**Crowdsourcing: How is value created?**

**ABSTRACT**

Crowdsourcing is the act of outsourcing work to a large, undefined crowd through an open call. This study examines the nature, practice and value creation potential of crowdsourcing in relation to management literature. A qualitative, theory building approach is used of eight crowdsourcing firms utilizing informants comprising firm executives matched with firm crowd members. Findings reveal that businesses entirely based on crowdsourcing are new, unique, industry-disruptive and create value for disparate stakeholders. The grounded data reveals that value is created by and for all three key stakeholders: the firm, client and crowd. Theoretically, this paper contributes to an expanded boundary model of where value is created. Crowdsourcing firms use their crowds both as a firm-centric labour resource and as a consumer of their products in the same business cycle. This challenges notions of upstream firm-centric versus downstream consumer-focussed value creation frameworks - especially because the amorphous crowds operating in both spheres are indistinguishable and not mutually exclusive. Findings also establish value drivers of innovation, attraction/engagement, size/scale and efficiency in relation to crowdsourcing. Such value drivers help form the conception that crowdsourcing is a unique type of business model with its own business model design.

**Keywords:**

Qualitative orientation – Case; Resource based view; Transaction costs theory; Business and competitive strategy; Technology and Innovation Management - Innovation processes.

## INTRODUCTION

Crowdsourcing is a term first coined by Jeff Howe (2006a) in *Wired* magazine. The definition ran "Crowdsourcing is a potentially value-creating phenomenon that is defined 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). It is commonly perceived as a Web 2.0 artefact, whereby Web 2.0 is defined as an online two-way social operating system consisting of networks that surround people, rather than simply present content (Tu, Blocker & Roberts, 2008). Searching the term 'crowdsourcing' on Google Trends (2014) confirmed that interest in crowdsourcing has been trending upwards indicating steady continuing public search interest building upward slowly over time from mid-2006 to 2014. This trend would seem to indicate that crowdsourcing is not merely a short-term business fad but has elicited slowly increasing public interest from a very low base in 2006 – when 'crowdsourcing' was first coined.

Crowdsourcing may sometimes be, but is not limited to open or user innovation frameworks (Afuah & Tucci, 2013; Schenk & Guittard , 2011). Crowdsourcing can be used in a variety of manners to source talent in unusual places and as a way firms may gain exogenous firm-boundary access to different perspectives and heuristics - which can prove to be extremely valuable (Jeppersen & Lakhani, 2010). For example crowdsourcing firm Threadless, an online t-shirt retailer, make use of three separate crowds – although they are not mutually exclusive. Each crowd provides direct value to the firm and effectively replaces inside-firm employees. One crowd submits up to 1,000 t-shirt designs weekly, another crowd reduce the 1,000 weekly designs by choosing only the best designs to be sent for print run and t-shirt production. Another

crowd buys the winning design t-shirts. Threadless is one of the biggest fashion brands on Facebook and attracts a more than 2 million-strong crowd.

To highlight crowdsourcing's huge growth an industry paper reported crowdsourcing firms experienced accelerating revenue growth above 75% having moved from $141 million in 2009 to $215 million in 2010 to $376 million in 2011 (Massolution, 2013). Crowd labor bases are growing over 100% per annum (Massolution, 2013). Crowdsourcing firms are increasingly attracting very large crowds of crowd labor.  For example crowdsourcing firm Freelancer attracts up to a 14 million-strong labor crowd (Freelancer, 2014). Such crowdsourcing-centric firms which had a relatively early start have realised tremendous growth and have often enjoyed a first mover advantage and fostered value creation via innovation (Agafonovas & Alonderiene, 2013). Clearly, practice leads theory.

The phenomenon of crowdsourcing itself is still an emerging scholarly research topic (Afuah & Tucci, 2013; Euchner, 2010; Chanal & Caron-Fasan, 2010).  Afuah and Tucci (2012) see crowdsourcing as a problem-solving mechanism and examine it through behavioral/ evolutionary organization theories. They posit that while crowdsourcing is not new, the Internet has opened many possibilities for the phenomenon to play out. However, although influential, Internet companies have struggled to create value and oftentimes viable business models. For example the dot-com boom/bust of the late 1990s saw internet firms convince investors that traditional revenue/ profit models no longer applied but they would soon figure out those models.  Such models have been slow to emerge (Teece, 2010).

Scholarly research on crowdsourcing is at its genesis and literature to this point is only beginning to provide a deep articulation of central issues of crowdsourcing, most notably its

relationship to value creation (Afuah & Tucci, 2012; Afuah & Tucci, 2013; Bloodgood, 2013). These scholars have put out an early call for serious scholarship into this important area and timely subject. This study represents a response to this call and provides grounded, qualitative data to discover the value drivers of crowdsourcing.   Given the recent genesis and related nascence of crowdsourcing, this study is a very early contributor seeking to establish value drivers in crowdsourcing-centric firms.

Recent debates in strategic management in relation to the value creation literature argue for a broadening of the traditional firm-centric perspective of value creation to highlight other potentially equally influential value creation locus' sources and effects. The burgeoning importance in the literature of value creation accounting for the 'downstream' consumer, demand-focussed perspective along with more holistic, systemic influences of value creation such as the business model point to extended frameworks for value creation (Priem, Butler and Li, 2013; Zott, Amit & Massa, 2011). This study contributes grounded evidence to build sophistication in relation to value creation by extending the consumer perspective framework of value creation and by providing research for conceiving crowdsourcing as achieving value creation via systemic means as a unique business model. In relation to crowdsourcing, it appears that new, unique business models are being created in an ongoing manner.

## VALUE CREATION AND CROWDSOURCING

Value creation is a key concept in strategic management and organization literature (Lepak, Smith & Taylor, 2007). Scholarly literature traditionally places the firm as the locus for value creation but has been recently enhanced by supplementary frameworks with more nuanced perspectives, including the consumer perspective where value can be created through consumer,

demand-driven frames (Priem, Li & Carr, 2012; Priem, et al., 2013). Other nuanced frames include more holistic, systemic value creation perspectives incorporating business ecosystems whereby other linked companies representing critical business complementors help shape and create value (Kapoor & Lee, 2013; Priem, et al., 2013) and business models (Amit & Zott, 2012; Priem, et al., 2013; Zott & Amit, 2007; Zott & Amit, 2008; Zott, et al., 2011). A business model is described as "a reflection of the firm's realized strategy" (Casadeus-Masanell & Ricart, 2010: 195).

**Firm-centric value creation frameworks**

Transaction cost economics (TCE) identifies firm generated transaction efficiency as a source of value (Williamson, 1985) and crowdsourcing potentially creates value as an efficient transaction involving firms efficiently meditating between market forces of huge crowds and worldwide clients to achieve high speed results over high speed networks. Alternatively, in accordance with the resource-based view (RBV) (Barney, 1991) crowdsourcing may be perceived as crowdsourcing firm organizing valuable, rare, inimitable and non-substitutable (VRIN) rent-generating resources vested in their enormous and productive crowds. Alternatively, as with dynamic capability frameworks (DCV) (Teece & Pisano, 1994), crowdsourcing offers firms a way of dynamically exploiting workforce capabilities, in the form of large crowds of largely unpaid task-focused workers. Schumpeterian innovation (Schumpeter, 1943) may be achieved through crowdsourcing firms organizing business innovatively and/or building new products and/or creating new markets.

In this study some of the other traditional firm-centric value creation frames including network effects among firms (Gulati, Nohria & Zaheer, 2000) and Porter's value chain

positioning (Porter 1985) were not considered *prima facie* strong contenders of value creation. This is due to the fact that in the study's crowdsourcing firms each crowd was large, often anonymous, free-wheeling and amorphous which makes value chain frameworks unclear and network centrality and inter-network value and behavior difficult to gauge.

**Value creation frameworks extending the firm-centric perspective**

Traditional value creation theories such as Schumpeterian innovation, the RBV, DCV and TCE all highlight the centrality of the firm in value creation. Crowdsourcing presents some challenges to this firm-centricity of value creation. The fluid, amorphous, free-wheeling, anonymous characteristic of the crowd places it at odds with understanding it as a usual firm-centric resource. Firms use crowds indisputably as a labor resource but do not contract them, train them, know them or mostly even pay them. Also some crowds operate as both a labor resource and a consumer of the firm's output in the firm's usual business cycle.

This leads to the 'consumer' (demand-side) perspective on value creation. It places the 'downstream' consumer as a critical arbiter of value, and sees that consumers experiencing (and paying for) benefits emanating from an 'upstream' firm are essential to any firm's ultimate success (Priem, 2007; Priem, Butler & Li, 2013). The consumer's role in value creation, in Priem's (2007) view, has often been ignored or minimized by traditional firm/producer-centric value creation frameworks as the RBV, DCV and TCE.

In addition, the holistic, systemic perspective of value creation represented by business models examines the strategic role of important stakeholders (not limited to consumers) in creating business value in tandem or co-operation with the central firm (Priem, et al., 2013; Zott, et al., 2011). The business model draws in a wider group of value-complementors to value

creation than simple producer and/or consumer. For example, in terms of the business model Zott et al. (2011: 1037) state: "Even those business model scholars who tend to focus on how value is appropriated by the focal firm recognize that value is created through the focal firm in concert with exchange partners."

This theoretical landscape regarding outside-the-firm 'exchange partners' having significance for value creation is still very much in development in the strategic management field.  There is a small but expanding literature concerning value creation through holistic systems as the business model and through involving the consumer view alongside the firm-centric view. This nascent theoretical landscape presents an opportunity for scholarly focus on providing grounded findings to support outside-firm value creation frameworks.  This paper responds to this opportunity by providing a rigorous grounded study aimed at providing discovery against the nascent theoretical frameworks in this strategic management field.

