

**Gordon Institute
of Business Science**
University of Pretoria

**The use of Crowdsourcing as an External source of Open
Innovation for organisations and Value Addition**

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

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Abstract

The purpose of this research was to explore the use of Crowdsourcing as an external source of Open Innovation and Value Addition for South African companies. The research study was exploratory using the qualitative methodology. The data was collected using face to face semi-structured interviews with sixteen participants purposefully selected.

The research is considered to be valuable in the South African context as the research findings highlighted that the use of crowdsourcing by South African companies is not yet widespread. This is possibly because the concept is still relatively new and therefore not as yet trusted by South African companies. The main finding from this research is that the strategic intent of the organisation will drive the success of using crowdsourcing as an external source of innovation and value addition. South African companies still use more internal innovation than Open Innovation mainly due to issues of trust and control. Crowdsourcing requires an organisation to have a business model that allows the company to open up to the external business environment. The proposed model was developed with the insight of the company strategy being central to the use of crowdsourcing as an external source of innovation and value-addition for organisations.

Keywords

Open Innovation

Crowdsourcing

Innovation

Business model

Declaration:

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Student Name: **Katleho Khoza**

Student Signature: _____



Date: **13 January 2016**

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Chapter 1: Introduction to the Research Problem

1.1 Definition of Problem and Purpose of Research Study

The ever changing requirements for a business to maintain competitiveness and sustainability means that it may have to adopt new ways of performing internal processes (Satzger, Psailer, Schall & Dustdar, 2013). Ozkan (2015) notes that globalisation and increasing competition has meant that organisational sustainability has come to depend to a certain degree on the ability of organisations to innovate. The uncertainties of the general environment, both politically as well as economically, has resulted in companies needing to innovate not only to improve efficiencies but also to enable internal research and development (R&D) departments to find new ways of creative thinking which may include external collaboration (Authors, 2011). Authors (2011) further asserts that historically company R&D departments were guarded about their innovation processes but the free availability of knowledge in today's world makes open innovation beneficial.

Factors that have become important for companies in driving innovation include short innovation cycles, availability of knowledge globally and in order for companies to remain competitive, there is a need to improve their performance of innovation (Inauen & Schenker-Wicki, 2012). Pellissier (2012) indicates that innovation should be continuous and encompasses different elements of the organisation including products, services or new ways of operating. Chesbrough (2003) adds that innovation is important for the survival and sustainability of most organisations as well as for their future growth and suggests that "Companies that don't innovate, die" (p.185). This is further supported by Ackerman, Stephan & Penrose (2015) who assert that Organisational Innovativeness, defined as the ability of an organisation to innovate, is critical for company survival in today's highly changing business environment.

Successful innovation can only be recognised by an organisation once it is implemented and adds value to the organisation (Mayer, 2012). The impact of innovation can be measured on its typology, how different it is from a previous version (whether it's a service or product), how useful it is and finally the profit that it generates (Pellissier, 2012). This may increase the competitiveness of the company as well as profits (Gallego, Rubalcaba & Hipp, 2012).

Many South African companies in different industries seem to have innovation as a strategic focus area. Table 1 below depicts a summary of some of these companies, encompassing sectors such as Financial Services, Telecoms, Fast Moving Consumer Goods and Health

Insurance, and their strategic statements on innovation. The data below was obtained through various sources online, from media releases, to statements made in annual integrated reports as well as innovation being identified as a focus area in some of the company's strategy statement obtained.

Table 1: Innovation as a strategic lever of recognisable South African companies by industry

Industry	Company	Strategic statement on innovation	Innovation strategic lever: Yes / No
Financial Services	1. Nedbank	"Client Centred Innovation"	
	2. FNB	"We strive to ensure that innovation is the hallmark of strategic and operational plans."	
	3. Absa	"The customer experience is being transformed through investments in digital technology and innovation. We are investing in technology and innovation to improve the customer experience"	
	4. Standard Bank	"Standard Bank has launched its dedicated innovation lab dubbed, the PlayRoom, as the group targets start-up businesses." "The bank says this move is in line with its strategy as a customer-centric and innovative institution."	
Telecoms:	5. MTN	"Innovation and best practice: Operating under the principle of innovation in everything we do and looking for opportunities to share and apply best practice. Innovation and best practice is another strategic theme and, in this respect, we look to provide leadership to drive innovation throughout our business, capitalising on the opportunities we have identified. Linked to this is work to ensure that every MTN operation is agile and can share best practices, including speedy go-to-market capabilities to maintain a competitive advantage."	
	6. Cell C	Cell C's vision is based on five key principles: "To be fair, innovative, inspiring, simple and to do everything with a smile."	
FMCG	7. Tiger Brands	'Brand investment and Innovation as part of the business strategy' 'Relentless focus on Innovation'	
Health	8. Discovery	"We must be known for our excellence, financial strength and innovation"	

Sources:

1. Nedbank strategic focus areas
<https://www.nedbank.co.za/content/nedbank/desktop/gt/en/aboutus/about-nedbank-group/vision-values-and-strategy/Strategic-focus-areas.html> Accessed on 13/12/2015
2. First Rand strategy and business philosophy <http://www.firststrand.co.za/AboutUs/Pages/strategy-and-business-philosophy.aspx> Accessed on 13/12/2015
3. Barclays Africa Group interim results presentation for the period ended 30 June 2015, 29 July 2015
http://www.barclaysafrica.com/deployedfiles/Assets/Richmedia/PDF/Presentation/Interim/Interim_2015_results_investor_presentation_speaker_notes.pdf Accessed on 13/12/2015
4. BusinessTech, 2015 <http://businesstech.co.za/news/banking/78467/standard-bank-unveils-new-innovation-hub/> Accessed on 14/12/2015
5. MTN Group Limited Company Profile 2015
<https://www.mtn.com/MTNGROUP/Documents/Profile2015/index.html> Accessed on 14/12/2015

6. Cell C Business Booklet 2015 <https://www.cellc.co.za/dl/cms/downloads/Business-Booklet-Apr2015.pdf>
Accessed on 17/12/2015
7. Tiger Brands Annual Results Presentation November 2013 http://www.tigerbrands.co.za/wp-content/uploads/2014/results/Annual_Results_Presentation_November_2013.pdf Accessed on 30/12/2015
8. Discovery integrated annual report 2013 https://www.discovery.co.za/discovery_coza/web/linked_content/pdfs/investor_relations/discovery_integrated_annual_report_2013.pdf Accessed on 30/12/2015

Table 1 above suggests that innovation is perceived as a strategic imperative and focus for companies not only in overseas markets but in South Africa as well. Although some South African organisations seem to view innovation as a source of competitive advantage, budget, resources, time allocation and lack of focus on innovation efforts have been identified as some of the challenges (Mayer, 2012).

Mayer (2012) states that the types of innovation efforts focused on by South African companies are product development and business model. Business model innovation is critical to business success (Giesen, Riddleberger, Christner & Bell, 2010). Giesen, Riddleberger, Christner & Bell (2010) assert that successful business innovation models share the common characteristic of the ability to work with external collaboration partners.

According to Satzger et al. (2013) organisational innovativeness may, however, require capabilities which are not internally available to the organisation. Lee, Chan, Ho & Choy & Ip (2015) note, however that businesses are increasingly making use of collective wisdom as a source of innovation and cost control. Pellissier (2012) suggests that having a creative workforce helps an organisation to overcome problems that cannot be solved by investment.

In an innovation poll conducted by two South African companies, Innocentrix (an innovation business) and Digital Bridges (business solutions provider) on South African companies, across a number of industries (General Business, Finance and Banking, Government and Parastatals), of the 54 Innovation Leaders that were polled just over 40% responded “no”, firstly to the use of formal external collaboration and secondly to the use of open innovation approaches to enhance innovation efforts within their organisations. Yet, over 40% responded “yes” to the use of crowdsourcing initiatives that involve customers (Mayer, 2012). The organisations that were polled highlighted that innovation is not necessarily an organised process but rather ad hoc and implemented using trial and error (Mayer, 2012).

Crowdsourcing, which is a type of open innovation (Marjanovic, Fry & Chataway, 2012; Xu, Ribeiro-Soriano & Gonzalez-Garcia, 2015; Ford, Richard & Ciuchta, 2015), may be the new way of innovating and dealing with change in the business environment. Crowdsourcing is a relatively new innovation concept for South African companies, with Jeff Howe (2006) being

given credit for giving the service a name. Many definitions of crowdsourcing exist depending on the perspective from which it is being used. According to Hossain and Kauranen (2015) Howe (2006) defined crowdsourcing as: “Crowdsourcing represents 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.” (p.3). in a more recent definition, Barnes, Green & Hoyos (2015) define crowdsourcing as “the outsourcing of work to a large group through an open call made possible through advances in technology.” (p.17).

To deal with the changes that occur in a business environment, and in innovating a business model, companies can get value from opening up their business models to external parties (Djelassi & Decoopman, 2013). Opening up a business model for the purpose of achieving innovation and dealing with change means that a business should be willing to, in its pursuit for new ideas and obtaining the resources or capabilities that are not available within the organisation, collaborate with the external environment (Dahlander & Gann, 2010). Goncalves, Hosio, Rogstadius, Karapanos & Kostakos (2015), however caution that using outsiders can, on one hand lead to the completion of more tasks but on the other impact on quality.

The purpose of this research is to determine whether the use of crowdsourcing can provide a credible external source of Open Innovation and value addition for organisations.

1.2 Conclusion

The use of an open innovation strategy can lead to better innovation performance for an organisation (Inauen & Schenker-Wicki, 2012). The issues pertaining to innovation for firms to remain competitive are now steered towards how to innovate rather than why to innovate (Díaz-Díaz & Saá-Pérez, 2014).

The use of closed innovation by organisations has been shown to only lead to incremental innovation which is just improving on existing products and services as opposed to radical innovation which can result in totally new products and services, referred to as revolutionary (Inauen & Schenker-Wicki, 2012). Busarovs (2011) highlights that the problem with incremental innovation, which is internally developed, usually results in a gap between what customers need and the products developed whilst Muller, Hutchins, & Cardoso (2012) argue that if the majority of ideas for innovation are of an incremental nature, then a company should look to the use of Open Innovation. Furthermore radical innovation, which can be achieved through open innovation, was shown to provide new benefits for customers and thus creating

access for companies to new market segments (Inauen & Schenker-Wicki, 2012). The use of closed innovation takes time in comparison to the quick and easier application of open innovation to production processes (Díaz-Díaz & Saá-Pérez, 2014). In innovating a business model, the organisation needs to use its existing assets and capabilities in new and unique ways (Giesen et al., 2010).

Innovation is a strategic imperative for South African organisations and this requires that new methods of sourcing for innovation solutions be considered beyond the borders of the internal organisation. In today's business environment which is fast moving and requires even faster implementation with shortened cycles of development, innovation performance has become even more important. In seeking new ways to innovate, companies need to seek alternative sources which may be external to the boundaries of their existing internal process. Wang, Chang & Shen (2015) assert that the activities of innovation in companies requires the use of external knowledge whilst Giesen et al. (2010) point out that this may include open collaboration with external partners.

The next section, which is the review of the relevant literature, will seek to highlight the use of crowdsourcing, as an external source of open innovation, to help companies remain competitive.

Chapter 2: Literature Review

2.1 Theory of open innovation

This research paper is based on the Open Innovation Theory (Chesbrough, 2003). Chesbrough (2003), who is acknowledged as the founder of Open Innovation Theory, (Chiaroni, Chiesa & Frattini, 2011; Muller et al., 2012; Ozkan 2015; Seltzer & Mahmoudi, 2012; Theyel, 2012), states that “Open Innovation means that valuable ideas can come from inside or outside the company and can go to market from inside or outside the company as well. This approach places external ideas and external paths to market on the same level of importance as that reserved for internal ideas and paths to market during the Closed Innovation era.” (p.43). The purpose of open innovation is to benefit the organisation by using both internal and external knowledge to fast track innovation Chesbrough (2003). The ‘closed’ way of innovating required companies to be in control of all aspects related to the innovation process including idea generation, development, marketing, distribution, servicing, financing and support (Chesbrough, 2003).

Chiaroni et al. (2011) elaborate further on Chesbrough (2003) definition of open innovation by describing it as the expansion of markets for use of innovation externally in order to accelerate internal innovation through purposefully using inflows and outflows of information. Open Innovation is a way of accelerating innovation inside of the organisation by using the inflow and outflow of knowledge (Almirall, Lee & Majchrzak, 2014) and using external ideas into the internal innovation process of a company (Seltzer & Mahmoudi, 2012). Ozkan (2015) says open innovation is used to describe all the activities that a company undertakes using external resources whereas Theyel (2012) sees it as the inclusion of external capabilities by an organisation as part of its internal innovation process rather than just relying on the internal innovation processes. The process for open innovation can be made up of three steps: firstly conceptualising an idea, secondly developing an idea and thirdly implementing an idea (Ozkan, 2015) whose performance, according to Saebi & Foss (2015) is dependent on the alignment between the business model and the open innovation strategy.

Chesbrough (2003) further suggests that two of the factors that broke the traditional practise of closed innovation were the increasing mobility of highly experienced and skilled people who took their knowledge with them wherever they moved to and the rise in start-up businesses due to the increase in access to funds through venture capital (Chesbrough, 2003).

Open innovation arose initially in technology companies but its use has evolved to other sectors over time (Ozkan, 2015). Following on from this, the challenge was whether it’s a new

paradigm for innovation in other industries, and if so, how then could it be implemented (Chiaroni et al., 2011). Howe (2006) quoted Larry Huston, Proctor and Gamble's vice president for innovation and knowledge, who noted that in his networks, "research budgets increase at a faster rate than sales" and that "The current R&D model is broken" (p.4).

The theory of open innovation provided a credible framework for crowdsourcing which has been identified as a type of open innovation (Marjanovic et al., 2012; Xu et al., 2015; Ford et al., 2015) and the principles were therefore closely related. Ozkan (2015) suggests that open innovation and crowdsourcing are the same thing. Both involve the inflow and outflow of knowledge and both are related to innovation for an organisation. Open innovation requires a new way of business given that it introduces new business models in an effort to capitalise on collective creativity. Chesbrough & Appleyard (2007) refer to this as open strategy which is "an important approach for those who wish to lead through innovation" (p.58) which Inauen & Schenker-Wicki (2011) state that it would require a company to seek other channels of exploiting innovation.

Gassmann & Enkel (2004) argue that the birth of open innovation was as a result of companies realising that they need to find new ways, beyond the scope of their organisations, to bring their ideas to market: "The reasons are to be found in shorter innovation cycles, industrial research and development's escalating costs as well as in the dearth of resources" (p.1). The research conducted by Gassmann & Enkel (2004) results in a framework for open innovation embedded in three processes: The "Outside-in process" (p.7) which entails using external knowledge for internal innovation; the "Inside-out process" (p.10) which entails using internal ideas in the external market; and the "Coupled process" (p.12) which is a combination of the first two processes.

Open innovation, for which Crowdsourcing has been identified as one of the types (Marjanovic et al., 2012; Xu et al., 2015; Ford et al., 2015) or as the same thing (Ozkan, 2015), requires the use of external resources that are not owned nor controlled by the organisation. Some of the activities that are associated with open innovation, through the provision of the inflow and outflow of knowledge, include: research and development (R&D), technology transfer, licensing, open source software and crowdsourcing (Ozkan, 2015).

Other types of open innovation include open source and outsourcing. It's not easy to distinguish the difference between the three types but the table developed below illustrates some of the common factors and differences between the different types of open innovation:

Table 2: Comparative table of common factors and differences for types of Open Innovation

	Crowdsourcing	Outsourcing	Open source
Web enabled	Yes – crowdsourcing platform (Hosseini, Shahri, Phalp, Taylor & Raian Ali, 2015; Ozkan 2015; Howe, 2006; Marjanovic et al., 2012).	Yes	Yes (Chanal & Caron-Fasan, 2010; Marjanovic et al., 2012).
Participants	Different types of individuals from hobbyist to scientists (Howe, 2006).	Usually companies that provide an outsource service (Marjanovic et al., 2012).	Online community (Chanal & Caron-Fasan, 2010).
Commercial or Non-commercials	Commercial and non-commercial (Marjanovic et al., 2012)	Commercial (Marjanovic et al., 2012).	Mostly non-commercial (Marjanovic et al., 2012)
Rewards / Incentives	Financial and non-financial (Marjanovic et al., 2012)	Financial (Marjanovic et al., 2012)	Mostly intrinsic reward such as: <ul style="list-style-type: none"> - User motive - Professional and personal benefit or learning - Reputation - Recognition among peers (Chanal & Caron-Fasan, 2010; Marjanovic et al., 2012; Schenk & Guittard, 2009)
Agreements	Declarations on crowdsourcing platform. (Hosseini et al., 2015)	Contract between outsourcing provider and company using outsourcing service (Hosseini et al., 2015; Marjanovic et al., 2012)	No contractual agreement (Marjanovic et al., 2012)

Source: Recreated by researcher based on highlighted literature

Crowdsourcing can be made up of a relationship between two parties with technology as an enabler: the solution providers who can be referred to as the crowd, the solution seeker which would be the company seeking innovation solutions and the technological enabler between the solution providers and seekers, which would be the crowdsourcing platform (Schenk &

Guittard, 2011). The crowdsourcing platform acts as the collaboration enabler between the seekers and solutions providers.

Crowdsourcing can be used for both commercial and non-commercial purposes and its use determined by the type of IP agreements required, the rewards and incentives used as well as the type of individuals that are used in the crowd (Marjanovic et al., 2012). An example of the non-commercial use of crowdsourcing is the US Patent and Trademarks office use of crowdsourcing for the review of patent applications (Brabham, 2010). A second example is the US transit authority's use of crowdsourcing for the design of bus stops through public participation (Brabham, 2010).

Ozkan (2015) suggests that open innovation, of which crowdsourcing is a type (Marjanovic et al., 2012; Xu et al., 2015; Ford et al., 2015) can be achieved using three main approaches:

1. Working with experts internal and external to the organisation;
2. Working with target customers; and
3. Innovation competitions with rewards.

Other categories of the uses of crowdsourcing include routine, complex and creative tasks (Hirth, Hoßfeld & Tran-Gia, 2013). Routine tasks are considered to be simple and don't need a qualification. Complex tasks are considered to be those tasks that require general skills. Creative tasks are considered to be those tasks that require highly specialised skills such as those that would be used in Research and Development (Hirth, Hoßfeld & Tran-Gia, 2013).

2.2 Definition of Crowdsourcing

Crowdsourcing involves obtaining ideas quickly through a network of individuals and institutions (Agrawal, Chen & Tanio, 2015). It occurs when a company puts out an open call, usually over the internet, to non-employees to contribute labour using their abilities and competencies (Bergvall-Kåreborn & Howcroft, 2013); Large group of people who provide ideas, content, services through an online community (Almirall et al., 2014).

Interestingly, although numerous researchers recognise crowdsourcing as a type of Open Innovation, Schenk & Guittard (2011) are of the view that crowdsourcing is a type of outsourcing by a large group of anonymous participants using a technology platform.

Prpi, Shukla, Kietzmann & McCarthy (2015) define four types of crowdsourcing as Crowd-voting (such as what is used to choose a winner in televised competitions), Idea Crowdsourcing (such as what is used by the American based T-shirt manufacturing company

Threadless), Micro-task crowdsourcing (which is used when the size of the task is too large or too complex to be completed internally) and Solution crowdsourcing which requires contributions for very specific problems (Prpi et al., 2015). Crowdsourcing is perceived by companies as a way of finding solutions quickly and inexpensively using a flexible workforce to perform internal business processes (Satzger et al., 2013).

Marjanovic et al. (2012) also identify four types of crowdsourcing. These are:

1. **Knowledge discovery and management approach:** This approach requires the crowd to gather and organise existing knowledge.
2. **Broadcast search approach:** This type of crowdsourcing opens up the solving of a scientific problem given that it is too risky to do internally to the organisation.
3. **Peer vetted creative production approach:** This approach uses the crowd to come up with creative solutions or uses the crowd to vet creative ideas.
4. **Distributed human intelligence tasking:** This approach uses the crowd to analyse large amounts of data.

