



# Using Amazon Mechanical Turk and other compensated crowdsourcing sites

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**Abstract** Crowdsourcing is becoming recognized as a powerful tool that organizations can use in order to get work done, this by freelancers and non-employees. We conceptualize crowdsourcing as a subcategory of outsourcing, with compensated crowdsourcing representing situations in which individuals performing the work receive some sort of payment for accomplishing the organization's tasks. Herein, we discuss how sites that create a crowd, such as Amazon Mechanical Turk, can be powerful tools for business purposes. We highlight the general features of crowdsourcing sites, offering examples drawn from current crowdsourcing sites. We then examine the wide range of tasks that can be accomplished through crowdsourcing sites. Large online worker community websites and forums have been created around such crowdsourcing sites, and we describe the functions they generally play for crowdsourced workers. We also describe how these functions offer opportunities and challenges for organizations. We close by discussing major considerations organizations need to take into account when trying to harness the power of the crowd through compensated crowdsourcing sites.

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## 1. The non-employee work revolution

The value of using non-employee work has increasingly become recognized as a viable business strategy for organizations. One method of using non-employee

work that has received significant recent attention is crowdsourcing, which has been defined as employing information technologies to outsource business tasks and responsibilities to Internet-based crowds of individuals (Prpic, Shukla, Kietzmann, & McCarthy, 2015). Crowdsourcing utilizes the skills and expertise of people online to engage in organizational functions or parts thereof that can be done more effectively or less costly by non-employees. There are Internet users that possess relevant skills for organizational

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needs, yet who are best contracted for individual tasks rather than permanent or full-time employment relationships (Aguinis & Lawal, 2013). The Internet facilitates this sharing of work with such workers and its transmission back to organizations. We focus here on compensated crowdsourcing, which we define as crowdsourcing situations in which individuals performing the work receive some sort of payment for accomplishing the organization's tasks.

Prpic et al. (2015) and Ford, Richard, and Ciuchta (2015) offer important initial specification of the nature of crowdsourcing and the internal organizational needs to sustain crowdsourcing initiatives. This article builds on these works by focusing attention on characteristics of sites that provide crowds and the nature of how workers participate in such sites. In discussing such applications, the authors draw on the existing literature base as well as personal experiences as workers on such sites.

This article begins by describing the general characteristics of crowdsourcing sites and providing examples drawn from them. We then discuss the wide variety of tasks that have been accomplished via such sites, drawing on the categories proposed by Prpic et al. (2015). The article then moves into discussing the characteristics of significant online communities that have developed around the sites and how they impact worker engagement with particular tasks and companies offering such tasks. Finally, we draw all these elements together in offering practical considerations for organizational use of such crowdsourcing sites.

## 2. The nature of crowdsourcing sites

In agreement with the conceptualizations of crowdsourcing offered by Ford et al. (2015) and Prpic et al. (2015), we view crowdsourcing as a subcategory of outsourcing. Crowdsourcing is outsourcing whereby the workers doing the tasks are recruited through the Internet, whether or not the actual work is done online—although in the vast majority of cases it will be. This article focuses on a subcategory of crowdsourcing: compensated crowdsourcing. In compensated crowdsourcing situations, individuals who complete the work receive some type of payment for accomplishing the organization's tasks. This payment typically takes the form of monetary rewards, although some sites compensate individuals with things like gift cards.<sup>1</sup>

Amazon Mechanical Turk is one of the best known and most used of crowdsourcing sites. Amazon Mechanical Turk (MTurk) was launched by Amazon itself as a means of hiring people to do microtasks, such as labeling image files, for the main Amazon site (Landers & Behrend, 2015). Amazon then opened up MTurk to other companies with tasks for hire, to potentially be completed by the pool of workers on the site. Workers register for the site and then, based on their qualifications, participate in small jobs—called Human Intelligence Tasks, or HITs—that are posted by *requesters*: the organizations that have need for such tasks. The workforce on MTurk is primarily made up of individuals from the United States and India, although workers do come from all over the globe.<sup>2</sup> Table 1 offers a list of major compensated crowdsourcing sites.

