

## **Un(der)paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing**

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### **Abstract**

This paper investigates the phenomena of "crowdsourcing", or the outsourcing of tasks to the general internet public. This phenomenon was made possible by technological innovations associated with "Web 2.0" but is evidence of historically significant change in the relations between firms and their customers. We are witnessing the emergence of a new consumer type: the "working consumer". In the conventional role, consumers were passive "kings" to be waited upon. Consumers now are becoming more like co-workers who take over specific parts of a production process, whereby this process ultimately remains under the control of a commercial enterprise. This article seeks a more precise definition of crowdsourcing, catalogues some of its forms, and differentiates them from peripherally related phenomena. It ends with a discussion regarding potential consequences (negative and positive) of crowdsourcing for the future organization of work.

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## 1 Introduction

Crowdsourcing, as argued in this article, takes place when a profit oriented firm outsources specific tasks essential for the making or sale of its product to the general public (the crowd) in the form of an open call over the internet, with the intention of animating individuals to make a contribution to the firm's production process for free or for significantly less than that contribution is worth to the firm. Firms engage in crowdsourcing to inexpensively mobilize the creative work of sometimes highly skilled persons as a resource for the generation of value and profits. Tasks that lend themselves to crowdsourcing include product design, advertising, quality monitoring, and the solution of specific technical problems.

Crowdsourcing has been made possible on a large scale by the emergence of "Web 2.0," a shorthand term for new internet applications that make two-way communication easier to manage. This article examines the phenomena of crowdsourcing in Web 2.0 and reflects on its ramifications for the organization of work and society.

The following section examines the wider context of change in corporate-consumer relations. The emergence of a new type of consumer, the "working consumer," is discussed as a theoretical preliminary for understanding the specific phenomenon of crowdsourcing. Reflections on a more precise definition of crowdsourcing are presented below (in section 3.1) together with an examination of the technical prerequisites (3.2) for its various types (3.3), with the caveat that it should not be conflated with related forms of interactive participation now common on the internet (3.4).

Voluntary participation in crowdsourcing tasks is currently very popular among internet users. Possible motivations driving individual participation and other factors that explain the rising prevalence of crowdsourcing, in-

cluding the motives of firms who initiate it, are discussed below (4). By way of conclusion (5), some potential future consequences of crowdsourcing for firms and consumers are reflected upon.

## 2 The Working Consumer

A functional differentiation of society into two dichotomous spheres of "production" and "consumption" is an artifact of early industrial society. The role of the consumer in this dichotomy is royally passive: consumers buy and use products, and that is all. Even in the act of buying they are waited on.

Self-service emerged much later in the history of consumption. Department stores in which customers were allowed to handle the stock themselves and vending machines first appeared at the end of the nineteenth century in the United States (Porter Benson 1988; König 2000). These changes reached Europe shortly afterwards and became widespread in the 1950s. Self-service first became commonplace in grocery stores, but by the 1970s companies like IKEA and fast-food chains widely expanded its use. Self-service principles started to become prevalent in many other areas of retailing like home improvement, pharmacy, and automotive supply at this time too.

Since the 1990s, the internet has been playing an important role in expanding forms of cooperation between firms and consumers in the production process. The internet revolution, which has left its "e-" footprint on many areas of the public sphere (e-government, e-commerce, e-banking, etc.), is not only about new technical possibilities of communication. Consumers are also being given increasing degrees of responsibility for service provision, e.g. in the health sector (Rieder 2005).

Considered in light of the history of industrial society, relations between firms and consumers recently have undergone far-reaching changes indeed. Consumers have ceased to be

merely passive takers of goods and services provided by company employees. Rather, they increasingly take part in firms' production and service delivery processes actively and directly. Consumers have become more like co-workers, who take over specific parts of a production process that ultimately remains under the control of a commercial enterprise.

Voß and Rieder (2005) interpret this development as the emergence of a new consumer type: the "working consumer" ("*arbeitender Kunde*"). The literal translation of "*Kunde*" is "customer," but the broader term "consumer" is more appropriate, because it encompasses a more complete range of relationships and conventions that define and regulate the firm's dealings with outside individuals.

Although consumer research has paid little attention to fundamental changes in corporate-consumer relations (cf. Scherhorn 1977; Rosenkranz/Schneider 2000), other research traditions began to draw attention to these phenomena in the 1970s. Three separate research perspectives have each separately investigated different aspects of the active participation of consumers.

Sociology and economics look at consumer behaviour as a part and outcome of larger social and economic transformations. Research into the tertiarization of the economy, coupled with the realization that the cooperation of consumers is often necessary for the provision of services, gave an important impetus for investigations of consumers' "coproduction" activities (Gross/Badura 1977; Gartner/Riessman 1974). Around the same time, feminists called attention to similarities between paid and non-paid work (Hausen 1978; Ostner 1978; Krell 1984). Active consumption became more and more widely investigated beginning in the early 1980s. One central term emerging at this time was "prosumers" (Toffler 1980), who are persons who consume what they produce themselves. Other concepts were

"do-it-yourself" work (Offe/Heinze 1990) and "the work of consuming" (Joerges 1981). Another core concept was "McDonaldization," first mentioned by Ritzer (1983), which is the rationalization of service routines whereby consumers are expected to perform certain essential steps.

Whereas sociology and economics focused on the linkages of consumer behaviour to broad social change, the management literature concerns itself with the practical matter of developing recommendations for firms dealing with the active consumer. As early as the 1970s and in the context of reflections on the transition to the service economy, a central question was how to integrate so-called external production factors (consumers in this case) into service provision and what risks were involved in doing so (Love-lock/Young 1979; Maleri 1994). Getting customers involved in production processes was an important issue also for manufacturing firms, for example in the widely touted concept of the "virtual corporation" wherein the focus was on business customers in particular (Davidow/Malone 1992). The consumer was discovered as a central resource for corporations, which were advised to treat "customer development" as seriously as personnel development (Gouthier/Schmid 2001; Gouthier 2003). One began to speak of "outsourcing to the customer" and even to think of customers as "service providers" (cf. Grün/Brunner 2002). Recent work conceptualizes consumers as joint participants with the firm in value creation (Reichwald/Piller 2006).

A third research tradition examines consumer behaviour from the perspective of role theory. Parsons (1951) pioneered this approach with his reflections on the complementary roles of doctors and patients. Using the "service encounters" approach of the management literature, researchers began looking at variation in consumers' active roles in various types of services (Czepiel/Solomon/Suprenant 1985;

Mohr/Bitner 1991). This research made clear that the quality of service provision depends just as much on how well consumers play their roles as on how well employees play theirs. Over time, both sets of roles were less often described as complementary and more often as similar. Consumers are thought of as "partial" employees (Mills/Morris 1986) or unpaid employees (Nerdinger 1994). Roles even come to be understood as interchangeable: "Employees as customers, customers as employees" (Bowers/Martin/Luker 1990). The importance of digital technology was often noted as a precondition for many new forms of self-service, as in the example of observations of services offered by mobile telecommunications companies. A "new type of prosumer" was discovered among cell phone service users, whose activities and skills are very similar to those of the information technology professionals who nominally provide those services (Hanekop/Tasch/Wittke 2001: 91; Hanekop/Wittke 2005). Other studies showed that consumers often do not have the skills one would expect of employees and that consumers are often confronted with unsatisfactory "working conditions" (Dunkel/Voß 2004).

