Crowdsourcing and Its Application in Marketing Activities

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ABSTRACT

Crowdsourcing is a newly developed term which refers to the process of outsourcing of activities by a firm to an online community or crowd in the form of an 'open call'. Any member of the crowd can then complete an assigned task and be paid for their efforts. Although this form of labour organisation was pioneered in the computing sector, businesses have started to use 'crowdsourcing' for a diverse range of tasks that they find can be better completed by members of a crowd rather than by their own employees. This paper examines how firms are utilising crowdsourcing for the completion of marketing-related tasks, concentrating on the three broad areas of product development, advertising and promotion, and marketing research. It is found that some firms are using crowdsourcing to locate large numbers of individuals willing to complete largely menial repetitive tasks for limited financial compensation. Other firms utilise crowdsourcing to solicit solutions to particular tasks from a crowd of diverse and/or expert opinions. Conclusions are drawn regarding the advantages and the limitations of crowdsourcing and the potential for the future use of crowdsourcing in additional marketing-related applications.

Keywords: Crowdsourcing, Outsourcing, Wikinomics

INTRODUCTION

What is 'crowdsourcing'?

The term 'Crowdsourcing' was introduced by Jeff Howe and Mark Robinson in a Wired Magazine article in June 2006. The 'official' definition of the term comes from Jeff Howe who has outlined crowdsourcing as 'the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call' (Howe, 2006b). At a later stage Howe added the proviso that outsourcing involved some form of

payment to differentiate crowdsourcing from the better-known 'wikinomics' (Tapscott & Williams, 2006) or 'commons-based peer production' (Benkler, 2006) which involves large unrelated groups working on joint projects such as the software programme Linux, or the online encyclopaedia Wikipedia 'without relying on either market signals or managerial commands' (Benkler ibid. p.60).

Crowdsourcing describes a process of organising labour, where firms parcel out work to some form of (normally online) community, offering payment for anyone within the 'crowd' who completes the task the firm has set. The advantages for a firm of outsourcing to a crowd rather than performing operations in-house is that firms can gain access to a very large community of potential workers who have a diverse range of skills and expertise and who are willing and able to complete activities within a short time-frame and often at a much reduced cost as compared to performing the task in-house (Howe, 2006a).

Crowdsourcing works in the following way. A firm identifies a task or group of tasks that is currently being conducted in-house. Rather than continue to perform this activity within the firm, the tasks are released to a 'crowd' of outsiders who are invited to perform the task on the firm's behalf for a stipulated fee. The crowd may be a truly open call where anyone who is interested in completing the task is invited to submit their response; or the task may be limited to a particular community that is pre-screened to have some particular knowledge or expertise; or a combination of these can be used with an open call released to a non-specific community but limitations placed on who may be allowed to complete the task. A member of the community then offers to undertake the task and a specific time allowance will be given for the task to be completed. When the task is done, the member will submit the task to the firm and the firm will then assess the quality of the work and if satisfied will make payment to the member. Variations on the above theme exist. Sometimes a single task can be completed by many different users and each can be paid if they successfully complete the task. In other cases the task can be accepted by many members who will each work on the task, although the understanding is that only one member will 'win' payment for the task, that being whoever came up with the 'best' solution to the task as decided by the firm.

Some firms have utilised crowdsourcing by publishing available tasks on their own websites. However, a more effective way of accessing the crowd may be through the services of online websites or crowdsourcing intermediaries which act as markets for customers to interact with the crowds (Tapscott & Williams (2006) refer to these sites as 'ideagoras' or marketplaces of ideas). Some of these websites may have their