2.3 Credibility of crowdsourcing as a source of innovation

Howe (2006), who is credited with discovering the term crowdsourcing, says the credibility of crowdsourcing as a source of innovation is determined by the profile of the crowd whose characteristics include, 'hobbyists', 'part timers', 'dabblers', 'could be working from a garage' and 'not suited to a 9 to 5', (p.2, 3, 4). The range of individuals varies from amateurs, such as those used in the photography crowdsourcing platform called iStockphoto, to professionals with specialist skills such as those used for R&D type initiatives on the platform InnoCentive (Howe, 2006).

Ultimately the power of the crowd seems to emanate from the ability of great minds dispersed globally to generate great ideas to solve business problems (Brabham, 2008). Brabham further says: "Diversity of opinion, independence, decentralization and aggregation of the crowd are necessary conditions for crowd wisdom" (p.81). One could conclude that the profile of the individuals that participate in the crowdsourcing initiatives will vary based on the type of initiative.

While there are opposing views on whether companies should use only experts in their crowdsourcing initiatives, Schenk & Guittard (2009) argue that, the company will only select the result that meets its expectation regardless of whether the result comes from an amateur or an expert. What makes the difference is whether the profile of the crowd is suited to the

type of initiative to ensure that the innovation results are credible and can actually be used by the organisation (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012). The crowd can be categorised into three characteristics: constitution of the crowd (skills and expertise); requirements; and rewards (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012).

Some of the other features that have been used to distinguish the crowd include diversity, anonymity, largeness, undefined-ness and suitability (Hosseini, Shahri, Phalp, Taylor & Raian Ali, 2015). Diversity refers to differences in background, age, gender and expertise; anonymity refers to anonymity between the crowd and the solution seeker and as well as between the members of the crowd; largeness refers to the comprehensive ability to complete a crowdsourcing task; undefined-ness refers to the lack of a selection procedure in choosing the members of a crowd; whereas suitability refers to the fit between the crowd and the crowdsourcing task.

A suggestion that has been made to deal with the requirement characteristic of the crowd is for the organisation that is seeking the innovative solution to have success or failure criteria upfront to measure the success of the task (Prpi et al., 2015). Another suggestion is to have an internal business expert engage with the crowd regarding company requirements to ensure that the organisation achieves its goals (Prpi et al., 2015).

In addition to engaging with the crowd, Prpi et al. (2015) suggests that the organisation needs to understand how the required knowledge will be acquired as well as the IT structure required to capture this knowledge. The three factors that determine the required IT structure are the purpose of crowdsourcing, whether it's internal or external to the organisation and the type of interaction amongst crowd members. The two determinants of the capability of the crowd are determined by the interaction of the crowd. This includes whether the crowd will be collaborating in solving the problem or whether the individuals in the crowd will be working independently. There are also two types of interactions: discrete independent interactions and ongoing interaction (Prpi et al., 2015).

The main aim of any organisation pursuing innovation is to realise value for itself and beneficiaries of the innovation, usually customers and the broader society (Marjanovic et al., 2012). Some organisations may be hesitant to use crowdsourcing as it is hard to show how it adds value (Prpi et al., 2015).

A case study conducted on crowdsourcing at Threadless, an American based T-shirt company, to understand the motivation for participating in crowdsourcing by crowd participants, found four main benefits (Brabham, 2010):

1. The opportunity to make money;

2. The opportunity to develop one's creative skills;
3. The potential to take up freelance work; and
4. The love of community at Threadless.

The monetary reward, in the Threadless case study, was a big motivator for the participants who had submitted a design. The other motivator was the potential for freelance work as one of the participants in the survey, highlighted that she started getting offers to participate in other contests and freelance opportunities through her participation in the Threadless t-shirt contests. At InnoCentive which is another crowdsourcing company, it was found that there is a positive correlation between the financial reward and the success of solving a problem (Brabham, 2010).

Almirall et al. (2014) also assert that there are different motivations for participating in open innovation. These include altruistic purposes, gaining recognition and funding. Davila, Epstein & Shelton (2006) on the other hand suggest that some people will pursue innovation for intrinsic rewards rather extrinsic simply because they have a passion for what they do. The intrinsic motivation includes competitive selection, diversity of knowledge, the complexity of the assigned task as well as the autonomy of completing the task (Chan, Li & Zhu, 2015).

There are also challenges related to ethics and legal rights which needs further analysis (Brabham, 2008). The company seeking innovation has ethical responsibility to the crowd participants which includes, but is not limited to, the option to opt out of a crowdsourcing task, ensuring that crowd participants are not harmed and also maintaining the privacy and anonymity of crowd participants (Hosseini et al., 2015).

In the traditional way of the organisation, the human resources that are used are managed and controlled by the organisation. Using crowds can only be meaningful if the purpose for which the crowds are being engaged which should be aligned to the goals of the organisation (Prpi et al., 2015). Crowdsourcing can be targeted to a specific crowd such as Barclays Bank defining the terms and conditions of a new credit card using existing credit card holders (Prpi et al., 2015).

2.4 Does crowdsourcing lead to innovation?

Some companies such as Proctor and Gamble (P&G) have experienced success in the use of crowdsourcing (Howe, 2006; Ozkan 2015; Bartl, Jawecki & Wiegandt, 2010). According to Howe (2006) six years after implementing the crowdsourcing model to the R&D function, 35% of P&G's initiatives were generated outside P&G, with Ozkan (2015) stating that this had been

at 15% in the year 200 and productivity grew by 60%, with a 100% success rate on innovation (Ozkan, 2015), and the company's stock had improved. This was accomplished by changing the way the R&D department worked. Howe (2006) goes on to state that when the initiative was started, P&G had 9000 people in the R&D department moving to now utilising the services of "up to 1.5 million researchers" externally (p.4). P&G went on further to use open innovation to enter new markets through joint ventures (Ozkan, 2015).

The P&G technology platform to encourage open innovation, known as Connect+ Develop, has generated approximately 2000 agreements with innovation partners globally P&G also formed strategic partnerships with universities to direct their academic research towards helping P&G build and develop new products(Ozkan, 2015). Bartl et al., (2010) noted that "The innovation success rate more than doubled, while the cost of innovation decreased" (Conceptual Framework based on a Programmatic View on Co-Creation section, para.2). They attribute P&G's open innovation success on three perspectives: the methods and tools used; the process followed; and the organisation and culture (Bartl et al., 2010). Davila, Epstein & Shelton (2006), however, caution that while measuring is difficult, one of the ways to prove a clearer picture of performance is to link innovations metrics to strategy. Whilst Wang, Chang & Shen, (2015) argue that in order for companies to be able to take advantage of innovation opportunities, the company would need to have an open strategy.

BMW also implemented this approach as an alternative source of research and development in the form of a virtual meeting place for individuals that are interested in car related topics, through their Co-Creation lab (Bartl et al., 2010). Their first crowdsourcing project, launched in March 2010, resulted in over 300 ideas being generated.

Goldcorp, a Canadian based mining company, used its internal crowdsourcing platform to provide geological data to the crowd in a challenge seeking the crowd to find places where gold could be found (Marjanovic et al., 2012). Other well known companies that have explored the use of crowdsourcing include IBM, Microsoft, GE and Google (Nevo & Kotlarsky, 2014).

2.5 What can be crowdsourced?

Vukovi (2009) identifies design and innovation, development and testing, marketing and sales, and Support as the four functions that can be crowdsourced. Crowdsourcing can also be used to solve a problem or find a solution too risky for an organisation to undertake internally (Bergvall-Kåreborn & Howcroft, 2013). An example is Apple Computer's crowdsourcing of the development of IT applications whose success cannot be guaranteed,

choosing instead to crowdsource from software developers globally (Bergvall-Kåreborn & Howcroft, 2013).

Companies such as L’Oreal and Chevrolet (although unsuccessfully) have also been known to have used crowdsourcing as a marketing tool in creating commercials (Busarovs, 2011). Hosseini et al., (2015) state that it has been used across different vocations such as in medicine, business, management, law, politics, environment sciences and sociology.

NESTA based in the UK successfully used crowdsourcing to address carbon emissions. They awarded grants to the most innovative solutions for the individuals to implement the solution for reducing carbon emissions in their communities (Marjanovic et al., 2012).

Threadless uses crowdsourcing for sourcing creative designs for its T-shirts through online competitions. The crowd then ranks the top designs which are then produced and sold on the online shop. The designer is rewarded with gift vouchers (Brabham, 2010).

Schenk & Guittard (2011) suggest two uses of crowdsourcing which they defined as Integrative Crowdsourcing and Selective Crowdsourcing (p.98). Integrative crowdsourcing entails the use of crowdsourcing by an organisation to source large amounts of data which would normally require substantial amount of resources. This type of crowdsourcing was used in a South African crowdsourcing study aimed at using data collected through the social platform Twitter to track thunderstorms between Soweto and Pretoria (Butgereit, 2014). In this example the applicable data on thunderstorms was extracted from Twitter, then using independent resources the collected data was mapped against data provided by the South African weather services to map lightning strokes (Butgereit, 2014). The second type of crowdsourcing use identified by Schenk & Guittard (2011) is defined as Selective Crowdsourcing which entails a company seeking a solution externally for a problem that cannot be solved internal to the company and ultimately the solution provider being rewarded for this.

2.6 Potential Benefits of Crowdsourcing

The benefits of crowdsourcing include speed to market, access to a large pool of resources, and acceleration of internal innovation. Speed to market is the ability to get products or services to markets quicker than competitors (Ozkan, 2015). The benefits of access to a large pool of resources outside company management enables the company the convenience of access to a large pool of resources with the required skills on demand and without having to

incur the costs of staffing (Nevo & Kotlarsky, 2014). Internal innovation is accelerated through leveraging off external knowledge (Saebi & Foss, 2015; Muller et al., 2012).

Despite its benefits, crowdsourcing is not necessarily free although the company can save on the costs of employment and benefit from increased productivity of the crowd (Bergvall-Kåreborn & Howcroft, 2013) whilst also making more proficient use of company resources (Xu et al., 2015). Crowdsourcing is also a way of reducing the human resource needs of an organisation. In order to do this effectively, an organisation needs the required capabilities in the form of the business model (Nevo & Kotlarsky, 2014).

Schenk & Guittard (2011) state that the benefits of using crowdsourcing include the variability in cost depending on the type of initiative being used, quality from the perspective of using a large pool of external resources that can produce unique solutions, the increased external networks and also the ability to spread risk out given that crowdsourcing does not depend on one individual.

2.7 Limitations of Crowdsourcing

Chesbrough & Appleyard (2007) note that one of the risks of crowdsourcing is that competitors can gain access to the same resources and use the same knowledge. Marjanovic et al., (2012) suggest that one of the ways to mitigate this risk is for the organisation to own the platform through which the collaboration is enabled. Such as in the case of Goldcorp, a Canadian based mining company that owns and controls a crowdsourcing platform as an enablers for its crowdsourcing initiatives (Marjanovic et al., 2012).

Chanal & Caron-Fasan (2010) note that individuals used in the crowd to come up with innovative solutions may want to gain financially through the value created for the organisation beyond their reward of coming up with a solution. Some of the participants in the Threadless crowdsourcing model have formed their own collaborative group, Black Rock Collective, with plans to start up their own t-shirt company (Brabham, 2010). Hossein, et al. (2015) suggests that this risk can potentially be mitigated through the crowdsourcing platform by enabling the negotiation of rewards through the platform.

From the solution providers' side, the solver has no guarantee whether their solution will be rewarded even though they would have already spent time on it (Chanal & Caron-Fasan, 2010). There is also the risk that the commitment of individuals is questionable (Marjanovic et al., 2012). Crowdsourcing is voluntary as the participants (crowd) actually choose in which task or activities or problems they want to participate in (Hirth et al., 2013). Being a member

of the crowd is voluntary, they can come and go as they please and can also choose which tasks to participate in (Satzger et al., 2013). Even Apple recognises the risk associated with using crowdsourcing, highlighting in its annual report that the use of crowds makes them dependent on third party IP (Bergvall-Kåreborn & Howcroft, 2013).

The benefit of the openness of crowdsourcing to external knowledge does have a downside as you are dealing with an external workforce and as a result of this, the quality of the work produced cannot be guaranteed (Satzger et al., 2013). One of the suggested ways to verify the credibility of a solution provided or task completed is defined by Hirth et al. (2013) as the Majority Decision Approach which suggests that if a task is given out to the crowd, the credibility of individual tasks is judged based on closeness in solution to the majority of tasks. The second approach is referred to as the Control Group Approach where a task is given to the crowd then a second independent crowd will judge the credibility of the solutions given by the first group (Hirth et al., 2013). Busarovs, (2011) also suggest the use of check questions as a way of checking the quality, given that the answers to these questions would already be known by the company making use of crowdsourcing.

The quantity of solutions for a crowdsourcing problem have been shown to be positively related to higher awards and recognition (Chan, et al., 2015). The quality of the innovation solutions are shown to be associated with information from the seeker, freedom of coming up with the solution, the diversity of knowledge and feedback on performance (Chan, et al., 2015).

Using crowdsourcing for innovation requires an organisation to open up to resources external to, and not within the control of, the organisation. This could result in an organisation's competitive intelligence, which may be linked to its future plans, being exposed to outside parties (Marjanovic et al., 2012; Xu et al., 2015). To mitigate the risk of openness, Apple Computers restricts its crowdsourcing platform to registered members only (Bergvall-Kåreborn & Howcroft, 2013).

Table 3: Summary of the risks, mitigations and benefits of using crowdsourcing as an external source of innovation

	Risks of crowdsourcing using	Risk Mitigation	Associated benefits
1.	Competitors use the same pool of crowdsourcing resources and gaining the same knowledge. (Chesbrough & Appleyard, 2007).	Company that uses crowdsourcing can own and run their own crowdsourcing platform. (Marjanovic et al., 2012).	Fast tracking of innovation through using both internal and external knowledge (Chesbrough, 2003). Access to large pool of resources on demand (Nevo & Kotlarsky, 2014).

2.	Crowdsourcing participants wanting financial gain from the value created by a company on a solution beyond the reward provided to the participants (Chanal & Caron-Fasan, 2010).	The use of a crowdsourcing platform that allows for negotiating of rewards with crowd participants (Hosseini, et al., 2015).	Crowdsourcing participant benefitting through opportunity to make money, developing creative skills and ability to do freelance work (Brabham, 2010).
3.	Quality of work produced by crowdsourcing participants (Satzger et al., 2013).	Company using crowdsourcing solution applies the Majority Decision Approach and or Control Group Approach to manage the quality of work produced (Hirth et al., 2013). The use of check questions can be used to check the quality as the answers to these questions would already be known by the company making use of crowdsourcing (Busarovs, 2011).	Speed to market for company using crowdsourcing (Ozkan, 2015). Accelerate internal innovation for an organisation through leveraging off external knowledge (Saebi & Foss, 2015).
4.	High volume of ideas (Chan, et al., 2015).	Company using crowdsourcing must define specific requirements which should be aligned to company objectives (Chan, et al., 2015).	One of the main advantages of using an intermediary is the screening of ideas. (Marjanovic et al., 2012).
5.	Loss of competitive intelligence by a company using crowdsourcing due to openness (Marjanovic et al., 2012; Xu et al., 2015).	Restrict crowdsourcing platform participation to registered crowdsourcing participants only (Bergvall-Kåreborn & Howcroft, 2013).	Transfer the risk of failure external to the organisation and also the company only pays for solutions that meet their requirements (Schenk & Guittard, 2011).

2.8 Crowdsourcing Business Models

The companies that have been successful in their application of open innovation have flexibility and a willingness to change their existing business models to those that are better suited to open innovation (Saebi & Foss, 2015). This entails defining the ways in which the company will create, deliver and capture value using external resources. This also requires alignment between the open innovation strategy of the company and the internal design, practices and capabilities to be able to exploit innovation derived from external resources (Saebi & Foss, 2015).

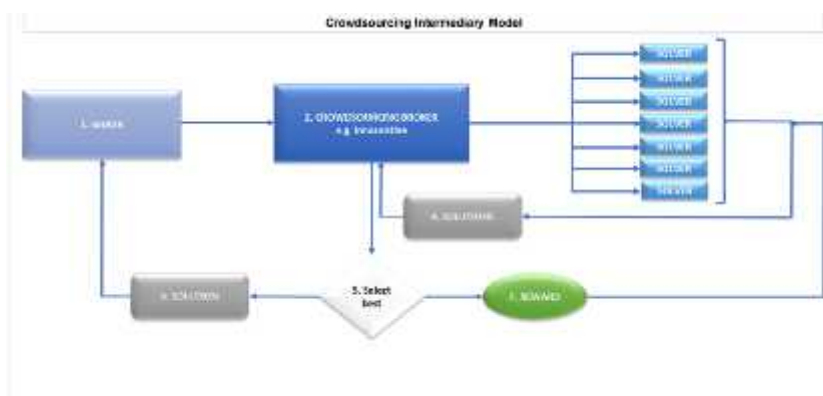
So ultimately if a company wants to pursue an open innovation strategy its needs to be willing to make the required internal changes to get performance (Saebi & Foss, 2015). Ozkan (2015) highlights that for open innovation to work, the company's process should be considered from an external perspective that is through the lens of their customers and this could include data and social communication (Ozkan, 2015).

An organisation, in choosing to use crowdsourcing, can either develop its own crowdsourcing solution or use intermediaries. The risks identified above have created an opportunity for crowdsourcing brokers (Marjanovic et al., 2012) also referred to as intermediaries (Chanal & Caron-Fasan, 2010) who coordinate the relationship between the solvers and seekers through the crowdsourcing platform (Busarovs, 2011). One of the advantages of using an intermediary is that they would already have a pool of resources at their disposal (Prpi et al., 2015) and can also screen ideas (Marjanovic et al., 2012). InnoCentive, MTurk and Microworkers are some of the well-known brokers (Hirth et al., 2013).

The use of an intermediary is just one of the business models that can be used for crowdsourcing. Some of the identified challenges associated with the use of crowdsourcing intermediaries is firstly, their dependency from these external resources (crowd) that are not under their control and can therefore not be fully managed. Secondly that the intermediary cannot guarantee the seekers that the solutions provided by the crowd can actually translate into an innovation that provides the company with a competitive edge (Marjanovic et al., 2012).

Figure 1 below has been developed by the researcher based on her own interpretation of the literature, to illustrate the model used by crowdsourcing intermediaries in coordinating crowdsourcing tasks between the crowd and solution seekers. The solution seeker will send a problem to the intermediary who will then open it up to the crowd for a solution. The crowd work as individuals and will then send their proposed solutions back to the intermediary who will then select the best solution and send back to the solution seeker. The solution that is selected will then be rewarded via the crowd participant. The intermediary will then get paid commission by the solution seeker for services provided. The intermediaries make revenue through consulting services, subscriptions and commission for successful solutions (Marjanovic et al., 2012).

Figure 1: Crowdsourcing Intermediary Process Model



Source: Researchers interpretation of the literature

Another crowdsourcing business model is to use crowdsourcing controlled internally in the organisation. One of the more widely known cases of this is Goldcorp. Goldcorp worked with a software company and a panel to judge entries to their platform in a competition to identify potential locations for gold mining (Marjanovic et al., 2012). Companies such as Best Buy have used crowdsourcing internally using the tool Blue Shirt Nation wiki to connect 24 000 staff members to share customer services tips and to also discuss internal operational issues (Prpi et al., 2015). Grant Thornton (2014) also used the internal model in 2014 to connect its global pool of staff in 127 countries to collaborate on ideas pertaining to the company's next strategy (Grant Thornton, 2014). In the Threadless model the crowdsourcing model is coordinated through the Threadless website where a member can sign up using their email address which gives them access to design for the t-shirt, vote on existing designs, or just shop for a t-shirt (Brabham, 2010).