It is characteristic of this literature that the active consumer is not treated as a subject in its own right but rather tangentially, by way of answering questions of internal significance to each of the individual research traditions. Voß and Rieder (2005) made an effort to overcome disciplinary boundaries in their review and synthesis of these separate literatures, summarizing their findings in what they call the *working consumer thesis*:

*Firms are shifting a wide array of previously internal capacities and functions onto their own customers, consumers in general, and other non-employees. This trend is affecting an increasing number of areas and is being conducted increasingly systematically.*

Currently, a pronounced increase in the instances of outsourcing to non-employees can be observed even as the forms and prevalence of self-service in all branches of commerce and industry are multiplying (Rieder/Laupper 2007). Examples are ticket machines and online ticket sales in public transportation, e-shopping and self-scanning in retail, and in the wide range of transactions in tourism, banking, and investment that individuals can carry out via the internet. All of these self-service activities cut firms' personnel needs – and related costs – significantly.

Yet the quantitative increase of outsourcing to non-employees is not as interesting as the qualitative changes it is bringing about. Indeed, we are witnessing a new phenomenon in the history of commerce and industry. Non-employees (customers, consumers, clients, patients, patrons, citizens, etc.) are fulfilling functions and providing capacities in the value creation process, usually for free. These capacities can be and are being exploited commercially. For instance, customers of amazon.com advise other customers by writing product reviews, uploading lists of favourite books, and rating the reliability of private sellers. More examples are discussed below.

On the basis of these empirical developments, one can speculate that the working consumer thesis implies a long-term, fundamental change in the social relations of production. What might these changes look like?

Possibly, "consumers" as we currently conceive them will simply disappear. The current notion of consumers arose in conjunction with industrialization and is characterized by the act of consuming *as opposed to* the act of work. In its place we may see a new, hybrid figure arise – that of the "working consumer" (Voß/Rieder 2005). Three characteristics of the working consumer that go beyond mere consumption are central to an ideal-typical definition: a) working consumers are

active in the production process and can be utilized as value-adding workers; b) the capacities they possess are valuable economic assets; and c) they are systematically integrated into corporate structures, where their actions can be monitored and manipulated by corporate managers much as if they were employees.

The examples of corporate outsourcing to consumers noted above may represent the beginning of wider changes in firm-consumer relations. Placed in macroeconomic perspective, we can speculate on the emergence of a new, expanded logic of the commercial exploitation of labour in the value creation process. Managers and investors are now beginning – explicitly and systematically – to tap into a new and previously untouched sphere of latent assets in the pursuit of profit. Of course, not every aspect of this activity is new. Corporations have always availed themselves of the capacities of workers whom they do not hold in their employ, as shown by many examples of home work. However, home workers were only indirectly influenced by the organization of the firm itself, if at all. New now is that firms are systematically building into their own strategic planning the commercial utilization of the productive capacity of persons who are completely outside the formal framework regulating corporate employees and suppliers. If one is so inclined, this development can be characterized as a further encroachment of capitalism into an area of social life that until now had been untouched by economic rationality.

One can postulate the beginnings of a new form of socialization of the individual through work, or rather through forms of unpaid or insufficiently remunerated work for firms in the capacity of a "consumer". In the future, people's identities may be influenced as much by these kinds of activities as they are now shaped by what they do in their regular jobs. In the place of the "long arm of the job," which reaches deep into the personal lives of employ-

ees, we may get two long arms: the arm of the job and the arm of consumer work. In the process, the corporation stands to obtain greater access to the capacities of workers than ever before, thus increasing the individual's dependency on corporate structures.

Corporations may also be affected negatively by these developments. The new kind of dependency emerging from changes in customer relations is not a one-way street. Corporations now depend on working consumers to carry out their "jobs" reliably and in accordance with the plans and needs of the firm. Thus, the rise of consumer work entails dangers and risks for both individuals and firms.

### 3 Crowdsourcing in Web 2.0

#### 3.1 Towards a Precise Definition of Crowdsourcing

The term crowdsourcing, was coined by Jeff Howe (2006) in the computer magazine *Wired*. In his original article, crowdsourcing meant for him "[t]he new pool of cheap labour: everyday people using their spare [resources] to create content, solve problems, even do corporate R & D. "

Perhaps the most widely read reception of the crowdsourcing concept in the German language is that of Reichwald and Piller (2006), who place the phenomenon in an economics framework. They suggest the use of the term "*interaktive Wertschöpfung*" (interactive value creation) as a synonym for crowdsourcing. In fact, they define interactive value creation in exactly the same way that Howe now defines crowdsourcing. For both, it is "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" (Howe 2007; Piller/Reichwald/Ihl 2007: 87). Tasks outsourced in this manner can be tied to innovation (the creation of new knowledge) or to operational activities such as marketing or the con-

figuration of a product. In every case, however, the act of value creation is changed from a firm-dominated process to a process of co-production involving the active participation of customers and other internet users. This approach is virtually identical to Voß and Rieder's (2005) concept of the working consumer, which describes a new division of labour between firms and consumers such that consumers become active participants in the creation of value. Reichwald and Piller (2006) look to cost-benefit issues to better understand crowdsourcing and its recent rise; they stress that crowdsourcing is possible only when its costs are low and the requisite interaction brings benefits to all participants.

Reichwald and Piller (2006) differentiate between what they consider to be two forms of crowdsourcing: "mass customization" and "open innovation". Mass customization refers to the enhancement of operations so as to enable single purchasers to buy a product personalized for them alone. Open innovation, on the other hand, refers to cooperation between a firm and its customers in the development of a new product for the "benefit" of a larger circle of potential buyers.

At this point it becomes clear that the way, in which Reichwald and Piller define "interactive value creation", is too broad to be used synonymously for crowdsourcing because of their inclusion of the phenomena of mass customization. Mass customization refers to the isolated activity of individual customers as directed toward one unit of the product, not to the collective activity of many individuals as directed toward a general product type. Yet, central to the concept of crowdsourcing is the idea that a crowd of people, collaboratively (or at least simultaneously) contribute to an aspect of the production process or to the solution of a design issue or other problems. Their concept of "open innovation" – and it alone – corresponds to the meaning of crowdsourcing as understood here.