The quality of work done by compensated crowdsourced workers—primarily workers on Amazon Mechanical Turk—has been examined, mostly from the perspective of academic research. The quality of MTurk sample data has been found to be equivalent to in-person participants for tasks/uses such as psychological surveys (Goodman, Cryder, & Cheema, 2013), behavioral tests (Casler, Bickel, & Hackett, 2013), matched-comparison groups (Azzam & Jacobson, 2013), body size estimation (Gardner, Brown, & Boice, 2012), and natural field experiments in economics (Chandler & Kapelner, 2013). Results suggest that Amazon MTurk and other crowdsourcing sites can be a good source of data for research-like tasks and questions.

There have been a few tasks examined wherein issues arose with crowdsourced workers. For example, Goodman et al. (2013) found that compared to in-person study participants, workers on MTurk are much more likely to use the Internet to find answers to questions asked. So if you ask a worker to make a judgment when a factual answer exists, MTurk workers are likely to find that exact answer rather than just make an estimate. This could hurt tasks that are aimed at organizational understanding of what people naturally know rather than what they can find out online. Chandler, Mueller, and Paolacci (2014) caution that crowdsourcing workers may be less likely to be affected by experimental manipulation and experimental deception, in part because some workers have participated in enough experiments to have seen such manipulations before. As such, tasks that require deception of workers might be less

<sup>1</sup> See Swagbucks (<http://www.swagbucks.com/>) for one example.

<sup>2</sup> For one illustration, see this map of locations of all workers who engaged in tasks by the requester, Techlist: <http://techlist.com/mturk/global-mturk-worker-map.php>

Table 1. Current compensated crowdsourcing websites

Amazon Mechanical Turk	<a href="http://www.mturk.com">www.mturk.com</a>	Workers register for MTurk and are then allowed to do Human Intelligence Tasks (HITs) based off of a system of qualifications. MTurk is one of the largest and most well-known crowdsourcing sites.
Samasource	<a href="http://www.samasource.org">www.samasource.org</a>	Samasource is unique in that it provides a physical workplace for its workers to complete microtasks. All Samasource workers are also citizens of developing nations who may otherwise not have employment.
CrowdFlower	<a href="http://www.crowdflower.com">www.crowdflower.com</a>	CrowdFlower pairs with partners including CROWD, ClixSense, CrowdGuru, instaGC, NeoBux, and Swagbucks to provide a large and diverse group of over 5 million workers. CrowdFlower handles task distribution to these various sites for the client.
Microworkers	<a href="http://www.microworkers.com">www.microworkers.com</a>	MicroWorkers has filters that allow workers to choose their tasks very specifically. MicroWorkers also includes worker success rates, rankings, and access to its online community so employers can target the best workers.
ClickWorker	<a href="http://www.clickworker.com">www.clickworker.com</a>	ClickWorker offers a diverse workforce from over 100 different countries. Quality of task completion is ensured through the peer review of tasks as well as statistical process testing and audits.

effective on crowdsourcing sites, although that hypothesis remains untested in a systematic manner.

There is a need to test the task quality of crowdsourcing workers for business purposes, as extant tests are conducted from the perspective of academic research. This research generally suggests that crowdsourced work offers comparable quality to work done by in-person workers.

In examining compensated crowdsourcing sites, we observed that sites provide several general functions, yet the means of providing those functions vary. We will focus here on three general functions and give examples from current compensated crowdsourcing sites. Over time, crowdsourcing sites may come and go, so we focus only on the general functions. These functions are central to the value of crowdsourcing sites, and thus we expect the functions to remain in use even as the means of reaching them may change. Focusing on general functions is also valuable in that organizations with different needs will require a different emphasis on certain functions, with some being more or less important.

### 2.1. General function #1: Creating the crowd

A crucial function of any compensated crowdsourcing site lies in creating the requisite crowd for the organization. Organizations need their work done in a timely fashion, and thus it is necessary that a large enough pool of workers exists to complete the jobs quickly and efficiently. Some estimates suggest there are millions of individuals doing crowdsourcing work online (Aguinis & Lawal, 2013). These workers can be dispersed across different crowdsourcing sites, which

can make it difficult for organizations to know where to go to find enough of the crowd.

In describing their services, many crowdsourcing sites focus on the workforce they can provide. For example, Amazon Mechanical Turk claims that it has over 500,000 workers onsite and it employs a counter to tally the number of available tasks on the platform (165,121 on January 1, 2016). For its part, CrowdFlower uses a network of online labor channel partnerships with sites such as CROWD, ClixSense, and Swagbucks to provide a large crowd across multiple platforms.

