focus on discussing intrinsic and extrinsic motivation (Deci & Ryan, 1985) which has been applied to crowdsourcing in earlier research. Internally motivated individuals seek the "fulfillment generated by the activity", whereas in extrinsic motivation the activity is only an "instrument for achieving a certain desired outcome", e.g. money or avoiding sanctions (Kaufmann & Schulze, 2011). Learning and social motives are examples of internal motivation whereas direct compensation and prizes as external ones (Zheng, Li, & Hou, 2011). Zheng, Li, & Hou (2011) find intrinsic motivation more efficient for encouraging participation; in particular, they recognized autonomy, variety<sup>9</sup> and analyzability (explicitly specified, and less complex) as important task features. Kaufmann and Schulze (2011) found that while extrinsic motivational factors (various payoffs) positively influenced the time spent in the crowdsourcing platform, participants tend to highlight intrinsic factors. These are also included in Kaufmann and Schulze's (2011) integrated model of crowdsourcing motivation, divided into enjoyment based and community based motivation and loosely following the dichotomy between personal interest and social interest (e.g., Ostrom, 2000). Hence, altruistic, reputational and other social factors also play a role as motivational factors of crowdsourcing (Quinn & Bederson, 2011). Kaufmann and Schulze (2011) discuss social motivation as "the extrinsic counterpart of intrinsic motivation", meaning that the participants are not driven by external rewards beneficial only to them (cf. orthodox-rationality in economics), but also consider benefits externalized to the social group, or the community. When innovations are freely shared, others can benefit from them, and a result is created that the larger community will benefit from. The "community", if such exists within the crowdsourcing platform, can also potentially serve to filter and monitor quality – potential social punishments may exceed threats imposed by the researcher (Ross, 1896). The power of such a community stems from shared, values, norms and

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<sup>6</sup> Assuming that pensioners are not, in general, familiar with mobile video recording.

<sup>7</sup> "The film is what consumers created by themselves for themselves. Films were one of the mediated forms through which consumers constructed their identities and captured their consumption." (Hein 2010)

<sup>8</sup> At least in Western standards.

<sup>9</sup> In terms of skills required.

obligations; in other words, *community identification* (Kaufmann & Schulze, 2011). Additionally, “crowdsourcing implies voluntary participation of individuals, with no hierarchy or contract related constraint, as well as a high degree of autonomy in the achievement of tasks” (Schenk & Guittard, 2011). In other words, little coordination by hierarchy takes place and consumers act independently. Kaufmann and Schulze (2011) name this *task autonomy* and link it to enjoyment based motivation, so that the participant is motivated because the task allows him to be creative (see also Csikszentmihalyi, 2008). However, individuals may emphasize their desire for creativity differently in terms of motivation – in the case of videography, capturing video allows a higher degree of creativity than traditional data collection methods, which can be seen as an advantage in terms of participant motivation. However, at the same a deeper commitment is required since requires more time and skill than e.g. answering to a questionnaire. Further, because of research requirements there can be no absolute lack of coordination. In fact, to protect data quality, guiding of participants should continue after task delegation as data collection progresses; the notable exception being non-participant approach where the researcher wants to influence the data as little as possible. Kaufmann and Schulze (2011) mention feedback in their integrated model; the idea is that some participants work partly to receive appraisal, or social approval, from the researcher (cf. Steele-Johnson, Beauregard, Hoover, & Schmidt, 2000<sup>10</sup>) – as long as they receive it, the motivation level is assumed to remain high. In contrast, a failure to give feedback (acknowledgement) will lead to diminishing motivation. Finally, participants may be after *delayed payoffs* which refers to accumulation of skills that could be useful e.g. in future projects; similarly the participant in crowdsourcing tasks may use it as a signaling strategy for attracting the awareness of possible employers (Kaufmann & Schulze, 2011). Boudreau and Hagi (2009, p. 175) note that “profit opportunities and monetary awards are but one aspect of prizes (...); participation itself may enhance one’s affiliation with the broader coder community; posted scores are an opportunity to signal capabilities to prospective employers and to achieve status; objective evaluation can be a useful means of self-improvement.” Although their findings are from a programmer community, not the average crowdsourcing platform, the same principles are generalizable according to their social fundamentals: crafting game mechanics and other aspects of “play” and competition raises the interestingness of the challenge and therefore positively influences motivation. Increasing the difficulty of the task is likely to have the same effect, as long as the participants feels capable of accomplishing the task (Csikszentmihalyi, 2008). Crowdsourcing activities, such as data collection may require specific skills and significant time investments (Schenk & Guittard, 2011). The match between skills possessed by the consumer and required by the researcher is likely to influence motivation; if there is a wide gap between the two (e.g. the task is too demanding compared to abilities of the participant), the motivation is likely to drop (Csikszentmihalyi, 2008). Besides compatibility of requirements and skills, the variety of skills required seems to affect motivation (Kaufmann & Schulze, 2011). It is logical to assume a relationship between motivation and quality of work (Kaufmann & Schulze, 2011). Because the researcher wants consumers to provide high-quality data, designing appropriate incentives becomes a priority. Degree of motivation will influence how participants complete the task, so that participants in the same study may answers differently based on variance of commitment, regardless of underlying consistency (Schmidt, 2010). As note previously, motives affect the quality of data collection, for which understanding is crucial. Consumers participating only to make money or “kill time” have significantly different motivation from those who participate because they find the research topic important (Fry & Dwyer, 2001). Kaufmann and Schulze (2011) refer to this as *task identity*; if the participant understands how the data will be used, the motivation will be higher than in a case of confusion of lack of information (note the conceptual link to *guidance*).