## RESEARCH METHODOLOGY

**Research Design**

Since the objective of this study is to gain an understanding of the contemporary phenomenon of crowdsourcing in terms of how it creates value, we employed qualitative methods specifically utilizing an inductive and multiple-case design (Eisenhardt & Graebner, 2007; Yin, 2003).  The case studies were justified because of the nascence of the phenomenon of crowdsourcing.  Edmondson and McManus (2007) present a model where research into nascent theory is better suited to research methods using qualitative data to test more open-ended research inquiries.

This study sits at the discovery stage and aims to present a holistic discovery through examining the dual perspectives of the crowdsourcing-centric firm and its crowd. The case studies used in this study allow the use of multiple sources of data in order to bring out the diverse viewpoints of the informants (Vargas-Hernandez, DeLeon & Valdez, 2011).

**Data Collection**

Commencing in October 2011, the data collection began with a pilot phase employing an analysis of the scholarly literature on crowdsourcing and a search on the term 'crowdsourcing' on Google Trends to guide interview question formation.

The study was grounded in a qualitative study of firms located in USA, Australia, Canada and Nepal with associated crowds of over 100,000 using crowdsourcing as their major revenue source, that is, crowdsourcing-centric (Table 1). The crowd members who were interviewed were located in 10 countries including Australia, Canada, Nepal, New Zealand, Philippines, Serbia, UK, Ukraine, USA and Venezuela.

 An eighth firm (labelled Firm P signalling 'polar') which did not use crowdsourcing as its major income source but as a strategic firm project was also used for the purposes of establishing a test/polar case (Eisenhardt, 1989).

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Insert Table 1 about here

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The informant interviews ran for a period between October 2012 and July 2013. In total 45 semi-structured interviews were conducted including a matched selection of similarly-ranked firm executives and each firm's corresponding crowd members.  In-depth interviews were conducted with 24 crowdsourcing business executives including founders and also matched with

21 crowdsourcing crowd members.  Firms were approached directly for interviews and crowd members were found via firm assistance or via direct contact through the firm website, and in some instances via snowball fashion once contact was made.

A further 10 crowd members filled out free-form qualitative surveys which closely mimicked the interview questions presented to crowd members. Two of the crowdsourcing firms (firms B and P) had strict privacy laws presenting structural difficulties concerning their crowd. As a result, these crowdsourcing firms did not have matched crowd interviews.

All crowd interviews were conducted one-to-one and four out of 21 were face-to-face.  The remaining 17 crowd interviews were conducted remotely by telephone, mobile phone or Skype. In terms of the 21 crowd members who were interviewed, 11 were based in developing countries and 10 in developed countries.

In addition to interview data collection, other data types and sources were utilised. A summary of the data sources, quantity and types are illustrated in Table 2.

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Insert Table 2 about here
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**Case Selection**

Case selection was governed by two overriding rationale.  Firstly all firms were start-ups in nature and were early examples of successful crowdsourcing-centric businesses.

In keeping with the theoretical sampling approach, firms were selected in multiple industries and those which used crowdsourcing as a significant basis for revenue generation. Firms were chosen which had crowd member sizes of over 100,000 because these were large

enough to do justice to Howe's (2006a) original definition of crowdsourcing as a 'large network of people'. These elements were utilised to achieve a realism of context.

**Data Analysis**

We analysed the data utilizing open coding (Glaser & Strauss, 1967; Strauss & Corbin, 1998). The data was further analysed using observations among emerging data, themes, concepts and dimensions which built a data structure featuring first order concepts refining to second order themes and then resulting in a finalised aggregate of dimensions (Gioia, Corley & Hamilton, 2012). This was a fluid process and honoured the tradition of inductive research.

Once the interview transcriptions had been checked by the professional transcriber, the researcher, and each informant, we conducted a manual line-by-line in-vivo thematic coding analysis. To remain true to the data and the inductive flavour, we, in tandem with using *in vivo* coding, also used first order codes, whereby the language used by the informants was used as frequently as possible (Gioia, et al., 2012; Van Maanen, 1979). Once this process was complete, a further line-by-line in-vivo coding analysis was conducted using *Nvivo 10* software. There was a high degree of congruence between the manual coding and the more automatic software program.

The initial coding provided emerging thematic codes for executives with 63 initial coding themes with 1,528 individual associated coding references. The crowd elicited 90 initial coding themes with 1,104 individual associated coding references. Using both manual methods and *Nvivo 10* software, the process required continual cycling through the codes and axial coding whereby relationships and similarities among the codes resulted in collapsing of codes together.

Two senior researchers completed a check of the coding scheme used and inter-rater agreement achieved high congruence (Gioia et al., 2012).

At the same time as the *in vivo* coding work, fine grain tables of significant quotes were also constructed and details regarding each firm were gathered including notes on observations of three firms, Facebook and web-based company pages and further press interviews conducted by some of the informants (Miles & Huberman, 1994). It became clear that details such as the size of the crowd used by each firm would expand rapidly every month so checking regular up-to-date website based information such as this detail was vital.

The codes from each single interviewee and from both groups of interviewees were selectively coded and cycled into 28 first order concepts. These 28 first order categories were completely informant-based and arose from *in vivo* line-by-line coding. After further analysis we categorised the 28 first order concepts to ten second order themes to form the basis of the emergent framework (Gioia et al., 2012). Further corroborating archival, image-based and observation data were also cross-checked periodically to corroborate and add further weight to evidence for each theme.

We maintained effort to keep to the 'spirit' of grounded research and fostered a reticence to impose existing literature constraints too early in the data coding to allow the data to fall where it would and thereby encourage a 'purity' of findings – free from pre-existing theoretical bias (Eisenhardt & Graebner, 2007). Clearly, however, the interview questions were based on the research questions and so constructed to gain an understanding of 'academic research into the phenomenon of crowdsourcing and how it creates value for business.' Responses to such

questions naturally elicited responses which thereby assisted in uncovering aspects of the phenomenon of crowdsourcing and how and where it creates value.

**Reliability and Validity**

Reliability and validity of data and procedures were important considerations. Strict case study protocol was developed and repeatability of interview questions was established and used. Triangulation from double-source CEO / C-level executives as well as the crowd in each firm was used to maximise data richness. The firms were all start-ups in four countries; the crowd from five developing and five developed countries. All informants checked and confirmed interview transcriptions. Regular peer debriefing was conducted and inter-rater agreement attained. Interviewees all reviewed case protocol including ethics. Interview questions/ survey questions were replicated across both groups in a consistent manner.

## FINDINGS

The data structure based on the line-by-line *in vivo* coding is represented at Figure 1.

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Insert Figure 1 about here

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The second order theme substantiating quotes in the data structure are presented in Table 3.

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Insert Table 3 about here

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## AGGREGATE DIMENSIONS EMANATING FROM 10 SECOND-ORDER THEMES

The final step in the structuring of the data was to group our individual 10 themes into three

representative aggregate dimensions represented in an ordered data structure (Figure 1) based on

recursive cycling of raw interview data of both interview groups (firm executives and crowd) as

well as some archival web-based firm data until the data reached its revelatory limit and no new

thematic relationships were apparent (Gioia, et al., 2012).  These aggregate dimensions emanated

from thematic grouping of second order themes and fell into three top categories.  In terms of

what type of business crowdsourcing is the dimension summarises the three second order themes

feeding into it.

## KEY FINDINGS: GROUNDED THEORY-CROWDSOURCING VALUE CREATION

Our findings reveal three aggregate dimensions stemming from the themes include:

1. Firms based on crowdsourcing are new, unique and disruptive (Essential characteristics);
2. Crowdsourcing businesses must attract clients and large crowds who willingly participate anytime and anywhere (Essential functioning); and
3. Crowdsourcing creates business value and provides tangible value benefits for clients and crowd (Essential value drivers)

The value associated with crowdsourcing can be seen as being invested in actually what it is

– its essential characteristics.  The very fact that crowdsourcing is a novel means of achieving

value-capturing productive output by large numbers of crowd members who willingly respond to

open calls and oftentimes willingly participate with little or no payment is a value-creating element *per se*. The elements which it embodies of often being a system of innovation and industry disruption also contribute to its value creation credentials. The notion that what it is, a new way of doing business, and that it invents a new source/manner of collecting labour and productive output also speaks to its value creation potential and/or realisation. Inherent in what is essential to what is crowdsourcing is the understanding that it is a system of mutual benefit for all parties. Clients get results "better, faster, cheaper" in the words of the CFO of Firm D. The crowd reaps a variety of value, through a key feature of what crowdsourcing is, that is, chiefly a new method to source work and potential payment.

The second of the three aggregate dimensions from the grounded interview data speaks to how crowdsourcing works or functions; how it essentially operates. And, so, how crowdsourcing works is another key value creating element. Ultimately it functions as a highly efficient mediator of crowd output against firm/client request, with crowds rapidly scaled up or down to meet demand and with its (the crowd's) excess output being effectively managed by the firm so as to be not cost prohibitive. Crowdsourcing functions so that it is fully task-centric, although, despite that, it can function to be affect-driven through crowd-firm and/or crowd-client relationships, which work to ultimately foster trust. Such trust-enablement creates value through its key role in creating a crowd attraction pull. Such a pull allows the crowds to operate with a level of satisfaction that they will be dealt with fairly and that in some cases they can use such relationships to build their own clientele from clients met through crowdsourcing interactions. It is nevertheless remarkable that any crowd-originated affect-driven sentiment was present (and it was) given the sheer numbers of crowd members and the seeming easy replace-ability of individual crowd members.

Crowdsourcing can be seen as a system involving all three parties of firm, crowd and client and is not just a simple firm routine or a single firm competency or an activity. The value in crowdsourcing as a system points to its originality of and the unique properties of its efficient operational design and part of its essential characteristics of innovativeness. For crowdsourcing is a system which subverts the notion that a firm's crowd work producers cannot also - within the same system - function as its decision-makers, waste reducers and consumers as is the case with Firm G, for example. Crowdsourcing firms' clients, likewise, in some forms of crowdsourcing such as that practised by Firm A, help create value by providing considerable self-serve style labour and also oftentimes help to choose the best results from the many offerings and at the same time cull unwanted crowd input.