The size of the crowd available influences which site an organization may choose to use. For small tasks like transcribing 50 receipts, almost any crowdsourcing site could provide a large enough crowd. For a much larger job like writing descriptions for tens of thousands of products, an organization will need to more carefully consider which site or combination of sites can provide the needed crowd. Organizations may need to use a site over time to determine how well it actually delivers on the size of the crowd promised. Experienced organizations may actually build up their own crowds over time to engage in tasks through organization-controlled platforms.

### 2.2. General function #2: Finding the right crowd

While crowd size is important, worker qualification for the task is crucial. This could be in terms of garnering the opinions of members of a target group (e.g., expectant mothers' opinions on diapers), to landing specific skills (e.g., German speakers translating text into German). Thus, compensated

crowdsourcing sites need to provide organizations with an appropriate crowd for the goals of the task.

One way compensated crowdsourcing sites provide for this is by allowing organizations to implement screening questionnaires or tests. In this scenario, if a worker qualifies after taking the test or questionnaire, he/she is able to do the full version of the task. Amazon Mechanical Turk allows organizations to implement as many qualification tests as desired, with workers only able to take on the full task once the qualification test is passed.

Crowdsourcing sites can also have built-in tools that requesters can use to restrict who can take on tasks: workers of particular group memberships, location, experience on the site, successful past task completion, et cetera. Of all current compensated crowdsourcing sites, Amazon Mechanical Turk likely provides the most extensive systems, with all of the aforementioned filters and a 'masters' qualification filter, which Amazon Mechanical Turk bestows on a select group of workers who do many tasks at a high level of quality. Most crowdsourcing sites also provide organizations with the ability to ban particular workers from taking tasks; this is often done in cases of individuals who have previously provided low-quality work.

The last major way that compensated crowdsourcing sites help organizations to find the right crowd is by providing direct support in identifying capable workers for a task. For example, ClickWorker asks the organization to provide its needed task and basic job parameters, and then ClickWorker determines which crowdsourcing workers should be assigned to the task. CrowdFlower draws from a large number of member websites and will choose which labor channel partners fit the job based on the task desired. Thus, some crowdsourcing sites provide more hands-on help in finding the right crowd for an organization.

Which method is used to find the right crowd will depend on the organization and the nature of the desired task. Sites with tools and qualification tests, like Amazon Mechanical Turk, will often be best-suited to organizations that are experienced in crowdsourcing and which desire flexibility in how the task is targeted. Conversely, organizations less experienced or less sure of who would be best for a task might consider full-service, staff expertise-focused sites like ClickWorker or CrowdFlower.

### 2.3. General function #3: Delivering task to the crowd

Once a crowd is determined, the task needs to be delivered. If the chosen crowd does not receive the task to complete and send back to the organization,

quality work will not result. Compensated crowdsourcing sites can facilitate the transfer of tasks to workers and back to the requesting organization.

The most basic help is a platform on which an organization can build or upload tasks. For example, if an organization wants to give a survey, a survey application on the crowdsourcing site can enable its posting. The site may require that the organization use computer programming to create a task, or site-based applications may assist in the creation of a task. Amazon Mechanical Turk, for example, has a built-in program via which requesters can enter survey questions for workers.

Organizations that would prefer workers to go through an organization website or another survey provider can use the crowdsourcing site as a launching page; from here, a worker would click a link to take the actual survey or task on that other site. While the crowdsourcing site in this scenario is used for attracting and compensating the crowd, the actual task is done externally. Organizations could use a company site or survey creation tools like Qualtrics or SurveyMonkey. These providers may supply tools that better deliver the needed task content.

Compensated crowdsourcing sites may also provide more direct service in delivering tasks. In such situations, organizations may work closely with crowdsourcing site staff in determining how best to deliver content. This could include how content is organized, divided, and structured. For example, ClickWorker has the organization describe its goal or need, and then ClickWorker staff members determine how to divide and deliver the task. Once completed, ClickWorker presents the data to the organization.

Which path organizations decide to take with regard to task delivery will depend on organizational needs and the nature of the task. Complex tasks may not fit well in common crowdsourcing site interfaces, and thus external linking may be essential. Organizations with goals that have unclear means may use crowdsourcing sites in a consultant-like role, having crowdsourcing site staff determine what tasks are needed. As with the previous functions, an organization's comfort and experience with crowdsourcing will impact which choices are best.