Another difficulty with Reichwald and Piller's (2006) definition is their assertion that individuals who respond to crowdsourcing calls must derive some kind of benefit from doing so. From a rational choice perspective, this conclusion is axiomatic. Since participation is voluntary, individuals participate only if they perceive that the benefits of doing so (however these may be defined subjectively) outweigh the costs. The problematic possibility that firms may be able to manipulate individuals' cost-benefit calculations falls outside of the paradigm. Yet, corporate consultants openly discuss crowdsourcing as a model in which participating consumers get absolutely no benefit from their participation. Examples include the use of corporate homepages to prompt customers to submit suggestions for improvement, new designs, and ideas. Customers who submit their ideas rarely receive adequate financial compensation for the work involved in doing so.

### **3.2 Technical Prerequisites for Crowdsourcing: Web 2.0**

The term "Web 2.0" refers to internet applications that make possible new forms of interactive communication that go beyond conventional sender-receiver models. These types of applications are used for a wide variety of content and purposes including audio, reviews, bookmarks, communities, files, films, photos, graphics, instant messaging, jobs, personal contacting, art, music, news, podcasts, programming, travel, shopping, games, sports, search engines, tagging, texts, tools, video, weblogs, wiki, and knowledge. The high popularity of these applications among internet users indicates that they are tapping into a widespread yearning for active participation. The initial impetus for Web 2.0 programming came from the anti-commercial "open-source" movement, but the corporate world has since discovered it as a platform for its own goals.

"Web 2.0," a neologism that dates to 2004, does not signify a technological

or organizational advance in the infrastructure of the World Wide Web in its entirety. Rather, it refers to the increased prevalence of broadband connections coupled with the emergence of applications made possible by numerous software innovations such as content management systems and "dynamic" (as opposed to "static") HTML programming languages developed in the late 1990s. The term "Web 2.0" gives expression to the apparent fact that these technological innovations have spurred changes in the ways in which the World Wide Web is used and perceived (cf. Alby 2006: 1-19). Characteristically, Web 2.0 is about interactive and collaborative structures that enable users to create "user-generated content". In Web 2.0, users need not be mere recipients of media content but can actively take part in its production through activities like blogging, uploading photos and videos, etc. The essential technical prerequisite for these activities is "social software," or applications that enable communication, interaction, and collaboration through the internet (cf. Stegbauer/Jäckel 2008). The distinctive features of these applications include the enabling of user-generated content, the creation of elaborate platforms for interaction and networking, and user-friendliness. The central function of these applications is to get end-users involved collaboratively in the construction of an internet site and the generation of its content. In this way, individual knowledge becomes shared information. For a comprehensive overview of Web 2.0 see Alby (2006) and O'Reilly (2005).

In sum, the term "Web 2.0" serves to vaguely signify the fact that new options and forms of internet-use have changed and continue to change what the World Wide Web is, does, and means. Whether it will turn out to be just another marketing buzzword or a real revolution is another issue.

What is absolutely clear: Web 2.0 structures are being used commercially. Corporations are engaging in

forms of "open innovation" (cf. Hippel 2005; Chesbrough/Vanhaverbeke/West 2007; Drossou/Krempf/Poltermann 2006, Chesbrough 2006, 2007), in which they attempt to integrate internet users into specific internal production processes. Examples range from small Web 2.0 firms, whose entire capital consists of user-generated content, to the sporadic employment of Web 2.0 elements by established firms. Common to the many, heterogeneous examples of commercial Web 2.0 activity is that they represent attempts by a firm to animate internet users to contribute directly or indirectly to the process of value creation under its control. This is most starkly manifest in the phenomenon of crowdsourcing as defined here. Crowdsourcing is the clearest example of how firms can mobilize internet users to make a direct contribution to its processes of value creation.

### 3.3 Types of Crowdsourcing

Crowdsourcing applications are currently in a phase of experiment and innovation. Different types of crowdsourcing are in use, and it is currently difficult to predict which, if any, of these types will become dominant in the future. Start-ups based solely on crowdsourcing principles are often just trial balloons that later can turn out to be pure hype. However, the empirical phenomena of crowdsourcing can be organized typologically, as illustrated below.

#### *Participation of consumers in product development and configuration*

Calls by established firms for participation in the design or configuration of new products represent one of the most prevalent forms of crowdsourcing being used currently. These vary in intensity from simple opinion polls to elaborate schemes for the collaborative development of actual products by users. One example of product development in collaboration with consumers is the call announced by the auto manufacturer Fiat for its new Fiat 500. In just a few months, the call generated

ten million clicks, 170,000 designs from (potential) consumers, and 20,000 specific comments on things like particular exhaust pipe forms, chrome bumpers, or Italian flags under the rear view mirror. Additionally, consumers created a mascot and almost 1,000 accessories. The campaign was also a complete success from a marketing point of view. Of course, participating consumers were not compensated for their contributions. Their only wages were feeling their opinion mattered, the opportunity to apply their creativity, and the chance that their design ideas might be realized in the final design of the car.

and it is often initiated by young start-up companies whose business plans are based entirely on the crowdsourced product. Many of these start-ups are successful, in part because of the ready availability of good online tools for managing user input, and in part because a significant number of hard core internet users are aesthetes with an affinity for good design. Thus, it is not surprising that offerings like that of spreadshirt.net are well received. On this site, consumers can upload and manipulate text, graphics, and photos for creating individual t-shirt designs. Customers become designers this way and can then offer their final designs for sale in the Spreadshirt "market-

The image shows a screenshot of the Dell IdeaStorm website. It displays two product suggestions, each with a 'PROMOTE' button (upward arrow) and a 'DEMOTE' button (downward arrow). The first suggestion is titled 'Standardize Power Cables for Laptops' (ID: 9570) and has 32 comments. The second suggestion is titled 'Make Linux and no Operating system standard options on all future products' (ID: 11880) and has 101 comments. Both suggestions are marked as 'UNDER REVIEW'.

Chart 1 (Source: <http://www.dellideastorm.com>, last view: 03.01.2008)

A related example is Dell's "Idea Storm" (see Chart 1.). This is a call for comments and suggestions regarding the company's entire product palette, not just one single product.

### *Product design*

Some crowdsourcing calls are intended to mobilize internet users for the creation of a product that wholly depends on their input. This kind of call goes well beyond the designing, configuring, and marketing of products that a firm already offers or could offer on its own,

place". Each designer is given their own on-line shop and can determine their prices within a given range. Spreadshirt handles t-shirt printing and delivery.

If a shirt is sold with a crowdsourced design, a portion of the proceeds goes to the designer. There are now thousands of t-shirt designs available and the company has been so successful that it was able to take over a French competitor, lafraise.com.

The example of Spreadshirt should be differentiated from a similar kind of internet platforming, discussed below as "market creation", that is only peripherally related to crowdsourcing as defined here. What Spreadshirt does is crowdsourcing rather than market creation, because it does not limit itself to matching t-shirt designers and buyers; it also sells its own designs and

their ideas. Their sole compensation is that their name appears on the final product.