own specialised crowd in the form of an online community, or they may agglomerate a more generalised crowd who will then pick and choose which tasks they wish to complete. Individuals working on tasks through these crowdsourcing intermediaries may not even become familiar with the client firm on whose behalf they are completing the task.   The best known of these crowdsourcing intermediaries is Amazon's 'mechanical turk' website, which although still in beta testing has received wide publicity and already hosts a large number of what they term 'Human Intelligence Tasks[1]' (HIT's) most of which pay only a small amount (typically less than US$1) for each HIT completed. Anyone can sign up to assign tasks and anyone can sign up to complete the tasks that are listed. Figure 1 illustrates the crowdsourcing process.
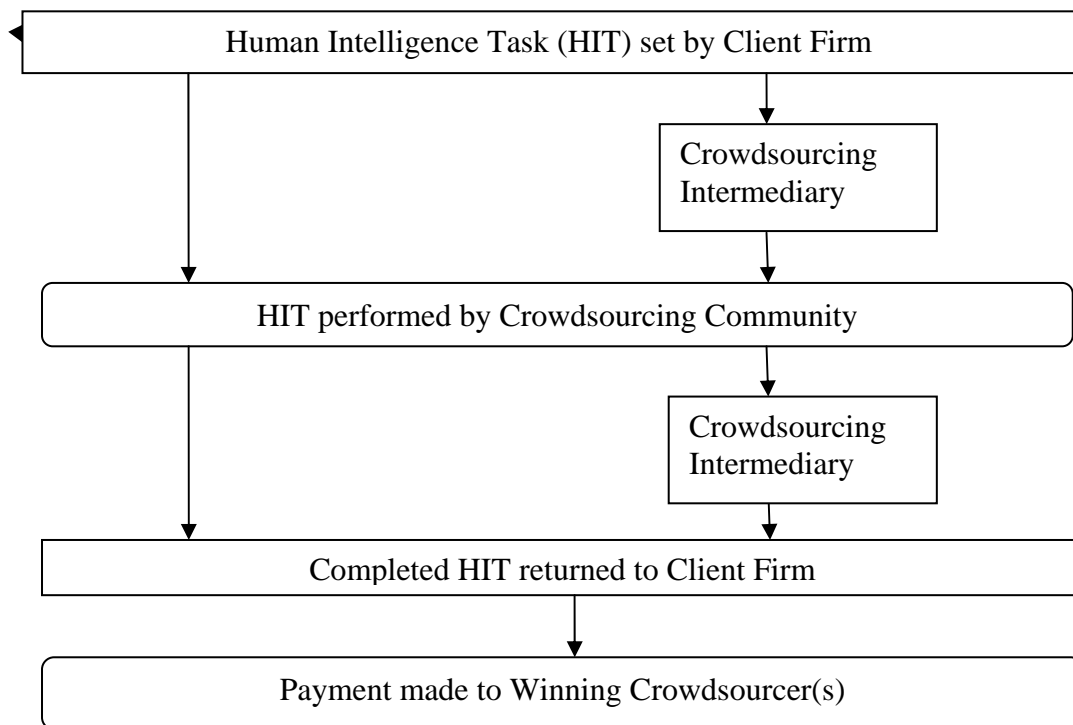

Figure 1 The Crowdsourcing Process

The impetus for crowdsourcing arises out of the movement which has come to be generically known as Web 2.0, a nebulous term which revolves around the idea that individuals are no longer passive browsers of the web, but they actually are the web. The most famous of the Web 2.0 companies is probably YouTube which uses the crowd to provide it with its own content, the online community MySpace is another well-recognised user-driven web business. The suggestion that Web 2.0 is creating a significantly new social and business environment is explored in   Surowiecki's

popular 2004 book 'The Wisdom of Crowds' and Yochai Benkler's more academic tome 'The Wealth of Networks' (2006).   The idea was encapsulated by Time magazine's choice of the person of the year for 2006 being 'You' namely the crowd or community of internet users who through their uploading of content and material and sharing of information were creating a new and improved web. Similarly, from a marketing perspective, Advertising Age recently nominated 'the consumer' as its advertising agency of the year based on the fact that firms are increasingly turning to consumers for creative ideas and output.

Reflecting the environment in which crowdsourcing was developed, much of the initial crowd-sourcing tasks that were first introduced involved computing related activities. These tasks may have involved writing a few lines of software code or debugging a certain programme. Although many computing-related tasks continue to be offered on the various crowd-sourcing websites, businesses are quickly finding that the crowdsourcing mode of organising labour can be applied to a wide range of tasks including the marketing applications presented in the next section of this paper.

The newness of the term crowdsourcing indicates that there is not any significant literature on the subject of how this operating method is utilised within the marketing function. The objective of this paper therefore is to take an exploratory look at how business firms are using crowdsourcing as part of their marketing activities at the present time, and to suggest how the practice of crowdsourcing may spread to other marketing activities as time goes on. The paper suggests that there are some marketing tasks where crowdsourcing is an appropriate methodology and other tasks where the use of crowdsourcing is less appropriate, the advantages and disadvantages of crowdsourcing are pulled together in the conclusions to this paper.