### 3. Types of tasks done on compensated crowdsourcing sites

Crowdsourcing sites offer organizations the ability to have workers engage in a wide variety of tasks. These tasks can often be done through the actual site interface or through links to user websites or applications. [Prpic et al. \(2015\)](#) divide crowdsourcing tasks

into four main categories: crowdvoting, microtask crowdsourcing, idea crowdsourcing, and solution crowdsourcing. We draw on these general categories and our experiences as crowdsourcing workers to discuss the tasks that can be done through compensated crowdsourcing sites.

### 3.1. Crowd voting

In the crowdvoting category, [Prpic et al. \(2015\)](#) include tasks in which members of the crowd make choices between alternatives, with the organization using these votes to help decide between the alternatives. One common type of this task entails a worker choosing between two potential names for a product. An organization could use specific workers of particular demographic groups or classifications to make such judgments. For example, if an organization was looking to market a new infant care product, it could target an audience of workers that have babies in order to vote between potential product names. That is, what the organization deems the most relevant crowd could be targeted to make a judgment.

Crowdvoting can also be used to determine the comparative visual appeal of advertising or packaging. For example, a worker could choose between two different images for use in the Google Play phone app store. In such tasks, workers might give their opinions on a number of elements, such as how appealing, professional, or eye-catching elements are. This could help an organization determine which framing of a product works better for different purposes.

Crowdsourcing workers may be called upon to make judgments regarding the usefulness of answers or results. In one common application, a worker is given a particular topic and a set of search engine results on that topic. The worker then picks the results that look most helpful or appealing. Such results could help an organization better determine which search results resonate most with interested users, as well as how people think about a particular topic and what is relevant to it. This could also be done to determine which image best represents a concept or how well a video fits a particular category.

While [Prpic et al. \(2015\)](#) focused just on voting, many tasks we experienced also allowed workers to offer explanations regarding or elaborate upon their answers. After a choice between two options, a follow-up question in the task might ask why the worker chose as he/she did. This methodology allows more data to be generated than simply the vote of one choice versus another. Such data could help the organization develop a more nuanced understanding of why one choice is more popular.

### 3.2. Microtask crowdsourcing

In microtask crowdsourcing, online workers complete small parts of larger tasks that an organization needs done ([Prpic et al., 2015](#)). In this case, aspects of a task are accomplished by many individual workers, with the work combined later. For example, if an organization wanted a large number of images identified, tagged with descriptors, and then summarized into paragraphs written about each one, a single worker could ostensibly do all parts of the task. However, under microtask crowdsourcing, this task is broken up into mini-jobs among multiple groups. Here, one group might identify the pictures and put them into categories, leaving the rest of the steps to other groups. Consider a task the first author did on MTurk. The author's job involved classifying whether or not a Google Earth-like satellite image included a swimming pool. One group of workers—including the author—performed these classifications. Although the rest of the microtask process is unknown to the author, it could have played out like this: The second group then looked at images put into the categories and provided descriptors (e.g., pool type, lot size, house color). Finally, a third group of workers looked at the pictures with descriptors and came up with paragraphs describing the pictures; these could then be used in informational packets or given to sales teams. Each component of the job was eventually put back together by the organization or microtask provider.

There are many different applications of microtasks for crowdsourcing sites. A common one is receipt transcription. In this task, workers are asked to cull the date, store name, individual items sold, sales total, and other information off a receipt and to enter that data in a format the store can use for its records. Other microtask crowdsourcing activities might include transcribing audio or video clips, transcribing handwritten forms, or extracting information from images. Organizations then take this information from online workers and place it in relevant internal databases.

### 3.3. Idea crowdsourcing

Idea crowdsourcing is defined by [Prpic et al. \(2015\)](#) as organizations looking to the crowd for ideas and solutions to problems, with an additional potential component of the crowd also evaluating such ideas. Here, the crowd goes beyond picking between alternatives offered by the organization (as in crowdvoting) and extends to actually creating content and offering ideas to the organization. In the case of crowdsourcing sites like MTurk, a requester can get potential ideas from a wide pool of workers and look

through the ideas for elements it believes will help the organization.

A common application of this on crowdsourcing sites entails asking workers to come up with potential names for products. Supplied with information regarding a product or service in development and what its target market is, workers are asked to come up with an appealing name. They might be asked to come up with a sales pitch for the product. In this case, an organization can get ideas from workers online, in addition to sales or promotional materials that can be used in whole or tweaked by internal staff members.