2.9 Does Crowdsourcing Provide Value?

I agree that innovation is a tricky thing to bring about. Companies want it but focus on the wrong things. – Art Fry, developer of Post-It Notes

Schenk & Guittard (2011) note that ideas on their own have no value unless they lead to innovation which should ideally translate into increased profits. Some of the highlighted benefits of crowdsourcing are relatively low cost, quality in the number of tasks achieved, positive network externalities, reduction in risk for the initiator and motivation and incentives for the crowd (Schenk & Guittard, 2011).

In an example used on Mobil's retail division, they highlight a well-designed measurement system which is based on the strategy of efficiency and focused on specific market segments (Davila, Epstein & Shelton, 2006). The measurements were:

- Return on Capital Employed (ROCE);
- Market share in the specific segments; and
- Success of specific innovation measures – product acceptance rate and new product ROI.

The resulting effect of this was a return of profitability and Mobil being the number one company in the industry within a year. Davila, Epstein & Shelton (2006) suggest that the measurement system for innovation is depended on the business model. This should describe how the company innovates and how this is then translated into value.

2.10 Conclusion

The literature review highlighted the use of crowdsourcing as a type of innovation in overseas based companies. Furthermore the availability of academic literature on crowdsourcing from a South African, specifically its use as a source of innovation by South African companies proved limited. The academic literature found from a South African perspective was more focused on non-corporate innovation initiatives such as the study conducted by Beitgereit (20114). In another South African study by Bhana, Flowerday &Satt (2013) although not highlighted in the literature, crowdsourcing was used as source of solving a social problem rather than being a source of external Open Innovation for commercial gains.

Mayer (2012) suggests that the process of innovation in South African companies is not organised and rather pursued on an ad-hoc basis. Innovation is a strategic imperative for South African companies as highlighted in chapter 1, however given the rapid rate of change of the business environment and the increasing need to remain competitive which requires new ways to improve innovation performance as highlighted by Inauen & Schenker-Wicki (2012), the literature shows that non-South African companies such as P&G (Howe, 2006; Ozkan 2015) have long recognised the benefits of using external resources through crowdsourcing as a source of external Open Innovation.

The use of crowdsourcing as a type of Open Innovation does require a company to have an open business model, yet 40% of the South African companies polled in the Innovation Poll conducted by Innocentrix and Digital Bridges, responded “no”, firstly to the use of formal external collaboration and secondly to the use of Open Innovation approaches to enhance innovation efforts within their organisations.

Although there were risks identified which are related with the use of crowdsourcing, there were also associated benefits shown such as the ability to accelerate innovation (Saebi & Foss, 2014), gaining access to a large pool of resources on demand (Nevo & Kotlarsky, 2014) and speed to market (Ozkan, 2015). Some of the risks included the aspect of the quality of the work produced (Satzger et al., 2013), potential loss of competitor intelligence (Marjanovic et al., 2012; Xu et al., 2015) and dependency on external resources that are not owned nor controlled by the company making use of their skills (Bergvall-Kåreborn & Howcroft, 2013). Some of these highlighted risks are directly related to the crowd participants, referred to in the literature as solution providers (Schenk & Guittard, 2011)

The literature did provide some insights on mechanisms to manage the quality of the work produced by the crowd participants such as the use of the Majority Decision Approach and the Control Group Approach by Hirth et al. (2013). This shows that there is a gap in

mechanisms that can be used to screen crowd participants given that they are such an important contributor the successful use of crowdsourcing as a source of innovation.

In light of all of the above the need for research on the use of crowdsourcing as an external source of Open Innovation and value addition for South African organisations has been emphasized.

Chapter 3: Research Objectives

3.1 Research Objectives

The literature highlighted that the crowd participants are an important factor that contributes towards the successful use of crowdsourcing. The literature showed the different motivations of crowd participants which is a contributor to the credibility of the work produced. However for the company that uses crowdsourcing as an external source of innovation, how then does it ensure that the appropriate crowd participants are used to achieve its desired outcome which would be important given that innovation was shown to be a strategic imperative for some of the highlighted South African companies in Chapter 1

The difference between the crowd and a normal employee is that the crowd is composed of a heterogeneous group of members with “different interests, working style, cultural background and skills” (Satzger et al., 2013). Being a member of the crowd is voluntary, crowd members can come and go as they please and can also choose which tasks to participate in (Satzger et al., 2013). Furthermore the members of the crowd are self-motivated and non-hierarchical with limited management scope unlike employees in an organisation (Satzger et al., 2013). The first objective of this research study aims to understand the screening mechanisms that can be used by companies to screen crowd participants.

The literature highlighted that amongst the benefits of using crowdsourcing is having access to a large pool of resources who can complete a large number of tasks providing accelerated innovation (Satzger et al., 2013) with Goncalves et al. (2015) arguing that this could impact on quality. The literature did not provide in depth insight into how companies can potentially mitigate this risk by providing quality checking process mechanisms for the work produced when using crowdsourcing as an external source of Open Innovation. The second objective of this research study is to determine the quality checking processes that are related to the output to be gained from using crowdsourcing as an external source of Open Innovation.

The use of crowdsourcing was revealed through the literature to have a need for an open business model aligned to the pursuit of a strategy of openness. Several of the scholars in the used literature alluded to the need for an open business model when using an Open Innovation strategy (Saebi & Foss, 2015; Inauen & Schenker-Wicki, 2012; Chesbrough & Appleyard 2007). This poses the question on whether the use of crowdsourcing, as a type of Open Innovation, is only suited to certain types of business models. The third objective of this research study is to determine the suitability of crowdsourcing to certain types of business

models. In the Innovation poll conducted by South African companies Innocentrix and Digital Bridges, 46.3% of the organisations polled do not measure the results of innovation both from an impact perspective and from a monetary perspective (Mayer, 2012). The fourth objective is to determine whether the use of crowdsourcing can add value to an organisation by its ability to translate the innovation arising from crowdsourcing into actual value. This will be determined through understanding the benefits of crowdsourcing, understanding the business value drivers by companies for the use of crowdsourcing as an external source of Open Innovation and finally the associated measures for these value drivers. The use of external knowledge can create value, in the form of money, within an organisation (Chanal & Caron-Fasan, 2010).

3.2 Research Questions

The theory of Open Innovation (Chesbrough, 2003) was used as the theoretical foundation for this research study. The research questions to be investigated are:

Research question 1: Should the crowd participants be screened in the use of crowdsourcing and what are the criteria that should be considered in screening these crowd participants?

Research question 2: What are the quality checking processes that organisations could use to increase the value derived from innovation solutions gained from the use of crowdsourcing as an external source of open innovation?

Research question 3: Is the use of crowdsourcing as an external source of innovation only suited to specific types of business models or can it be used for any business model?

Research question 4: What are the business value drivers that would lead companies to use Crowdsourcing as an external source of innovation and how can these be measured?

3.3 Conclusion

This study aims to answer the above four questions through an explorative study using qualitative research methods. Based on the literature that was available on the use of crowdsourcing being mainly based on non-South African companies, this study will contribute towards obtaining better insight into the use of crowdsourcing as an external source of open innovation for South African organisations.

Chapter 4: Research Methodology

4.1 Introduction

The aim of this research was to understand the use of crowdsourcing as an external source of open innovation and value addition to organisations in an emerging market, South Africa. This was conducted using an exploratory qualitative research method following the abductive approach which Saunders et al., (2012) define as a combination of the deductive and inductive approaches. The use of exploratory qualitative research is suitable when the findings are to be generalised and involves, amongst other things, questions to be asked (Harrison, 2013). The data collection method used was face to face semi-structured interviews.

Qualitative research is not a simple approach as it considers the research problem holistically using a small number of subjects (Guercini, 2014). The selection of a research methodology in management studies is important as it impacts on what the researcher was attempting to communicate and management practices.

4.2 Research design

The research design outlines the plan of achieving the research objectives which includes how the research questions were answered including the sources of data, collection methods used, how the data was analysed and the challenges experienced pertaining to all these tasks (Saunders, Lewis & Thornhill, 2012).

The research design was based on the type of evidence that was required to answer the research questions (Mouton, 2011). The choice of research design was also determined by the time that was available to complete the research as well as the costs that would be incurred to perform the research (Saunders et al., 2012). The selected research method, in this case qualitative research, has been shown to be only as good as the research design which was guided by the research questions applying rigour through electing to use as large a sample size as was possible (Mårtensson, Fors, Wallin, Zander & Nilsson, 2015).

This research study was suited to the abductive approach as the literature review provided some insight into the use of crowdsourcing, however the academic literature available indicated that the use of crowdsourcing is more prevalent in overseas markets with limited academic research based on its use in the South African context. The aim of collecting data when using the abductive approach was to identify themes and patterns to develop a conceptual framework (Saunders et al, 2012). Hyde (2000) suggested that all research

requires a balance between inductive and deductive approaches as on the one extreme, using induction only could potentially result in a researcher missing some useful theoretical concepts which could guide exploration of a topic further, while using the deductive approach only could prevent the researcher from developing new theory.

The abductive approach enabled the researcher to identify themes and to develop a conceptual model for the use of crowdsourcing by South African companies (Saunders et al., 2012). Using the abductive approach enabled the researcher to use the existing theory of open innovation to gain insight from a situational perspective, on the use of crowdsourcing in South African companies (Timmermans & Tavory, 2012). This ultimately enabled the researcher to develop a conceptual model which is specific to the South African market, based on the existing theory of open innovation and emerging themes through the insight provided by the research participants.

4.3 Qualitative Research Methodology

Sergi & Hallin (2011) describe qualitative research as: “qualitative research is about the methods used to generate what could be better described as interpretations and meanings, a form of knowledge that cannot and does not aim to be reproduced with exactness and to be generalized, since it is the result of a processual performance;...” (p.193).

Qualitative research has evolved and been used in a wide range of management research from analysis of the organisation to even more of the quantitative areas of the business such as accounting and finance (Cassell, Symon, Buehring & Johnson, 2006). New qualitative research methods have emerged due to changes in the business environment, technological advancements and inputs by management researchers (Guercini, 2014). Technology has increased complexity to data, it has also enriched the opportunities for qualitative research through increased data content such as text, multimedia, images, audio and video (Guercini, 2014).

One of the factors that were historically used to discredit the importance of qualitative studies was the belief that qualitative studies are the first step before the real enquiry of quantitative enquiry. However some social scientists now believe that both qualitative and quantitative studies contribute to research (Hyde, 2000). Some of the features of using qualitative research that are recognised as being valuable include the ability to have conversation with the research participants, such as consumers, the ability of the researcher to listen actively

and being able to pick up on underlying discourse and the ability to obtain valuable insight that a researcher can draw conclusions from (Branthwaite & Patterson, 2011).

The study by Cassell et al. (2006) highlighted that qualitative research was judged as lacking credibility because it did not have the same process that can be used for quantitative data such as quantification, statistical analysis, rigour, systematization. However the counter to this was that credibility could not necessarily be attributed to the research process but rather to how the research report was presented (Cassell et al., 2006).

Amongst the benefits of qualitative research is that data collection is grounded in the context of the specific situation (Guercini, 2014). The value of qualitative research is that if carried out correctly, also through gaining cognitive access to participants, it can provide new, unique and rich knowledge which may not always be the case through other research approaches (Kapoulas & Mitic, 2012).

Qualitative research quality may be judged by the contribution that it makes by providing new insights that were commonly unknown and add to the knowledge of management (Cassell et al., 2006). Qualitative research can be identified through its ability to provide a process that can be replicated on the process followed with the associated findings, the ability of a researcher to interview participants and be able to interpret the findings and the knowledge provided (Bailey, 2014).

4.4 The population and sample

The population of this study comprised of innovation experts that work in South African organisations who have an understanding of crowdsourcing as a source of open innovation.

The purposive sampling method was used for the selection of the sixteen participants selected for the study. This sampling method is used when the researcher uses judgement to select the samples that will enable the researcher to address the research objectives (Abrams 2010; Saunders et al., 2012). The selection of the sampling method was important as it relates to the integrity of the research study, the quality of the data that was collected and the ability for the researcher to be able to draw conclusions (Abrams, 2010).

The criteria used to select the participants was that the participant either had to be an innovation expert derived from experience and exposure in working with innovation. The second criteria used to identify participants was that the participant was an innovation expert and provided crowdsourcing services. In qualitative research, the researcher recognises that

certain participants are more suitable than others in providing the required insight and thus the use of sampling methods such as probability sampling may not help the researcher in achieving the goals of the research (Abrams, 2010).

The participants were selected through the researcher performing online research using sources such as LinkedIn and Who's who South Africa where information was available on the participants. A second source used by the researcher was through her own networks when the identified participant was a common contact or had been recommended for participation based on the topic of this study. Some of this information included the company that the participant works for or ran as an entrepreneur, their work experience and contact details. This information was not asked for in the interview schedule however it was used in the presentation of demographic data without compromising the participant's confidentiality. This was achieved through using the company information to identify the industry sectors that the various participants worked in without identifying specific companies.

The researcher started out with a target of 20 participants purely based on trying to achieve a strike rate of 15 participants. Some of the participants targeted were specifically crowdsourcing service providers. However gaining access to these proved to be a challenge as most of them ran their own companies and could not spare the time to participate in the interview. This did not impact on the insights provided as the innovation experts interviewed all had exposure and understanding of crowdsourcing and thus provided credibility even though they did not necessarily work for a crowdsourcing company. Their exposure and understanding of crowdsourcing was qualified through some of the questions included in the interview schedule. Furthermore they were able to provide deeper insight from a corporate perspective and the use of open innovation, of which crowdsourcing is one of the types.

It was important to establish some rapport with the participants given that the successful use of purposive sampling is partially attributed to the researcher's knowledge on the topic and also gaining trust with the targeted participants (Barratt, Ferris & Lenton, 2015). First the researcher established if there was a common contact between the participant and herself, who could facilitate an introduction. Then the participants were contacted either by email or telephonically. The emails sent provided information on the purpose of the research study with an attachment of a copy of a consent form to participate and an official letter from the University of Pretoria's Gordon Institute of Business Science (GIBS) confirming that the researcher was a registered student.

Table 4 below sets out the category, the accompanying definition as well as the number of participants which fell into each of the two categories.

Table 4: The Sample Quota by Criteria

	Participant Category	Definition	Number of participants
1.	Current crowdsourcing service providers and Innovation experts	This means that they either work for or own a company that provides crowdsourcing services whether it be through a technology platform or non-technology platform and thus acting as an intermediary between their external clients (solutions seekers) and the crowd participants (solution providers)	4
2.	Innovation experts:	These participants were selected based on their experience and knowledge of innovation either through their employment, use of innovation in their own companies or academic research. The selection of these participants was also based on their knowledge or exposure to crowdsourcing.	12

Source: Researchers own categorisation

4.5 Data gathering process

4.5.1 Semi-structured Interviews

The research interview is a tool used to obtain knowledge on the topic. Qu & Dumay (2011) advise that in order to minimise bias, the interviewer should be neutral to the responses of the interviewee. This is the neopositivist view of research interviews (Qu & Dumay, 2011).

In order to gain an understanding on the use of crowdsourcing in South African organisations, face to face semi-structured interviews were conducted with the identified participants. In using semi-structured interviews to gain a deeper understanding of the use of crowdsourcing from a South African perspective, the researcher covered key questions to identify common themes based on the categorisation of the interview questions (Saunders et al., 2012).

Some considerations in planning for the interviews included the type of interview to be conducted, who would be interviewed, the number of participants to be interviewed and how the collected data would be analysed subsequent to the interviews (Qu & Dumay, 2011). The use of semi-structured interviews was useful for the exploratory study as it allowed the interviewer to probe responses to questions. Furthermore the opportunity to probe also provided insights into other ideas related to the topic which the researcher may have not

considered and thus providing richer data to address the research objective (Saunders et al., 2012).

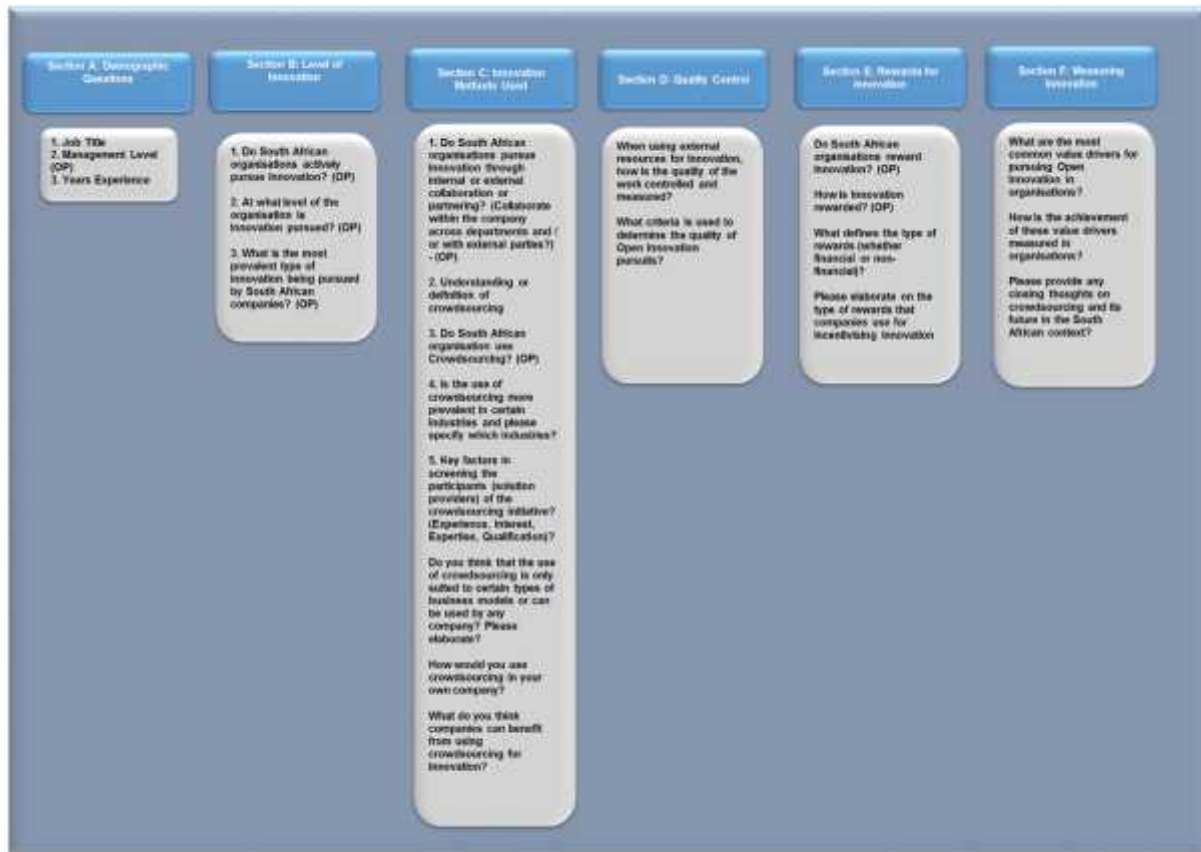
The interviews were recorded using two audio recording devices. The primary device was a recording app called Easy Voice Recorder on the researcher's cellphone. The second device used was a Bell Office recorder which was used as back up. Prior to the start of the interview, each participant was asked for permission to record the interviews and this was granted by all participants. The transcribed interviews were based on the primary audio recorder. The duration of the interviews varied with the shortest interview performed being 19.39 minutes and the longest one being 42.32 minutes. The majority of the interviews were conducted at the participant's place of work either in a meeting room or in the participant's office for the more senior management participants. Three of the interviews were performed on the GIBS campus premises.

The recorded interviews were transcribed through a professional transcriber subsequent to the interviews. The researcher did some editing work on the transcription due to the transcriber not being able to understand some of the terminology used by some participants. Some of the important aspects considered in conducting the interviews, as highlighted by Cassell et al. (2006) included: Making initial contact with the participants, which was done either via telephone or email to position the research and their contribution by participating. Communicating how the information provided in the interview was to be captured (through recording in this instance) and how confidentiality of the participants would be maintained through the research team. This was achieved by not using personal identifiers of participants such as their name or surname or the company that they work for.