Uses of Crowdsourcing in Marketing

To assess the current practice with regard to the uses of crowdsourcing in marketing, we have undertaken an examination of the various crowdsourcing websites already in operation and searched through the HIT's posted to identify marketing related tasks placed by client firms[1]. We have studied each of the relevant HIT's to determine the precise nature of the task being undertaken, how the task has been defined, how respondents to the HIT have been qualified by the client firm and the method by which crowdsourcers are paid for their efforts in completing the given

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[1] The websites surveyed included crowdsourcing intermediaries such as Cambrian house, mechanical turk, istockphoto, mob4hire, crowdspirit, Kluster, ninesigma, innocentive, filmriot, mob4hire, etc. Additionally, tasks identified from the home pages of numerous clients who engaged in crowdsourcing directly were included.

tasks. In addition to surveying the websites we have also relied on reports from the popular business press on applications of crowdsourcing in marketing and examined the various internet weblogs dedicated to the subject of crowdsourcing. While such a methodology is limited in terms of being able to appraise all marketing applications conducted through the means of crowdsourcing, we do consider that such an overview can at least highlight the current trends with regard to this new phenomenon and point out potential avenues for the further use of crowdsourcing in marketing and possible areas of further research.

In surveying the literature and examining the existing published HIT's in this manner, three marketing-related areas emerged in which firms are actively using crowd-sourcing, namely product development, advertising & promotion, and marketing research. Within each of these areas two distinct approaches were evident, one where use was made of a mass crowd where tasks where open to almost all who wanted to complete them, and another approach where the firm sought to limit those who could participate in the task to those with some sort of prior expertise. To differentiate between these two types of tasks companies utilised different crowdsourcing providers from the open-to-all sites such as 'mechanical turk' to closed communities of pre-screened crowds such as 'innocentive'. The paper now moves on to look in more detail at each of the three marketing areas where crowdsourcing is currently being utilised.

Product Development

Examination of available HIT's indicated that a common marketing task for which crowdsourcing is being applied in these early days of the medium is for purposes of product development and design. Firms use crowdsourcing to get input and advice on their own product development efforts from existing end-users, and experts who may be able to solve a certain scientific or design problem. Other firms have challenged the crowd-sourcing community to design their own products, which the client firm may then produce on the crowdsourcers behalf, sharing the profits. In another form of 'product development' some firms have turned to crowdsourcers to provide not just the idea but the very products or services (often written 'content' or information) that the firm then offers to its own customers. These forms of crowdsourcing for product development are discussed more fully in the following sections where examples of each form are provided.

Obtaining the input of consumers for purposes of product development is not a new phenomenon (von Hippel, 1998; 2006). Manufacturers have for years turned to

end users for suggestions for new products and for advice on development of existing models. Salespeople have often been charged with the responsibility of collecting feedback from customers so that this can be used in the product development process.

However, crowdsourcing has expedited the process of obtaining feedback from end-users in at least three distinct ways. Firstly, the sheer number of consumers/end-users consulted can be vastly increased, suggestions or developments can come not only from existing customers but from potential customers that previously the firm had no way of contacting. The 'quality' of the customers consulted may also be higher as those who engage in the crowd-sourcing activity are likely to be amongst the firm's most demanding consumers. Secondly, crowd-sourcing allows firms to interact with consumers instantly and directly, there is no need for information to filter through (or not) from salespeople or other members of the distribution channels. Thirdly, instead of consumers providing generalised ad-hoc suggestions on new products, firms can specifically tailor the areas of product development that they ask crowdsourcers to focus upon. For example specific product development or engineering problems can be posted with a significant fee paid to anyone who can provide a working solution. One crowdsourcing firm, Innocentive, specialises in scientific solutions to Fortune 500 companies (including Proctor and Gamble and Boeing) who each pay an annual fee (starting at US$100,000) for access to Innocentive's community of crowdsourcers plus a percentage of the fee paid to any individual crowdsourcer who successfully solves one of the firms posted tasks (Rigby, 2007). Other examples of firms utilising crowds for the purpose of product development include Netflix, the DVD rental firm, which has offered a one million dollar payment to anyone who can develop a superior system for estimating how much users with a particular revealed film type preference will like a particular movie, and Google, which has offered up to ten million dollars for those who develop innovative applications for their new mobile phone operating system Android (Trendwatching, 2007).