### 3.4. Solution crowdsourcing

In solution crowdsourcing, the organization goes beyond soliciting ideas from the crowd (as in idea crowdsourcing) to actually asking the crowd for solutions to organizational problems and needs (Prpic et al., 2015). This category does offer some overlap with idea crowdsourcing and microtask crowdsourcing. The differential focus, though, is complete creation of a piece of content that can be used immediately by the organization.

The most common type of activity that would fall into this category is when a company needs a great deal of content of a particular type created at once. An example found on Amazon Mechanical Turk is companies looking for workers to create summaries of articles or web pages. Such companies provide summaries of many websites for internal or customer use, and rely on crowdsourcing workers to create these.

The expertise of crowd members may also be called upon to determine what content is needed and then create it. For instance, a travel site might look for crowdsourcing workers to provide summaries of particular attractions in their hometowns. These locals would know much more about the city than the organization, and provide more in-depth summaries than a full-time traveling expert could given his/her time and knowledge constraints. This can also be done in terms of text translation from a foreign language to English. Instead of retaining a dedicated staff translator for each language, the crowd could be used for translations, with the potential of multiple translations of the same document to ensure accuracy.

## 4. Community around compensated crowdsourcing websites

While crowdsourcing sites are often thought of as repositories of workers hireable for one-shot tasks,

with no expectation of interaction or future employment (Prpic et al., 2015), significant online communities exist around crowdsourcing websites (Goodman et al., 2013; Schmidt, 2015). We will discuss these communities in relation to how they provide value for workers in fulfilling four major purposes. As with the compensated crowdsourcing sites above, examples will be drawn from current sites, but the purposes are ones we anticipate will continue in the future even if particular sites become defunct. Table 2 presents a number of current crowdsourcing worker websites.

### 4.1. Purpose 1: Sharing of ‘good’ tasks

A major goal of worker community sites is helping site users share and become informed of tasks that are currently running on crowdsourcing sites. These tasks are ones users see as particularly ‘good,’ with good generally meaning a decent wage rate for the time needed to complete the task (Goodman et al., 2013). Since workers are doing compensated crowdsourcing in order to gain income or desired rewards, workers want to find the best opportunities. Worker communities help members of these communities share valuable information on tasks that are worth doing.

A number of worker community sites have message boards or sections devoted to sharing good tasks. MTurk Forum, for example, has a daily HITS thread where users post about tasks currently on Amazon Mechanical Turk that other users may also want to do. Such descriptions will often include information on compensation rate and time required to complete the task. The site HITSWorthTurkingFor is devoted to sharing such good tasks, and features a macro that crosses out thread links as the tasks are fully completed. The site encourages users to share tasks, with monthly rewards going to the most active posters. Organizations that have their tasks shared through such communities are likely to have their work completed more quickly and by more experienced workers.

### 4.2. Purpose 2: Community policing of tasks and requesters

Related to Purpose 1, worker communities will often offer an element of community policing of both tasks and requesters. Workers don’t want to do tasks for requesters that are unlikely to pay them or organizations that are likelier than usual to reject work submissions as inadequate. Workers also want to avoid requesters that make them work for a long time for low pay rates. To avoid such problems, workers have created community sites and message

Table 2. Current compensated crowdsourcing worker websites

MTurk Forum	<a href="http://www.mturkforum.com">www.mturkforum.com</a>	MTurk Forum is a site that allows MTurk workers to get to know each other, discuss issues on MTurk, and post daily threads to desirable tasks on MTurk. It even offers a section for MTurkers to talk about investing for the money they make on the site.
HITsWorthTurkingFor	<a href="http://www.reddit.com/r/HITsWorthTurkingFor">www.reddit.com/r/HITsWorthTurkingFor</a>	HITsWorthTurkingFor is a forum where workers share dozens of high-quality HITs with each other daily. The site even has a bot that informs workers when certain jobs have been filled and have no more HITs to offer.
Turkopticon	<a href="https://turkopticon.ucsd.edu/">https://turkopticon.ucsd.edu/</a>	Turkopticon allows workers to see reviews for tasks and requesters on several dimensions. Requesters can also contribute to Turkopticon by commenting on reviews of their tasks.
Crowd-Square	<a href="http://www.crowd-square.com">www.crowd-square.com</a>	Much like MTurk Forum, Crowd-Square is an online community for ClickWorker that offers workers a place to discuss improvements to the site as well as discuss tasks and requesters.
BeerMoney	<a href="http://www.reddit.com/r/beermoney">www.reddit.com/r/beermoney</a>	BeerMoney is a site for people to share opportunities to make money from all over the Internet. It often includes links to crowdsourcing sites, but also tips for making money or jobs needed found on specific organizational websites.
WorkOnline	<a href="http://www.reddit.com/r/WorkOnline">www.reddit.com/r/WorkOnline</a>	Much like BeerMoney, posters at WorkOnline can also receive links directly from organizations with the goal of making a minimum wage.
SlaveLabour	<a href="http://www.reddit.com/r/SlaveLabour">www.reddit.com/r/SlaveLabour</a>	Organizations are able to recruit workers directly at SlaveLabour for a wage rate below going market rate. Workers may also place 'offer' threads describing their potential value to a company.