The value drivers of crowdsourcing emanating out of a combination of all three aggregate dimensions from the grounded interview data can be represented by a framework. Figure 2 below provides a summary framing illustration of the dynamism between all of the concepts established at the thematic stage as illustrated earlier at Figure 1.

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Insert Figure 2 about here

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The framing concept in Figure 2 above summarises crowdsourcing in relation to crowdsourcing firms and how they function. The crowdsourcing firm's essential characteristic - essentially what the firm is - creates innovation-based competitive advantage. It illustrates how the firm functioning creates value for all stakeholders. Clients, due to their willingness to be participative and engaged, and due to their essential characteristic of being 'edgy', reap value benefits from crowdsourcing. The crowd, due to their large combined size and global, participatory essential

characteristics reap value benefits. All three stakeholders combine to function toward mutual benefit and thereby reap symbiotic value benefits.

The framework combines two major elements of the phenomenon of firm-based crowdsourcing. The first is what each stakeholder is and its direct link to value benefit creation. The second is how the phenomenon functions to create value. The third is the systemic combination of all stakeholders to create value. Extrapolating from the above model to simplify to the core elements, Figure 3 below summarises the key high level value drivers of crowdsourcing based on the data of the study into a crowdsourcing value framework.

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Insert Figure 3 about here
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**Crowdsourcing Value Framework: Innovation**

Interestingly a number of crowdsourcing firm executives self-perceived as thinking differently, or being different. One crowdsourcing business owner/founder (Firm E) mentioned that it was not obvious that this type of business could or would ever work when he commenced it. He now has attracted a crowd in excess of over 7 million, having only founded within the past five years. The first-mover risk-taking associated with 'non-obvious' future business success associated with a new business phenomenon combined with the trailblazing unique thinking characterised by crowdsourcing owners combined with one of the newest ways of organising a business and the forming of value for all three stakeholders point to a potent form of innovation. The unique properties of crowdsourcing – differentiated from those of related business models of outsourcing and offshoring – focus exclusively on delivering client's output, through a highly meritorious system. It is the end-product that is critical in crowdsourcing not the process. This end-product is delivered in many crowdsourcing firms direct to the client who is in the position

to choose the best out of the *completed work*. Neither the client nor the firm pay for the process of completing the work, such costs are borne individually by the individual crowd members themselves. This is quite different to related models of offshoring and outsourcing, where traditionally individual units of work are paid by the firm/client.

Crowdsourcing helps to deliver completed work to clients quickly while giving them a plethora of choice and options via a fast, cheap and efficient online system, where constraints around geography, time zone, race, nation, gender and in some cases language (some design sites require image/ picture creation only) are greatly reduced. The innovation around the combining and bundling and reversal of traditional client/consumer/worker roles is another key element of crowdsourcing. Clients and workers blur in some crowdsourcing models. In Firm G the firm's end-point consumers have oftentimes earlier in the process been the firm's 'workers'.

Innovation is linked with the value driver of attraction/engagement. The attraction of large crowds coupled with their sustained engagement and mutual trust establishment along with the engagement of clients is central to the workings of crowdsourcing and its new way of doing business. The potential harvesting of the crowd's collective intelligence in some instances of crowdsourcing also represents a potent type of innovation and a new superior way of solving client-based problems.

**Crowdsourcing Value Framework: Attraction/Engagement**

The data from the study suggests that the value-creating potential of crowdsourcing is closely linked to the firm's ability to attract large crowds, engage oftentimes self-serving clients and have highly speedy and heavily automated transactions. The establishment of 'attraction' in crowdsourcing brings in the core value-creating element of the actual (large) crowd – which is

the element that most differentiates crowdsourcing from other types of perceived similar processes/ business models like outsourcing or off-shoring – where the workforce is formally selected, contracted and paid by the firm.

The firm must attract, retain and maintain their huge crowds in order to bring in clients looking for speed of beginning-to-end-point transactional process, choice, variety, diversity, core task-focus and lower costs.  In addition, more surprisingly, the firm must be doing the attracting while paying such crowds either overall relatively small amounts of payment or not paying them at all – quite different to outsourcing/offshoring.

The stickiness of the attraction appears to be increased by the firm's own appeal to the crowd, particularly in some part due to the mutual affect between the firm and the crowd (and in some cases between the client and crowd). The mutual trust established and the feeling by the crowd that the firm is helping them in some way is important.  It seems that the crowd see the firm helping them in a number of ways, such as by providing payment, by providing new clients to crowd members looking to build their own business networks, by providing flexibility, by providing learning opportunities or by providing and grooming a community that is appealing to the sum of its individual crowd members.  This mutual trust, the presence of positive emotional affect and the attraction both of these factors build as a result is a key source of value creation in crowdsourcing firms.

In the data, there were 40 references from 12 firm-based sources from the crowdsourcing firms which discussed their respective firm's various efforts involving 'crowd curation'.  The curating of each respective crowd was seen as a somewhat delicate proposition in a number of cases and a very necessary competency inside each firm.  Most firms in the study were very

mindful of their crowds and knowledgeable about what the crowd's negative and positive issues were in relation to their own respective systems of crowdsourcing. The crowds likewise had strong views of the firm. The data showed 41 individual references from 13 crowd sources about the firm, with literal words by the crowd expressing (positive) opinions and some emotional affect about the crowdsourcing firms.

**Crowdsourcing Value Framework: Size/Scale**

The sheer enormous crowd size and the ability to scale the crowd up or down very rapidly in a cost effective manner are key sources of value creation of crowdsourcing. The fact that the crowds in all crowdsourcing firms appear to be growing exponentially speaks to several trends happening across the globe currently. One of the trends is that the 'bottom of the pyramid' developing country populations , that is the collective markets of low-earning individuals, are rapidly becoming part of the global world of e-business through increasing take-up of Internet-enabled devices (Kleiner, 2010). This trend helps to deliver a voluminous crowd to the potential crowd-fold. So the sum of individuals potentially joining the crowd is increasing exponentially. As the CEO and founder from Firm E says:

> ..we've got 7 million users, we could have 700 million users and still be getting going right. In fact the other 5 billion people on this planet are going to be potentially customers for us, and many of them also want to get a job so you know, we're in a very good position in terms of the way things are heading with Internet growth and so on, so we just focus on keep getting growth up there, keep the revenue up in triple digit realm if we can.

This trend offers incredible potential scope for crowdsourcing firms to scale on levels numbering in the 100 millions in terms of crowd size. In terms of geographic and human resource diversity available to businesses which avail themselves of crowdsourcing this trend is set to explode and will surely alter the employment landscape from now.

However, many of the crowdsourcing organizations report on sizeable numbers comprising both developed and developing country crowd members.  So the signing-on of developing country participants to the world of Internet connections and global e-business is only part of the picture contributing to the sheer size of crowdsourcing crowds.  While some commentators express horror at perceived exploitation in crowdsourcing putting forward a view that it is a modern incarnation of a 'digital sweatshop' (Cushing, 2013) and makes good use of burgeoning crowds of cheap labour in developing countries, this is not always the case.  One of the study's crowd members from Firm F, PB, mentions winning $500,000 and $30,000 respectively in two crowdsourcing competitions he has entered.  This is clearly substantial payment and a far cry from the 'digital sweatshop' moniker.

Another related trend is that of workforce scaling flexibility on a scale unheard of until relatively recently (Shingles and Trichel, 2014).

A third trend is that crowdsourcing offers people already employed the chance to advantageously and contingently co-mingle their on-site paid work and their crowdsourcing work at periods of downtime or during quiet periods during their work cycle – a sort of double-dipping if you will. Other crowd members will combine crowdsourcing with paid work after formal work hours during their leisure time on the same working day.  This is particularly the case in 'microtasking' style of crowd work, where crowd workers can avail themselves of a few cents for a fleeting, few minutes of work.

An example is that all four crowd members of Firm F were holding full-time positions and crowdsourcing in their spare time. Many of these 'hobbyists' did not receive payment and one (P.B., Firm F) had this to say: "if you paid me my daily rate, what I charge, if (Firm F) paid me

my daily rate for time I've spent in I'd be a billionaire by now. So it's not about money." This is one of the key value drivers of crowdsourcing - getting a 'billion' dollars of work from the (vast) sum of individuals comprising the crowd for a relatively modest outlay.

**Crowdsourcing Value Framework: Efficiency**

The efficiency of the firm-crowd-client exchange in crowdsourcing increases the transactional efficiency and lowers transactional cost overall and this thereby translates to a primary value driver. Some of the efficient cost minimising governance structures inherent in crowdsourcing include the generic 'one-size-fits-all' governing contract which covers all online transactions, the one-stop-shop efficiency, helping to reduce search costs, of the single locational website and the strict rules of conduct protocols, helping reduce bargaining costs, for online transaction between all parties combined with the self-policing behaviour demonstrated by the crowd work to reduce opportunism and provide more symmetrical, dependable information to all parties.

As stated in a recent trend report by Deloitte (Shingles & Trichel, 2014: 32-33): "In crowdsourcing, the needle in the haystack comes to you, with skills and interests aligned to your ask. Buyers can access large pools of people in short order, typically at low transaction cost." The efficiency of this model reduces search and information costs greatly making for a more efficient mode of sourcing work than traditional methods.

All of the crowdsourcing firms in the study exist to provide an efficient doorway for clients to gain access to the global, open market of the 'crowd'. These firms have cultivated huge and sometimes specialised crowd-based marketplaces and offer clients the advantage of accessing these huge crowds with a few simple keyboard clicks. Each crowdsourcing firm can provide its

clients a near-instantaneous experience of interacting with the crowd 'marketplace' to procure services or products. For example, Firm E claims that its clients will often receive crowd response within a mere 10 seconds via its online portal.