The interview schedule used was semi structured and is attached in Appendix B. The schedule was designed based on categories with the ultimate aim of the researcher being able to identify themes that will answer the four research questions identified in chapter 3 of this study. Some of the questions were guided in that they required a participant to select from a list of options provided by the researcher during the interview. It is important that when conducting interviews, the researcher sets out the ground rules for the participants to ensure that participants are at ease with the process (Branthwaite & Patterson, 2011). The researcher allowed participants to elaborate on their selections for these questions as this provided context for the participant's selection. The other questions were open ended, enabling the participant to provide insights based on the expertise in relation to their experience and exposure on the use of crowdsourcing as a source of open innovation.

Figure 2 below is a summary of the interview questions by category. Furthermore the figure highlights the questions which were guided in terms of options for response using the acronym OP which stands for options provided.

Figure 2: Summary of interview schedule



Source: Researcher summary

4.6 Data Analysis

One of the ways to link data to the research questions is through a process of pattern matching. The recorded interviews were sent to a professional transcriber to enable the researcher to perform analysis. The process of analysis used in this qualitative study was the coding of responses into themes which were then linked to the research objectives (Cassell et al., 2006).

The data analysis was performed using two data analysis tools. The first tool was Microsoft Excel 2013. This tool was used for two purposes. The first purpose was to enable the researcher to summarise demographic data and this is depicted in the chart and tables in section 5.2 below. The tool enabled the researcher to provide a graphic representation on the participants in context of the questions covered in section A of the interview schedule as well

as knowledge that the researcher has on each participant without breaking any confidentiality. The second purpose that the tool was used for deeper analysis of the data coding that was generated from the second data analysis tool used for this research study.

The second tool used for data analysis is the software tool Atlas.ti. This tool enabled the researcher to code the data and then categorise it into predefined themes. The coding method used in Atlas.ti followed the main categories as per the interview schedule, then coding of sub categories as themes emerged through analysing the participant responses per question. As Guercini (2014) notes, technology has made it possible for a researcher to be able to collect huge quantities of data with software to process and disseminate the collected data.

4.7 Limitations

The literature review, revealed the limited academic literature available on crowdsourcing from a South African perspective. One of the limitations to this process was the possibility of a low response rate by the selected experts to participate in the interviews. Some of the challenges associated with qualitative research include gaining access to participants to participate in the research study. Kapoulas & Mitic (2012) highlight that in industries with increased rivalry, participants may be hesitant to even grant interviews from fear of losing intellectual property and potentially compromising their organisations' positioning in that market (Kapoulas & Mitic, 2012). They also highlight ethical concerns as a challenge given that interviews can be open ended. However it is important for a researcher to highlight that the research and content thereof is only for academic and theoretical purposes (Kapoulas & Mitic, 2012). There was no personal data collected in terms of the names or surnames or the current company that the participants works for or owns. The participants were provided with a consent letter to sign as agreement to voluntarily participate in the research study as well as a promise that the participant's confidentiality would be maintained. A copy of the consent form used for each participant can be found in Appendix A.

The use of semi-structured interviews may introduce data quality issues related to reliability, bias, generalisability and validity (Saunders et al., 2012). The issue of quality of the research was addressed through providing a detailed account of the research steps performed to a level at which the research could be replicated (Kapoulas & Mitic, 2012).

When coding the data, there is a possibility that the data may not fit directly into the themes and may fit into a number of themes (Cassell et al., 2006). Where this occurred the researcher

used her knowledge and interpretation of applicability to code responses into the applicable themes.

Chapter 5: Research Results

5.1 Introduction

This chapter presents the research result based on the insights provided by the sixteen purposively selected research participants of the study as outlined in chapter 4. The presentation of the results has been structured in line with the interview schedule used to conduct the research. Section A of the interview was focused on participant characteristics which included their job title, management level and experience working in innovation and or technology. Section B of the interview schedule focused on general questions relating to innovation in South African companies and on easing participants into thinking of innovation in preparation for the more in-depth follow up questions answering the primary research questions of this study in Section C, D and F.

Given that this was an exploratory study using the abductive approach constrained by limited academic literature on South African crowdsourcing for Innovation, Section B and E were included to provide further testing insight on whether there were emerging relationships between the innovation context in South African companies and the use of crowdsourcing for innovation based on this. Each of the main categories had sub-questions presented in this chapter.

5.2 Demographics of the participants

The data presented in this section relates to section A of the interview schedule which was based on demographic data of the participants.

Table 5 below depicts the current job titles. The participants were asked for their current job title to determine the context of their job from an innovation and technology perspective however there was no general consistency or classification of the job titles from an innovation perspective.

Table 5: The current position or job title of each participant

#	Position / Job Title
1	Business Analyst Manager
2	Business Analyst Information Technology
3	Product and Innovation Manager
4	Executive Marketing and Product
5	Chief Evangelist for Pixel (Crowdsourcing Platform)
6	Shareholder of 3 Businesses

7	CEO: Value Add
8	CEO
9	Chairman of 2 Companies
10	Chief Solution and Marketing Officer
11	Entrepreneur
12	Head of Inventions
13	Head of Sales and New Business Development
14	Digital Consultant / Director
15	Mobile and Digital Manager
16	Senior Business Analyst

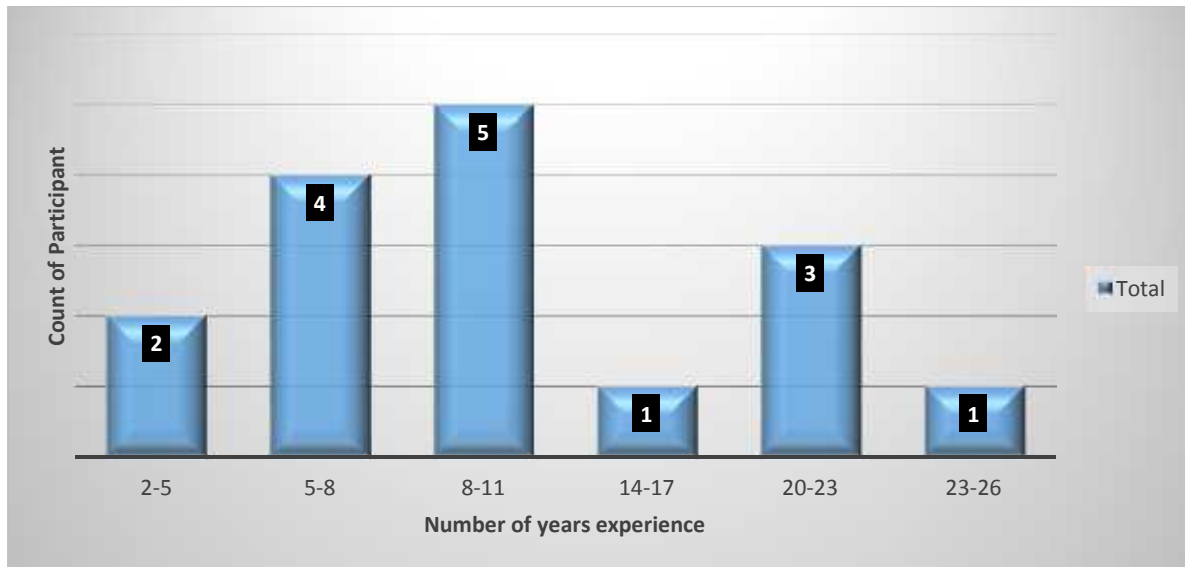
During the interview, participants were asked to select their management level as either Junior, Middle or Senior Management. In interview 11 the participant who is an entrepreneur when asked on his management level referred to himself as the founder. For the purposes of grouping the data, the participant has been classified under senior management. This classification was made also on the basis of the 22 years of experience the participant had with the company. Figure 3 below represents the management level of the various participants of whom the majority were on the senior management level.

Figure 3: participants by management level



Figure 4 below presents the numbers of years of participants' experience working in innovation or with both innovation and technology in intervals of 3 years. The reasoning behind this question was to determine their level of expertise on the topic in relation to innovation and the aspect of technology was based on knowledge of crowdsourcing as a technology platform. As indicated, the majority of respondents (10/16) had at least eight or more years of experience working in Innovation or Innovation and Technology. The actual responses are attached in Appendix C of this study.

Figure 4: Number of participants' years of experience in Innovation & Technology



The participants were categorised on whether they are employed or entrepreneurs. Some of the participants volunteered the information that they were either an entrepreneur or founder of a company when asked on their job titles. Figure 5 below present's data on participants' vocational demographics. Employed means that a participant works for a company; an entrepreneur, means that the participant owned and operated own company, whereas employed / entrepreneur means that they work and run a business on the side. The majority of the participants were employees as indicated.

Figure 5: Participant categories by employee, entrepreneur or both

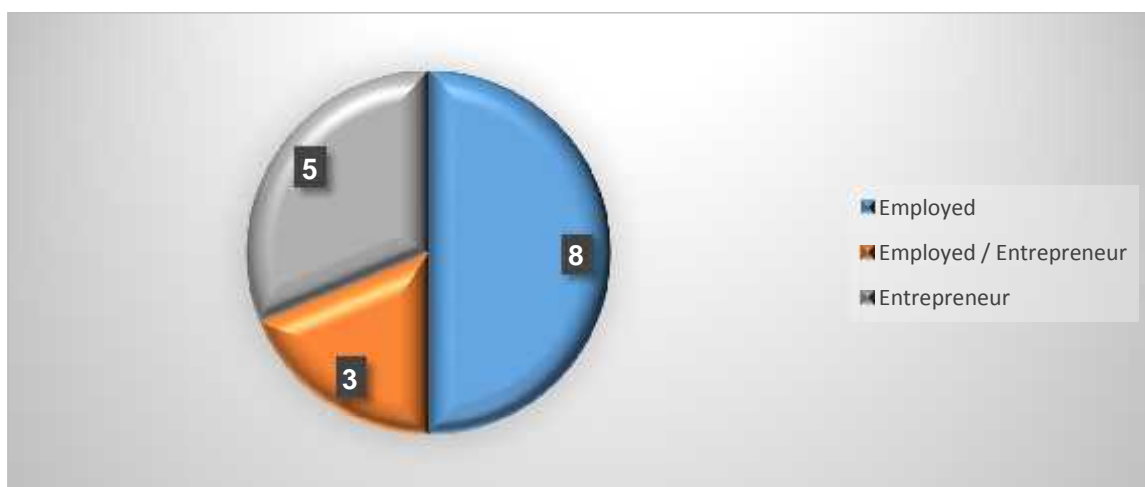


Figure 6 below shows the category of industries in which participants. These are Digital Advertising Agency, Financial Services, Healthcare, Innovation Consulting, Management Consulting, Technology, Telecoms and Vehicles tracking. The purpose of this chart is to provide perspective in terms of the context from which the participants responded to questions from an industry exposure perspective. This data, as highlighted in chapter 4, was obtained when performing research on participants given the use of the purposive sampling method to select participants for the study.

Figure 6: industry sector by participant



As can be observed from the chart, the participants work across various industries with no particular industry dominating. The remainder of this chapter 5 presents the results as per the data collected in the interviews.

5.3 Category B: Level of Innovation in South African organisations

This section was mainly used to ask general questions related to innovation specifically and also to start getting the participants in the mind set of thinking about innovation.

5.3.1 Organisations level for pursuing innovation

The participants were asked, based on their own experience, at what level of the organisation do South African companies pursue innovation activities. The purpose of this question was for the researcher to obtain insight on the strategic importance of innovation in South African companies based on the level from which it is being driven. The participants were given four options in terms of possible response:

1. Pursued through a central innovation office which is solely focused on innovation.
2. Pursued by each department independently
3. Pursued at business unit level and
4. Pursued by individuals in their day to day jobs.

The majority of participants (7/16) believed that most South African companies pursue innovation through a central innovation office. Five believed it was being pursued at all levels of the organisation with two suggesting that it was being pursued at department and business unit level. The remaining 2 participants believed that it was being pursued at three levels: the central innovation office, department level and business unit level.

None of the participants thought that innovation was being pursued at an individual job level. Participant 6 stated that individuals that innovate end up leaving the company to go and start their own: *"And then of course you have a lot of innovation comes out from say people who are working for companies, see a gap, the company isn't going to do that innovation or something and they actually leave and go and form their own business to innovate. And then I guess, probably at a slightly lower level with less capital and things like that, you have got people who just need to find a way to find work and that and they are innovative in how they create work for themselves."*

Participant 7 was of the view that companies may be missing out on opportunities by not empowering individuals in their day to day jobs to innovate: *"...but I think the day to day employees, given the level or the lack of level of accountability and empowerment that they have, probably don't originate a number of innovations, which is a little bit sad because I think if you were to focus on that that's where you get more service level interactions. Because the day to day employees that are servicing customers walking into different networks or points of presence or contact points are probably exposed to the types of innovations around service that you earlier spoke about."*

Six of the participants agreed that for innovation to be successful within an organisation it had to be lead from the top (i.e. senior level). Participants who identified this as an important criteria were all Senior Managers with eight or more years work experience. Four of the six were employed whilst one was an entrepreneur. The sixth was both an employee and an

entrepreneur. Of the six participants four were Innovation experts whilst two were current providers of crowdsourcing services. Table 6 below provides a summary of the common demographics between these respondents.

Table 6: Common demographics of participants that agreed on senior level criteria of success in innovation within an organisation

CATEGORY B5.5: Success = Senior Sponsorship	Years of work experience	Management Level	Employee / Entrepreneur	Innovation Expert or Crowdsourcing Service Provider
Yes	8-11	Senior Management	Employee	Innovation Expert
Yes	8-11	Senior Management	Employee	Current crowdsourcing service providers and Innovation experts
Yes	8-11	Senior Management	Employee / Entrepreneur	Innovation Expert
Yes	20-23	Senior Management	Entrepreneur	Current crowdsourcing service providers and Innovation experts
Yes	23-26	Senior Management	Employee	Innovation Expert
Yes	8-11	Senior Management	Employee	Innovation Expert

Source: Researchers analysis of the data

“I think it’s important that innovation doesn’t exist outside of a strategy. So, you know, if your company is championing innovation as its sort of method to be staying relevant in the future, then it needs to set a décor of strategy. I don’t think it can exist as an island somewhere in the organisation with its own team and own measurements.” (Participant 3)

“I think in the past we’ve tried to, I suppose initiate innovation programmes within our business. So the problem we’ve had is that if they are not grown from the top of the organisation, they peter out. If you try and do it half-heartedly, it doesn’t survive. Innovation, I think takes lots of work. It needs disciples, people that are passionate about that and an organisation needs to give it time, so it’s got to be grown from the top as part of the CEO’s language. If you want part time it, it’s never going to happen.” (Participant 4)

“I am not saying there is not a lot of other success stories, but the success story always comes from the CEO office. I have seen many failures in South Africa where innovation departments were created but they were created at far too low level. It has to sit in strategy, it is too complex to not have the CEO behind it.” (Participant 9)

“It tends to run from a C level perspective and if you don’t have C level sponsorship your innovation programs tend to fail. It tends to be run programmatically as well, so if you are going to pursue innovation you have got to pursue it as a program with inside your business.

If you don't pursue it as a program, what you find it doesn't get the necessary support sponsorship and hence is often not successful if you don't do it at that level." (Participant 10)

"I think in examples where I have seen innovation be successful, it is driven from the top. So innovation isn't a bottom up approach, all right, because simply by the nature of bureaucracy ideas don't filter up, ideas filter down. So it is important that the leadership of that business, whether it is in financial services where there is the technology, or whether it is, the leader of the business needs to be innovative and needs to drive that culture within the organisation. It has to be driven by an organisation and usually that comes with an executive mandate" (Participant 15)

Five of the participants identified the culture within the organisation as being an important criteria for the success of innovation. Table 7 below is a summary of the common demographics of these participants. The majority of the 5 participants are at senior level management, have between eight to 11 years of work experience and are entrepreneurs.

Table 7: Common demographics of participants that agree that culture is an important success criteria

CATEGORY B5.5: Success = Culture of Innovation	Years of work experience	Management Level	Employee / Entrepreneur	Innovation Expert or Crowdsourcing Service Provider
Yes	8-11	Senior	Employee	Innovation Expert
Yes	14-17	Senior	Entrepreneur	Current crowdsourcing service providers and Innovation experts
Yes	20-23	Senior	Entrepreneur	Current crowdsourcing service providers and Innovation experts
Yes	8-11	Middle	Entrepreneur	Innovation Expert
Yes	8-12	Senior	Employee	Innovation Expert

Source: Researchers analysis of the data

"So what we found when we rethink and I suppose the things that were wrong in the past is that if you want to innovate, you've got to try instil it in the culture and you've got to be able to see it in the KPI's and in the language of the organisation." (Participant 4)

"You will have some companies, and this is to me the much more successful model, who have created a culture within the organisation where innovation is very much through the fabric of the organisation. So it is normal to innovate right throughout the company as opposed to it being a separate department." (Participant 6)

"So it was Michael Jordaan that drove it, he created a drive within an existing department, it was brand management and he had a dedicated champion that then dispersed throughout the

entire organisation of 33 000 people where champions played the role. So he didn't create clumsy structures that he had to motivate, you were doing your job but 20 percent of your time had to go to innovation and that created a critical mass that was driven from the top. So it wasn't wasteful expenditure, it actually created a culture that took more than 10 years to create. It isn't a magical one, it takes consistency and long term vision to actually make it happen. (Participant 9)

"From what I have seen I think that it is actually better to try and get it across the entire organisation but in South Africa I don't think that is happening yet. It seems like it is always a very separate thing. So people will set up an entire different business unit for it." (Participant 12)

"...the leader of the business needs to be innovative and needs to drive that culture within the organisation." (Participant 15)

5.3.2 Types of innovation being pursued by South African companies

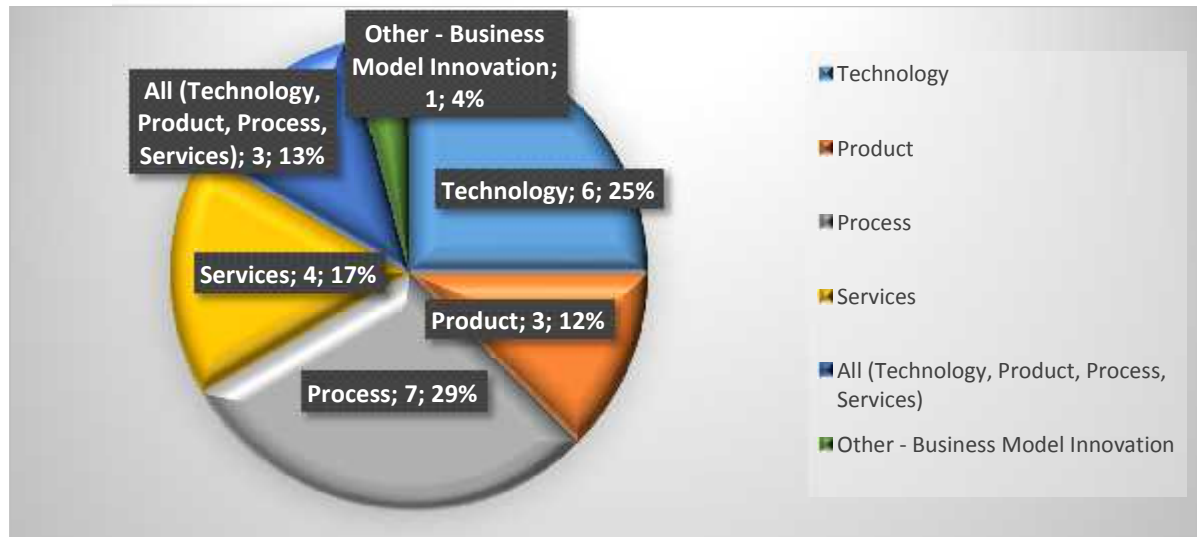
The participants were asked on what they thought were the most prevalent types of innovation that were being pursued in companies. The purpose of this question was to get participants' view on what they considered to be innovation and also for the researcher to obtain insight on whether based on the types of innovation highlighted, crowdsourcing could be used as a tool to externally source the attainment of these innovations. Figure 7 is a depiction of participants' responses.