boards via which to share their experiences with particular requesters and tasks. These sites offer worker ratings and reviews of requesters in a format that is similar to reviews of restaurants on Yelp. Turk worker reviews can help steer other workers toward requesters that will pay them appropriately and offer reasonable tasks.

One of the current sites that focuses on such ratings is Turkopticon. Via Turkopticon, visitors can see ratings for fairness, speed of pay, amount of pay, and communication of the requester on a zero to five scale as well as a short review written by other workers. Turkopticon also offers a web browser extension that enables workers to see requester reviews right on the actual Amazon Mechanical Turk site as available tasks are being browsed. Thus, a worker can easily avoid low-rated requesters and focus on those requesters that have been vetted as high quality by the community.

Sites like Turkopticon can be either beneficial or significantly concerning to participating organizations. Requesters with good ratings are likely to get

larger numbers of workers choosing their tasks, with applicants confident the tasks will be worthwhile and paid-in-full. Conversely, requesters with bad ratings—justified or not—are likely to receive less attention from workers. Bad reviews often focus on bad pay for length of task, tasks that don't function as they should, very boring tasks, and requesters that reject worker submissions and refuse to pay. In general, fair treatment of workers and appropriate pay levels should lead to good reviews for a requester through Turkopticon. Organizations that get bad reviews can register with the site as a requester and comment on user reviews about them, or resolve issues that workers are having with posted tasks.

#### 4.3. Purpose 3: Creating a sense of community among workers

Although crowdsourcing workers have no obligation to interact with each other, some still strive for connection (Schmidt, 2015). Many are likely to

have similar experiences and can act as a support network. Several worker communities include areas in which workers can ‘meet’ each other, talk about their crowdsourcing goals, and even engage in idle chitchat. Consider, for example, MTurk Forum’s Daily HITs thread sharing tasks, where individuals engage in conversation and post things like GIFs from TV shows to motivate each other.

#### 4.4. Purpose 4: Communication between workers and organizations

A final purpose of compensated crowdsourcing worker sites is to provide an arena in which workers can interact with the organizations requesting work. On such sites, organizations may post tasks they need to have done, whether the task is listed on an existing crowdsourcing site or would be done directly through the organization. Workers can also create posts describing their experience and skills, which organizations are able to read and thereby use to recruit workers based on the shared information. The gallows humor-named site SlaveLabour allows for both types of posts, with the idea that organizations are able to get quality work at well below going market rates.

Worker sites that allow workers and organizational representatives to interact offer significant potential benefits to organizations. An organization can drive workers toward its tasks, use interactions to build its reputation in the worker community, and amass a crowd on its own without compensated crowdsourcing sites acting as an intermediary. Workers can be directed to organization-based crowdsourcing initiatives. This can be very valuable for organizations experienced in crowdsourcing that would like to contract workers for tasks in a more direct fashion.

### 5. Overall considerations when using crowdsourcing sites and workforces

In this section, we offer three major considerations that organizations should weigh in using crowdsourcing sites for organizational tasks. Each consideration includes both opportunities and challenges related to using sites that create a crowd.

#### 5.1. Crowdsourcing sites offer large potential pools of workers to do quality work

Crowdsourcing workers have the interest and ability to do a wide range of different tasks, with academic research suggesting that these

crowdsourcing samples provide similar answers and work quality as compared to traditional research samples (Gardner et al., 2012; Goodman et al., 2013). However, this needs to be tested more directly for work tasks versus research tasks. Crowdsourcing sites could provide quick results for an organization’s task and information needs. Crowdsourcing sites are a potentially powerful tool to gain the benefits of crowdsourcing suggested by Ford et al. (2015) and Prpic et al. (2015) and to generate the needed crowd for such work.