The crowdsourcing firms in the study work against potential market frictions and thereby work to reduce transaction costs by a variety of means. Each crowdsourcing firm for example is 'task' or output focussed so that the actual finished product/service is delivered direct by the crowd to the client without further transactional costs such as bargaining costs. Search and information costs are reduced in crowdsourcing because the crowd resides in one cloud-based location via a single website entry point. An outsourcing firm will engage staff to be present and pay them even if they do not actually productively perform every second of every hour they are employed. However it is different for crowdsourcing firms. For example, Firm E currently claims to have a crowd of 7 million but does not sink costs into, that is, pay the 7 million to be waiting in its cloud to compete for work and, in fact, only pays a miniscule percentage of those 7 million who are successful in submitting work that is deemed excellent enough to be chosen by the client.

The uncertainty which can present a transaction cost is reduced in the crowdsourcing firms in the study via the strict techno-rules based interactions between client and crowd which are highly automated. In addition, the crowd and to a certain extent clients also both self-select to participate which helps to mitigate uncertainty. For firm F every crowdsourcing contest it runs is technologically automated.

Market friction and transaction costs can be increased via opportunism from the firm (via the client) directed to the crowd. For example opportunism can be present at times when a client

takes advantage of work presented by a crowd member or members and uses it but does not provide payment. Ultimately, such an opportunistic client will be 'blacklisted'.

Despite the relatively small instances of opportunism present in crowdsourcing transactions, most of the crowdsourcing firms have set up systems to avoid non-payment opportunism. In most cases clients have to pre-pay or avail their credit accounts to the firm for auto-payment when the transaction is successfully completed.

Potential transaction costs related to economies of scope and scale are significantly reduced in the study's crowdsourcing firms via the size and scale afforded by the large crowds attracted to the crowdsourcing firms. All productivity in crowdsourcing firms is magnified by the sheer voluminous nature of the crowds and their output potential. Productivity is also enhanced by the ease, speed and relatively affordable costs by which such crowds can be scaled up or down on demand.

**Crowdsourcing Value Framework: Proof Tables**

Table 4 summarises value creation sources of the eight case study firms illustrating how innovation, attraction/engagement, size/scale and efficiency are evident in each of the firms.

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Insert Table 4 about here

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## DISCUSSION

**Value creation: consumer perspective and crowdsourcing**

The findings from the study point that two major elements are significant in value creation in crowdsourcing firms. The first is the notion that the proper functioning together of all three

parties of firm, client and crowd is important. The second is that the value source elements of innovation, attraction and engagement, size and scale, and efficiency are essential components both individually but are also symbiotic and inter-related.

In relation to the first element, that is the functioning together of all three parties, this study develops the work relating to the 'consumer' ('downstream', demand-side) perspective on value creation, developed by Priem (2007) and later by Priem, Li and Carr (2012) and Priem, et al. (2013). This combined work positions the 'downstream' consumer as an essential value arbiter. The value in such a model focuses 'downstream' from the 'upstream' firm to both product markets and consumers in order to explain and predict firm intervention that increases value in a value system (Priem, Li & Carr, 2012). This model posits value being determined outside the firm rather than traditionally inside the firm, as with TCE, RBV or DCV frameworks, and sees that consumers utilizing benefits flowing out from an 'upstream' firm are essential to any firm's ultimate success. Priem (2007: 219) states that: "Consumers are arbiters of value..Many defunct 'dot-coms' simply failed to provide sufficient consumer value. The lesson? Willing consumers validate the value of products and services".

This study moves the existing body of research on the consumer perspective of value creation developed by Priem, et al. (2013) forward in relation to the critical importance of the downstream consumer in the creation of value and the crowdsourcing-spawned simultaneous interplay of up- and down-stream elements working in the same business cycle.

In terms of the critical importance of the downstream consumer, the data provides some evidence that the consumer - vested in the crowd - as with Firm G in particular is providing key capabilities and productivities necessary to the very existence of the firm. One of the key

findings in the grounded research in the study is that all three parties, that is the firm, client and crowd, were all critical to the successful functioning of crowdsourcing firms. Put simply, crowdsourcing firms would cease to exist without their corresponding crowd.

The business landscape in more recent times dictates that many modern firms must be consumer-driven. Priem, et al. (2013) called for scholars to extend research findings concerned with value creation to account for the 'downstream', demand-side, consumer perspective.

Not only do crowdsourcing firms need to be consumer-driven, they must operate in a way to attract huge, mostly unpaid or lowly paid crowds of workers to provide labour output. This means in effect crowdsourcing firms need to be (labour) supply-driven and work strategically to attract, engage and form an informal alliance with labour-supply crowds.

The current study of crowdsourcing firms suggests that the firm's crowd, which acts as both (inside-firm upstream) labour producer and at times (ex-firm downstream) consumer simultaneously, is of critical importance to the value creation strategy of the firm. This simultaneous up-/down-stream role applies to three firms (B, G and P) in the study. These crowds function 'upstream' by providing labour production or ideas or decision-making or marketing toward the development of the firm's products. The crowd work is not trivial and the crowdsourcing firms rely existentially on the low-cost or no-cost labour provided by the crowd. In the same cycle, the same crowd will also function 'downstream' to purchase the same products which they helped produce, create or improve.

The consumer perspective (Priem, et al., 2013) accounts for the target consumers' needs in value creation and the current study extends this framework by adding the notion that many crowdsourcing firms attract labour suppliers (the crowd) who are simultaneously the firm's

target consumers (also the crowd) who work in tandem with the crowdsourcing firm to provide for their (the consumer crowds') own 'expressed, anticipated or latent needs'.

In addition, some crowdsourcing firms' crowds do not operate as consumers, yet these firms will utilise their end-point consumers who are separate from their crowd members at upstream points in the business cycle, as well as at later downstream points. These crowdsourcing firms encourage clients (consumers) to self-select and to follow an automated online system of posting and updating work requirements, of crowd interaction, and of subsequent payments for completed work that requires no direct time expenditure from the firm. Quality of the crowd work is controlled by system-controlled algorithms (Firms C, D and F) or through client (consumer) discretionary choice (Firms B, E and G). Through such systems requiring almost no direct intervention or time expenditure by the crowdsourcing firms and enlisting the labour of others - whether it be crowd or client - these crowdsourcing firms are able to produce scaled work at unprecedented levels. For example, staffed with only 50 employees, Firm D's CEO claims to "produce several human years of work a day" via its enormous crowd, and Firm A receives production items every five seconds around the clock.

The consumer perspective is extended through the novel manner of crowdsourcing firms working to inject the consumer perspective both upstream and downstream in the same business cycle simultaneously with significant, indeed existential, alliance with either self-selected and self-managing clients (consumers) and/or functional supplier/consumer crowds.

**Value creation: systemic perspective of the business model and crowdsourcing**

The second major insight from this study relates to the stand-alone and inter-relatedness of the value drivers of innovation, attraction and engagement, size and scale, and efficiency.

Emanating from this insight, this study helps develop the work relating to 'holistic, systemic' perspective of value creation, which highlights the business model as a worthy locus of business creation potential (Priem, et al., 2013; Zott, et al., 2011). In these works, the business model draws in a wider group of value-complementors to value creation than simple producer and/or consumer.  The innovation generated is more holistically-sourced than traditional Schumpeterian frameworks suggest – where the firm itself is critically central.

Another emerging stream of literature concerned with value creation focuses on the business model. Casadeus-Masanell and Ricart (2010: 197) state: "a business model is about how an organization earns money by addressing these two fundamental issues – how it identifies and creates value for customers, and how it captures some of this value as its profit in the process." The business model literature emphasises that the business model is a more holistic and broader-reaching concept than single theory concepts like the RBV and DCV. Amit and Zott (2001) conclude that business models cannot be defined by or explained completely by single theories or even combinations of those. For example, they examined Schumpeterian innovation, the RBV, dynamic capabilities (DCV), transaction cost economics, strategic networks and value chain analysis and concluded that while each explains pieces, none fully explain business model operation.

Crowdsourcing may be seen as a value-creating strategic embodiment of firm architecture/ structure represented by the business model. Grounded data illustrates that crowdsourcing constitutes a new type of business model. Six executive informants from four crowdsourcing firms named their crowdsourcing operation a 'business model'.  Scholars such as Trompette et al. (2008: 3) suggest "crowdsourcing conveys new patterns of arrangements to organize, co-ordinate and control economic activities".  Similarly, Google CEO, Eric Schmidt sees

crowdsourcing as a way to harness new modes of production in order to take innovation and wealth creation to new levels (Tapscott & Williams, 2006). Some of the scholars writing about crowdsourcing associate it as a business model (Annibell, 201; Chanal & Caron-Fasan, 2010; Euchner, 2010, Favaro & Pfleeger, 2011).

Organization structure is increasingly perceived as an important element in accounting for differences in organization performance and can be a potential source of competitive advantage and a contingent factor in organization performance (Christensen, 2001; Richardson, 2008; Zott & Amit, 2008). The business model is defined as a 'structural template that describes the organization of the focal firm's transactions with all of its external constituents' (Zott & Amit, 2008: 1). It is seen as a potential vehicle for the realisation of economic value and the further creation of competitive advantage (Morris, Schindehutte & Allen, 2005). Richardson (2008) posits that the business model is a conceptual framework that helps link the strategy of the firm – or theory of how to compete – to its business activities.