The majority of participants selected the option of process and technology. Some alluded that in South Africa, there was mainly incremental innovation which is really just improving on what already exists rather than disruptive innovation which is creating something totally new.

"I think there is a lot of technology innovation and most probably my point of reference is a connecting world. So all of a sudden there's a lot more transparency and insight into people and how they're using things or lots more customer information available. And that, I suppose, that's allowing companies to rethink some of their product models. A classic example is FNB and an iPad and an App. So that's sort of a technology. So FNB didn't have to invent the technology but they found a clever way of using it. It's changed their business model considerably as with, I suppose, as with Discovery man, where they are saying, listen, we can use technology to help influence consumers, to make them better risk and we better manage their health." (Participant 4)

“One is incremental innovation, so that is more process oriented stuff. So just literally working with companies and saying, no, you currently do your business process this way, what if we re-engineered the process, but it is still the same functional thing? So you are looking for an innovative improvement, but it ends up with functionally delivering the same thing.” (Participant 5)

Figure 7: Prevalent types of innovation being pursued by South African companies



5.4 Category C: innovation methods used by South African organisations

This section of the interview schedule was mainly structured to answer the four research questions of this study. The majority of questions in this section were focused specifically on various factors related to either crowdsourcing directly or to crowdsourcing as a type of open innovation.

5.4.1 Do South African organisations pursue innovation through internal or external collaboration or partnering or both?

The purpose of this question was to ascertain the perception of the level of openness of South African companies to using external sources as a source of internal innovation from participants. Nine of the sixteen participants indicated that they thought that most South African companies pursued innovation internally. Three of the sixteen indicated that South African organisations pursued innovation through external networks whilst four said South African companies used a combination of both internal and external networks.

Three themes emerged in this section. The first related to South African companies generally having trust and control issues which have been noted as one of the main reasons for innovation mostly being closed and internally driven.

“I think it’s because they don’t want to share what they have because they might lose their competitive advantage.” (Participant 2)

“I think almost exclusively internal innovation, so closed, and I think the big reason for that is I think companies generally look to try and solve problems that they are more sensitised to and there’s a reluctance firstly to open it up to innovation out there because of confidentiality issues, control issues, you know,...” (Participant 7)

“They don’t want to share. Obviously I always think of the big banks, I mean when they have got something they want to make sure that they are first to market, they don’t want to share it with any of the other banks and lose that advantage. And I don’t know, I think that it is something that if anyone makes something it can always be duplicated. It is more about how you do it than what you actually have.” (Participant 12)

The second theme identified relates to willingness to be open to external parties as a source of innovation. Based on participant responses, where South African companies do collaborate externally, they prefer to do so with trusted partners as opposed to opening themselves up to external unknown parties which may be the case in some instances of crowdsourcing. These participants believed that South African companies will run their own internal innovation initiatives then also partner with external sources in the form of trusted partners. Participant 10 stated that the challenge is getting companies to go beyond the trusted partners.

“I think probably because it is still an emerging market, a developing economy, there is a much greater emphasis on companies that want the likes of us to come in as a business partner in that process and they would lean on us to provide the ideation and the process and the management and execution of those ideas.” (Participant 5)

“I think they start off innovation in a closed loop, as internal, and then you will find they start to rely on their partners in a partner ecosystem based approach to drive more of an external based innovation approach, so then using the partners to actually help them drive whatever innovation they are looking to. I think where there is a bit of a challenge is the lack of driving outside of the existing partner base, so using means beyond the known. A lot of it is still done within who I know, what I know, how much I know versus the breaking the barriers beyond that.” (Participant 10)

The third theme identified relates to the issue of ownership. This was specifically mentioned in relation to Intellectual Property rights and that in using external sources as a source of internal innovation, what are the legal implications from an IP perspective.

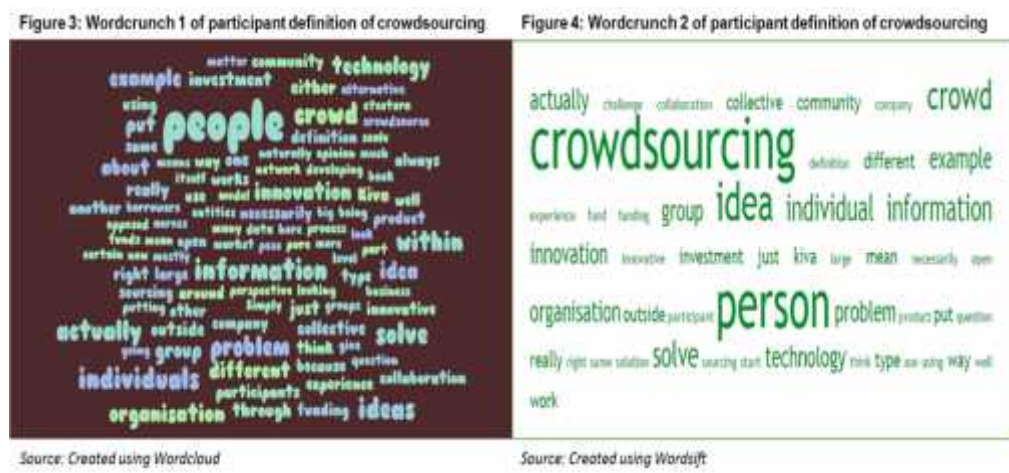
“I think again we are talking generics here, I think overall the trend in South Africa is that companies are unsure on how to handle intellectual property, so they are not capacitated enough to handle intellectual property, so they shy away from open innovation. Not because they don’t believe in it see the value of it, because they don’t have the competency to drive it.”
(Participant 9)

The detailed responses by the participants have been included in Appendix D.

5.4.2 Please provide your understanding/definition of crowdsourcing

The participants were asked for their understanding or definition of crowdsourcing. The purpose of this question was to provide the researcher insight into whether participants had generally similar understandings of crowdsourcing as presented in academic literature by authors such as, Howe (2006), Bergvall-Kåreborn & Howcroft (2013) Almirall et al. (2014) and Agrawal et al. (2015). Participants’ detailed responses have been included in Appendix E. Two internet based word crunching tools were used to compare the most common words used in the definitions provided. Figure 8 below shows the results of the word crunch. Based on the results of this some of the common words included, Crowd, Innovation, Idea, Solve, Problem, People, Person, Collective, Group, Outside, Organisation, Community, Technology which suggests that participants had a reasonable understanding of what crowdsourcing is.

Figure 8: Word crunch of participant definition of crowdsourcing



5.4.3 Do South African organisations use crowdsourcing?

Participants were asked a direct question on whether South African companies use crowdsourcing. Half of the participants (8/16) indicated that South African companies use crowdsourcing whilst the other half indicated that they did not use it. Those who indicated that companies did not use crowdsourcing were probed further to illicit the reasons. The reasons given included the issue of ownership from an intellectual property perspective, trust and control. One participant mentioned credibility in relation to the information gained from crowdsourcing.

“Most companies are reluctant to use it because they don’t believe it’s credible, which I feel is wrong, they should be able to use it and then they should criticise it, whether it is credible or not instead of just assuming it’s not credible, just because it’s not backed up by any academic research.” (Participant 2)

“...the organisations in South Africa are structured to be these huge institutions and structured mostly in very hierarchal ways with a lot of egos sitting in between those structures. And those structures don’t support external crowdsourcing, open innovation, etc. so I believe that a large part of what needs to happen is that if you are saying the strategy is innovation then you need to structure the organisation to be porous and allow for innovation to happen. I mean you’ve got your company set up like that and people thinking like that you open to having other people contributing.” (Participant 3)

“As soon as you say I’m going to go share some stuff with other people, the governance guys lock all the doors, bolt down latches and bring out agreements that are fifty pages long.” (Participant 4)

Participants who indicated that South African companies use crowdsourcing seemed to have a common theme that its use was not prevalent, with one participant stating that he hadn’t seen it being done successfully.

“So I have seen some that do, I haven’t seen it done too successfully frankly. I know some of the guys we work with have specific crowdsourcing programs and I think the truth of it is that one’s that I have seen have been frankly so unsuccessful that the guys have started switching them off.” (Participant 6)

“I think, without calling it crowdsourcing, any brand survey asking opinions of customers is an expression of crowdsourcing. So with a different tag, yes, definitely a lot. But using the word

crowdsourcing and open innovation, not a lot. So it is definitely words that need a lot more adoption.” (Participant 9)

A comparison was done between the participant’s responses in relation to the use of internal (closed innovation) versus external collaboration (open innovation) by South African companies as an external source of the innovation in section 5.4.1, and the participants responses in this section, 5.4.3, on whether South African companies use crowdsourcing. Table 8 below provides a summary of the difference and similarities in responses.

Five of the participants that agreed that South African companies mostly used internal collaboration also agreed that South African companies don’t use crowdsourcing. One respondent that had responded that South African companies mostly use external collaboration also responded yes to the use of crowdsourcing by South African companies. The responses that were different were those from respondents who said that South African companies mostly use internal innovation yet agreed that South African companies use crowdsourcing. This was an interesting insight given that crowdsourcing is considered a type of open innovation and thus would be used by companies that also use external collaboration as a source of innovation rather than just closed innovation.

Table 8: Similarities and differences between responses on the use of internal and external collaboration versus the use of crowdsourcing by South African companies

Participants that said internal collaboration and no to crowdsourcing	Participants that said yes to External collaboration and yes to the use of Crowdsourcing	Participants that said external collaboration but no crowdsourcing	Participants that said internal collaboration and yes to the use of crowdsourcing	Participant that said both internal and external collaboration and yes to crowdsourcing	Participant that said both internal and external collaboration and no to crowdsourcing
5	1	2	4	3	1

Source: Researchers analysis

5.4.4 Prevalence of the use of Crowdsourcing by industry

In this section the participants were asked whether they thought that the use of crowdsourcing was more prevalent in certain industries than others.

The majority of participants (13/16) said crowdsourcing could be used in any industry even though they believed it was more prevalent in the financial services and technology sectors. Some were specific in terms of industries that they thought could benefit from the use of

crowdsourcing while others seemed to know only their own sectors which they gave as areas of crowdsourcing prevalence.

“I would say technology companies are more likely to use crowdsourcing purely due to the fact that the amount of data they have access to, which they can analyse and get insights from. Whereas traditional companies don’t really have that opportunity.” (Participant 1)

“Okay, so I think from a crowdsourcing perspective, where you just get opinions and people vote on something, it would be more used in brand and customer experience surveys.” (Participant 9)

“But when you do product development your crowdsourcing will have to have an intellectual property component to it, because the crowd cannot walk away with a BMW, for instance. Somebody walks away with that car, it is not like Linux where everybody walks away with code. And that doesn’t mean you can’t do it with open innovation because there is a lot of companies like 9sigma, Yeta.com, InnoCentive, all of those companies do intellectual property based open innovation projects and I think that is the area where South Africa probably lags the most. I think we are quite good with open innovation hackathons, code fests, but we struggle with the things that we want to own and also mobilising crowds on that.” (Participant 9)

“I think it can be used across certain sectors but in terms of prevalence it is certainly around the technology space. Predominantly around the technology space. I think it could be used, given our current circumstance around education. I firmly believe that the crowdsourcing model could certainly work there where you have people that emanate from the communities from which the students come from, actually making contributions collectively. And in fact creating self-sustaining ecosystems.” (Participant 13)

The industries that were identified as potential users of crowdsourcing by the participants included: Financial Services, Mining, Engineering, Education, Health, Technology / IT, Marketing, Energy and Manufacturing. One of the participants stated that he had noticed its increasing use in financial services with two other participants stating that banks could potentially benefit from its use given the fast follower approach of innovation by the banks.

“Alpha code Fintech, the moment you are taking that solution you can bet the other banks will follow suit within a couple of months. So the window of opportunity is very short.” (Participant 11)

One of the participants stated that it could be used by mining companies to improve their safety portfolios whilst five of the participants highlighted its use in the technology industry.

“I would say technology companies are more likely to use crowdsourcing purely due to the fact that the amount of data they have access to, which they can analyse and get insights from. Whereas traditional companies don’t really have that opportunity.” (Participant 1)

“I think IT system integrators can learn a lot from crowdsourcing. What is the change in the dynamic of the products that are happening in the market, what’s new and coming and how would they be approached and accepted from a product perspective?” (Participant 10)

The overall consensus given that a significant number of the participants (13/16) agreed, was that crowdsourcing is suited for use in any industry.

5.4.5 Key factors in screening the participants (solution providers) of crowdsourcing initiatives

The participants in this section were asked whether they thought that there were key factors for consideration in the screening of crowdsourcing participants. Criteria such as experience, qualifications, expertise and interest was provided as examples of some of the criteria for consideration. Table 9 below provides a summary of the participant’s responses in relation to whether participants should be screened and depending on whether it was a positive (yes) or negative (no) response they were probed further.

Table 9: Screening of crowdsourcing (solution providers) participants - summary of responses

Participant	No	Yes	Depends on purpose
1	X		
2	X		
3		X	
4		X	
5		X	
6		X	
7			X
8	X		
9			X
10			X
11		X	
12	X		
13			X
14			X
15			X
16			X

Four participants did not believe in the that crowd participants should screened by qualification, experience or expertise as the screening would limit the innovation process from the perspective of gaining diverse ideas through the crowdsourcing process.

“I believe any ideas is an idea worth evaluating because if we screen people we preventing ourselves from thinking out of the box.” (Participant 1)

“It should definitely be open. For me you don’t know where the best ideas are going to come from. Like you obviously want people who are thinking differently to you. But you start screening for people who have the same qualifications, the same experience and all of that you are going to get the same ideas. So you want to open it up to as many people as possible and then, from there, when you have all the ideas, then you screen them.” (Participant 12)

Five participants (31%) believed in the screening process. One of the participants provided insights on a screening process which focuses on innovation capability to obtain a combination of the required capability providing diversity without limiting the innovation process.

“So how we’ve leveraged the phenomenon is that we have gone into the market and formed partnerships with platforms that provide services. Consulting insights and subject matter experts and technology design and development and open innovation.” (Participant 5)

“So we lean on our partners to provide the methodology by which those participants are screened but at a higher level what we look to do in the open innovation space is you are really looking to find four key groups. The first is your kind of radical innovator, your sort of your ideation people. Second is what we call incremental innovators. So people that can take an idea and say, okay, but if we tweak it like this it would be even better. The third is how we would think of our organisation, which is really around people who can visualise and look for places where you can plug different things together and create something new. So real kind of innovators in that space. So not so much ideators but saying, well if we took this company and this company and we added that service, then we could come up with something that was completely brand new. And the fourth is the influencers or the shapers, the people who are going to participate and call it but are not necessarily going to provide ideas on their own, but they are helping to shape and mould what is being provided. And so what we work with our partners to do is then, using their selection criteria, they have questionnaires that help to screen and select the individuals that we are looking to build the crowd with a specific percentage of each one of those groups. And then we work with them then to create participation in that community and then to drive the ideas from initial inception all the way

through to something that is actionable. So you are shaping it the whole way until you get to an up that you say you are going to work with that idea” (Participant 5).

Seven participants (44%), were of the view that screening of participants was dependent on the purpose for which the company is using crowdsourcing. Examples given were that for solving problems requiring technical, legal or compliance requirements, such as engineering or financial services then you would need the type of crowd that has an understanding of these requirements.

“I think it depends on the problem. So if the problem is a highly technical expert driven problem it is completely idiotic to bring in a lot of people who have never dealt with the problem. But, if you design it that it becomes so exclusive that you get internal thinking instead of external thinking, then you are also not getting the benefit from the crowd. So I think the design is extremely important and at least go across industries. So if you can, we are talking about a highly technical problem now, if you can frame the problem in such a way that it becomes industry agnostic, if I can give you an example. Proctor & Gamble did a challenge where they were trying to find a replacement for an iron on a shirt. So if you can put the shirt in a washing powder that when, after it has been washed, it is also ironed. That would be a fantastic solution for them. So instead of going to the crowd and saying, we are looking for a replacement for an iron, they looked at the science of what will make a shirt be ironed. And the science behind it is the fibres of the shirt should relax. So they went and said, we are looking for substances, chemicals, solutions, mechanical solutions, whatever, that actually relaxes fibres in materials. Now, you are not going to look at the typical crowd that actually does ironing traditionally and a Stanford Professor got that contract and he was in chips manufacturing and he used a spray on his board to relax the fibres when he did his research. And it was not a spray known to that industry. So that is really the benefit of the crowd in many circumstances, that unexpected solutions from cross-industry collaboration. And if you design your crowd you can design that in. You don’t have to be so inclusive that you have to deal with millions of solutions and then ultimately you stuff the system so much that you can’t get to a proper answer. But when you design, design cleverly.” (Participant 9)

“It depends on the concept. So if I have already designed something and I need input to optimise it I would then look for skilled professionals or people within the field, or if I am pivoting to create something that supports like a complementary service of some sort, I would find people in those service areas. So I will always look for the skill. But if it is something where we are trying to literally come up with green field’s innovation, it would be pretty much around a brainstorming session, depending on what the direction you are going for is. I would find

people that would have a linked interest in that direction. In terms of IP protection, that is where you want to screen people but I am guessing it will only be on a competitive basis really, more than anything.” (Participant 16)

“I think it once again depends on the topic of innovation you are crowdsourcing. So that topic would, depending on that topic, could apply multiple different things. If it is a heavy, let’s take an engineering type topic, if it is heavy engineering there is no ways I am going to be listening to or putting that out into a market of 13 year olds, but I may want to get it into the universities where there is great R&D happening in engineering, that is changing. So my demographic may play a part. The areas that you go into in the market, so in that example I would probably want to go out into the engineering fraternity at the universities. So I don’t think it is a single thing, I think it depends on the idea and how you coach that idea forward and how you structure your thought process in what you want to do when you go out to crowdsourcing.” (Participant 10)

The detailed responses for each category of “No”, “Yes” and “Depends” are provided in Appendix G.

5.4.6 Suitability of crowdsourcing to certain types of business models

In this section the participants were asked whether they thought that the use of crowdsourcing was only suited to certain types of business models. A common example that was used by the researcher in providing an understanding of a business model was the use of crowdsourcing in a start-up company with less rules and more flexibility versus in a large long established corporate with rules, hierarchies and bureaucracy. Thirteen of the sixteen participants (81%) said crowdsourcing was suitable for any type of business model. The emerging themes from these participants was that although start-up businesses have flexibility and agility, they also have resource constraints. The second theme highlighted was that larger corporates faced the challenges of internal institutional barriers related to legacy.