This potential does not come without challenges. For example, a large pool of workers may be willing to do tasks for organizations, but will the turkers provide high-quality work? Will they cheat or dishonestly complete tasks (e.g., copy and paste text from the web for writing tasks)? Organizations will need to consider such issues as they increasingly use crowdsourcing sites. Some organizations will do periodic checks of worker tasks to see if they are of a sufficient quality. One common method of quality control currently used by organizations entails having multiple workers complete the same task to see if the workers agree and provide similar output. Organizations looking to depend on crowdsourcing sites for crucial tasks will need to consider creating processes for making sure they receive appropriate quality, just as they would with traditional in-person workers.

#### 5.2. Worker community sites impact which tasks are done

An important aspect of crowdsourcing workers that has been relatively ignored until recently<sup>3</sup> is the online website and message board communities surrounding crowdsourcing sites. These communities offer significant potential benefits and challenges to organizations. On the positive side, requesters that have their tasks shared in such communities are likely to have those tasks completed more promptly. High ratings on a requester rating site like Turkopticon could increase the desirability of an organization’s tasks to workers. Sites such as WorkOnline and SlaveLabour provide organizations with direct access to workers; in this way, organizations can share tasks with workers or guide them to organization-based interfaces for doing crowdsourcing work. Online community sites for crowdsourcing workers can be powerful tools in getting tasks completed more quickly, tasks being more widely advertised, and even building

<sup>3</sup> See Goodman et al. (2013) and Schmidt (2015) for exceptions.



a dedicated crowd for the organization. These are the benefits.

This community of workers can also offer challenges. For example, while good ratings on sites like Turkopticon may attract more workers to an organization's tasks, bad reviews could drive them away. An organization may not agree with the reputation it has online, perhaps in part because it has different expectations than workers as to what is considered appropriate output. A requester may have very high standards for work quality, and thus reject a significant percentage of submitted tasks. From the organizational perspective this rejection might seem absolutely necessary due to the nature of the task, but from the worker perspective it might be seen as unfair and capricious, resulting in negative reviews. Affected workers would find it perfectly reasonable to advise others to avoid the requester due to a high rejection rate, even though the organization has its own good reasons for its behavior: it may look to cultivate crowds that have the relevant skill level and like the kind of work that is being offered.

Another potential community concern is that community sharing of tasks can result in many of the same kinds of workers doing an organization's tasks. For many requesters, this may not be a problem and in fact may be desirable: workers who have done the task many times before are experienced, know what needs to be done, and thus are more likely to do good work.

Worker homogeneity can be more of a problem for tasks related to gaining opinions and market research. The sample might be constricted by the same workers doing tasks over time. This represents a major area of concern for academic researchers. Paolacci and Chandler (2014) examined their own requester history on Amazon Mechanical Turk and found that 10% of workers on the site were responsible for completion of 41% of their tasks. When doing market research, organizations may want to consider this issue. As discussed previously, filters could be set for work experience and demographics, and screener tests could be given as well to help ensure that workers with the right characteristics end up doing the task.

### 5.3. Different sites offer different benefits and worker pools

Organizations that use crowdsourcing sites will need to consider which worker pools and sites suit them best. Amazon Mechanical Turk offers the largest crowd overall, but using other crowdsourcing sites or targeting particular MTurk workers might better fit organizational needs. For example, an

organization that wants work done and is looking for corporate social responsibility opportunities may want to utilize Samasource, a site that draws its workforce from underprivileged and impoverished nations around the world.

Organizations will also need to consider how much help they require or want in the process. Sites like Samasource and ClickWorker offer organizations significant help in figuring out how a task might be divided and best delivered to a workforce. Amazon Mechanical Turk doesn't provide direct guidance, but does provide a large crowd and many tools for creating tasks and targeting groups within the site. Finally, sites like WorkOnline and Slave-Labour give organizations the opportunity to directly connect with workers for tasks or for recruitment to their independent crowdsourcing initiatives. The 'best' site may depend on the task desired, crowd needed, and how experienced the organization is with crowdsourcing workers. Some organizations might transition over time from sites that offer significant help in the process, to their own dedicated organization-controlled sites later on. Crowdsourcing sites are playing an increasing role in business strategy, and those organizations familiar with such sites and workers will be able to avail themselves of this potential competitive advantage.

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