Scholars have attempted to break the business model into components as value proposition, processes, resources and profit formula (Johnson, Christensen & Kagermann, 2008; Morris et al., 2005). Scholarly interest has focussed on the business model activity system and related focus on design parameters and value creation perspectives (Baden-Fuller & Morgan, 2010; Teece, 2010; Zott & Amit, 2008; Zott, et al., 2011). Crowdsourcing through its value drivers combining its essential characteristic of innovation with its activity-based operational functioning elements of attraction/engagement, size/scale and efficiency work to create a unique economic model/ profit formula and thereby suggests it can be seen as a business model and form its own unique value driver design. This study extends business model scholarship by providing grounded and scholarly evidence crowdsourcing may be considered a unique business model.

**CONCLUSION**

This study is among the first to contribute extensive grounded data to contribute knowledge about crowdsourcing firms and thereby contribute to the nascent field of crowdsourcing.

The contribution to scholarly work is the extension of the consumer perspective (Priem, et al., 2013) by the novel injection of such consumer perspective functioning both upstream and downstream demand-level simultaneously in the same business cycle in crowdsourcing firms. Crowdsourcing firms foster significant and innovative alliance with either self-selected and self-managing clients (consumers) and/or functional supplier/ consumer crowds at various touch-points in the same business cycle. Crowds may function upstream effectively inside the firm at early points in the cycle to produce items or ideas, assist with decision-making and market products and, then, later downstream to purchase those same products.

A second scholarly contribution is to add to the business model framing of Zott, et al. (2011) to place crowdsourcing as a business model through its unique profit formula combining what it is - a novel stakeholder system of firm, client, crowd - and how it works achieved via value drivers of innovation, attraction/engagement, size/scale and efficiency.

This study also makes a practitioner level contribution on real-world and profitable crowdsourcing firms and provides insight into operations and characteristics, providing valuable knowledge on how value is created across global locations using global and amorphous crowds.

The study is limited to crowdsourcing-centric firms and further scholarly studies could extend the scholarship into how firms could use crowdsourcing in a single business activity to create value.  Further studies over time as crowdsourcing matures would be highly desirable. Further scholarship is required to develop the grounded concepts into testable propositions.

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**TABLES AND FIGURES**

**TABLE 1**
**Case study participant firm details**

| Firm | Headquarters | Staff | Crowd Size | Industry | Firm Maturity | Interviewees |
|---|---|---|---|---|---|---|
| Firm A | Australia | 75 FTE | 228,000 | Design | Start-up Founded 2008 | Founder/CEO<br>Chief Technology Officer<br>Production Manager<br>3 crowd members<br>(+2 crowd member surveys) |
| Firm B | Canada | 30 FTE | 200,000 | Marketing Research | Start-up Founded 2009 | Founder/CEO<br>Chief Marketing Officer<br>Creative Services Research |
| Firm C | Nepal | 50 FTE | 150,000 – 1,000,000 | Information Tech Services | Start-up Founded 2008 | Founder/ CEO<br>Product Manager<br>VP, Business Development<br>4 crowd members<br>(+8 crowd member surveys) |
| Firm D | USA | 50 FTE | 5,000,000 | Services | Start-up Founded 2009 | Founder/ CEO<br>Founder/CTO<br>Chief Financial Officer<br>5 crowd members |
| Firm E | Australia | 300 FTE | 7,300,000 | Services | Start-up Founded 2009 | Founder/ Chief Executive Officer<br>CTO<br>Client Services Manager<br>3 crowd members |
| Firm F | USA | 20 FTE | 100,000 | Science | Start-up Founded 2010 | Chairman<br>Founder/CEO<br>Scientist<br>4 crowd members |
| Firm G | USA | 106 FTE | 2,500,000 | Fashion Design & Retail | Start-up Founded 2000 | Founder/CEO<br>Chief Creative Officer<br>Business Dev Manager<br>2 crowd members |
| Firm P | Australia | 550 | 6,000 | Grape-growing Wine Production & Liquor Wholesaling | Founded 1965 | Global Marketing & Export Sales Manager<br>Senior Innovation Manager<br>Creative Director |

**TABLE 2**
**A summary of data inventory**

| Data Type | Quantity | Data Source |
|---|---|---|
| Interviews | 45 | Expert informants |
| Qualitative Surveys | 10 | Expert informants |
| Site visits | 3 | Business premises occupants |
| Observational data | 15 hours | Notes & recordings from site visits<br><br>Notes from two-way exchanges in crowd community sites<br><br>Notes & recordings from 2-day Industry conference |
| Company web home-page | 150 visits to 8 home-pages | In-house corporate communications, selling & branding communications, Internal News articles. Company philosophy & mission statements. |

| Company Facebook | 20 visits to 8 Facebook accounts | In-house corporate communications, Feedback from clients and crowd members, complaints & praise from crowd members, company events, company photographs of premises and major events. Company philosophy & mission statements. Specialty crowd sections. |
|---|---|---|
| Company Twitter | 4 visits to 3 Twitter accounts | In-house corporate communications, company events, company philosophy & mission messages. |
| Company blogs | 55 visits to 8 blog-sites | Expert company informants incl founders and CEOs and high level executives. |
| Emails | 105 | Expert informants.  Support staff.  Crowd members. |
| Phone calls | 52 | Expert informants. Support staff. Crowd members. |
| Image analysis | 80 | In-house communication images. Firm event images.  Showcase images. |
| Company documents | 39 | Company conference presentations. Company brochures. Press releases. |
| Media & News reports | 80 | Online newspaper and practitioner journal reports. Online trend reports. |

## TABLE 3
## Informant quotes which substantiate second order themes

**Theme 1: The entire business is based on crowdsourcing**

| **Substantiating Informant Quotations to illuminate Second-order Themes** |
|---|
| **The company was born crowdsourcing:**<br><br>'Basically our entire business model is built on the premise of crowdsourcing.' (CTO, Firm A).<br><br><br><br>'Yes, and when we launched our community, we didn't actually know, we didn't have a term for it.  So you know, we were doing it, but we didn't know it was crowdsourcing until Jeff Howe who wrote the crowdsourcing book contacted us and said: "hey, you guys, you're crowdsourcing, I'd like to write about you in our book" and we're like, "that's great, now we can kind of define what we're doing".' (CEO, Firm B). |
| **From its start the company was open to fostering and employing crowds:**<br><br>'We don't have a high turnover of successful freelancers.  We have a lot of people continuously signing up, and so there is in fact always and always has been, and I suspect always will be, an over-supply of freelancers.  There are many more freelancers than there are jobs.' (CTO, Firm E).<br><br><br><br>'You know for four years like we really just kind of treated it like we built this entity that people like to hang out at, you know think if you put a public park and it got really you know, like really, really popular' (CCO, Firm G). |
| **The company existentially uses crowdsourcing:**<br><br>'He sketched on a napkin an idea of you know, how he could build a crowdsourcing community of software development enthusiasts, their ideas and then using that same crowd to kind of you know, find the best ideas, collaborate with the crowd and then ultimately fund those ideas based on the crowd perspective.' (CEO, Firm C)<br><br><br><br>"It certainly is a crowdsourcing company, so I mean the crowdsourcing more than adds value, it's kind of how we do what we do. So the benefit of the crowd is that we have a lot of people working very hard with all their different approaches" (Data Scientist, Firm F) |

**Theme 2: Crowdsourcing owners are pioneers and trailblazers**

| **Substantiating Informant Quotations to illuminate Second-order Themes** |
|---|
| **Crowdsourcing is a new and unique sort of business:** <br><br> 'I mean we're in an industry that didn't exist five years ago, and even today, it's still a burgeoning not-that-well-known buzzword, I still can't really describe to my mother what it is that we actually do.' (CTO, Firm D). <br><br><br> But it's not like the whole world understands that they should solve their business problems with crowdsourcing, ..So this is still an underground technology and we are selling to a very exclusive group of people. (CFO, Firm D). |
| **Crowdsourcing business owners think differently** <br><br> 'He kind of wasn't encumbered by those pre-definitions about what would work and what wouldn't work, but also unencumbered by you know, like set rules and regulations and would really challenge the team to go – well how can we get around this, what would be the opportunity' (CEO & Founder, Firm B). <br><br><br> Yes, I think we're a little different, there are other competitors in this space.. I mean you know, companies like that in that realm I think we would consider you know, even sometimes, you know maybe partners with some of them, it's still I think we like still have something pretty unique from our competitors. I think everyone (here) is doing something a little differently. (Bus Mgr, Firm B) <br><br><br> 'But that's where we are massively, massively different from any other player.' (CFO, Firm D). |
| **Crowdsourcing business owners are pioneers** <br><br> 'So what we've done is you know, I think what we've done you know, is really pioneered the application of crowdsourcing or you know a group of people solving a common problem' (CTO, Firm A). <br><br><br> 'Yes, and I think we were a bit of a trail-blazer, so I think that the people that started other crowdsourcing companies following that were members of our community, watched our successes and failures and kind of took that into their own ventures and knew what worked and what didn't work too, so I think we were definitely breaking new ground.' (CEO & Founder, Firm B). |

**Theme 3: Crowdsourcing businesses are innovative and disruptive to other businesses**

| **Substantiating Informant Quotations to illuminate Second-order Themes** |
|---|
| **Crowdsourcing businesses are disrupting industries:** <br><br> 'But I would say, at its heart, we have used crowdsourcing as a way to disrupt an industry, you know, like graphic design, you know. Previously people were limited to you know, maybe three or four concepts from a single designer you know, maybe it was their nephew or their niece, you know, maybe it was a student, maybe it was a graphic design shop down the road.' (CTO, Firm A). <br><br><br> 'So it's very disruptive in terms of what we are able to pay, and then you start saying we're going to pay that same amount in rural parts which is just huge.' (CEO & Founder, Firm D). |
| **Crowdsourcing businesses are highly innovative:** <br><br> 'What we're really doing is we're opening up a whole area of the market that didn't really exist before. So if you're cafe owner for example, and you want to get a website built, in the past you might not be able to afford $5,000 to get a website built. But now you can go online and get a website for $100 or $200; that will perfectly suit your needs.' (CEO & Founder, Firm E). |

'I think the fact that we were the first player in the States, and that we're still here and that we've grown the community to hundreds of thousands.' (Bus Mgr, Firm G).