#### *Competitive bids on specifically defined tasks or problems*

Another form of crowdsourcing that involves activating individual contributions from a large number of internet users is the public request for bids on


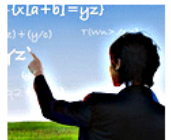

	<p>INNOCENTIVE 4470259 RTP 1047 project rooms open            ALS Biomarker            POSTED: NOV 06, 2006 DEADLINE: NOV 06, 2008 \$1,000,000 USD            A biomarker for measuring disease progression in Amyotrophic Lateral Sclerosis (ALS or Lou Gehrig's Disease/ Motorneuron Disease) is needed. <a href="#">Read More</a></p>
	<p>INNOCENTIVE 5659803 Theoretical-IP Transfer 230 project rooms open            Statistical modeling in clinical trials            POSTED: NOV 30, 2007 DEADLINE: MAY 30, 2008 \$25,000 USD            Improved statistical methods for post-study treatment adjustments are needed.            More details are available once you register as an InnoCentive Solver. <a href="#">Read More</a></p>
<p>THE ROCKEFELLER FOUNDATION</p> 	<p>INNOCENTIVE 5644660 Theoretical-IP Transfer 257 project rooms open            Solar-powered wireless routers            POSTED: NOV 28, 2007 DEADLINE: JAN 28, 2008 \$20,000 USD            A design for a solar-powered wireless router composed of low-cost, readily available hardware and software components is needed. The router is to become part of a reliable Internet communication network connecting metropolises and remote towns in developing countries. This challenge sponsored by the Rockefeller Foundation requires only a written proposal. <a href="#">Read More</a></p>

Chart 2 (Source: <http://www.innocentive.com/>, last view: 07.01.2008)

undertakes production and shipping of every shirt itself. Thus, Spreadshirt is really a t-shirt print-on-demand business that has outsourced a large share of product design to internet users via crowdsourcing but still does production and marketing in-house.

A similar example is the "open source footwear" platform of John Fluevog Boots and Shoes (<http://www.fluevog.com>).

On their site, consumers can create and submit ideas for new shoes. The company publishes the designs and organizes on-line voting whereby internet users select their favorites. The most popular designs are then manufactured and offered for sale. As the term "open source" suggests, however, successful designers are not paid for

specifically defined tasks or problems. Respondents are compensated financially upon completion of the task or resolution of the problem. A prominent example is Proctor & Gamble's *innocentive.com* (see Chart 2.), a platform intended to enable the company to tap into "expert knowledge" latently resident in the crowd.

Unsolved research questions are posted on <http://www.innocentive.com>, where they are read by thousands of people who can choose to try their hand at a solution. Over 100,000 potential "solvers" are already registered. Individuals who solve posted problems receive financial remuneration that varies with the difficulty of the problem and can be as high as \$100,000.

All those who work on a problem unsuccessfully receive no compensation.

Moviebakery<sup>1</sup>, which uses this form of crowdsourcing also, is an internet-based agency that mobilizes amateur film directors and producers to accept commissions for internet advertising. Companies who want an ad turn to the site's owners, who post a call for submissions that fit the needs and wishes of the commissioning company. Persons can respond by sending in their videos. Moviebakery selects the ten "best" and pays at least €500 for each film. The commissioning company pays Moviebakery €10,000 and receives all ten videos plus distribution and promotion in the WWW by Moviebakery.

#### *Permanent open calls*

Another form of crowdsourcing that works on the principle of the financially remunerated bid request, but is not directed toward particular tasks or problems, is the permanent open call for the submission of information or documentation. The best known example of this practice is probably the use of "amateur reporters," who submit photos or short articles for publication or broadcast. CNN engages in this practice and allows its amateur reporters to send in material via cell phone.<sup>2</sup> CNN offers no compensation for voluntarily submitted material. In contrast, Germany's BILD newspaper offers its "reader-reporters" €500 for every nationally published and €100 for every regionally published photo.

#### *Community reporting*

Another way to transform informational inputs from a large number of internet users into a marketable product is to organize consumers into a "community" of registered users who report on new products, new trends or other kinds of news outsiders might be willing to pay for.

<sup>1</sup> See: <http://www.moviebakery.com>.

<sup>2</sup> See: <http://edition.cnn.com/exchange/ireports/toolkit/index.html>.

This is the strategy of trendwatching.com. It brings together over 8,000 "trend spotters" worldwide. These individuals are asked to notify the company regarding any observable changes in market supply or consumer demand; some even write reports or articles. This service complements traditional market research, which always has had difficulties getting timely information on the latest trends and market developments. For their contributions, trend spotters receive points that can be traded for incentives of modest value such as iPods or memory sticks. Trendwatching.com publishes a yearly trend report and sells current information to firms and customers who want to know what's "in".

#### *Product rating by consumers and consumer profiling*

Widely used in e-commerce is the practice of activating and publishing consumers' knowledge and opinions about products. Also common is the collection and utilization of data on the purchasing habits of its customers. The prototypical example for both activities is Amazon.com (<http://www.amazon.com>). One of Amazon's advantages lies in the fact that many customers submit unpaid reviews of products it sells. The information thus gained, however subjective it might be, is relevant for other customers as they make their own purchasing decisions. Amazon also entices its customers with additional information framed as "customers who bought the product you just bought also bought products X, Y, and Z". This information is generated through an analysis of the consumption profiles of all Amazon users.

#### *Customer-to-customer support*

Another kind of crowdsourcing practice is the organization of customer-to-customer support via chats and discussion forums. A distinction must be made between commercial and non-commercial forms. Non-commercial forms are discussed in the next section. Commercial sites are run by companies for the purpose of customer develop-

ment, allowing customers (or patients), to share their experiences with others facing similar challenges and problems. Experiences can be shared, users can challenge each other to competitions or grant emotional support. Companies thus enable and encourage a form of social support much like the traditional self-help group, but one that is closely aligned to the company and its products. On some health sites, for example, users can compare their physical fitness levels with others and thereby derive a competitive kick for their own exercise regimens. On Nike's platform,<sup>3</sup> for example, users can upload their running times via their iPods and then use this data to engage in various competitions with other users.

Another example is the Coop-Online Coach<sup>4</sup> in Switzerland, a site on which users trade information on healthy eating and exercise.

### 3.4 Phenomena Related to Crowdsourcing

There are many forms of interactive participation in production processes currently taking place in the internet that are similar to crowdsourcing but should not be conflated with it. Some of these are conducted by commercial firms, some by non-commercial project groups or forums.

