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Crowd Working - Chances and Challenges

Bachelorarbeit

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1 Introduction

1.1 Motivation and Relevance

“Remember outsourcing? Sending jobs to India and China is so 2003.”

— Jeff Howe [21]

As we continue our everyday lives the world gets increasingly connected and new trends arrive. One of the trends which affects us the most arose within the scope of the Web 2.0 [33], namely Social Media, and tremendously changed the way people use the Internet. While it was common to just acquire information online, the Internet of today allows everyone to take part in various social events by commenting or posting their own opinion for everyone accessible. It is not unusual to participate in online discussions concerning the current television program or to assess a new dish a restaurant is about to include in its menu - everything is done in real time and with ease on a mobile device.

As a result of the emerging online participation and acceptance by the online community, crowdsourcing¹ gained vast popularity and the usage of crowdsourcing began to increase sharply. Since 2009 this new form of outsourcing particular tasks was applied especially in the fast moving consumer goods (FMCG),² technology and automotive industry as Figure 1 illustrates. Until today already 85% among the 2014 Best Global Brands like Coca-Cola, Apple and Google have been using crowdsourcing at least once [52].

One of the most popular examples for online crowdsourcing is Wikipedia [31, 69], an Internet platform which allows Internet users to publish their knowledge collectively and make it accessible for the online community. Besides examples for non-commercial crowdsourcing, McDonald’s “Burger Battle” [46] is one of the most popular examples with a commercial purpose. The community is asked to create their personal favorite hamburgers and to submit the resulting suggestions. The burger with the most votes is then included in the menu.

Eventually Amazon was the first to realize the vast range of options and opportunities that the so called wisdom of crowds [63] represents and established the first and most popular crowd working platform Amazon Mechanical Turk (MTurk) in 2005 [2] and hence,

¹Crowdsourcing describes “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call” [20].

²FMCG are goods which are consumed quickly by customers and are sold in high quantities. By way of example soft-drinks and toiletries are FMCG and are the contrary to slow moving consumer goods (SMCG) like clothing [61].

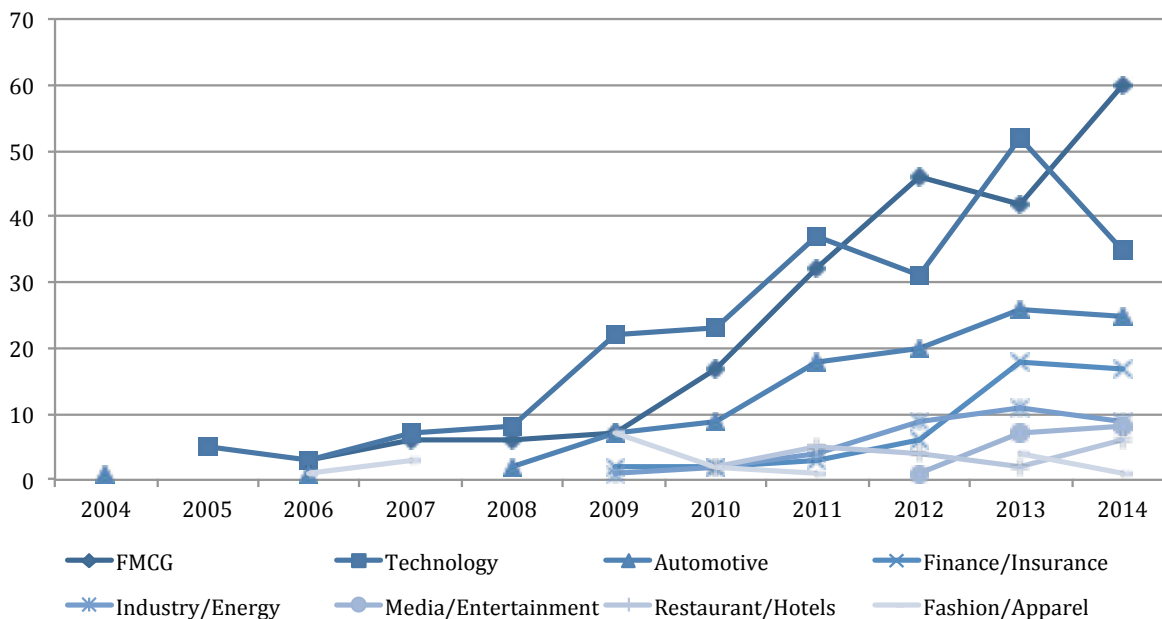


Figure 1: Evolution of crowdsourcing usage by the Best Global Brands
Own illustration according to Roth [52, p. 7]