Some of the more exciting evidence of the use of crowdsourcing however goes beyond simply asking for assistance with existing development plans or contributions to problems already encountered. Rather a number of pioneering firms have already started to use the crowd-sourcing approach to engage a multitude of potential users to either design and create their own products or to utilise the crowd as a source of the firm's own product or service, aggregating the information and experiences of the crowd into their own product offerings which are then made available to the firms' end consumers. An example of this approach is cafepress.com where crowdsourcers

provide their own designs which are then sold by cafepress on a range of items from mugs to t-shirts. The design creators get a percentage of every item that is sold featuring their design and gain access to the full facilities of the online storefront and manufacturing and distribution facilities of cafepress without having to pay any upfront fees. Similarly, Crowdspirit.org has been organised to allow a group of community members to jointly develop and bring to market a range of electronic items, users will jointly vote on which ideas should be accepted and jointly fund the product development and marketing costs of ideas that go into production (Hempel, 2007).

Making use of user-generated content is no longer considered extraordinary as the basis of a business model, YouTube has shown just how fast such a business can grow. Similarly, Amazon, the world's largest online retailer, has relied for much of its success on reviews, guides and lists provided to Amazon by its customers. However, neither of these examples can be properly referred to as crowdsourcing, failing to meet the definitional criteria of the user being paid for the content they provide. However, firms engaging in crowdsourcing have learned from the experiences of YouTube, Amazon et al and seen the potential of users as content providers in the development of their own products and services. Many of the existing marketing based tasks placed by firms with the crowdsourcing intermediaries call for users to provide some form of content (such as reviews of local restaurants, guides on using a particular type of mobile phone, listings of the recording releases of a particular band) in return for a small fee. Companies can thus build up their 'inventory' of content which adds to the value of the product or service they offer.

In another form of the same process, Gannet, the newspaper publisher in the United States, has made a decision to crowdsource some of its news gathering operations. Rather than relying on full time reporters to gather all of its news, the firm has actively sought to crowdsource, in one example the firm's Fort Myers News Press invited readers to investigate and report on examples of government malfeasance. The results were immediate and substantial as 'retired engineers analyzed blueprints, accountants pored over balance sheets and an inside whistle-blower leaked documents showing evidence of bid-rigging' (Howe, 2006c). As uploading technologies improve, it seems certain that many other companies will seek to obtain the benefits of crowdsourcing as a means of developing content for their services.

Advertising and Promotion
The second generalised marketing area where crowdsourcing is currently being utilised is for tasks related to advertising and promotion. In this area it is possible to

distinguish two distinct forms of crowdsourcing activities, one is the use of crowdsourcers for rather laborious, menial tasks which the hiring firm has neither the time nor manpower to complete themselves, the second form is again the use of experts who are used by some firms to help create and develop advertising and promotional campaigns.

On the lower end of the scale, the kind of promotional tasks that firms are crowdsourcing include activities which are time-consuming and labour-intensive - tasks that although laborious cannot easily be computerised. As an example, one small firm required willing crowdsourcers to print off copies of a promotional flyer and to distribute a certain number of them in particular locations at a particular time (how this was to be monitored was not explained in the task). Other firms have called on crowdsourcers to write positive reviews of their products and post it to various websites to increase the internet visibility of their product or brand. There is some concern that crowdsourcing may be being used by some unscrupulous firms to engage in 'click-fraud', hiring crowdsourcers to repeatedly 'click' on an internet ad to either increase the revenue of the website where the ad is placed or to increase the costs of the firm placing the ad[2].

Smaller firms in particular have taken to using crowd-sourcing for purposes of helping them with creating and developing advertising and promotional activities. The website istockphoto for example is a crowdsourcing image library where users upload stock photography which firms can then incorporate into their promotional materials for a set fee[3]. The wide range of photographic images already available, the ability to request a certain type of image and the much lower cost of the service as compared to hiring a photographer or working with one of the established image library services are all part of the appeal to user firms.   Similar to the old 'in ten words or less' competitions of the 1960's and 70's, some firms have asked crowdsourcers to develop a slogan or tagline that best describes the firms' product which then may be used in future promotional campaigns. Businessweek (Hempel, 2006) has reported that the cosmetics firm L'Oreal turned to users of current TV, who create and upload much of the stations programming, with a challenge to develop a television ad for a new brand of eye shadow. The winning ad was developed by a user named 'spiceytuna' for a cost of US$1,000 compared to an estimated US$164,200 charge that the firm would normally have paid for such a spot. Frito-Lay also invited

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[2] The crowdsourcing organisation Subvert and Profit has a business model based upon its crowd of users manipulating stories onto popular social media websites such as Digg and YouTube.
[3] Istockphoto was acquired by Getty images for US$50 Million in February 2006

user-generated advertising through Yahoo, and showed the winning submission on a prime-time advertising slot during the 2007 super-bowl.