#### *Mass customization*

Mass customization is an oxymoron composed of the terms "mass production" and "customization". It refers to a concept of production that attempts to capture the advantages of economies of scale while still taking each individual customer's preferences into account (cf. Pine 1993; Piller 2001; Piller/Stotko 2003; Hanisch 2006). The target is the mass market, but the product is designed in way that a small number of its features are variable and can thus be "personalized". Mass customization was made possible only by the advent

of modern computer and communications technology. With the help of an on-line software application, customers can configure their product by themselves. A prototypical example is the online-shop of the computer seller Dell. The company offers a few preconfigured computer models with components that can or must be altered in the course of the customer's ordering process. The result is that each customer creates her or his "own" computer. The company assumes implicitly that consumers have a command of the requisite knowledge about computer components and their functions. Mass customization involves the organization of a purchase such that specific design tasks are outsourced to the purchasing individual for a product that then becomes the property of that person. This differs from crowdsourcing, which is addressed to an unspecified quantity of consumers who do not become owners of the finished products.

#### *Creation of limited access markets*

One of the most important forms of user interaction on the internet takes place in the form of market transactions organized by a third party. The third party, whether it be a commercial or a non-profit enterprise, uses the internet to activate a latent market. Platforms that connect sellers and buyers, taking on a purely mediating roll but deriving financial remuneration for this activity, are related to the phenomena of interactive value creation and of consumer work. The product or service offered on the platform does not come from the company running the platform but derives rather from its users. This is crowdsourcing in the widest possible connotation since the success of the site's owner depends on how many individuals the company can animate to proffer their goods or services to potential sellers. Yet, this activity is not crowdsourcing by the definition offered in this paper because the organization of interaction by a third party (the company) represents the entirety of what the company does; the company produces nothing in the

<sup>3</sup> See: <http://nikeplus.nike.com/nikeplus/>.

<sup>4</sup> See: <https://www.coopcoach.ch/coop-diaet/>.

traditional sense and thus does not outsource mere parts of the production process. This is no longer co-production.

One form of market-creating activity is the creation of limited access markets. This occurs when firms secure the right to charge for entry. This often works much like real-space farmers' or flea markets: those who desire to sell their goods must pay market organizers for the right of access to a potential pool of buyers. In the internet economy, this is prototypically organized as a percentage commission on the value of goods and services actually sold. Examples include eBay, Amazon's "Marketplace" and Rent a Coder. Amazon's "Mechanical Turk" is one example where buyers, not sellers, pay for entry.

mission for their services. Only sellers and buyers are actually active on the site. The cost of the goods offered is determined either by the sellers alone or through the use of a time-delimited auction.

A newer but expanding field of limited access market creation involves online markets for tasks and jobs. This practice is similar to the form of crowdsourcing described above as "competitive bids on specifically defined tasks or problems" because an entity (usually a firm) addresses itself in the virtual marketplace via a bid request to a large group of individuals potentially interested in performing a specific task or job. But this practice should be differentiated from crowdsourcing, because the contracting parties do not

<b>Find Folio Number</b> <a href="#">View a HIT in this group</a>			
Requester: <a href="#">Enrovia Research</a>	HIT Expiration Date: Jan 7, 2008 (4 days 12 hours)	Reward: \$0.04	
	Time Allotted: 60 minutes	HITS Available: 5	
<b>Write a product review on a digital camera</b> <a href="#">View a HIT in this group</a>			
Requester: <a href="#">Junaid Ali</a>	HIT Expiration Date: Jan 3, 2008 (6 hours 11 minutes)	Reward: \$0.20	
	Time Allotted: 60 minutes	HITS Available: 4	
<b>Web Page Classification</b> <a href="#">View a HIT in this group</a>			
Requester: <a href="#">Steven Research</a>	HIT Expiration Date: Jan 5, 2008 (2 days 3 hours)	Reward: \$0.10	
	Time Allotted: 60 minutes	HITS Available: 3	
<b>Express Transcription: 1199295581 leon h fixed (avg rwrtd+bns: \$1.34) [00:04 hh:mm]</b> <a href="#">View a HIT in this group</a>			
Requester: <a href="#">CastingWords</a>	HIT Expiration Date: Jan 3, 2008 (3 hours 40 minutes)	Reward: \$0.67	
	Time Allotted: 4 hours 30 minutes	HITS Available: 3	
<b>Write a product review on a camcorder</b> <a href="#">View a HIT in this group</a>			
Requester: <a href="#">Junaid Ali</a>	HIT Expiration Date: Jan 3, 2008 (6 hours 11 minutes)	Reward: \$0.25	
	Time Allotted: 60 minutes	HITS Available: 2	

Chart 3 (Source: <http://www.mturk.com>, last view: 03.01.2008)

The internet auction house eBay (<http://www.ebay.com>) and Amazon.com<sup>5</sup> run platforms that allow sellers and buyers to exchange information, enable different modes of payment, and establish a legal framework for the resulting transactions. The companies charge a fixed amount or a percentage of the transaction amount as a com-

interact directly with the company, although the hosting firm does skim off a commission. Users do business with each other, regulated by a conventional contract. Probably the most popular example of this kind of activity is the "Mechanical Turk" (see chart 3.) from Amazon.com, which was created to help firms outsource "HITS" ("Human Intelligence Tasks"). The concept underlying the "Mechanical Turk" is simple. It is assumed that humans can accomplish a wide variety of simple tasks (HITS), such as the identification

<sup>5</sup> See: "Amazon Marketplace" at: <http://www.amazon.com/gp/seller/sell-your-stuff.html>.

of certain attributes of photographs, much better than computers. People who have too much free time can do the tasks and earn money in the proc-

fuels this Artificial Intelligence by coming to the web site, searching for and completing tasks, and receiving payment for their work."<sup>6</sup>

The screenshot shows a marketplace listing for a project titled "ClipShare, vBulletin and Subdramer Integration". The project is categorized as a "Small Business Project: \$100(USD) and above" and is located in the "Web, MultiMedia" category. It has a progress bar showing 5% completion, with 5 bids since Jan 3, 2008 6:57:12 AM EDT. The listing includes a description: "I require integration of Clip Share as a plugin for Subdramer using the vBulletin user database. The clip share plugin should replicate the 'look and feel' of the current subdramer site at videoforums.co.uk. The following user settings should ..." and a link to "videoforums (0 ratings)".