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<sup>10</sup> Relating to the confirmation bias, or tendency of some subjects to provide answers they feel the researcher is looking for.

## 2.4 Outcomes

The fabrication of the outcome relates to the type of material collected. This section of the paper focuses on videographic research as an example of data. To begin, Rokka (2010) suggests that visual elements reflect the actual field and could be put in the center of research until representations emerge. He divides videographies into documentaries and visual ethnography. Documentaries connect to the real world through actions and events recorded on video. They are bound to relevant theories by reflecting practice. In contrast, visual ethnography is a process of creating and representing new knowledge; highly compatible with interpretative consumer studies (Rokka, 2010). Belk and Kozinets (2005; Kozinets & Belk, 2006) underline that videography can benefit and contribute into different techniques and methodologies of qualitative consumer research. Belk and Kozinets (2005) list individual or group interviews, naturalistic observation and autovideography as traditional methodological options. They also recognize collaborative, retrospective and impressionistic videography. Pink (2007) underlines the importance of collaboration and self-representations in videographic techniques. The role of video should be seen as recording reality, which can be retained for later use. In practice, the material is created based on video diary keeping, note-taking including surveys and recording certain processes and activities (Chalfen & Rich, 2004; Pink, 2007). Documentary and visual ethnography are both based on context-rich videographic data that is retained in the representation. Even though documentaries are analyzed based on various categories (see Rokka, 2010), the question of whether videographies could be more than “compelling data” have been addressed (Rokka, 2010). To answer this question, the relationship between reality and theory should be reviewed. More specifically, the focus documentary representation is on argumentation representing meanings, explanations and interpretations; not only describing what exists (Rokka, 2010). In turn, benefits of visual ethnography are seen in inter-subjectivity and multivocality of the method. Visual ethnographers aim into new ways of understanding, creating a tighter bond between vision and observation that does reflect the reality. The approach is reflexive and underlines subjectivity, creativity and self-consciousness (Rokka, 2010). For example, interviews shift textual authority from the filmmaker to the interviewees, while the reflexive mode focuses on *how* topics are talked about. In documentaries these modes can occur simultaneously or mixed; whereas documentaries support different roles of the filmmaker, visual ethnography only supports the reflexive mode of representation (Rokka, 2010). In visual ethnography, this mode underlines the collaboration between ethnographer and informants to draw out, reconstruct and represent relevant experiences (Pink, 2007). Through filming, editing and reflecting upon the material, the filmmaker and participants are building the context where continuities between diverse worlds and experiences are presented. Hence, videography and particularly the visual ethnography can be seen as a true opportunity to bring out informants’ voices in the representation (Rokka, 2010). The context becomes grounded on material from consumers, bringing out their individual voices. Finally, while creating the representation, the researcher should also consider ways to judge its quality. Kozinets and Belk’s (2006) topical, theoretical, theatrical and technical criteria can be used as the starting for assessment. When considered in the context of crowdsourcing, data collection, topical and theoretical criteria are fully reliant on tasks given by researchers. Theatricality and technical parts depend on the material consumers have filmed, but receive their final forms in researcher’s editing table. Of course, the guiding given by the researcher significantly affects consumers’ filming decisions such as camera angles and backgrounds; however, the choice of what to include and exclude into the representation remains with the researcher.