**The crowd itself can offer highly innovative solutions**:

I think there's a lot, there's no creative boundaries for the t-shirt as a canvas – because you have to wear it every day, and you do have, and it's a form of expression unlike any other canvas I believe, so that – and also t-shirt as a price point is very accessible to the masses, so it's like a piece of art that you carry around with you without paying hundreds or thousands or hundreds of thousands of dollars for a canvas that you actually put like on a wall (Bus Dev Mgr, Firm G).

My favourite is actually probably for the H F, building algorithms that automatically graded essays, high school essays, so these are all essays that are being graded by two teachers and we built an algorithm. We had a competition to build an algorithm that could out-perform whatever the teachers could do. (CEO, Firm F).

**Theme 4: Crowdsourcing involves handling lots of people and jobs/ projects efficiently**

**Substantiating Informant Quotations to illuminate Second-order Themes**

**Scale and size of crowds attracted by crowdsourcing firms are great** :

'I mean we have designers in 192 countries…we're way bigger than anybody else, so that's great.' (Product Mgr Firm A).

'We have proven that we can do this on a massive scale where we've done a project upwards of 720 million tasks.' (CFO, Firm C).

We've got 7 million users, we could have 700 million users and still be getting going right. (CEO & Founder, Firm E).

**Waste or excess or inaccurate production of crowd effort is handled efficiently** :

(Firm D) can produce several years of work per day. (CEO & Founder, Firm D).

'Here's the thing - once the competition is set up and going, it's all automated.' (Data Scientist, Firm F).

'Yes, but so with the leaderboard, I'll get 80% accurate, you'll get to 85, I'll keep working until I get ahead of you, and you keep working until you get ahead of me, and that pushes us to perform better than if we were working on the problem by ourselves. Does that make sense? And so that's a characteristic of (Firm F) that is different.. there's a level of objectivity.' (CEO & Founder, Firm F).

**Crowdsourcing is a new employment avenue involving participating and at times self-managing crowds:**

'(We have) 200,000 designers, all over the world and we've paid out over US$45 Million…We've completed about 175,000 projects.' (CTO Firm A).

'I think the numbers are – there's 700 Million now in terms of jobs that have been posted that have gone through the system in total which breaks down to about four Million Projects, but the – yes – and the average project there is under $200.' (CTO, Firm E).

**Theme 5: The crowdsourcing business, its clients and its crowd are all essential elements to successful operation**

| |
|---|
| **Substantiating Informant Quotations to illuminate Second-order Themes** |
| **Crowdsourcing businesses represent an activity system or business model innovatively incorporating demand & supply elements**:<br><br>For customers (Firm D) adds value by providing a scalable workforce and high quality workers. For crowdsourced workers (Firm D) establishes a meritocracy and allows the workers to earn more and more money. (CEO & Founder, Firm D).<br><br><br>If by clients we mean users of our website, we have 6.7 Million that have signed up to the website to date.  At any given time, point in time there'll be something like 12,000 (clients) online… there's 700 Million now in terms of jobs that have been posted that have gone through the system in total which breaks down to about 4 Million Projects.' (CTO, Firm E). |
| **Crowdsourcing businesses would falter without all parties including company, client and crowd participating:**<br><br>'Yes, you're going to get that overlap of people (crowd and customer).  Initially everybody is going to be a customer you know, because those are going to be the only people you can market to.  I mean they are the ones who participate. So you know, obviously there's some people who are going to be like all customer and no participation or all participation and no customer, but there's always going to be a good enough amount between the two to have the business be healthy. (CCO, Firm G).<br><br><br>'Yes, I think it's a combination of both, so we certainly have a lot of clients that are growing quickly just like we've grown up 100 times over the last eight months in terms of our number of tasks that we've done, eight months ago we were only doing five thousand tasks a week and today we're doing five million tasks a week, so we grow as our clients are growing, and fortunately we have some very high growth clients.' (CEO & Founder, Firm E). |
| **Large crowd numbers are important in crowdsourcing businesses:**<br><br>'There are 100 million people that are members of communities at which (Firm D) work is available, 14 million of them have at some time or another looked at one of our tasks to decide whether they wishes to do it or not. Four million have actually done tasks for us, and on the average day we have 20,000 – 25,000 new people and we have no idea who they are, they are just an IP address.' (CFO, Firm D).<br><br><br>'Well I mean we've huge liquidity in the market place, so we've got 7 million users.' (CEO & Founder, Firm E). |

**Theme 6: Crowdsourcing is always available at all times to people willing to participate**

| |
|---|
| **Substantiating Informant Quotations to illuminate Second-order Themes** |
| **Crowdsourcing is a global Internet-enabled business and always on**<br><br>'Yes, so we've still got quite a large contingent in the United States, but we also have you know, a big population of designers in Indonesia, the Philippines, and then Eastern Europe as well, so countries like Bulgaria, Serbia, Romania.' (CTO, Firm A).<br><br><br>'The customers are about 60% outside the US, and the crowd, the community that submits and scores designs are more international, like more like 70% international.  But there is not like one demographic, I mean it's anywhere from high school students to art directors at agencies, to even like, we've printed people in their sixties, it's kind of all over the place.' (CEO, Firm G)<br><br><br>'The big difference is that we've got a lot of (crowd) coming from Eastern Europe, Indonesia, Philippines, which is not big customer markets for us, but big (crowd) community.  Brazil is a big (crowd) community.  Chile, the UK.  The UK is quite big for us in terms of artist community because of the focus on art.  We're starting to break through in Asia a little bit.  We're seeing like the Asian community – the oriental Chinese, Asian community starting with the very artistic, but we've never really marketed ourselves there, so we think that there's a lot of growth in these regions for us once we get a foothold in there.' (BDM, Firm G) |

**Most countries in the world now participate in crowdsourcing** :

'I mean we have designers in 192 countries. You know, they – up until very recently the largest community of designers was in the US and recently that was eclipsed by Indonesia, and we have large populations in like Eastern European countries, the Philippines is a pretty big one, Australia, Canada' (Production Mgr, Firm A).

'Our workforce is in over 80 countries.' (CEO & Founder, Firm D)

'Probably just about every one.  Actually not sure if it's every one, but it certainly yes, I don't know exactly how many countries, but it would be I'd say about 100, it's definitely more than 100.' (CEO & Founder, Firm F)

**Crowdsourcing businesses offer a new employment/payment avenue for developing country populations which are increasingly participating in Internet-enabled businesses** :

'There's also the economics of it, you know, $500 in San Francisco is different than $500 in Jakarta, right, so the amount of effort that somebody is going to put in you know, in San Francisco, versus the amount of effort that somebody will put in in Jakarta is totally different, so you have these kinds of dynamics that go on, .. I mean that's great, and you could certainly, that is you know a month's income I guess, you know, somewhere around there, depending on where you are and whatnot, so for an Indonesian when $400 can be a month's income and $1000 – wow that's crazy, like this is fantastic.' (Production Mgr, Firm A).

'When you think of Finland, you think of Nokia, you know, and that's what we want, we want to be you know, the same thing. It's like Nepal - oh (Firm C) – we want it to be a win for the whole nation, this idea of innovation that comes out of the last place on earth that you would think it would come from.' (CEO, Firm C).

**Crowdsourcing work is available to most people who are willing to participate. Crowds may experience difficulties and unfairness** :

'Sometimes there are times when I feel like the contest is not favourable for designer, it's very much favourable for clients.  It happens, but just like (Firm A), it's a kind of industry that can never be perfect, so whenever you are getting frustrated, with some not nice clients or not nice contests, you just have to think of that idea that this is not perfect, so accept the things that you might not be liking.' (JP, Crowd, Firm A).

'The early jobs that I took I took for a lower rate just to get the work, but the most frustrating thing is when somebody says that they need a job at a certain time and then you work, you kind of put off all other work to do that, and then when the time elapses you find that it's disappeared, and you have earned no money for a week.' (D, Crowd, Firm E).

'There has been some major difficulties in terms of people trying to cheat.  So I suppose people creating multiple accounts to give them a little bit of an edge.' (EJL, Crowd, Firm F)

**Theme 7: Crowdsourcing offers a competitive advantage over traditional businesses**

**Substantiating Informant Quotations to illuminate Second-order Themes**

**Crowdsourcing businesses are better, faster, cheaper and reduce risk for clients** :

'We can do it better, faster and cheaper, and I mean that, it's better, it's faster and it's cheaper.  Even very, very simple tasks like the image moderation work we do.' (CFO, Firm D).

'The best anyone had managed to do was a 70% prediction accuracy and that was after four years in academia, and we were able to beat that within a week and a half of the competition going live and we ended up two months later with an algorithm that generated 77% accuracy, one tenth of an improvement, so you know, that's a pretty spectacular result.' (CEO & Founder, Firm G).

**Crowdsourcing businesses are global and always available** :

'I mean we have a new design that is submitted to the site every five seconds, right, so it's a huge amount of work.' (Product Mgr, Firm A).

'So I mean in terms of employers, No.1 U.S. 50%, - No. 2 is UK 10%, - No. 3 is India 7%, then  - Australia 5%, - Canada 4%, and a very long tail, and in terms of (Firm E) crowd  35% or in India and then it goes Bangladesh, Pakistan, Philippines, Romania, China, Vietnam, Ukraine, etc. All around the world.' (CEO & founder, Firm E).

'UK, Canada, Australia, as second third and fourth, they're always kind of neck and neck, Commonwealth countries.' (CEO, Firm G)

**Crowdsourcing businesses operate at huge size and scale**:

'So we have about 4 million people who have done useful work for us.  The reach is higher but we only count someone as being in the workforce if they do some work for us and it's validated by our system… Our workforce is in over 80 countries.' (CEO/ Founder, Firm D).