Below this listing are two other listings:

- Web 2.0 Design of our current website redesign**: Medium Business Project: \$500(USD) and above. Categories: Web, Page / Site Design, Graphics, Cascading Style Sheets (CSS), XML / XHTML, Prototype / Model. Bidding open since Jan 3, 2008 6:56:59 AM EDT. Max bid: \$700.00 (USD). Link: "onlinegamez (0 ratings)". Description: "The details are in the attachment. The Design should be Web 2.0 design. Timeframe: 3 weeks after selection. Please provide samples of your previous design."
- flash animation**: Very Small Business Project: under \$100(USD). Categories: Graphic Design / Art / Music, MultiMedia, Artwork, Graphics. Bidding open since Jan 3, 2008 6:56:38 AM EDT. Link: "dddobos (14 ratings)". Description: "Hi, I run seminars for high school students... Here's the storyboard for flash animation, to be created ultimately as a WMV file that will run in a powerpoint file. A short man is pushing a gigantic boulder up a hill, (he starts ... (see bid request for full description))"

Chart 4 (Source: <http://www.rentacoder.com>, last view: 03.01.2008)

ess. The remuneration for each job is clearly indicated in the task description. A user can, for example, transcribe a four-minute interview for €0.83 or post articles on low traffic homepages for €0.02 per posting. In the case of Mechanical Turk, the buyer of services, not the seller, must pay for access to the market. These so called microjobs are carried out by individuals who get paid absolutely rock bottom rates. The sheer pleasure of activity of any kind, of being productive in any way seems to be a principle motivation driving individuals to accept the jobs. Yet, some observers have expressed reservations about this phenomenon, one reason being that Amazon's Mechanical Turk provides a means by which computers can be programmed to automatically integrate the work of humans directly into their processing. This gives Michael Arrington, founder of the weblog "TechCrunch" the creeps:

"I can't get the Matrix-we-are-all-plugged-into-a-machine vision out of my head. (...) To the [software] application [that has been programmed to use Mechanical Turk], the transaction looks very much like any remote procedure call – the application sends the request, and the service returns the results. In reality, a network of humans

Another example of limited market creation is Rent a Coder (see chart 4.), which has created a marketplace for software coders and buyers. Over 180,000 registered programmers respond to bid requests for coding projects posted by firms or individuals using the platform. Most of the 2000+ bid requests open at any one time look like this.

#### *Creation of free access markets*

Another form of market-creating activity involves the creation of free access markets. In these cases, companies activate markets but charge nothing for entry. Access to these markets is open and free of charge to "sellers" and "buyers". Sometimes market participants culminate their activity in an economic transaction, but more common is the exchange of goods and services – such as information or advice – free of charge. Site owners may be commercial enterprises but they get only derivative income from their sites, prototypically through advertising. Examples include flickr, YouTube, EzineArticles, and thousands of non-

<sup>6</sup> See <http://www.techcrunch.com/2005/11/04/amazon-finally-shows-itself-as-the-matrix/>.

commercial information exchange platforms.

Internet platforms onto which users upload self-made content – such as films, videos, digital photos, animations, and presentations – represent perhaps the most popular type of free access market. The most widely used examples by far are the photo community flickr<sup>7</sup> and the video community YouTube<sup>8</sup>. Each has numerous less successful competitors. On these sites, registered users can upload their photos or videos in unlimited quantity, virtually free from censoring. This content is catalogued in a searchable database, enabling millions of other users to find and link to them. Although users' activity on these sites is generally not commercially motivated, and neither members nor users are charged anything, these sites are owned and maintained by firms that are most certainly interested in making money. They do so through advertising, which is only possible because of the content generated by the participating community. Due to the enormous amount of content these sites offer, they are extremely frequently used, leading to significant advertising revenues. That YouTube was bought by the search engine company Google for \$1.65 billion in stock shows just how much such companies are worth on the current market.

An additional example is EzineArticles.com (<http://ezinearticles.com>). This company accepts articles from amateur authors, catalogues them in a searchable database, and offers them to publishers of online magazines free of charge. Neither authors nor editors pay for the service; it is a pure "matching service" that now has thousands of pages of current content for distribution.

The thousands of non-commercial information exchange platforms existing

today are further examples of free access market creation, although supply and demand revolve around information that is given for the asking. These include various forms of internet-chat platforms (with Web 2.0 these now encompass other formats such as wikis, blogs, and homepages) that enable the sharing of advice and other information on a wide variety of specialized topics. These are peer-to-peer information exchanges, all sustained by the ideal of a non-hierarchical internet community and the norms of open source and open content projects, as discussed below.

On a myriad of platforms, users solve problems for other users and thus work very much like a self-help group. Forums exist, for example, in which MS Word users describe their problems with the software and suggest or ask for problem solutions. On other forums, users relate their experiences with their cars; potential buyers of the same model can gather a wealth of first-hand information before buying. Members of vacation communities exchange tips on where to find the best beaches, members of cooking communities exchange recipes. On other platforms, users exchange information on home remedies for all kinds of ailments.

#### *Open source and open content projects*

Crowdsourcing is not the only work-like process by which users of the World Wide Web create products and services. Collaborative activities in the context of the open source and open content movement emerged earlier, and it may even be the case that these models inspired crowdsourcing. Open source projects like the operating system Linux and open content projects like the internet encyclopaedia Wikipedia had a decidedly anti-commercial impetus. When a user writes an article in Wikipedia, value creation in the economic sense does not occur because the product to which the user contributes is not exploited commercially. In contrast, when a firm

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<sup>7</sup> See: <http://www.flickr.com>.

<sup>8</sup> See: <http://www.youtube.com>.

takes up an idea submitted by a user, that user makes a contribution to the firm's value creation process. Until now, the development of ideas always had been an internal task realized by regular employees.

In the context of open source and open content, peer-to-peer interaction is elemental. All participants are equal partners, and preventing the emergence of hierarchies is an important common goal. Since volunteers do all the necessary work with (usually) no corporation, and no paid employees behind the scenes, open source projects are not a form of crowdsourcing as defined here.

The products of open source and open content work are free for all to use. Individuals who work on a project are not compensated materially. Their only profit is recognition, reputation, or pleasure in doing things for others.

The bestknown example of open content work is probably the online encyclopaedia Wikipedia, which need not be discussed here. It is worth noting, however, that Wikipedia is considered to be the precursor and inspiration for open content projects in Web 2.0. A large number of more specialized but similar wiki-projects have been launched. A continually updated list of these can be found – where else but? – on a wiki platform.<sup>9</sup>

A related and interesting field of activity is open-content journalism. There are many "citizen journalism" or "grass roots" news homepages, the content of which is created independently by users. Examples like indymedia.org or zero.newsassignment.net show that the idea can work. However, unlike Wikipedia, the journalistic quality of these sites has yet to be evaluated. The owners and users of these sites consider themselves independent journalists working in opposition to main stream reporting and adhere to open

source and open content conventions regarding democratic organization and freedom of speech. Other news platforms like thoof.com or newskick.de also work with user-generated content but employ a form of democratic editorial control pioneered by a website called digg (<http://digg.com/>). On these sites, users evaluate articles submitted by other users, and the site software to generate a ranking of most popular articles uses this information. Users can also subscribe to news feeds on topics related to their personal interest.