### 3. Method

The empirical part evaluates the usefulness of the crowdsourcing model in practice. The theoretical model was applied in crowdsourced videographic research conducted for a Finnish gaming company in November 2011. The purpose of that research was to explore consumers' mobile game consumption in multiple contexts which in this case were locations and environments. The data was sourced from participants who documented their game consumption through short video clips. A special application was used for data collection; taking the role of crowdsourcing platform. Hence, the application for crowdsourced videographic research method allows the researcher to connect with crowds to provide filming tasks for research purposes and discuss about different ways to conducting the research. Crowds in turn can receive tasks, discuss with researcher, and most importantly film the videographic data that could be sent directly to the researcher without any disruptive device changes. The crowdsourced videographic research method at its best could be used to provide both participant and non-participant data. But executing research as through non-participant techniques requires control of research ethics. Crowdsourced videographic research method should be applied in researching consumer culture, because it brings out contextual relations and unconsidered contextual relationship behind what is obvious. The application creates common platform that makes the use of crowdsourced videographic research method possible.

Video material was supplemented by asking consumers to explain verbally why they were playing games in the specific situations. Based on previous research, visuals were expected to be in a key role for creating understanding, because they extend the description of context beyond what consumers are able to tell through words. However, using both visual and verbal communication in producing the video material was especially underlined in the Research Task 1:

*Please show through video what kind of situation you are in and verbally tell why you want to play the game in this specific place at this moment.*

It was also important for the focal study that the consumers filmed in different locations, as the game had location-based elements relying on real environments. Importance of bringing out variety of situations was also highlighted in the Research Task 2 which asked players to

*explore situations in which consumers might want to play mobile multiplayer games.*

Participants for the focal study were chosen by convenience-sampling researcher's networks. In practice, suitable participants were approached via Facebook where they were asked to download a special mobile application created for this crowdsourced research. Through the application, participants were able to receive a research task, film material and send it to the researcher. At this point participants were not actually informed about the research questions, but told that the topic was mobile gaming and that their task was to film videos through the application they had downloaded. Application was downloaded ten times in total and all participants received the research task to their mobile device in the beginning of the research period. No additional information was provided. Movie tickets were used as incentives for crowds to participate.

The four most active participants created three videos each and two others two each. The four remaining participants did not produce any videos at all. Thus, activity was not very high and participants did not even produce one video per filming day. The timeframe for filming was one week, but even the most active participants only filmed three videos. In total, the study received 16 videos, their length ranging from 7 to 56 seconds. All videos contained verbal interpretation except three videos filmed by one participant that did not had voiceovers at all. In general, videos were filmed at different places and situations. Participants focused on showing the environment where



they were. They moved camera to show a wide view of the context and most of them completed the description by verbally explaining where they were, what they were about to do and why would they play the mobile games in those particular situations. For example, “killing time” was a common reason for playing mobile games stated by respondents. Many videos were filmed on the go. Participants were presented more often alone than accompanied with other people. Most of the videos were filmed seriously, but one participant also joked about the research task and described his actions in an ironic way.