established crowd working. The main idea was to hire digital online workers at very low costs in order to make them look for adult content on compact disk (CD)-covers. Since computer intelligence was and still is much slower and more inconvenient in the fulfilling of such tasks compared to human intelligence [54].

Since crowd work is a relatively new phenomenon and has not been researched a lot, which is especially true for German platform providers, the aim of this paper is to examine the important aspects and characteristics of crowd work and to consider its limitations. Furthermore, the focus of this bachelor thesis is pointed towards the needs and requirements of a crowd worker because past research has mainly focused on the needs of crowdsourcing companies [58].

1.2 Status Quo - A Literature Analysis

As already mentioned before crowd work thus far is not a popular subject to current or past research [7, 58]. However, there is a vast range of literature on “crowdsourcing”, a closely related topic. Referring to the literature on crowdsourcing, the term “crowdsourcing” was first introduced by the American journalist Jeff Howe [21] and is a combination of the terms “crowd” and “outsourcing”. Substantially it is a term for a web-based division of labor [41] and describes the act of splitting a task in many subtasks, often referred to as “micro-jobs”, which are then offered to a large, mostly undefined group of people [21] that

use the Internet, denoted as the crowd. Those tasks are typically offered to the crowd in form of an open call [21], which means that it is offered to the public and everyone with access to the Internet has a chance to accept the job offer. Traditionally, these tasks are completed by employees of the outsourcing company [6], however, the work is now outsourced and processed by “digital workers”, “crowd workers” [6] or “clickworkers” [5]. The crucial disparity that differentiates “outsourcing” from “crowdsourcing” concerns the participating parties. While outsourcing implies the displacement of a task from one company to a third selected party, which is specialized in its subject, crowdsourcing displaces jobs from a company to Internet users worldwide and mostly independent of the crowd worker’s skills.

However, there is also a small set of literature on “crowdworking”, though it is mostly concentrating on the most popular microworking platform MTurk³. Thus, “crowd working”, “digital working” or “clickworking” describes the act of completing small tasks, so called “micro-jobs”, online on an Internet platform. These jobs are offered by a crowdsourcing company and available for everyone with access to the Internet to accept. Different from temporary employments and platforms like MyHammer [47], where private persons submit their artisanal order, for instance fixing a water conduit, and receive offers from qualified craftsman they can choose from, crowd work always takes place on the Internet or is submitted via a crowdsourcing specialized Internet platform. The range of duties is extensive ranging from web content extraction over surveys, text creation, designing and programming [36].

Despite of all the literature on MTurk, [Leimeister and Zogaj \[36\]](#) published a comprehensive and general literature analysis concerning the changes in work flow organization due to crowdsourcing. In their studies both perspectives are examined, namely the company’s as well as the workers position. However, it is particularly noticeable that the authors show an interest in especially the crowdsourcing company’s position whereas the crowd worker’s position is not elaborated intensely. Regarding crowd work, [Leimeister and Zogaj \[36\]](#) categorize crowd work, with reference to the work by [Malone, Laubacher, and Dellarocas \[44\]](#), in competitive approaches and collaborative approaches as can be seen in [Figure 2](#). Accordingly collaborative approaches are tasks which are completed by crowd workers either collaboratively in form of teamwork or independently. The latter requires the submission of multiple independently fulfilled tasks which are merged for a high-quality outcome. Similar to collaborative work tasks, the competitive approach also implies the submission of multiple independently completed tasks. Furthermore, [Leimeister and Zogaj \[36\]](#) elaborate six incentives by which a crowd worker may be driven, namely enjoyment of crowd work, social commutation, expansion of skills, acknowledg-