“I think it can be used in any type of company. I don’t think it’s restricted to any type of company per say. Yes it depends on the maturity, for crowdsourcing I think it’s a matter of maturity of the organisation culture, I think that’s the major thing that makes crowdsourcing work or not. You see some cultures within some organisations prevent people from having their voices heard, you can have some traditional organisations with a lot of bureaucracy and red-tape, but however people are able to expand on their views and all of that to show, it really depends on the maturity of the organisation and the culture is it an open organisation where people can

easily exchange ideas, which more likely than not, traditional bureaucratic organisations don't have that type of culture.” (Participant 1)

“I think it's suitable to all organisations but I do think that it is dependent. The success of it I think is dependent on how an organisation is structured.” (Participant 3)

“No, I think everybody can benefit from crowdsourcing. I don't think it's that its only certain structures of business will benefit. I think the reality is that your smaller start-ups adopt it easier because they have less at stake than what big businesses have. So you know if things go wrong, a big corporate has got more to lose than what a small start-up does. I guess that's just the matter of how it works.” (Participant 4)

“So when we work with start-ups, supporting them with crowd services, the typical constraint is around resourcing. So yes, they are more flexible and they are more agile, but they don't have the money to throw at the problem. And success factors become that much more critical for them. So you need to really be specific about what are we trying to get out of this exercise and how do you define success and how you are actually going to kind of move the needle for them.” (Participant 5)

The participant then highlighted the other side of the challenge for a large corporate as: *“In a corporate you have got almost the inverse problem. So you have got lots of resources but typically lots of politics in play as well. It is a lot around change management kind of political management of the organisation as much as anything. So the ability to get buy in and support becomes really, really critical. And then the, perversely, in a large organisation, so if we go to a Barclays and we say, well, we want to do some open innovation with you guys. Great, what idea or output are you going to come up with that is going to be significant enough to be of value to a Barclays, right? So they are in the top five financial institutions globally, so what are we looking to get out of this process? How do we demonstrate that value has been created? I think that's the biggest challenge of a large corporate. So it is applicable across the board but you have got to be very careful on how you approach and apply it, depending on the audience.” (Participant 5)*

“In different shapes and forms it can be used for any business. I haven't thought through if there is an exception to this rule, but each business cycle life stage, so whether you are a start-up, growing, established company, will pose external or internal challenges for the implementation of that crowdsourcing. In the use of the crowdsourcing model in a start-up he stated: “In a start-up you may not have the resources to listen to everybody and create, you have to listen to what is needed in the market and see if you can find a solution, but you will

be limited in your ability to implement those solutions. If that is resource intensive.” In relation to its use in a large corporate he stated: “In a large corporate you might have institutional barriers to change in that option.” (Participant 11)

“I think that ties back to what I was saying earlier. I mean obviously for a start-up and all that it is kind of a given because a lot of these guys there is only a couple of them in the business, they are talking to each other all the time and they are talking to their friends and family. What I like about that is that it is very collaborative and it gets people to start thinking about ideas outside of their own heads. But then when you think about the bigger organisations, like I said what they are trying to start to do is to create these innovation hubs and ja, I think it does work for those sorts of places. So ja, definitely it does work across all of the different types of business models, it is just it works in different ways I would say.” (Participant 12)

“Yes, so in a start-up crowdsourcing can be risky if you are not careful in how you implement it, right? But it can be quickly implemented because start-ups are agile, they have got a lot of agility and flexibility. However, in corporates you can use crowdsourcing, assuming that the heritage structure or the silo’s that you have will allow for the innovation to flow, because that’s always the issue is, the team that came up with the innovation always needs other teams in. We get stuck in between. So if you can get over that hurdle then it can work for moderate to small companies. In fact even operations, operations business work too. So warehouses, they do currently run things like continuous improvement, but it is a smaller scale of innovation and you do see interesting things come out of those type of sessions. I don’t think it has a limitation it is just how you go about sourcing the information really.” (Participant 16)

Three of the sixteen participants (19%) believed that crowdsourcing could not be used for all types of business models.

“I think there are other challenges for a small organisation, like why – I mean if you are an unknown organisation and you put something out into the crowd, why would anybody respond? Whereas if you look, a lot of the reason why people respond on a lot of these crowdsourcing things are big prizes or they see that it is Vodacom or it is somebody, you know. So I don’t know that smaller organisations would be more successful.” The perspective that the participant highlighted on the larger corporates was: “And I think a big organisation, if it gets it right, can get value from it but I think there is more, there is a lot of internal levers within a big organisation that actually need to be lined up correctly for them to get value from crowdsourcing. And then they need to get, let’s call it “lucky”, that the right thing comes through. Obviously that is not predictable.” (Participant 6)

“I totally believe that, but that is my human opinion. I think it is such a massive task to – I mean it depends on the size of the company as well hey. IDC also went on a journey and they were 800 people, so to change 800 people’s culture is much easier than 33 000 people. So the time frame and the consistency depend on the size of the problem and you must also take into account then that if you think of FNB they had a crowd, 33 000 people, even if they are your own workers, is a crowd, they all have your account, they can all play into that. So it is not that you are not open innovation, you know. So opening up within an organisation is as complex as opening up outside. Because you actually want to get rid of the silos in the organisation, you want to know what you know inside your organisation. A massive organisation, internationally, called Schlamburgeiz, they are in the petrochemicals industry I think, they went on an open innovation drive not outside but inside. So they created all the platforms everything, for inside the organisation.” (Participant 9)

The results in terms of participant split in section 5.7.4, which was related to the suitability of crowdsourcing to all industries, or only specific industries are similar 13 participants said crowdsourcing could be used in any industry and, similarly in this section, 13 said crowdsourcing can be used for any type of business model. Furthermore the same number of participants, 3 out of 16, said crowdsourcing can be used for specific industries and similarly for specific business models. Two of the three participants that responded that crowdsourcing was suitable only to specific industries and specific business models were the same participants.

5.4.7 The uses of crowdsourcing

Some participants were asked how they would use crowdsourcing in their own companies. This was a general question that the researcher started asking some of the participants interviewed later out of interest. Below are some of the uses identified by these participants:

“I have used it right from the beginning. My company’s name was crowd sourced. So even before it was established, it was crowd sourced” (Participant 8)

“I would use it to look at how do you change the product portfolio to better address the market need. So use crowdsourcing to look for different innovative ways to drive product outcome from a system integration perspective.” (Participant 10)

“We do use crowdsourcing in our company and, like I said, we are known as the innovation hub so people come to us as soon as they have a crazy idea, we are known as kind of the mad scientists, so people will come to us whenever they have something that they want to

hear if it's possible and we can research that and find out where to go from there.” (Participant 12)

“Certainly, well actually we are transitioning as a business, we were initially a pure web development based company. We are now transitioning to becoming a software and a service business. And in that we ultimately then producing product. So we shifted from really being a services led business towards becoming a product led one. But in essence I would say actually one of the products that we are or actually have launched, it would have been great if we had the opportunity to actually put it out to people and say, look, this is what we are doing, this is the reason for why we are doing this and this is essentially what it serves to do or what impact. So it is an enterprise orientated software application. And look, you know, I mean and also sourcing certain level of investment. It certainly would have been good to share the load, to essentially see what is required in order to get us to the end destination.” (Participant 13)

“So where I see crowdsourcing giving us value is, and this is an area of passion for me, is understanding what customers are as a strong part of customer strategy, so the research piece comes into it where traditionally would have gone say to a Milwid Brown, or would have gone to a research house and said, I want to find out about digital usage and such in South Africa and then I will get people into a room just like this, we'll have some drinks and we will talk about it and will sit behind the screen and we will watch this thing. Crowdsourcing to me allows me to put information online SAP that says guys, we want to get the following information, give us your thoughts. As simple as that. Whether it is on an on-line survey, or whether we get actual human beings in a room and have a nice discussion, I think that is where the value is around understanding who exactly our customers are and then how do we fine-tune our customers strategy to appeal directly to those individuals” (Participant 15)

5.4.8 Benefits of crowdsourcing

In this section participants were asked how they thought South African companies could benefit from crowdsourcing. The purpose of this question was to provide insight about the potential value of crowdsourcing. Participants identified twenty eight potential benefits. The researcher then grouped these into families. There were five families of benefits identified: Speed, Resourcing, Customer, Innovation and Financial. Resourcing, customer and innovation were the most frequently mentioned. Table 10 below is a summary of the family of benefits as coded by the researcher using the participant responses.

Table 10: Summary of responses of benefits of crowdsourcing by family categories

	SPEED	RESOURCING	CUSTOMER	INNOVATION	FINANCIAL
Total number of participants who mentioned benefits in this category	7	10	10	12	5

Source: Researchers analysis of the data

“The cost sometimes, as against another professional services solution. Sometimes it is cheaper, not always, but it is almost certainly the solutions are more robust as a result of having engaged with a larger group. Typically much quicker as a turnaround so much more agile. Really speed and quality are the primary ones, cost sometimes and that idea that you are, by accessing a larger group of people, you are looking to get a more robust, a more innovative solution. The biggest advantage for any company looking to engage crowd is really the flexible resourcing nature of it. Our view is that this is absolutely the future of work. So not everything will be structured this way but the nature of our business will look like a crowdsourcing business in the next 10 years, for sure, guaranteed. Not only does talent want to engage with work in a different way, so they don’t necessarily want a 40-hour work week, there is your task, there is your laptop, go to it, they want to engage more flexibly and with more challenging engagements. But companies are looking for a more flexibly resourced solution mechanism. The same applies for our clients when we talk to them about how you leverage the concept of crowdsourcing. It is that you now have access to a consulting firm basically, a virtual consulting firm, but totally on demand.” (Participant 5)

“I think firstly flexibility and the ability to move very quickly. The second solution would be around how quickly some of the solutions can be developed particularly if you are looking at a prototyping and a piloting solution. If you could use a crowdsourcing company to give you a first very quick and dirty solution or view of the solution that then helps you understand how you then expanded and how to take it further, I think that would be the next one. The third thing or third advantage would be something along the lines of you are tapping into a very different culture and you are tapping into a mind-set that is very different. So, again, different companies or most companies get to a stage where their culture imposes upon them what they need to do and how they do it, to get a group of almost radical thinkers to approach problem solving in a different way, I think is a big advantage.” (Participant 7)

“I think you can create a huge amount of bang for your buck if you do not have to employ all the cleverest people yourself. If you then develop the capacity to deal with clever people, properly and fairly, and pay for their time and pay for their IP and incorporate it into your bigger research and development drive, you can probably save years on your idea to market cycle and you can accelerate. You can save a huge amount of overheads if you only pay for the

time that you need the invention to be developed for, instead of employing people that might work or might not would out for you. So there is a lot of benefits. Capacity, speed.” (Participant 9).

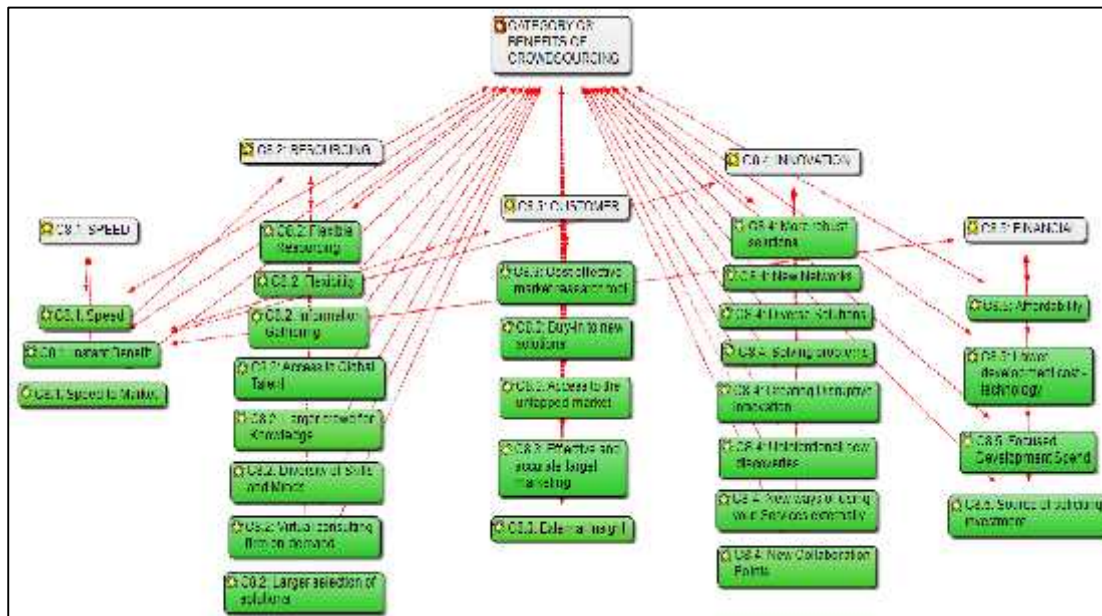
“I think the speed of innovation is one of the benefits that, when you go out into the crowdsource ether, if I can use that term, I think you can get a much faster response time, is one benefit. The second thing is I think it expands the horizon of the innovative thought process beyond the known. So it is beyond what we know inside the business to what is known out there. I think you open yourself up to an entrepreneurial thought process that you may not have in your own business and that is quite powerful but you also open yourself up to market demand on how the consumer is thinking, even if you don't think you have a consumer led business. Every business in some form impacts the ecosystem in the market that they operate and they touch a consumer in some way. Financial modelling, I mean you can expose the company to different sets of financial modelling that you don't currently think through at the moment. Different delivery models. You can change the way you deliver, I mean there are so many benefits. I think companies need to be thinking more of it. Companies need to think more about the value of crowdsourcing for innovation and the value of innovation versus the risks associated with it. They need to mitigate the risks as best as possible, but they need to adopt an open mind-set to use crowdsourcing and innovation to drive a different demand in the market.” (Participant 10)

“I think I mentioned it earlier, the biggest thing for me is the untapped market. And again, if you are thinking of it in terms of the people that we are talking to, it is normally the guys who are sitting at these big corporate jobs and all that. That is a very small percentage of the population. We should rather be trying to go and speak to the rest of the guys who actually nobody normally speaks to at all. And that is a whole untapped market of ideas. Those ideas are the stuff that actually is going to solve the larger population's problems. So those are the people that we should be speaking to.” (Participant 12)

“Getting them out of their cake or your business right. Like now we still have old school industrial age control of business and what crowdsourcing will do it will actually give, depending on the crowd and depending on the company, could give the company itself an insight on what people see of it. Because often companies look at themselves from the inside. So if a bunch of people from like an external company are coming and showing you what you could do, it could open new networks you never thought about with new collaboration points and ways of you using your services towards the external.” (Participant 16)

Figure 9 below is a representation of the coded benefits highlighted by the participants which were then grouped into families of benefits by the researcher.

Figure 9: Benefits of crowdsourcing



Source: Researcher interpretation of participant responses

5.5 Category D: Quality Control

5.5.1 Measuring and controlling quality of Crowdsourced solutions

The purpose of this question was to obtain insight on the quality control mechanisms that could be used to manage the outputs of crowdsourcing to gain value.

Some of the participants highlighted that the management of quality was one of the challenges related to the use of crowdsourcing. Although crowdsourcing, as an external source of innovation, can provide great idea generation through a mass of people, this posed a challenge in managing the quality when dealing with a large number of potential solutions.

“I have had kind of first-hand experience watching people who run a crowdsourcing business and the big challenges that they have with this. I don’t necessarily have a solution, I know it as one of the biggest challenges.” (Participant 14)

The researcher coded the responses into four main categories as per table 20 below. These categories were: Market Feedback, Internal company quality controls, working with experts and defining the quality criteria upfront. There were some overlaps as some participants were

included in more than one category for managing the quality criteria, based on the participant's responses.

Market Feedback: Six responses were coded in this category section.

“Well from, I can only speak from a technology point of view, how we could measure the effectiveness is only through having whatever innovation that comes out of the crowdsourcing initially being tested out there in the field where we can gather the data around the usage of whatever initiative is and adoption and take on and up and whatever feedback we can extract from social media and various other feedback platforms. So I would say the only way to measure the quality is when you actually go ahead with the initiative because with some innovations it may seem ridiculous when you assessing them and looking at them but you may find that out there in the market it takes off. So in my environment definitely, I wouldn't be putting those organisations reputation at risk so obviously you would test it with a subset of your whole market, so you select a few so it's sort of a pilot” (Participant 1)

Apply internal company quality controls: The consensus of the 12 participants who responded to this question was that the responsibility for managing the quality of the crowdsourcing outputs was still the responsibility of the company that uses crowdsourcing as an external source of innovation.

“We have processes within the business that we set up. So for example, if we doing something from a product point of view internally, there are gates that it needs to get through. And in those gates would involve people or areas within the business will not give it the go ahead unless they are satisfied that it delivers. So if it was a piece of technology it's going to need to be tested and signed off by someone I think. That sets the standards. And change control boards and things like that. So if you're doing something understand that I'm going to do this and this is the impact.” (Participant 4)

“...so I don't think there is an easy solution, I think with crowdsourcing you do not avoid the issue of you must still own the process. So the crowd does not own the process, the crowd does not own the outcome. You are busy with developing your own idea to market cycle, so you are building whatever it is, whether it is upping your toothpaste sales, that is you that owns that problem. So when the crowds input is make the hole bigger, then you still, you might have forgotten about it, it is opening an avenue, but then you still need to play around with that. So the process remains your responsibility, and the quality.” (Participant 9)

“But you need to make sure you have built a robust team of open minded thinkers that are applying the quality criteria in the information that comes back. It is a massive thing. It is not

an auto adoption either. So you don't just adopt everything that comes back, you have got to apply a rigorous approach through an internalisation of the information coming back through that quality criteria to make sure that you are driving the right outcomes for your business.”
(Participant 10)

“I would say you want to get as much as possible in the beginning and so there is always going to be a quality issue and from there it is just going to be how you sift through those ideas to see what you think is actually going to work. There is a bit of a problem in this because what you think might be a good idea, it might not be the best idea and obviously that is where the quality problem comes in. For me it is a form of a committee, whenever we get a bunch of ideas we go through, let's say we have 20 ideas like inside the business unit, we will discuss them, we will see which we think are the best ideas. From there we will then go to a higher member in the organisation, speak to them, do simple little business model canvasses around each idea, if it is that type of idea. Rather just speak to as many people as possible to weed out the ones which nobody thinks is a good idea. So it is a process of speaking to a lot of people, basically that is the filtration method for us, ja.” (Participant 12)

Working with experts: Three of the sixteen participant's responses were coded into this category.

“You would need to work with people that know what they do. That's the first thing. So open innovation is expensive very often because it comes with a whole set of services that support that. Now as we build an innovation capability in organisations, that will become less and less important, but I think it's around working with experts that have got the experience.”
(Participant 8)

Define the quality criteria upfront: Six of the sixteen participant's responses were categorised in this section.

“Okay, the most important trick of the trade is the framing of the problem. So the more effort you put in to the thing that you want to be solved by the crowd, and I think this is where people really fold with crowdsourcing, is they think the more open they are, the more interesting concepts they will get, they fail, over and over. The more specific you are about what you are looking for and the more sure you are about what the outcome is that you seek, the more you own the problem and the better you mobilise the crowd.” (Participant 9)

“I think before you even go out into the crowd you have got to define your quality criteria. And don't forget, you are going to get things back from a crowd perspective that challenge the ethos of what you are doing. Okay? So you have got to define your quality criteria on how

you are going to measure what you are looking for, but you cannot make it so stringent that every idea that is outside of the horizon falls off the radar. And the definition of that is going to depend on what you are doing, it is going to vary totally differently, okay? But you need to define that upfront before you go out. Actually, I wouldn't put that quality criteria out into the crowdsource, because it may hinder the information you get back.” (Participant 10)

The detailed responses per category by each participants are attached in Appendix H.

5.6 Category F: Measuring value when using Open Innovation

This section required participants to respond to two questions. The first question was related to what the most common value drivers were for companies pursuing open innovation with the caveat of crowdsourcing as type of open innovation. For this question the participants were given examples of value drivers as being Profit, Competitiveness or Other. The second question, based on what the response to the first question was how they would measure the achievement of the identified value drivers for using crowdsourcing as a source of external innovation.

The purpose of this section was to gain insights on what could potentially be the business value drivers for pursuing crowdsourcing as a type of open innovation to drive innovation within an organisation using external sources.

5.6.1 Common business value drivers for pursuing Open Innovation

Participants were asked what the most common value drivers were for pursuing open innovation by organisations. In coding of the value drivers, the participants had been provided with options in terms of the responses: Profits, Competitiveness and ‘Other’ which provided for defining other value drivers not mentioned. The definition for profits was used loosely in that revenue was recognised as profits on the basis that using open innovation could result in an increase in revenue and thus increasing the possibility of profits. In the “other” option, participants listed a number of other value drivers. These were categorised into subcategories of marketing, customer, financial and opportunities. Table 11 below provides a summary of the category selection of the value drivers given by participants.

Table 11: Summary of value drivers by category - participant selection

Profits	Competitiveness	Other Marketing –	Other Customer –	Other Financial –	Other Opportunities –
8	6	2	5	5	4

Most participants selected profits as one of the value drivers, followed by competitiveness, then customer and the subcategory financial (which excluded profit) in the category ‘Other’. The detailed responses per category made by each participant have been documented in tables 12, 13 and 14 below.

Some of the participants highlighted the theme that has emerged in most of the interview sections that the value drivers will be determined by the intent of the company in using crowdsourcing as an external source of innovation.