'We've got 7.3 million and growing, and our closest competitor has got two, so you know it's got – with marketplaces it's sort of like winner takes all but the employer is going to go where the most (crowd workers) are and the (crowd workers) want to go where the most employers are, right, so we've got more skills, a deeper marketplace, more liquid market place etc., so there's a lot of benefits there.' (CEO & Founder, Firm E).

'Over the course of all the history probably close – somewhere between five and ten million (clients).. it's on demand (so) we don't have to take inventory on it, so we can come out with some every week and we can launch with 400 designs in the catalogue..Yes, we're – actually we're the largest fashion brand on Twitter, it's like 2.5 Million followers, and then Facebook is big for us too, we've got about 700,000 followers on there (CEO & Founder, Firm G).

**Crowdsourcing businesses can have a social benefit which also generates profit** *:*

'So I think what throws people is when they see us lead with a statement that we want to connect a million people in the developing work with basic computer work and raise them up as leaders to impact their communities, that automatically says oh this must be not-for-profit, but it's unfortunate because we feel that maybe business has been jaded in a way and most businesses should be about the common good and creating good for all stakeholders.' (CEO & Founder, Firm C).

 'I mean what we're doing is we're creating employment in places that desperately need it, they're in jobs that are desperately needed globally, which you know, white collar jobs and skilled jobs all working in quality jobs in whole bunch of different areas and so I mean it's a win/win for everyone really.' (CEO & Founder, Firm E).

**Theme 8: Crowdsourcing offers tangible benefits and exceptional value for clients**

**Substantiating Informant Quotations to illuminate Second-order Themes**

**Crowdsourcing businesses offer more choice to clients** :

'Yes, sometimes they (the client) can get 80 – 100 different designers.' (CTO, Firm A).

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| (We offer) high quality results out of lots of people. Its core capability is producing everything at high quality. (CEO & Founder, Firm D). |

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| **Crowdsourcing businesses enable superior service offerings**:<br><br>'We run tests and we're about 40% more efficient than your average data entry worker that's just sitting in the office entering data for eight hours a day.' (CFO, Firm C).<br><br><br><br>There's no other way to scale up and scale down a workforce as fast as (Firm D) can. (CEO & Founder, Firm D). |
| **Crowdsourcing businesses offer participatory client engagement** :<br><br>'They're designs that are submitted and sometimes they go through like dozens of rounds of community critique and the community is helping the designer make those designs better and finally it gets submitted and it scores well.' (CEO & Founder, Firm G).<br><br><br><br>'It's actually something that is at the heart of our company, so if we sort of get down to the nitty gritty like we believe we're democratizing advertising market intelligent, we're actually putting the consumer, the customer or the employee in the driver's seat right beside the company or the Government, because they are now having a full voice'.  (CEO & Founder, Firm B). |
| **Crowdsourcing businesses enable unprecedented scale over short-term periods** :<br><br>'We have one client where should all of their fans and employees come on our community it will be in the millions, and that's the client we're working with now. Where they're coming on you know, thousands at a time, and we're starting to get enterprise clients that are saying I'd like to move all of my customers, all of my fans and all of my employees, because I now understand that this is you know, an enterprise innovation way of doing things.' (CMO, Firm B).<br><br><br><br>'We are the most scalable option for getting tasks done.. There's no other way to scale up and scale down a workforce as fast as (Firm D) can.' (CEO & Founder, Firm D). |

**Theme 9: Crowdsourcing fosters various types of value for the crowd**

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| **Substantiating Informant Quotations to illuminate Second-order Themes** |
| **The crowd may attain employment, income, career or personal development, a better life,  esteem-building, a creative, fun or philanthropic outlet, work-life balance, 24-hour global employment availability, a time-filling avenue, an alternative employment or payment currency avenue as well as learning-, teaming-, client-building- and leadership- opportunities.** :<br><br>I've talked to a number of our crowd members and they can tell you that you cannot categorize them simply.  An example is the woman who did most work for us last year .. her entire reason for doing crowdsourcing all day every day is that so she doesn't have to come out of her room and deal with her retired husband who is now at home every day. (CFO, Firm D).<br><br><br><br>No, it's not the money.  Before I joined (Firm C), I used to spend most of the time in India, I didn't used to do anything and this made me actually… with (Firm C)  they give me work to do and also work in the community which I do every two weeks…I have now worked three times in community service in an orphanage. (J.S., Crowd, Firm C). |

**Theme 10: Firm and crowd relationship is important**

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| **Substantiating Informant Quotations to illuminate Second-order Themes** |
| **It is important for the firm to establish a form of relationship and curate a level of trust with the crowd.** : |

'You know, we want to take care of the designers (crowd) and to be very accessible, super authentic..it's a relationship that they can believe in and like all relationships there's ups and there's downs but at the end of the day they know that it's there and it's solid and they can feel it, we can feel it and it's something that I think we're definitely very proud of.' (Product Mgr, Firm A).

'I like the idea of keeping in touch with (Firm G) and I like to just sort of keep up to date with what they are doing, not that I'm as in deep into it as I was, but just because out of respect of what they do, I think they kind of set the standard and they're always changing things up, and I think they have to do that in order to stay kind of level ahead of everyone else, you know, so I mean I'm just a (Firm G) fan, and I talk it up because I'm just a fan of what they do and I'm a fan of like what (Firm G founder) created.' (G.J., crowd, Firm G).

## TABLE 4
## Value source elements for crowdsourcing firms

| Firm A | Value source elements |
|---|---|
| **Innovation** | The firm admit to disrupting design industry by providing a radical departure to traditional industry norms. |
| **Attrac/Engage** | The firm seeks to attract, curate and build a 'community' and engage them through means of an engagement/curation team which value adds via offering learning experiences, showcasing best of breed |
| **Size/Scale** | The firm has 228,000 crowd members and 75 FTE staff. It is present in 192 countries. |
| **Efficiency** | The firm processes an individual crowd member's production output averaging every five seconds around the clock all year round. The client receives all crowd output and choses best, thereby eliminating unwanted crowd output. The firm, crowd and client all work together at multiple touch-points in an efficient system. |
| **Firm B** | **Value source elements** |
| **Innovation** | The firm democratises firm, client and crowd offerings to provide highly specialised, tailored and innovative client offering. The firm was among the first firms using crowdsourcing in its modern guise and has contributed to the crowdsourcing industry knowledge base immeasurably. |
| **Attrac/Engage** | The crowd has a strong business ethic and seeks to establish a community. It views its crowd as (passionate & willing) contributors, equals and partners in its success. |
| **Size/Scale** | The firm has 200,000 strong crowd and 30 FTE staff. |
| **Efficiency** | The firm uniquely blends crowd contributions to solve complex and difficult problems related to client's products and services. Clients avail themselves of passionate consumers all contributing much time to solve the client-posed problems and rarely or very modestly being paid. All parties blend in this system to contribute significantly. |
| **Firm C** | **Value source elements** |
| **Innovation** | The firm was the first in Nepal to offer computer-based, office-based part time employment primarily aimed at students |
| **Attrac/Engage** | Small tight-knit teams feature crowd-seeders who are leaders of each crowd team and oversee quality standards. Crowd members feel part of a community and interact daily on Facebook with each other and the firm. |
| **Size/Scale** | 150,000 in Nepal, up to one million worldwide. The firm is focusing on providing office-based, computer-based work in developing countries and providing a living wage. |
| **Efficiency** | The firm claims a 50% saving, a ten-fold management efficiency and a three times faster turnaround in work produced for its clients over traditional rival businesses. |
| **Firm D** | **Value source elements** |
| **Innovation** | The firm has pioneered micro-tasking style crowdsourcing. It uses advanced algorithms to manage the quality output of its crowd and has managed 1.3 billion crowd tasks in less than five years. |
| **Attrac/Engage** | The firm sees itself as the ultimate crowdsourcing firm where absolutely anyone, anytime, anywhere who can connect to the Internet may be part of its crowd. The crowd is completely self-selected. |
| **Size/Scale** | The firm has five million strong crowd from 208 countries. Its crowd has completed more than 1.3 billion paid tasks. It can rapidly scale up to 100,000 strong crowd within a 24 hour period for a relatively modest cost outlay. |
| **Efficiency** | Due to its technological governance and automatic nature of its workflows this firm can efficiently process hundreds of millions of tasks per year. It has a modest FTE staff of 50 to help manage clients, the crowd production and curation. |
| **Firm E** | **Value source elements** |
| **Innovation** | The firm considers itself a trailblazer in crowdsourcing and is one of the world's largest crowdsourcing firms. It is disrupting industry in terms of providing rapidly available, cost-effective globally-sourced staff t |
| **Attrac/Engage** | The firm manages a huge crowd and attracts mostly a developing country crowd and a developed country client base. Crowd members have an opportunity to build client bases and some crowd members have established sub-contracted businesses on the firm's site. Many crowd members in developing countries benefit from currency exchange differentials based on the client's developed country location. |
| **Size/Scale** | The firm has a 7.3 million strong crowd with 300 FTE staff. It claims to operate in most countries in the world. It can produce an active interface between the crowd and a client within 10 seconds. |
| **Efficiency** | Search costs are reduced by the rapid-fire cloud-based presence of literally millions of crowd members waiting to bid against each other when clients enter work projects online. |
| **Firm F** | **Value source elements** |
| **Innovation** | The firm provides a collective intelligence crowdsourcing mechanism to harness the collective intelligence of gifted data scientists and genius level crowd contributors. The firm has fostered the solving of difficult decades-old industry problems within weeks for relatively modest cost outlays. |