³Exemplary work can be found in [Chen, Menezes, and Bradley \[10\]](#), [Felstiner \[17\]](#), [Ipeirotis \[24\]](#), [Kittur, Chi, and Suh \[30\]](#), [Little et al. \[39\]](#), and [Ross et al. \[51\]](#)

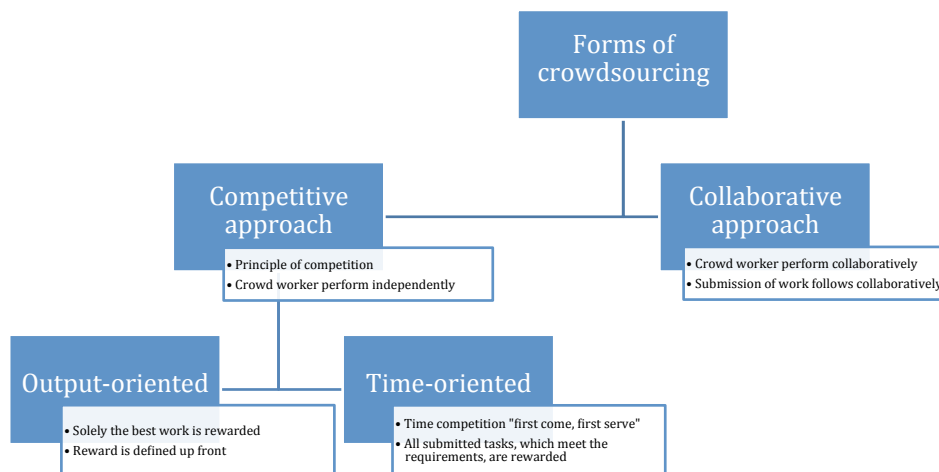


Figure 2: Crowdsourcing work forms
Translated from Leimeister and Zogaj [36, p. 63]

ment, self-promotion and compensation. Finally, with reference to the work by Felstiner [16], Felstiner [17] and Kleemann, Voß, and Rieder [32], Leimeister and Zogaj [36] come to the conclusion that crowd worker earn less than the American minimum wage and that a comprehensive research in various aspects is necessary.

1.3 Research Question

As subsection 1.2 showed, crowd work has solely been researched for American platforms which only concentrate on micro-jobs rather than creative and complex crowd work tasks. Therefore, both researchers and people, are not aware of all existing forms of crowd work which initialize new forms of freelancing or self-employment. Consequently, a research gap arises which includes the examination of crowd work beyond the scope of micro-work.

According to that, it is necessary to not only examine the perspective of crowdsourcing companies but to investigate the implications on the employed crowd worker. This new form of work implies vast changes in self-employment and opens new ways for companies to circumvent minimum wages and working condition laws. Furthermore, it has to be scrutinized how a crowd working process functions and who participates in such processes. Moreover, it is of essential importance to determine what legal implications crowd work is subjected to and which challenges and risks arise due to online crowd working. Despite the downsides of such a new phenomenon it is also necessary to study the arising benefits and chances for crowd worker as well as to point towards future improvements and needs.

In that context, this paper's aim is to address the needs of a crowd worker and to examine the crowdsourcing and crowd working process from the perspective of a crowd worker.

Recapitulating, this bachelor thesis asks for the *chances and challenges of crowd work*.

1.4 Procedure

In order to answer the research question and all implications [subsection 1.3](#) contains, this paper is segmented as follows.

Thus, [section 2](#) provides the fundamentals which are required for a better understanding of the subsequent sections. Accordingly, it gives an insight to areas in which crowdsourcing is already applied as well as it presents the various forms of crowdsourcing. Subsequently, the process of crowdsourcing is introduced which is followed by an illustration of various quality control mechanisms as well as common practices of reputation management.