#### **4 Factors Contributing to the Increasing Prevalence of Crowdsourcing**

Crowdsourcing is part of a broad and historically significant trend, by which the capitalist firm is targeting consumers for integration into the process of value creation more than ever before, and in completely new ways, such as those now possible via the World Wide Web. Of interest from the perspective of the sociology and psychology of work is understanding why and how consumers are being systematically exploited as a "second type" of worker; i.e., as workers who receive no financial compensation or who are compensated at a level that is in gross disproportion to the value the company extracts from their input. This analysis can also be applied to areas beyond the internet economy.

Crowdsourcing represents the most explicit form of the integration of users (or consumers) in internal processes of value creation; it enables the direct utilization of consumer work for commercial purposes. The charging of commissions for the use of limited access markets represents another type of direct utilization that is possible within the context of the internet economy. Further instances of commercial utilization are indirect and include the use of Web 2.0 sites for advertising purposes or the cost-cutting transformation of customer

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<sup>9</sup> See: [http://en.wikipedia.org/wiki/List\\_of\\_wikis](http://en.wikipedia.org/wiki/List_of_wikis).

service to customer self-service as in the case of internet banking.

Three important questions regarding crowdsourcing remain largely unanswered. What are the typical methods employed by crowdsourcing firms to mobilize and utilize the work of users and consumers? What motivates companies to crowdsource? What motivates users and consumers to respond and participate? The following theoretical reflections on these questions serve as a preliminary basis for future empirical study.

#### **4.1 Firms Initiating Crowdsourcing**

One of the most basic motivations for companies to establish an internet presence is the possibility of realizing cost reductions by expanding areas of self-service via the web. Costs are reduced when internal work processes can be transferred to the consumer ("outsourcing to the customer").

More important and more innovative are company activities meant to include users as active partners in the value creation process, making a direct contribution to company profits. This involves contributing to product innovation (the consumer as "co-designer"), contributing to product improvement (the user as "beta tester"), evaluating customer service (often the evaluation of individual service representatives or private sellers), or participating in the configuration of a product or its production.

Technological improvements (including not just the internet but new vending machines for all kinds of products and services) make it easy and inexpensive to integrate consumers into work processes. A company successful in doing so can reap a variety of benefits (Grün/Brunner 2002):

1. Cost reduction through reducing complexity. For example, the introduction of standardized internet portals reduces the complexity of interaction with consumers because portals restrict the variety of user transactions.

2. Productivity gains through more efficient use of resources. For example, companies can expand geographically and increase daily service hours without increasing expenses by using automated, self-service solutions.

3. Increase of turnover. Products can be offered at lower prices and more flexibly in terms of service hours and geographic distribution, resulting in an expansion of the customer base.

4. Quality improvement using consumer knowledge. In the context of integrating customers into productive processes, companies can make use of customers' expertise – in the use of company products, for example. In this way, customers can contribute to the betterment of product quality.

The first three advantages involve the outsourcing of work to customers using forms of self-service. The fourth kind of advantage arises through the integration of users as partners in the value creation process; it takes on other specific forms as well, such as the mobilization of consumers to develop product innovations.

Reichwald and Piller (2006: 149-154) name four additional benefits for firms arising from the mobilization of consumers in the value creation process. These are the reduction of the time it takes to develop new products ("time-to-market"), the reduction of the costs of innovation ("cost-to-market"), the increase of market acceptance of new products and consumers' willingness to buy them ("fit-to-market"), and the increase of consumers' subjective perception of the actual newness of a new product ("new-to-market").

Firms often closely emulate the aesthetics and rhetoric of the open source and open content culture in order to motivate users to participate in crowdsourcing projects. These campaigns orient themselves to images of self-determination, community orientation, and creativity. These correspond well to the areas in which crowdsourcing is most often employed: product configura-

ration and design, problem solution, and innovation. All these activities challenge individuals' creative capacities and are more likely to be subjectively satisfying to the participant. Yet, quite contrary to open source and open content culture is the practice, associated with some forms of crowdsourcing, of offering financial remuneration to those who produce the "right" or the "best" response to a bid request.

The orientation to open source and open content culture is probably strongest among crowdsourcing projects that target the internet's heavy users. Similarly, companies that sell purely crowdsourced products are likely to be oriented toward this culture strongly, especially if they were launched by private individuals who developed their business concept as a result of their experiences on the internet.

#### **4.2 Respondents to Crowdsourcing Initiatives**

The first and foremost question regarding individuals who respond to crowdsourcing initiatives is: Why do they do it? A theoretically oriented answer differentiates between extrinsic and intrinsic motivations. An extrinsically motivated person performs an activity in order to obtain some kind of external reward. Rewards for working consumers could be benefits for one's career, recognition for work done, or the satisfaction of pursuing common goals. An intrinsically motivated person, on the other hand, takes up an activity for its own sake – or for fun's sake (Ryan/Deci 2000).

It would be especially interesting to know which factors make activities worth doing for their own sake, making them intrinsically motivating. Some potential answers are offered by the theory of self-determination (Ryan/Deci 2000), according to which humans are drawn to activities that allow them to experience personal adeptness, autonomy, and social embeddedness. Thus, someone who is a talented skier can decide when and where to

ski, and can do it together with others. Her or he is intrinsically motivated and will ski even in the absence of external rewards. Following this pattern, Ryan and Deci (2000) identify clearly intrinsic and extrinsic motivations as well as mixed forms. Similar considerations on intrinsic motivation emerge from the job characteristics model (JCM) used in work psychology (Hackman/Oldham 1980). The model addresses itself to varieties of job tasks and identifies particular characteristics that would appear to increase the intrinsic motivation of workers. These are similar to characteristics that appear in other models of humane work such as worker autonomy and the ability to work in a holistic manner.

Among the studies of motivations underlying the special phenomenon of consumer work, a portion focuses on open source and open content projects. Another portion focuses on commercial enterprises.

Empirical studies of open source and open content projects strongly suggest that even when contributions are unpaid, extrinsic motivators are nevertheless often present. These include career related benefits (Robles et al. 2001) and the desire to acquire new knowledge, to share expertise with others, and to reach common goals (Gosh et al. 2002). Yet intrinsic motivation ("fun") appears to be the deciding reason for getting involved (Luthiger Stoll 2006). Inquiring into the origin of intrinsic motivations, a study by Lakhani and Wolf (2005) suggests that the experience of being creative is most closely linked to readiness to work on open source projects. In a very instructive study that used the Job Characteristics Model, Schroer and Hertel (2007) surveyed task characteristics associated with persons who work on the internet encyclopaedia Wikipedia. In their findings, readiness to participate was most closely associated with autonomy, task significance, and the newness of the challenge or "skill variety". Whether or not these task characteristics actually lead to participation

depended on the presence of intrinsic motivations. In other words, intrinsic motivations function as one mediator between task characteristics and participation. Contrary to expectations, strongly participating individuals reported an unfavourable personal cost-benefit balance. All indications are that participants are aware of the imbalance but possess an immanent willingness to participate anyway.