This study uses postulates of videographic crowdsourcing to evaluate the management of the crowdsourcing process of the focal study. So forth the data-analysis has checklist approach for this research. In the original use, checklist aimed to make an evaluation about factors that impacted the program (Rutman 1984, 142) and in this study the used factors of checklists were defined in the model. The actual evaluation was conducted by comparing the data about the focal study towards these pre-defined postulates. The use of checklist approach of evaluative method was adaptive and the used analysis crafted to match with this specific research (see Hesse-Bieber & Leavy 2006, 344). The use of checklists also helped to avoid errors that normally occur in qualitative analyses and supported to select the checklists as the approach of evaluation (Cook & Campbell 1976; see Rutman 1984, 143). The postulates are as follows:

- **Guidance – Quality:** How the researcher guides, interacts and communicates with the crowd affects the quality of material produced.
- **Guidance – Representation:** How the researcher guides, interacts and communicates with the crowd frames the possible research outcomes, or representations.
- **Guidance – Incentives:** How the researcher guides, interacts and communicates with the crowd may in some cases act as an incentive to participate per se.
- **Quality – Guidance:** The quality of material collected affects how the researcher is evaluating and improving future guidance.
- **Quality – Representation:** The quality of the material collected frames the possible representations that the researcher can create.
- **Quality – Incentives:** The quality of material collected affects how the researcher is evaluating and improving future incentives.
- **Incentives – Guidance:** Instead of removing the need for guidance, incentives may even increase it if the number of participants increases (in complex tasks).
- **Incentives – Quality:** Incentives may have a positive effect on quality, although this cannot be interpreted as a rule due to fuzziness of personal (hidden) motives.
- **Representation – Guidance:** When creating the representation, the researcher strives to hold consistency with the guidance given to participants.
- **Representation – Quality:** When creating the representation, the researcher is considering different criteria for judging quality.

Evaluative research is common in social research and it “attempts to assess whether a particular intervention, process, or procedure is able to change behavior” (Salkind 2010, 1254). At its simplest, evaluation leads to an opinion concerning the object (House 1980, 18), but it is at the same time bound by criteria and context. Suchman (1969 see Caro 1971, 8) continues that evaluative research focuses on a comprehensive appraisal of how the objective meets the criteria. This study differs from the original use of the evaluative and its application, because the evaluative method is used to provide information about the management of crowdsourcing research process, but use of it is still acceptable, because of focus on the relation between appraisal and criteria. This study applies professional review as an approach of evaluative research. In the approach it is assumed there is a consensus on evaluation criteria and it need to fit the case (Caro 1971, 8).

For professional review approach House (1980, 23; 35) suggests reviews by panel or self-studies. In this study, in evaluating management of crowdsourced videographic research the object of the review was the secondary data about the focal study. Data included the process of crowdsourcing

and created videographic data. In this study the used data was secondary material about how the research of the focal study was communicated to the participants and the actual data participants gathered during research (see Rutman 1984, 22). By using special mobile application the researcher controlled the research process and communicated the research task to participants. This data about using the application was documented with screenshots from the mobile application and used in evaluation. The second type of data was videographic data produced by the participants. Both of these two types of used data could be defined as record and file based data (see Rutman 1984, 22). Rutman (1984, 22) continues that record and file base data are common for evaluative research. The fact that author conducted also the focal study gave a good opportunity for self-evaluation that was third type of data used in this study. Record and file based data about focal study was received directly from author's research records and nothing unpredictable or special could had happen during this secondary data collection to affect evaluation. Self-evaluation was made reflectively during conducting this study and there was no risk in missing information in the data collection of this study. The secondary data actually fit the evaluative research well compared to the primary one (Caro 1971, 22–23) and because author also conducted the original crowdsourced videographic research there was possibility for self-evaluation. Thus, in addition to secondary material author commented the research process based on his own experiences from executing the focal study. In practice, the used method in this study was actually a combination of objective professional review and self-evaluation, and author acted in two roles.

## **4. Results**

### *4.1 Guidance*

Guidance in the focal study involved the task description but there was no additional support for participants to carry out the task. In hindsight, this created the risk of participants not responding to the task in the correct way and the quality of the data might not meet the requirements. Zheng et al. (2011) define that guidance improves the materials' similarity and analyzability, which was seen in the differences in the material. For example, one participant did not express verbally anything, the other discussed the factors in the game and the rest filmed the environment they actually were in. Referring to the features in the game was an example of how research task was misunderstood compared to the other. The other videos were similar to each other in their content and structure. They were filmed to show the environment and the participants described where they were and explained why they would play the games at that particular moment. Many participants filmed the videos when they were on their way to different places and videos formed a certain theme as a result. Videos also shared the same structure of first showing the environment and then focusing on the details. Participants interpreted the task similarly and answered in a form that researcher expected. So, it could be said that enough information was given to participants to understand the task correctly with good task design. These similar videos were analyzable and provided sufficient information for the research task based on their similarity. The videos of one participant that were ironic comments about research followed the same structure, even though the content was not really useful. It is also good to think about the engagement of participants and the variety of videos. In the focal study the researcher managed to engage half of the participants who downloaded the mobile application to answer the task, but the amount of videos any participant produced during the week was quite low compared to the time limit for filming. Feedback from the researcher during the research might have encouraged them to produce more material. However, participants did not contact the researcher to ask any additional questions. The independence of participants could be