It has been suggested, that firms may eventually crowdsource a whole range of activities that have been previously carried out by marketing 'professionals' such as public relations, copywriting, or the development of audio/visual materials. The advantages that crowdsourcing provides over, say, the hiring of a traditional advertising agency, includes access to an exponentially increased amount of ideas, input from a wider, more diverse group than the usual bunch of advertising executives, and all at a fraction of an agencies cost. For firms seeking to appeal to a younger audience raised on MTV and YouTube, often a less professional but edgy user created promotion will be more meaningful and persuasive to them than something slicker created by an established agency and produced by crafted audio/visual technicians. Perhaps recognising a long-term threat to their own position, the advertising agency TBWA/London in November 2006 introduced 'the big what adventure' a section of its website where it posts some of the projects it is working on and asks for comments or suggestions, anyone can submit and they will be paid for any ideas that are used.

Marketing Research

When a marketing manager is first presented with the medium of crowdsourcing which provides the opportunity to acquire information from a large group of consumers in a timely manner and at a relatively low cost, the first thought turns to utilising this methodology for purposes of marketing research. Indeed many of the tasks that have been placed with the crowdsourcing websites replicate traditional research activities; in most cases users are paid a small amount (normally US 25 cents or less) to answer some form of questionnaire.   Despite the abundance of these tasks on sites such as mechanical turk, there is some question whether this is truly a form of 'crowdsourcing'.   Certainly the tasks are being opened to a crowd and users are paid for completing them, however in a strict sense the tasks being undertaken are not replacing something that was previously done in-house by the firms' employees.

Additionally, using a crowdsourcing approach for consumer research may not be appropriate, especially if utilising closed end questions which are then analysed quantitatively. When utilising crowdsourcing sites for this type of marketing research, problems arise due to the fact that respondents are being paid for providing information. Similar to any other case of paid research, this raises issues of whether the responses are being affected by the payment, perhaps for example leading to an overly positive view of a firm's products or services. Secondly there is the issue of

whether the respondents who are taking part in the research are representative of the target population. It is after all a relatively small segment of the overall population that is engaging in crowdsourcing and this group of people, who are willing to answer questionnaires for what is typically a few cents per questionnaire, may be an unrepresentative sample.

The whole issue of sampling is in fact problematic when attempting to crowdsource consumer research. Although the various crowdsourcing sites allow firms to state they only want a certain type, or sample, of individuals to be allowed access to any task, there is little that can be done to verify whether a computer user is indeed who they claim to be. A firm may open a task and restrict completion to married housewives for example, but there is little to stop bored teenagers from imitating this demographic to earn a little extra pocket money. To lessen this problem some online research tasks require users to answer a number of pre-qualifying questions correctly. Presumably if wrong answers are submitted the questionnaire results are discarded and the user is not paid for completing the task.

Due to these sampling issues, consumer research utilising a standard questionnaire format is therefore maybe not best suited to a crowdsourcing solution. However, there are other forms of marketing research which can be carried out through crowdsourcing and evidence from the crowdsourcing websites suggests that marketers are adapting their research operations for this medium. One approach that many firms are using is to carry out qualitative rather than quantitative research and to move away from closed end questionnaires where boxes must be ticked, to open-ended questions where consumers are asked to write in their own responses, sometimes a minimum number of words is required for a particular answer in order to receive the payment. This type of survey allows firms to evaluate each response received and discourages multiple responses by any single individual. Springwise.com, for example, maintains a network of over 8,000 trend-spotters worldwide who contact the firm when they come across interesting new products or business models, the firm then rates and assesses the reports for their validity and interest and makes payments for those it accepts. Aggregated results of upcoming trends are then sold by Springwise to a range of corporate customers keen to keep up with global trends.