Keep in mind that participation in open source and open content projects serves community-set goals that are of great significance for collaborators. The situation is very different when working consumers collaborate with commercial enterprises. Why some consumers willingly do so was investigated by Bateson (1985), in an early study of a variety of different services. The study employed both qualitative and quantitative methods. The results indicated that consumers are willing to do more work themselves because they hope that by doing so they can save money and better control the service they receive (cf. Michel 1997, 2000; Voswinkel 2000). Reichwald and Piller (2006) found that besides the above mentioned intrinsic motivations, consumers who participate in forms of product innovation are also motivated by dissatisfaction with existing solutions and the expectation that they can help make products that are better attuned to consumer needs.

A number of additional studies focus specifically on self-service technologies (Dabholkar 1996; Meuter/Ostrom/Bittner 2000; Dabholkar/Bobitt/Lee 2003). Some studies investigated particular scenarios – for example, a fast food scenario in which interview subjects were asked to identify the conditions under which they would use self-service technology without any qualms (Dabholkar 1996). Other studies were based on field research involving self-service technologies already in use, self-scanning being one example (Dabholkar/Bobitt/Lee 2003). Based on their own and others' research Dabholkar, Bobitt, and Lee (2003) come to

the conclusion that the positive reception of self-service situations depends on the extent to which individuals anticipate being able to control the process. The expectation that using the technology would be fun also appeared to motivate customers. Other, less significant factors included time-savings, (low) required effort, (low) complexity, reliability, precision, and one's (positive) attitude toward technology. When asked about their preferences regarding interaction with employees, customers' opinions were split. Some considered it an advantage, others a disadvantage.

In sum, the primary motivations of working consumers are intrinsic ("for the fun of it"), but also of central importance are characteristics that make tasks fun (autonomy, creativity, importance of the task). Extrinsic motivations such as the satisfaction of pursuing common goals or timesavings are also relevant but appear to be less critical.

The studies reviewed above allow for an initial assessment of the motivations of working consumers, but a few caveats are in order. The studies commonly observe quite different motivations, making them difficult to compare. Many studies employ online questionnaires with one or, at most, a very few items for the factors being investigated. Affirmative answers on these items do not necessarily add up to a valid picture of the actual attitudes that permeate the projects. Comprehensive qualitative studies of the everyday behaviour of working consumers are needed to achieve this.

## 5 Conclusions

The essence of crowdsourcing, as defined here, is the intentional mobilization for commercial exploitation of creative ideas and other forms of work performed by consumers. Other Web 2.0 based activities that do not integrate users into a firm's value creation process are related but peripheral to

crowdsourcing. By responding to crowdsourcing calls, consumers contribute to a commercial firm's efforts at product and/or process innovation. Crowdsourcing represents, first of all, a quantitative expansion of the older trend toward integrating consumers in productive processes, in that it allows firms to reach a greater number of individuals. But it is also a good example of a new form of consumer integration, whereby persons who have no relations to the firm are persuaded to do work for it or its customers. Thus, crowdsourcing goes beyond classic co-production, by which consumers contribute to the production of a good or service that they personally consume. The phenomena of crowdsourcing confirm the working consumer thesis, detailed at the beginning of this paper: society is witnessing the emergence of a new type of consumer, whose work capacity is being increasingly exploited (usually with their full complicity) for commercial purposes. Whereas the emergence of the working consumer is independent of specific technologies, crowdsourcing has come into its own only with the advent of Web 2.0.

The future consequences of crowdsourcing for firms and consumers are a matter for conjecture. However, the following three aspects are likely to be among the most significant developments.

### **5.1 Distribution of profits and other economic consequences**

For firms, outsourcing to the consumer carries a significant potential for increased profits, just as it puts regular employees at risk. Yet profits are not guaranteed. The ability of firms to realize economic benefits from crowdsourcing is conditioned upon many variables. Crowdsourcing strategies and platforms require significant investments; whether these investments pay off depends on how the crowd responds to the crowdsourcing call. Even the interaction with consumers itself

can be cost intensive, depending on the level of complexity involved.

Consumers also stand to benefit from participating in crowdsourcing. They may reap a (low) wage. In competitive situations, winners may be compensated quite well. In other cases, however, there is no remuneration.

### **5.2 Influence on product design**

Some forms of crowdsourcing are used by firms to stimulate consumer cooperation in terms of product development and improvement. In the successful cases, firms profit from consumers' expertise and experience. Innovation provided by consumers can also be used for marketing purposes, as seen in the case of the Fiat 500 campaign. Yet when a firm enters the realm of internet communications, it exposes itself to new kinds of vulnerabilities. What happens, for example, to the firm and its image if customers and bloggers express disapproval of the company or its products?

Crowdsourcing gives consumers a new avenue of influence on corporate decision-making, at least indirectly through means such as recommending new designs and influencing public opinion. At the same time, consumers are themselves exposed to a new danger: the danger of being exploited by a corporation as a cheap supplier of valuable ideas stripped of control over their use. This dependency is somewhat alleviated when firms are at least willing to make public which consumer ideas were actually implemented. Dell engages in this practice on its "Ideastorm" platform.

### **5.3 Quality of work and working conditions**

An important question for firms is whether the crowd actually can deliver quality work. Without question, the consumer is the real expert in the use of a firm's products and services, and their knowledge and experiences are of great potential value. Yet, several factors limit the quality of consumer work in practice. A central issue is the pro-

professional qualifications of participants involved in the productive process. Regular employees possess requisite qualifications as a condition of their employment. Questions and issues relating to the qualifications of working consumers are (as yet) unexplored and unresolved. This means that firms take a risk in transferring responsibilities to the crowd. For example, virtual health communities must decide whether they want to assume the responsibility for checking the soundness of medical advice posted by patients and possibly intervening to stem the spread of dangerous misinformation. Another problem is that consumers' expertise is very specific and relates only to the corporation's *front stage*, to use Goffman's (1959) expression. They know little or nothing about back stage processes, making them uninitiated in an essential area of knowledge, which company employees have at their disposal. This relative disadvantage could be lessened, of course, with future changes in the integration of working consumers.

An important issue from the perspective of consumers is the quality of the "working conditions" they face. Ideally, crowdsourced work or tasks will be organized to harmonize with their intrinsic motivations. Such work is characterized by high worker autonomy, opportunities for communication with others, the utilization of worker's special talents, and a linkage to personal development. Under these conditions – a best case scenario of crowdsourcing – respondents actually stand to gain a more satisfying work experience than in their real job.

There is no way to predict exactly what the working consumer of the future will be doing or how the relationship between consumer work and traditional employment will be organized. But the passive customer model is unlikely to dominate any longer. In response, future research in the field of labour studies likely will place a stronger emphasis on forms of work

that have little to do with "employment" in the traditional sense.

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