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| **Attrac/Engage** | The firm sees itself as a community for elite crowd members gifted in data analysis to learn from each other and network and form teams in some cases. The firm has made efforts to embed itself inside universities. The firm 'gives back'. |
| **Size/Scale** | The firm has an elite crowd of 100,000 gifted data analysts and high level of PhD members. It runs crowdsourcing competitions to solve scientific data problems and boasts a crowd in 100 countries and 200 universities |
| **Efficiency** | The technological governance mechanisms set up by the firm ensure that crowd members are aware in real time within seconds of submitting contest offering how they rank in relation to other contestants. |
| **Firm G** | **Value source elements** |
| **Innovation** | The firm won major industry award of "Most Innovative Small Company in America". The firm admit to revolutionising retail clothing industry by combining designers, production line decision-making and consumers into specialised crowds. |
| **Attrac/Engage** | The firm has three distinct crowds which intermingle. The firm views its crowd as organic and delicate |
| **Size/Scale** | The firm has a crowd of 2.5 million with 106 FTE staff. The firm has always sold out every item of every production line |
| **Efficiency** | Search costs and information asymmetry are both greatly reduced through the mechanism of the (consumer) crowd choosing what it wants to purchase at the pre-production phase |

**FIGURE 1**
**First order Concepts leading to Second-order Themes leading to Aggregate Dimensions**



| 1st Order Concepts | 2nd Order Themes | Aggregate Dimensions |
|---|---|---|
| The company was born crowdsourcing | 1. Entire business is based on crowdsourcing | |
| From its start the company was open to fostering and employing crowds | | Firm type: Essential characteristic |
| The company existentially uses crowdsourcing | | |
| Crowdsourcing is a new/ unique business type | 2. Crowdsourcing firm owners are pioneers and trailblazers | Firms based on crowdsourcing are new, unique and disruptive |
| Crowdsourcing firm owners think differently | | |
| Crowdsourcing firm owners are pioneers | | |
| Crowdsourcing firms are disrupting industries | 3. Crowdsourcing firms are innovative and disruptive | |
| Crowdsourcing firms are highly innovative | | |
| The crowd can offer highly innovative solutions | | |
| Scale and size of crowds are great | 4. Crowdsourcing involves handling lots of people and jobs/ projects efficiently | |
| Waste or excess or inaccurate production of crowd effort is handled efficiently | | How it works: Functioning |
| A new employment avenue using crowds | | |
| Crowdsourcing firms represent an activity system or business model innovatively incorporating demand & supply elements | 5. Crowdsourcing firm, clients and its crowd are all essential elements to successful operation | Attraction of clients & large crowds who willingly participate anytime & anywhere |
| Crowdsourcing firms would falter without all parties including company, client and crowd participating | | |
| Large crowd numbers are important in crowdsourcing firms | | |
| Always-on, global Internet-enabled business | 6. Available at all times to people willing to participate | |
| Most countries in the world now participate | | |
| A new employment avenue for developing country populations | | |
| Crowdsourcing available to willing participants. Crowds may encounter difficulties/ unfairness | | |
| Crowdsourcing firms are faster, better, cheaper and reduce risk for clients | 7. Competitive advantage over traditional businesses | |
| Crowdsourcing firms: global & always available | | |
| Crowdsourcing firms operate huge size & scale | | Value creation: Value drivers |
| Crowdsourcing firms can have a social benefit which also generates profit | | |
| Crowdsourcing firms offer client more choice | 8. Crowdsourcing offers clients tangible benefits and exceptional value for clients | Crowdsourcing creates bus value & provides tangible value benefits for clients and crowd |
| Crowdsourcing firms: superior service offerings | | |
| Crowdsourcing firms offer participatory client engagement | | |
| Crowdsourcing firms enable unprecedented scale over short-term periods | | |
| Crowd benefit: employment, income, career/ personal development, esteem, creativity, philanthropy, work-life balance, 24-hour global timeframe, time-filling, alternative employment or payment currency avenue, learning, teaming- or client-building & leadership | 9. Crowdsourcing fosters various types of value for the crowd | |
| Curate relationship and trust with the crowd. | 10. Relationship is important. | |

**FIGURE 2**:
**Grounded framework of crowdsourcing characteristics, function and value creation**

| Essential Characteristics | Functioning | Value | |
|---|---|---|---|

Crowdsourcing firm
-New, pioneering
-Rare, unique
-Innovative, disruptive

Competitive Advantage
-Essential firm characteristics create competitive advantage (Innovation)

-Continuous, global open call attracting people willing to participate
- Efficient processing of large numbers of people and projects

Multi-party value
-Functioning of crowdsourcing creates value for all 3 parties. (Attraction, Engagement, Efficiency)

Client
-Engaged
-Underground, edgy
-Participatory
-Willing to self-serve
-Self-selected

Client benefit value (Engagement,Size/Scale)
-Faster, better service offering
-Cheaper
-More choice
-Continuous availability
-Participatory
-Unprecedented human capital scaling

Crowd
-Large in number
-Global
-Participatory
-Anyone /anytime
-Organic
-Self-selected
-Relationship-oriented

Crowd benefit value  (Size/Scale, Attraction)
-Continuous, global employment avenue
-Income when successful
-Career/personal development
-Esteem-building
-Creative/Philanthropic/Time-filling outlet
-Alternative employment source
-Currency conversion/virtual payment benefit
-Learning, training, teaming, client-building, leadership opportunities
-Available in developing & developed countries

-All three parties including firm, client & crowd are essential to proper functioning

Multi-party value (Attraction/Engagement)
-Relationship among parties helps attract, build & maintain crowds and attracts participatory clients
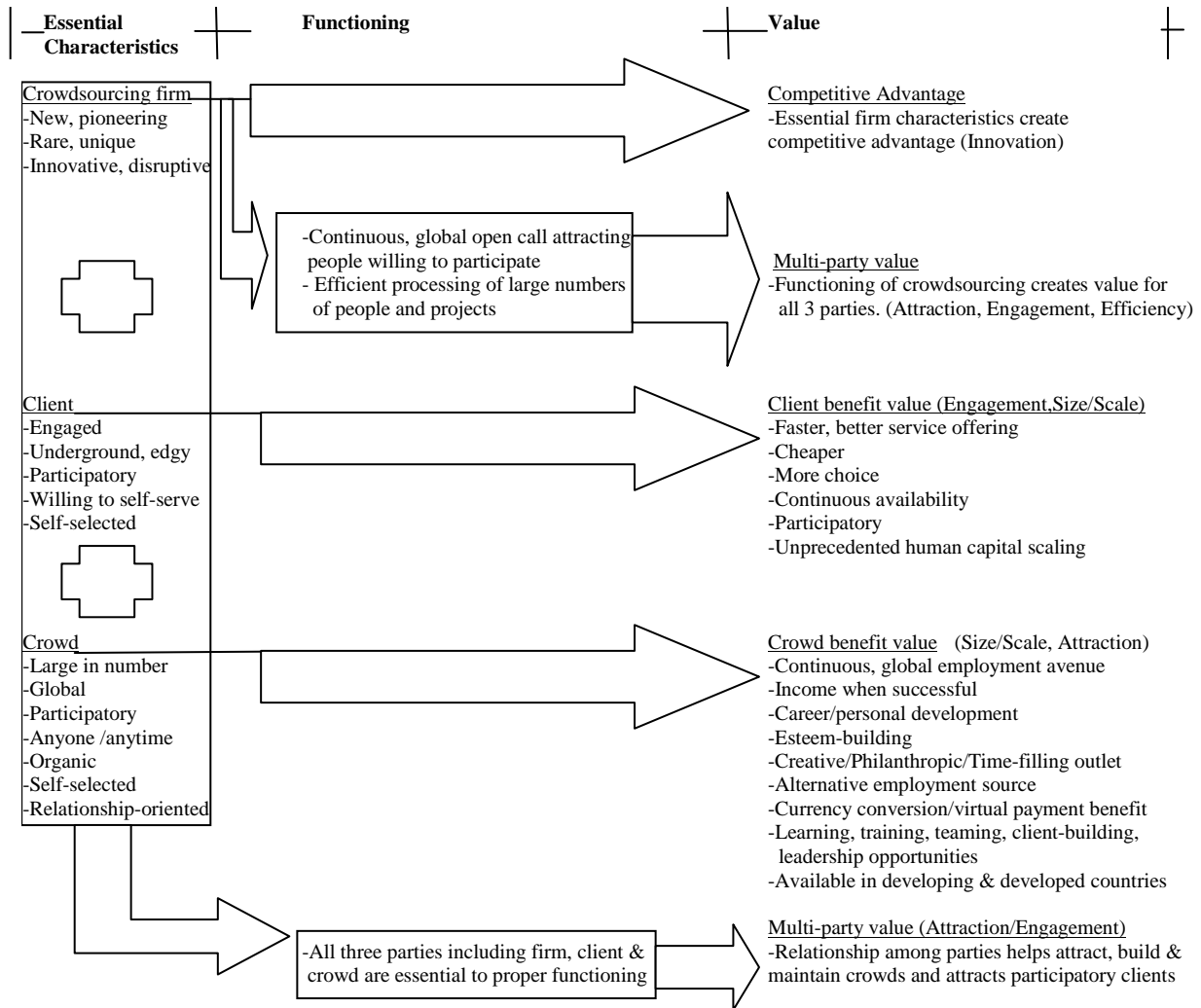
**FIGURE 3**
**Distillation of value creation for all three parties into one high level framework**

**Innovation (Essential characteristic)**
-New way to organise business and recruit workers
-Novelty, openness, firm boundary re-conceptualisation, disruption

**Attraction / Engagement (Functioning)**
-Attracting and keeping large crowds, clients
-Establishing trust; Incentive placement

**Size & Scale (Functioning)**
-Enormous and increasing crowds
-Unprecedented scaling; Global reach

**VALUE**

**Efficiency (Functioning)**
-Reduced transactional costs; Economies of size/scale
-Output/ task/results focus; Opportunism reduction