If the task has been restricted to a group of people with particular knowledge or experience, the firm can weed out nonsense or bogus replies and has no need to pay for any completed surveys which are considered unqualified. This approach to collecting research through crowdsourcing may be particularly suited to collecting

'expert' information. Research on issues such as future technological developments, environmental trends or legal developments could all be collected in this manner. On a less salutary note, there are firms which are actively using crowdsourcing to collect competitor information, paying for information about competitors' plans or activities, presumably from the employees of those competitors.

Gaining availability to a wide range of experts is indeed one of the key benefits of crowdsourcing and it is at this end of the research spectrum, rather than broad-based consumer research, where the crowdsourcing option is most suitable.

CONCLUSIONS

The above discussion has identified a range of marketing applications which may be handled by means of crowdsourcing. Of course, the movement towards crowdsourcing is in its infancy and no doubt marketers will find other tasks that can be completed using a crowdsourcing approach as new opportunities arise and as new technologies evolve. However, at this early stage, it is possible to identify some of the pros and cons of crowdsourcing as a means of completing marketing activities and to broadly identify which types of marketing task are most conducive to the use of a crowdsourcing approach.

The advantages of crowdsourcing are that it gives firms access to a potentially huge amount of labour outside of the firm which can complete necessary tasks often in a fraction of the time and at a fraction of the cost than if the same activities were conducted in-house. Some of the available 'crowd' may have limited skills but they will be willing to take on repetitive, menial tasks which cannot easily be performed by computers. On the other hand selected crowds may have a degree of expertise not available within the firm which can work to solve more complex issues or tasks. With particular applicability to the marketing field, crowdsourcing allows firms to harvest ideas from a wide and diverse collection of individuals with experiences and outlooks different from those that exist within the firm.

Many of the better known published examples of crowdsourcing have come from the larger multinational firms, perhaps as a means of giving the practice additional credibility. However, on visiting the crowdsourcing websites which list available HIT's, it is clear that smaller firms are currently the primary users. These firms often work with limited resources inside the firm and have limited budgets to spend on advertising agencies, public relation firms, graphic designers, photographers or whatever. These small firms can benefit greatly from access to a wide pool of skills available at reasonable prices through the technique of crowdsourcing.

The disadvantages associated with using crowdsourcing also need to be mentioned. Although the method works on the principle that 'two heads are better than one', sometimes a crowd can return a vast amount of noise that may be of little relevance (Keen, 2007). As Jeff Howe has put it 'sometimes crowds can be wise, but sometimes they can also be stupid'. For crowdsourcing to be effective tasks need to be focused and clearly explained and the firm needs to have procedures in place for effectively filtering and considering ideas that come in (Hempel, 2007). Legal issues regarding ownership of ideas submitted also need to be clearly addressed (Stibbe, 2006). For some types of work crowdsourcing will not be effective, for example there is a limited ability to use the methodology where the information to be gathered or project being worked on is secretive in nature.

There are also clearly a number of ethical issues involving the use of crowdsourcing and many of these have been debated in some length in the various crowdsourcing weblogs. In the discussion above, the practices of using crowdsourcing for purposes of gathering competitive intelligence and to engage in 'click fraud' have been identified as two potential ethical violations in the marketing field. In the broader sense, crowdsourcing raises the same sort of ethical concerns that are still associated with the trend to outsourcing; namely that firms are replacing their own highly-paid employees with much lower-wage workers from outside the firm . From the examples outlined above there is no doubt that many marketing professionals, from copywriters, to photographers, account executives to researchers, may find that their services could to a greater or lesser degree be crowdsourced, how will firms treat these existing employees? The very low piece-rates that are paid to crowdsourcers for the typical HIT raises questions of exploitation of workers for the firms benefit (Cove, 2007), some have even used the term slave labour although there is no evidence of anyone being physically forced to engage in any task. In today's business environment firms that engage in crowdsourcing activities will be required to be able to justify the social responsibility of their actions.

Marketing is famous for its use of buzzwords and some will see 'crowdsourcing' as just another neologism or fad whose time will pass. However, as the developers of the term have stated, they may have invented the word but the existence of crowdsourcing is not altogether new and applications of crowdsourcing have continued to develop apace. As this paper has shown, in the marketing arena there are many tasks which may be amenable to a crowdsourcing approach and there are already existing cases where the use of crowdsourcing has brought clearly identifiable benefits. As with outsourcing, the adoption of crowdsourcing techniques by some

marketers will likely push all firms to at least consider their working processes and organisation of labour to see whether some scope for crowdsourcing of activities exists.

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