Against this backdrop, the main part of this bachelor thesis, [section 3](#), addresses crowd work. Therefore, a typical crowd work process is presented which is followed by the characterization of compensation and reputation management structures. The legal circumstances and aspects concerning crowd work are illustrated in [subsection 3.5](#). Subsequently, [subsection 3.6](#) provides an experimental field research in order to give a deeper insight in the crowd working processes. Therefore, five online crowd work platforms are selected which are tested particular regarding user friendliness and crowd work process execution as well as compensation among other aspects. Furthermore [subsection 3.6](#) gives insights to the variety of crowd work offers and eventually compares the examined platforms.

Based on the theoretical framework provided in [section 2](#) as well as [section 3](#) and the examination of crowdsourcing platforms, [section 4](#) discusses the chances and challenges which arise from the preliminary sections. Moreover, it discusses arising issues which occur in crowd working processes and considers benefits and drawbacks. Finally, [section 5](#) briefly summarizes the gained knowledge of the previous sections and outlines the importance and the potential development of crowdsourcing in future.

5 Conclusion and Future Look

The Internet and new technologies increasingly influence the everyday life as well as everyday work and work flow. One of the current innovations which influences the flow of work is the so called crowd working, a result of crowdsourcing. Therefore, this paper examined both, crowd work and crowdsourcing in order to provide a basic understanding of these processes and its synergies.

Within the scope of this bachelor thesis, the complexity and multifariousness of crowd work was illustrated. Hence, [subsection 2.1](#) displayed the overall practical relevance of crowdsourcing and crowd work with examples of application areas, which already take advantages of these new innovations. It is pointed out that all of the 2014 top global brands used crowdsourcing at least once within the last decade [[12](#), [52](#)]. Furthermore, quality control mechanisms as well as reputation management systems were introduced and an overview of the various approaches which can be applied was provided. Accordingly, it was indicated that a combination of various mechanisms represents the best strategy, which however, is also the most costly approach. Moreover, it was observed that the overall outcome quality is a product of different aspects, namely the worker's profile, expertise, the task definition as well as the user interface, granularity of task instructions and especially aspects of compensation.

However, [subsection 3.2](#) displayed that compensation is not always the main incentive. Thus, it was found that skill expansion and self-promotion are driving factors as well. Furthermore, [subsection 3.5](#) provided an insight in the legal circumstances regarding crowd work. Thus, a crowd worker is protected by existing work contracts and consumer protection if crowd work is not the principal source of income. Otherwise, a crowd worker is legally self-employed and no longer a subject to social insurance, dismissal protection, vacation entitlement and other aspects.

Subsequently, [subsection 3.6](#) provided a detailed insight in the process of crowd working and compared different crowd working platforms. Hence, differences in registration, aptitude test, compensation and order supply were found. Moreover, [section 4](#) discussed chances and challenges of crowd work and crowdsourcing. In conclusion, crowd work is poorly paid and often monotonous. It contains various aspects of improvement as well as it is a high risk profession for self-employment.

Nevertheless, it can be assumed that crowdsourcing and, by implication, crowd working will gain importance in the future. Thus, mobile crowd work and ubiquitous crowdsourcing [[68](#)] might play an important role in the further development of mobile systems, especially within the scope of Industry 4.0. Also machine teaching due to crowd work

might be a potential future work form used by companies to save costs. Hence, crowd workers are exploited in order to train machines on how to complete tasks and eventually, the crowd worker will be replaced once the teaching process is finished [31, 38].

Eventually, there is a lack of resilient economic and empiric findings. Thus, future research has to examine the impacts of crowdsourcing and crowd working on labor markets and people as well as organizations and businesses. Hence, it has to be observed which effects crowd work has on employment as well as wage levels, the return to education and work flow management. Furthermore, there are many unanswered aspects concerning legal aspects. Therefore, a detailed analysis of law and rights is necessary, especially in the context of minimum wage laws. In order to improve working conditions on crowd work platforms the establishment of an incentive mechanism or a regulatory system is required which eventually pressures platforms to improve on these conditions.