“Ja look, I mean different companies in different industries have different reasons, it goes without saying. I think the first question though is, why do companies do it is an interesting one because I think a lot of companies feel they need to innovate, but actually themselves haven’t worked out the why. And until they work out the why it is very hard for them to get an organisation to innovate. So ja, the why changes but the why is crucial. If an organisation doesn’t know the why it is very hard for the leadership to say to the organisation, we need to innovate and to draw the whole organisation along to innovate.” (Participant 6)

“I think it is again, a question that every organisation will have to answer, because everybody’s goals and objectives with innovation are not the same. We are different industries and we are extremely different organisations.” (Participant 8)

Profit: Eight participants mentioned profit as a value driver for pursuing open innovation with crowdsourcing being recognised as one of the types. This was the top selected category out of all the value drivers that were coded in this section.

Table 12: Profit as a value driver for crowdsourcing

Value Driver	Participant response
Profit	<p><i>“So underlying everything is the competitive advantage which then ties into the revenue that would come in as a result of this competitive advantage...” (Participant 1)</i></p> <p><i>“It needs to actually create revenue...” (Participant 3)</i></p> <p><i>We work with another organisation where their problem actually is that they are very successful and they churn out a lot of cash, they are very profitable, so they not only innovate but they don’t have the burning platform reason to innovate. So it is okay, well now why do we need to innovate? So what they have done, which I think is very clever and makes a lot of sense, they have said, and these aren’t real numbers, but let’s say they are doing a billion rand a year at the moment, they have said that their goal is in five years’ time to be doing two billion rand. If they look at normal growth, if they look at business as usual and normal growth, they would only get to R1.4 billion or something. So they need to find R600 million in revenue over five years through innovation. So what they have done is they have said, okay, why do we need</i></p>

	<p><i>to innovate is we have got a R600 million gap in our targeted revenue that we need to find, and we need to find that from innovation. You know, so they have found other drivers.” (Participant 6)</i></p> <p><i>“And because of that collaborative approach and because the culture is now starting to change, the metric that get thrown up would be greater collaboration, a greater sensitivity toward customer centricity and ultimately solutions and innovations that help us drive revenue.” (Participant 7)</i></p> <p><i>“I think here people do innovate they do expect a return, whether that return is impact, if it is service delivery, higher profits, market growth, new products or services to market, to be more competitive or to make their competitors irrelevant, if you want to talk value innovation.” (Participant 8)</i></p> <p><i>“...it will also drive new revenue streams...” (Participant 10)</i></p> <p><i>“...I would say the profit share is always going to be something which you are trying to come up with, with a new line of business you could say. And that is always going to be one of the big ones. So again it doesn’t have to be a new idea that is bringing in more revenue if you are finding a way to improve something inside your business that can make you just as much profit.” (Participant 12)</i></p> <p><i>“So I am coming from working for a public organisation, a listed company, it is all about the bottom line at the end of the day.” (Participant 15)</i></p>
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Competitiveness: Six participants selected competitiveness as a value driver. This was the second most selected option. The table below includes the responses by each of these participants.

Table 13: Competitiveness as a value driver for crowdsourcing

Value Driver	Participant response
Competitiveness	<p><i>“It’s I would say its competitiveness I mean you always need to make sure that you meet your point of parity, with your competitors and come up with innovative points of difference that will give you a competitive edge. So underlying everything is the competitive advantage which then ties into the revenue that would come in as a result of this competitive advantage sometimes it’s not a matter of competitive advantage you may already hold on, then you’ll go into looking at how can I look at innovation in terms of helping me with my sustainability that’s why I see a lot of companies that have competitive advantages that are doing well start looking into loyalty programmes and other types of initiatives that help drive the sustainability long term sustainability of the business.” (Participant 1)</i></p> <p><i>“...to be more competitive or to make their competitors irrelevant...” (Participant 8)</i></p> <p><i>“I think it is to drive a differentiator in the market. So where you are looking to do things that you haven’t traditionally done in your business. Now that will immediately drive a competitive nature for your business out into the market...” (Participant 10)</i></p> <p><i>“In my industry as well it is more about obviously we come up with ideas a lot, can I say the type of industry? Ja, so this is advertising so it is always going to be coming up with new ideas for the clients on a day to day basis. So innovation is critical to our process. It is to make sure you don’t just run</i></p>

	<p><i>another Facebook campaign, we want something that is going to be completely different, which then makes the client happy.” (Participant 12)</i></p> <p><i>“Most of them do it in order to get a competitive edge because you don’t know who it is that might be within this particular formation that may essentially give you that one little piece of code that essentially changes the whole dynamic. Yeah, competitive edge, most guys are looking at that and also from an operations point of view, most guys within the tech business it is usually a two to three man show, so the idea is that essentially we can extend the pool to other skills or resources that essentially can provide value to, in the absence of you not having to shell out any operational expenditure in order to then achieve that.” (Participant 13)</i></p> <p><i>“I think that there are certainly places who are doing it for a competitive advantage, whether it is from a financial point of view or to create different, whether it is communications or products or whatever...” (Participant 14)</i></p>
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Other: In this category, four subcategories: marketing, customer and financial (excluding profit) and opportunities were coded. One of the participants had a very interesting insight about companies using crowdsourcing to drive internal marketing campaigns to engage their employees on innovation. The marketing subcategory was stated by 2 participants while the customer subcategory was selected by 5. The financial subcategory, which excluded profits given that it had already been coded as one of the main categories, was selected by 5 participants and the final subcategory, opportunities was selected by 4 participants.

Table 14: Other value drivers for crowdsourcing

Value Driver	Sub-category	Participant response
Other	Marketing (2 participants)	<p><i>“The stuff that we have seen has been partly around employee engagement, so almost like an internal marketing campaign around how innovative and cool and funky we are. And also the idea that, if you really believe that there is – if you buy the notion that interesting solutions can come from anywhere, then the person who is sitting in accounting doing invoice transactions, taking care of billing, they might have the best solution for your impossible market condition. So it is about, even within your organisation, there are interesting ideas to tap, interesting solutions to find. So partly around looking for a solutioning, different solutions and partly around, I think, that internal campaign around how do you get people engaged across the organisation, regardless of what their role is. To be involved in what the day to day business of the business is. So yes, you work in accounting, but you might be able to contribute this amazing thing to this totally different area. It is an interesting kind of employee dynamic there.” (Participant 5)</i></p> <p><i>“...and then for some people it is a marketing strategy.” (Participant 14)</i></p>
	Customer (5 participants)	<p><i>“...but I think a lot of companies use it right now just to gauge whether their customers are happy or potential customers that they can bring in to the company.” (Participant 2)</i></p> <p><i>“...improve customer experience or value.” (Participant 3)</i></p>

		<p><i>"The stuff that we have done locally doesn't have a hugely robust consumer goods market, so it is not like in America or in Europe where you are looking to create a new product or new service. We have done services stuff here in the financial services space and that is where it is quite interesting because you can build your crowds, especially with companies that are looking to go to sort of access or service the bottom of the pyramid. You can build crowds and leverage design thinking to really understand your user base at a much deeper level." (Participant 5)</i></p> <p><i>"I think customer centricity absolutely hey. Customers will tell you what the problems are, they will tell you why they are not choosing your organisation, they will tell you why they are not choosing your products. Whether you are brave enough to listen and then to heed that, is something completely different. Like I was saying earlier on, there is no shortage of insight, it is how do we take those insights and translate them into things that we can change and materially change is where the issues are."(Participant 7)</i></p> <p><i>"...means we get more share from that client and we will then attract more clients when we win more awards." (Participant 12)</i></p>
	<p>Financial (5 participants)</p>	<p><i>"I think overall it's to get a higher market share..." (Participant 2)</i></p> <p><i>"...reduce cost..." (Participant 3)</i></p> <p><i>"...it will also drive different financial models, it could drive expense optimisation, cost optimisation." (Participant 10)</i></p> <p><i>"And then I would say cost saving is another one as well." (Participant 12)</i></p> <p><i>"And then for operational business I have seen innovation – actually I overlooked that, that was actually true innovation from the external. There was a truck, they just put pretty much covers at the bottom of the truck to make it aerodynamic, so it actually saved fuel and reduced carbon emissions. Simple concept, high results, right? Yeah. So those guys did it to save fuel costs for logistics." (Participant 16)</i></p>
	<p>Opportunities (4 participants)</p>	<p><i>"So interesting solutions and ideas can come from people who probably wouldn't ordinarily engage with, so the likes of Barclays, for example, it creates the opportunity for them to engage the potential customer in the township who might not organically be a Barclays customer, but now you can, on a much more deep level understand what their needs are, what kind of processors they would be looking for are and you can get them to help you shape what that offering should look like." (Participant 5)</i></p> <p><i>"...market growth, new products or services to market..." (Participant 8)</i></p> <p><i>"I think they have seen that with things that they thought they could solve or struggle to solve, they got really valid answers and new partners that they have never worked with before. So it does open your eco-system, it does open your partnership pipeline and it opens up opportunities, and that is the essence of why you do it in any case." (Participant 9)</i></p> <p><i>"It is back to the point I made before about the person sitting in Sandton, having to find solution for somebody who lives in Diepsloot and not putting a value judgment who knows where. I am saying you have frames of reference, you have got water, electricity and internet, this is a person who has to survive on a 2G connection with USSD and all that, so the approach a person in Diepsloot will take finding a solution is very different to the person who has got access to</i></p>

		<p><i>infrastructure and resources. So I am not sure the word desperation is right, you need almost something similar to desperation. So the old way of doing things does need – does it then lead to competitive advantage and support, absolutely, that's at the end of the day what we are driving for. But there are some organisations that are not driven by profits in that sense, but still need to find solutions to deliver primary health care services through NGO's, that need to deliver water supply, electricity and so forth. So it is almost innovation by necessity.”</i> (Participant 11)</p>
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5.6.2 How is the achievement of these value drivers measured in organisations?

In this section, participants were asked how they would measure various value drivers that had been identified in section 5.6.1. The measure of the value drivers seemed to be linked to the actual value driver being pursued by an organisation using crowdsourcing as a type of open innovation. Using the main value drivers as identified in section 5.6.1, the following measures were identified through coding based on the participant responses.

Profit – Measures (Change in Revenue)

“There is a tremendous opportunity in – may I finish that point, which is that in certain core areas, like around consulting services, and technology design and design and development work, for example, easily translatable bottom line value, for sure.” (Participant 5)

“Yes. So again, I think whether it is open innovation, whether it is closed innovation, the metrics is exactly the same, it is around revenues, it is around how your product is being moved through the value chain. So I would measure things in the standard ways. I would look to see what revenues are before and after an intervention...” (Participant 7)

“So what I am probably thinking about is hold on, I have got to drive a 10 percent increase in my revenue,...” (Participant 10)

Competitiveness – Measures: Improved Market Share

“So if I'm looking at competitive advantage I'm looking at my market share how's my market share improved. So there's a lot of measures I would say it depends on the situation.”
(Participant 1)

Marketing – Measures: Changes in employee engagement (Internal Marketing), Increased Brand Equity, Increased Customer Lifecycle)

“Increase in brand equity, people obviously prescribing a whole lot more to get brand they are getting the innovation that they are seeking to deliver or frequently or consistently deliver.”
(Participant 13)

Customer – Measures: Customer Feedback (customer surveys, focus groups, social media, complaints), New Clients, Repeat Business

“Okay. This is my opinion but I think that another crowdsourcing activity should be undertaken after you have implemented and seen the same feedback is provided again. Whether or not obviously it was successful.” (Participant 2)

“We’ve got a customer centricity department that simply goes and looks outside in and rates our customer journey. So they would be able to give us first-hand experience through the focus groups that they hold and the research that they get from customers whether the new process or a product or a service is actually beneficial, do customers like it or don’t they like it. We embrace social media. So we open ourselves up to scrutiny through our Facebook and our Twitter accounts. And you can’t hide from that in today’s era, so if customers don’t like you, you going to know about it. Our App also, you know, Apps are allowed to be rated, so we launched a new App the other day. If you were to go on it you would’ve seen a whole lot of comments on it which are not great. And if we don’t look at that feedback and use it as a measurement against our innovation then it’s kind of fruitless..” (Participant 3)

“Customers quickly tell you whether they are happy or not these days hey” (Participant 4)

“I think in other industries it must be a lot tougher, but for that we have got a very clear method because as soon as it is out in the public we can check the trend.” (Participant 12)

“Some of that then also goes back to what I was talking about, businesses who are doing it as part of their DNA, which is around feedback and perception in the market. So I guess call it feedback. And from a communications point of view to see if you have disrupted the market in the way that you intended, from that approach.” (Participant 14)

Financial (excluding profits) – Measures: Cost Efficiency, Offering Fair Market Price, Return On Investment (ROI), Share Price, Increased Sales Volumes

“...they would look at the cost cause some innovations result in us being able to be more efficient I think it ties out innovation...” (Participant 1)

“Typically a lot of the innovations that actually get done have a business case behind them, end up in a product, end up in something that gets taken to market and there you can see how

many of those products got sold and at what price and you can, over time, determine a value of that innovation.” (Participant 6)

“If you do innovation you need to understand what the end goal is going to be. We identify those success criteria upfront to be able to track back. If you can’t measure and track ROI and measure against what we believe success would look like, you won’t be able to learn about and deepen that ROI. And if you can’t have ROI innovation you shouldn’t be doing it.” (Participant 8)

“...what is the return on investment in rands and cents after the five year investment horizon? I need to see numbers, I need to see how you tracked the business case every year and then, apart from that, because this is just a financial metric if you want to say, I also want to say, how is my share price performing? Because at the end of the day we don’t do cool stuff to make money for no reason, we need to see it impact our share price positively because that is a signal from the market whether or not we are going down the right path. Okay, so once again it all depends what your business is all about.” (Participant 15)

Opportunities – Measures: Increased Opportunities.

“I mean you can be superficial and say, okay we spent R250 000 on an open innovation project and it opened R600 million of opportunities for us, but we still had to then translate those into opportunities. You know, so what will that cost be?” (Participant 9)

In this section the central theme of strategic intent emerged again through some of participants’ responses.

“The key is to relate the measurements that you have in place, your financial drivers, to what is happening in terms of innovation.” (Participant 7)

“Because the first feeling you get is that innovation is an emotion, it is almost like, how do you measure, I love somebody, how do you measure how much I love you, or how much I hate you? You know it is this much but how much. So that was my first feeling but if there is something that I can learn from my experience is that you not only can measure innovation, you should, and it always depends on knowing what your specific outcomes are and then asking the right questions to determine the answer.” (Participant 8) “So for me measurement is always it is important, it is imperative you should do it right up front. But it also shouldn’t be complicated. You shouldn’t have too many metrics and you will be drowning in the metrics and no-one knows what the heck’s going on and they only look at the standard stuff, patents,

creativity, all those things. It is something that you must do that you should keep simple and that you should focus to be aligned with your outcomes and then use that to track back impact.” (Participant 8) “If you do innovation you need to understand what the end goal is going to be. We identify those success criteria upfront to be able to track back” (Participant 8)

“So I think that is the ultimate study in that you actually connect your drive with open innovation, with a strategic intent of the company and then measure overall performance, linked to open innovation.” (Participant 9)

“So once again you have got to define and that, funny enough, is part of the value you are trying to realise when you define what innovation you are going after, and the concept of innovation you are trying to chase. And the quality elements. They are all highly interlocked. If you are trying to drive, so if I am a business and I am looking to drive an innovative idea to change one of my models in the business, I have got some key performance areas already sitting in the back of my head of why I am doing this. I am not doing it willy-nilly just for the idea of what we are doing. So what I am probably thinking about is hold on, I have got to drive a 10 percent increase in my revenue, or a 40 percent reduction in my cost. I can’t do that in my traditional model so I am looking for ways to drive that. I want to bring on a new product line and I am using the word product line very loosely, product line into my business because I need to double my revenue by 2018 or whatever it is. If you look at it from that perspective, if you drive the internalised key performance areas of your business and you should be linking your innovation to those. If you just drive innovation for the fun of it then you have got a very extreme business model because it is hard to align back to where the business direction and vision is going. It may change some of the vision and the direction of your business as you go through the innovation process, but it should fundamentally be kicked off and run to drive outcomes of your business.” (Participant 10)

5.7 Overall conclusion

The central theme which occurred through most of the sections of the results was that the use of crowdsourcing as an external source of innovation needs to be driven by strategic intent using the right methodology for a specific purpose within an organisation. This theme was reiterated several times by participants in various sections of the interview schedule. This highlights that South African companies embarking on crowdsourcing, as an external source of innovation, should have strategic intent tied to innovation and should not innovate just for the sake of it.

“For me it’s very often related to the organisation strategy. How they think and plan and it’s very often depending on leadership. What their views are and how they embrace this.”
(Participant 8)

“I am not saying there is not a lot of other success stories, but the success story always comes from the CEO office. I have seen many failures in South Africa where innovation departments were created but they were created at far too low level. It has to sit in strategy, it is too complex to not have the CEO behind it.” (Participant 9)

“And if you think of where it comes from, there two leaders, Gore and Michael Jordan are both creative entrepreneurs themselves. And I think they understand the benefits you can get from opening up the circle. And you see it today in what they do. So I would say ya, I think it is a large portion to why they are so successful. It’s because they embrace innovation in their strategy and their culture. And they’re not afraid to go outside their walls.” (Participant 3)

“I can’t think of any drawbacks actually, I think it is, without using too many superlatives I think it is a fantastic option simply because the strength of crowdsourcing is that you are asking the people who you want to service, what will work for them. Okay? So to me there is no better business strategy because the mistake I have seen a lot of businesses make, and honestly I see it still happening in South Africa, which is interesting, because I came from a different background having lived and worked in the US and the UK and then coming down here, is that we seem to have this great ability to build things and hope there is a market for it.
(Participant 15)

The next theme that emerged from the results, specifically in section B on the organisational level for pursuing innovation, was related to leadership and internal organisational culture. “Innovation cannot exist on its own in some office. It needs to form part of the culture of the entire organisation for it to be successful”. This was a theme that was shared by five participants who shared the common characteristic of all being Senior Managers with eight or more years of experience. For innovation to be successful in an organisation and be ingrained into the culture of the organisation, it had to be driven from a senior management level such as the CEO. Six participants shared this sentiment as well as the common characteristics of being senior management with eight or more years of experience.

The theme of trust and control emerged out of the section on whether South African companies mostly used internal (closed innovation) or external collaboration (open innovation) for innovation. The majority of respondents were indicated that South African companies mostly used internal collaboration for innovation. This is related to reluctance to share

information with external parties, issues of confidentiality and ownership from an IP perspective when using external collaboration. The participants that highlighted the use of both internal and external collaboration, four of the sixteen participants, highlighted that South African companies were willing to collaborate externally, but only with trusted partners rather than opening up fully to crowdsourcing with unknown participants.

The same two themes of trust and control as well as preference to work with trusted partners emerged when the participants were asked whether South African companies use crowdsourcing with an even split between participants that answered “yes” and those that answered “no”.

There were very close similarities in the results of the prevalence of crowdsourcing to specific or all industries as well as the question on the suitability of the use of crowdsourcing to certain types of business models. In both sections, 13 participants said crowdsourcing could be used in any industry and type of business model whether a start-up company or a large corporate. In the section on the types of industries, participants identified nine industries with most identifying the use of crowdsourcing in the technology industry and financial services sector. There were distinctions made by some of the participants on its use in a start-up business and the need for success due to limited resources versus dealing with internal challenges in a large corporate with legacy issues and barriers as a result thereof.

In the section on the screening of crowdsourcing participants seven respondents said this depended on the intended purpose of using crowdsourcing by South African companies. The theme that emerged from this section was that screening of crowdsourcing participants should be conducted based on the desired outcomes and therefore the requisite skills should be used. The two other themes that emerged out of this section was that screening of participants should be done cautiously without limiting the diversity and volume of solutions that could be obtained through crowdsourcing. However the contrarian view to this was that screening of participants helped to limit having to go through large volumes of ideas which might not lead to any innovation but also that screening helped to keep focus on the desired outcome.

In the section on managing and measuring quality, one of the emerging themes was that this was one of the challenges associated with the use of crowdsourcing as an external source of innovation. The majority of participants agreed that the management of quality rested with the company using crowdsourcing and should use their internal quality processes to manage the outcomes of using crowdsourcing.