seen in the variety of the videos, because the situations described in videos were different from each other and depended a lot on the participants. Everyone expect one participant were actually trying to provide material that answered the research question. So forth, the research task was well-enough designed, autonomous and explicitly defined to gain satisfactory contributions (see Zheng et al. 2011, 57; and Guittard 2011, 103). In the focal study incentive effects did not show too strongly because of limited guidance. On the other hand, in the focal study the participants were recruited from the acquaintances of the researcher, so the fact that the participant knew the researcher promoted answering. Still, many did not record any videos at all. In the focal study, tangible incentives to answer the research task were the movie tickets. The prize was only informed in the summary of the research task and most likely it did not have that big of an effect on the participants. In practice, this means that incentives were not used to actually persuade the participants. More likely the fact that the researcher knew participants was a more important incentive and a source of motivation for the participants. In the focal study it was not defined when and based on what performance the participants would actually get the tickets. In practice, the tickets were offered to the participants after the research via post to those who filmed videos. Emphasizing this information might have supported the crowdsourcing process.

#### *4.2 Quality*

Conducting research by using crowdsourced videography helps to see how different ways of guidance lead to different quality of material. The quality level of material also provides instructions on how to guide, but it requires a couple researches to get the touch. The most important fact when evaluating the focal study here is to see that there was no continuous discussion during the research. However, there were no total misunderstandings, only one participant was providing too detailed information about a game not the context and other did not verbally interpret any situation. Problems concerning the situations where participants go too deep to side roads or minor details, in this case by telling about playing one specific game, could be avoided by leaving the given tasks without examples. In practice, it is more challenging to make sure that participants include the verbal interpretations in videos. This is because there might be different reasons for the lack of voiceovers, where as mixing the objective with an example is only dependent on if the examples are used in the given task. Awkwardness to speak loud in public places could be the reason for the lack of voiceovers in the material. However, one participant did not use voiceover even when he was alone indoors. The other relevant reason is that the participant did not understand the question. For example, the video example within the given task might be the solution for these situations. On the other hand the example video could affect on outcomes, when participants have too a dominant idea about the video. In the focal study's outcome collected videos were shown as unedited visual ethnography. Therefore, the quality of created material was shown in the structure of the videos. All the material of the focal study was easy to watch through, because the perspective of video was the same in all. Even though two participants' videos had a bit different content, focus in game actions and no voiceovers, their videos still followed the similar framing and structure with the others and outcome's watching experience was still pleasant and congruent. The mobile phones' role could be discovered through relation from quality to representation, because the way how videos were filmed, actually followed quite well the angles how mobile phones are normally held and used. Standard way how to film videos with mobile phones makes material more homogeneous. This is also good, because not all the participants are used to filming video, but they are still somehow comfortable with using mobile phones.

### *4.3 Incentives*

In the focal study guidance was extremely limited. Thus, there was no option that guiding could have been increased heavily. However, going through the videos that participants filmed would have taken longer if there would have been enormous amount of clips per participant. Mainly the focal study showed that gaining enough motivated participants was the concern in the focal study. Personal motives seem also quite fuzzy in the focal study. The amount of received videos reveals that the most likely participants did not really have motivation to contribute. Movie tickets were not such an incentive to motivate externally participants. On the other hand, there was also a problem with internal motivation as well. Still, what could be underlined is that information about the incentives should have been brought out more. Also combining the incentives more directly with the quality of participants' material would have been good. For example, giving a better incentive if participant produces multiple videos, or giving the prize for the best participant might have created stronger links from quality to incentive. The task should also have motivated crowds internally, but providing information about mobile gaming was not significant for participants and the amount of active participants was limited. Also, the active participants only filmed two or three videos within a week, even though they would have had time for deeper contribution. Thus, task did not motivate participants well. It is also good to recognize that participants' motives could have been to please the researcher, but even that did not bring many videos.

### *4.4 Outcome*

In the crowdsourced videography researcher controlled the outcome in the very end. In the focal study the participants were only informed about the topic of the material they were creating not how the videos are used in any point. This actually made the use of videos a bit different and the researcher can for example approach the material from different perspectives. The approach was direct and the material was only used to explore direct situations in mobile gaming. The other approach for the use of the material could have been what these situations tell about mobile gamers, for example. In that case the whole research would of course have been different, but it would not actually have effected how the material was collected. The only problem might have occurred, if the participants had found out that their material was going to be used differently than first explained. This ethical or transparency issue could have been avoided by using more open research task, where use of videos would not be defined. Thinking about quality of crowdsourced research as whole while creating the outcome is extremely important for success in process. When video is edited especially the limits should be considered. When presenting research outcome as visual ethnography without editing there are not that many options that can affect the outcome after receiving of the videos. However, choosing the proper order and categorizing similar videos together helps to create an understandable whole.

## **5. Discussion**

Crowdsourcing is managed through guidance, quality, incentives and outcomes. When task design is clear enough it improves similarity and usefulness of contributions, even when there is no other guidance. It is important to provide all needed information clearly, so participants can understand the task correctly and produce useful outcomes with sufficient information. The participation level in amount of participants and in amount of filmed videos showed that attracting participants to join

the research was difficult. Because the planned outcome was visual ethnography, not documentary (see Rokka 2010), there was less pressure for guiding; videos could be shown as raw files and different perspectives were sought after. Incentive effect was not underlined during the research process. This might be because the participants were recruited from the acquaintances and networks of the researcher, so the fact that the participants knew the researcher must have promoted answering. Moreover, the prize was communicated only in the summary of the research task.

While the effect of the guidance is quite clear, evaluation about quality is quite challenging. Even though there was no continuous discussion during the research, there were no serious misunderstandings in data collection. Some mistakes like focus on example in task or skipping verbal interpretation in video could be fixed by making sure that the given filming task is unambiguous. However, the quality of unedited visual ethnography was fully reliant on the quality of material. The other forms of representations required different and diverse quality material to make comprehensive representation. Communicating incentives is important in order to receive good quality video and incentives should be linked to the quality. In a similar vein, outcome is under the researcher's control, but material gives guidelines what is possible to do and what is not. Transparency is important and participants should know what is going to happen to the material they are providing in order for them to provide useful contributions.

Incentives are also demanding. Too persuasive incentives might increase the required guidance, but more likely there is need to motivate the participants to produce enough material in terms of quantity and quality. Also understanding and affecting personal motives is hard. Even in the case of personal relations between the researcher and the participant there was no strong motivation to answer. Motives are extremely personal and hard to influence by external incentives. Overall, the reasons for crowds to participate seem to relate to personal interest more than money or other firm-provided incentives. Therefore, when designing the incentives, firms may consider intrinsic motives as an alternative to financial incentives. Such a conclusion also applies to researchers of crowdsourcing; for example the influence of pricing may be limited in empirical settings (Boudreau & Hagi, 2009): "extreme competition and rivalry (...) is itself a great motivator for coders [...], something a price system on its own would clearly fail to achieve." Regarding tasks given by the researcher, the instructions should be sufficient to extract the answers for the question asked, but at the same time open enough to motivate creativity and achievement of various personal interests (Howe, 2008; Zheng et al., 2011). As such, crowdsourcing becomes more than just a cost-cutting strategy, and firms may consider recruiting the most talented members that perceive the effort of participation as meaningful. In order to succeed, firms have to focus on guiding crowds, being clear and transparent on task requirements and rewards, and carefully plan integration of the outcomes to their internal processes. Understanding these practical features helps firms to manage crowdsourcing in practice. Before this study there were little practical tips, but now there are at least some first-hand experiences and documented best practices on managing the crowd.

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