The section on the value of crowdsourcing was the biggest section in terms of results with a number of subsections. The main emerging theme is linked to the first theme identified, which is that the strategic intent will drive value and that the value drivers determine the measures to be used. The overall conclusion from the results was that strategy needs to drive innovation with the caveat that crowdsourcing as a source of innovation would need to be driven from the top of the organisation.

Chapter 6: Discussion of Research Results

6.1 Introduction

The purpose of this research was to determine, through conducting an exploratory study, the use of Crowdsourcing in Open innovation as an External source of Innovation and Value Addition for organisations. The study was based on the theory of open innovation (Chesbrough, 2003) with crowdsourcing as one of the types of open innovation (Marjanovic et al., 2012; Xu et al., 2015; Ford et al., 2015).

This chapter will discuss the results presented in detail in chapter 5 while also linking these findings to the literature reviewed in chapter 2 and also to the problem statement that lead to this research which is outlined in chapter 1. The chapter is structured around the research questions as the main headings with the relevant sub-questions interpreted in the relevant research question.

To reiterate, this research study had four objectives as outlined in chapter 3. The first objective of this research study aimed to understand the screening mechanisms that can be used by companies to screen crowd participants. In order to fulfil this objective, research question 1 was: Should the crowd participants be screened in the use of crowdsourcing and what are the criteria that should be considered in screening these crowd participants? In order to answer this research question, data collected and presented in chapter 5 relates to the screening of crowdsourcing participants. The discussion of the results relating to research question 1 are presented in section 6.3 below.

The second objective of this research study was to determine the quality checking processes that are related to the output to be gained from using crowdsourcing as an external source of innovation. In order to fulfil this objective, research question 2 to be answered was: What are the quality checking processes that organisations could use to increase the value derived from innovation solutions gained from the use of crowdsourcing as an external source of innovation? The discussion of the results for research question 2 are presented in section 6.4 below.

The third objective of this research study was to determine the suitability of crowdsourcing to certain types of business models. To fulfil this objective, research question 3 to be answered was: Is the use of crowdsourcing as an external source of innovation only suited to specific types of business models or can it be used for any business model? The discussion of the results on question 3 are discussed in section 6.5 below.

The fourth objective is to determine the value that can be derived from the use of crowdsourcing and what are the business value drivers and associated measures that drive the pursuit of crowdsourcing as a type of open innovation. In order for this objective to be fulfilled, research question 4 to be answered was: What are the business value drivers that would lead companies to use Crowdsourcing as an external source of innovation and how can these be measured? The discussion of the results for research question 4 are presented in section 6.6 below.

6.2 General innovation questions asked in Section B

The central theme that emerged through the results in chapter 5 is that the use of crowdsourcing as an external source of innovation needs to be linked to the strategic intent of a company to innovate and not to pursue innovation just for the sake of it. Although the general questions in section B were not linked to the research questions, given the central theme of strategic intent, section B has been included in the discussion of results as it provided unique insights.

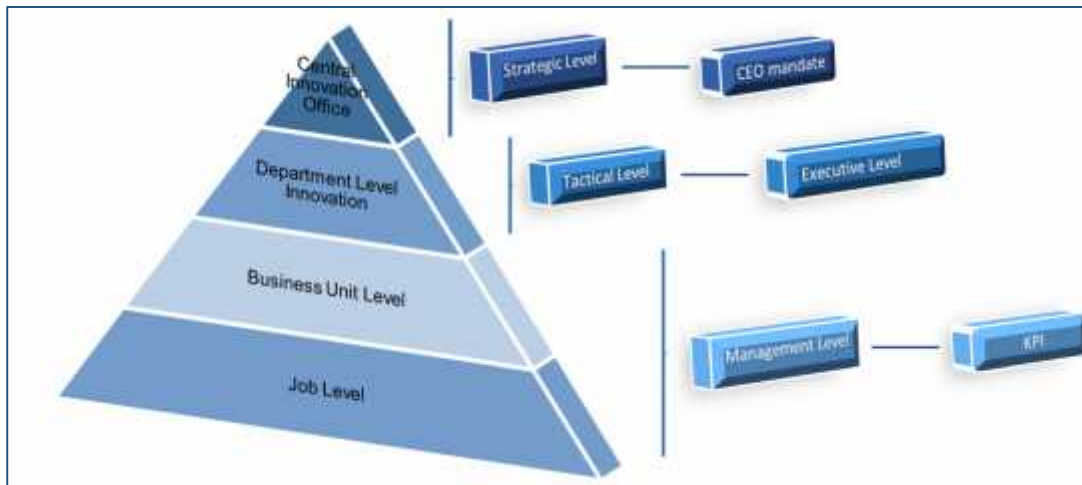
6.2.1 The level from which innovation is driven in South African organisations

This section addressed the question related to the organisational level from which innovation was being driven by South African companies. The majority of participants said based on their own experience, most innovation is run through a central office within a company.

There were two emerging themes from this section. The first was related to the success of innovation being related to leadership within a company. Some of the participants, who are senior managers with eight or more years highlighted that where they have had exposure to innovation being successful, it had been driven from the top, specifically at CEO level. This highlights that for innovation to be successful it has to be a strategic imperative. In each of the companies highlighted in Table 1 in chapter 1, the majority of these South African companies had innovation as a strategic imperative.

Figure 6 below is the researcher's own interpretation of the organisational level from which innovation is driven based on hierarchy of importance. Based on this, crowdsourcing, as an external source of innovation, would need to form part of the central innovation office, with credible value addition to the organisation in which it is implemented, with leadership support.

Figure 10: Organisational levels of innovation



Source: Researchers own interpretation

The second emerging theme was the importance of embedding a culture of innovation within an organisation. Crowdsourcing is still a new concept in the South African market and thus in the same way that a culture of innovation has to be built into a company, for crowdsourcing to add value as a source of external innovation, South African companies need to build a culture of openness to external sources for internal innovation. This supports Bartl et al. (2010) who suggest that the success of crowdsourcing is dependent on the methods and tools used, the processes followed and lastly the organisation and culture.

6.2.2 Conclusion on organisational levels of driving innovation

In order for innovation to be successful in any form within an organisation, it needs to be driven at a strategic level by top leadership in the company firstly, and secondly the company needs to have a culture of innovation embedded within it. Therefore, crowdsourcing, as an external source of innovation would need to be aligned to this. Xu et al. (2015) support this finding in that the use of crowdsourcing by a company to gain competitive advantage needs to align with the strategy of the company.

6.3 Research Question 1

Should crowd participants be screened in the use of crowdsourcing and what are the criteria that should be considered in screening these crowd participants?

6.3.1 Screening the participants (solution providers) of crowdsourcing initiatives

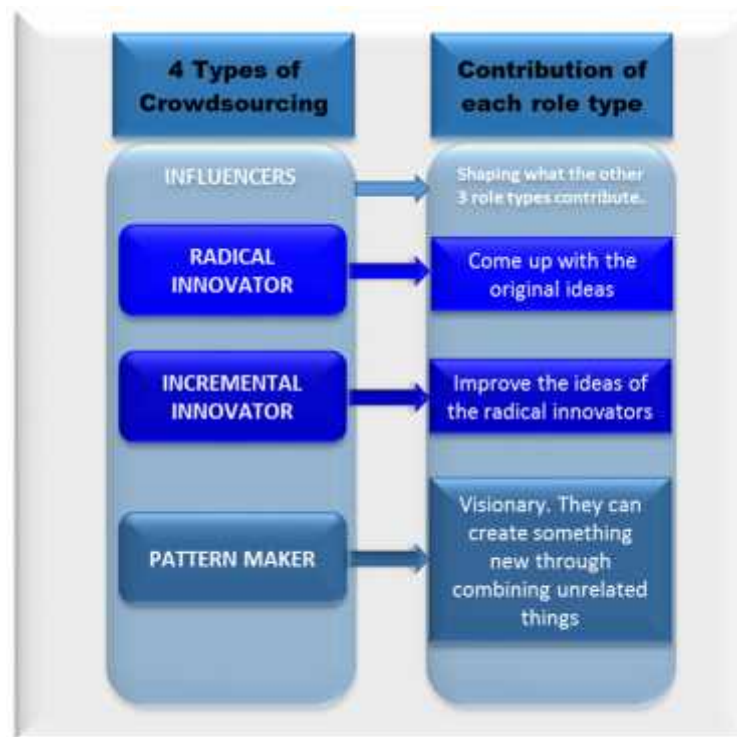
In order for the researcher to answer research question 1, participants were asked whether crowd participants should be screened either on their qualifications, experience, expertise or interest as screening criteria.

Four of the sixteen participants believed that crowdsourcing participants should not be screened at all. The emerging theme from these participants, based on the researcher's own interpretation, was that screening participants by qualification or experience limited the diversity of solutions and creativity that a company could gain from using crowdsourcing. Although these participants were in the minority, their views were supported by literature in that diversity, which refers to differences in background, age, gender and expertise, was identified as one of the distinguishing features of crowdsourcing participants (Hosseini et al., 2015). Furthermore, Prpi et al. (2015) suggests that rather than dealing with screening of participants, a company that seeks to use crowdsourcing for innovation should rather focus on defining the success criteria upfront to measure the success or failure in relation to the achievement of the organisational desires.

Five of the sixteen participants believed that crowdsourcing participants should be screened to protect the company. The emerging theme from these participants included the use of crowdsourcing intermediaries in the form of trusted partners and intermediaries screening methods to perform the screening process on behalf of the company. These participants were in favour of screening crowd participants to protect the company from firstly, a confidentiality of information perspective, secondly, to limit ending up with large volumes of ideas they could do nothing with and thirdly, to ensure that the required expertise is obtained. The idea of anonymity between the company that uses crowdsourcing and the crowd participants is supported by the literature as a distinguishing feature of crowd participation (Hosseini et al., 2015). This anonymity can limit the company using crowdsourcing from being compromised from an information confidentiality of information perspective which is highlighted as a potential risk arising from the required openness when using crowdsourcing which could potentially lead to loss of competitive intelligence by a company (Marjanovic et al., 2012; Xu et al., 2015). Participant 5 had a very insightful perspective on the screening mechanisms they would use. Figure 7 below is the researcher's interpretation based on the participant's description. Instead of screening solution providers by qualification, experience or expertise, they would screen based on innovation capability. This idea of having a combination of capabilities is ideal as the company using crowdsourcing can then obtain the diversity which is deemed to be valuable

whilst also getting focus by controlling the volume of participation and focusing on getting to a required solution rather than ending up with just ideas.

Figure 11: Different crowdsourcing role types



Source: Researchers interpretation of participant 5's description

Seven of the 16 participants said that screening participants was dependent on the purpose of using crowdsourcing by a company. The emerging theme was that if a company wanted to get the desired output from the use of crowdsourcing, then the requisite skills should be used. This theme is supported by literature in that even though the attainment of diversity in the crowd may be important, the profile of the crowd should be suited to the type of initiative to ensure that the innovation results are credible and can actually be used by the organisation (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012). Estelles-Arolas & Gonzalez-Ladron-de-Guevara (2012) further gleans in on the idea that crowd participants should be characterised by three factors, firstly who forms part of the crowd in relation to skills and expertise, secondly what requirement does the crowd have to fulfil, and thirdly how is the crowd rewarded. The first two factors support the findings that screening should occur based on what the desired outcomes are. In other literature, suitability, which refers to fit between the crowd and the crowdsourcing task to be completed is identified as a feature to distinguish crowdsourcing participants (Hosseini et al., 2015). Hirth, Hoßfeld & Tran-Gia (2013) identify different categories of crowdsourcing as routine, complex and creative tasks with routine task

being identified as simple tasks that don't require any qualification, complex tasks being tasks that require general skills and creative tasks as those that require highly specialised skills (Hirth, Hoßfeld & Tran-Gia, 2013). In a study performed by Barnes et al. (2015) it emerged that users of crowdsourcing platforms, which they termed 'buyers', were interested in the formal qualifications when sourcing for crowd participants and that work experience and qualification assisted the crowd participants in being selected to participate in crowdsourcing initiatives.

Screening of crowd participants can further act as a risk mitigation with some of the risks highlighted as being directly related to crowd participants being:

Ford et al. (2015) suggest using the following criteria to decide on whether to use crowd participants as:

1. Does the company want to make use of external resources for a project?
2. Can the company prevent loss of competitive advantage by using external resources?
3. Does the company have the required internal expertise to engage the crowd participants appropriately?
4. Does the company have the internal capability to carry forward the crowd participant contribution?
5. Does the company have the capability to find the right profile of crowd participants or an intermediary to do so on behalf of the company?

6.3.2 Conclusion on research question 1

The majority of participants agreed that screening of crowdsourcing participants depended on the intended purpose of using crowdsourcing. Crowdsourcing is only as meaningful as the purpose for which crowd participants are being engaged, in line with the goals of the organisation (Prpi et al., 2015). The researcher concludes that participants should be screened based on the intended purpose aligned to the desired outcomes. This aligns further to the central theme of strategic intent in the use of crowdsourcing. The screening criteria used, whether skills, qualification, experience or innovation capability, should ultimately achieve the desired outcome for the company using crowdsourcing as an external source of innovation and value addition.

6.4 Research Question 2

What are the quality checking processes that organisations should use to increase the value derived from innovation solutions gained from the use of crowdsourcing as an external source of innovation?

There was a general agreement by some participants that this was one of the challenges of using crowdsourcing as an external source of innovation. At least five of the sixteen explicitly stated that managing and measuring quality was one of the biggest challenges of using crowdsourcing. The literature highlights that although crowdsourcing can be beneficial in that it can provide companies with a tool to find solutions quickly and inexpensively through the use of a flexible workforce, the downside of this was that given that crowdsourcing deals with the use of external knowledge, a company cannot guarantee the quality of the work produced (Satzger et al., 2013). Furthermore the inability of a company using crowdsourcing to guarantee the quality of the solution obtained may result in faulty work (Marjanovic et al., 2012). The other side of this challenge was that having motivated crowdsourcing participants could result in more work being completed but this might affect the quality of the work produced (Goncalves et al., 2015).

The quality checking processes were considered using four categories: Market Feedback, Internal Company Quality Controls, Working with Experts and Defining the Quality Criteria upfront. There were overlaps in terms of participant selection in more than one of these categories.

1. Obtaining market feedback: The first category was managing quality through obtaining market feedback. This category, in terms of actual participant responses, included testing of crowdsourcing solutions in the market, piloting solutions with customers and obtaining feedback. Six of the sixteen participant responses were categorised into this section. This is aligned to literature that suggests that companies should consider their processes from an external market process for open innovation, with crowdsourcing having been identified one of the types, to work specifically taking into consideration the customer and external data and social communication (Ozkan, 2015). Another approach suggested by Hirth et al. (2013) is to obtain feedback on the crowdsourcing solution through crowd participants. This is referred to as the Majority Decision Approach in which the solutions provided are judged against each other based on similarity in solutions produced by crowd participants (Hirth et al., 2013). A third approach would be to use what is referred to as the Control

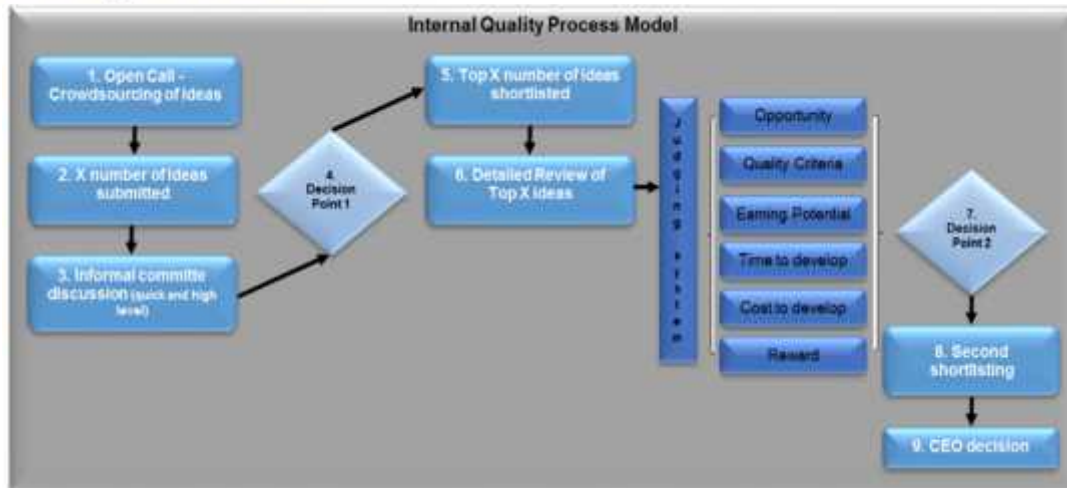
Group Approach in which the crowdsourcing participants providing solutions are judged by a second independent group of crowdsourcing participants (Hirth et al., 2013).

- 2. Using internal company quality control processes:** The second category was that the company using crowdsourcing as a source of external innovation should apply its own internal company quality control processes to the solutions gained from crowdsourcing. This category included in terms of actual participant responses stress the testing of IT solutions, internal company change control boards, sign offs by internal 'gatekeepers', project managing solution providers by an internal company resource, having an internal team that applies the internal company quality criteria against the solutions and having an internal committee that selects the best solutions to take forward to implementation. The majority of participant responses, twelve of sixteen, were coded in this category based on the researchers' analysis of the responses.

One of the participants provided a very detailed description of his company's internal model for selecting ideas internally to decide on which ideas to pursue for implementation. The participant first provided the description of the use of an internal committee in section D relating to quality checking processes and elaborated further on this process in section F on the value drivers for pursuing crowdsourcing. Although the description provided by the participant was for an internal process of selecting ideas from inside the organisation, the researcher interpreted a similar process for managing quality of ideas and deciding on which crowdsourcing solutions to pursue.

The figure 12 below is the researcher's interpretation of the description provided and how a similar process could be used for checking the quality of innovation solutions produced using crowdsourcing, through the use of an internal company committee.

Figure 12: Internal quality process model



Source: Researcher's interpretation of participant 12's description

The idea of the quality of crowdsourcing solutions being managed internally is supported by the literature in that to ensure that an organisation using crowdsourcing achieves its desired outcomes, it should have internal business experts engaging with crowd participants on the problem to be solved to shape the desired outcomes (Prpi et al., 2015).

3. **Working with experts:** The third category was the use of experts as a way of managing the quality of the work. This category included using crowd participants that have a track record of successful implementation in a different geography, experience and expertise. Only three of the sixteen participants selected this category. Their rationale was that working with people or organisations that know what they're doing or have the expertise in the field in which the crowdsourcing user would be trying to tap into would provide quality assurance. Geiger, Seedorf, Nickerson & Schader (2011) refer to the use of experts as a mechanism to manage the quality of outputs as "qualification-based preselection" wherein crowd participants must have specific proven knowledge or skills prior to participating in a crowdsourcing initiative (p.6).
4. **Defining the quality criteria upfront:** Six participants said the crowdsourcing company should define its own quality criteria upfront. There was a caveat to this category in that participants highlighted that the criteria should not be so stringent that it hindered the process of innovation. One participant even suggested that even if the criteria is defined upfront, it should not be shared with the crowd so as to allow the process of innovation to occur unhindered. Prpi et al. (2015) support this in that companies should define the criteria for the success or failure of crowd participants in achieving the desired outcomes upfront. Furthermore information provided by the company seeking crowdsourcing solutions, creative freedom, the use of diverse knowledge and feedback to crowd participant on performance

should be associated with the quality of the innovation solutions (Lee, Chan, Ho, Choy & Ip, 2015). Finally, when a company uses crowdsourcing, in order to increase the chances of attaining quality solutions, the company needs to be specific about its requirements and these should be aligned to the its objectives (Lee et al., 2015).

6.4.3 Overall conclusion on Research Question 2

Based on the researcher's interpretation of data, in line with an overall central theme of strategic intent when using crowdsourcing, the management and measurement of control of crowdsourcing solutions is the responsibility of the company and should therefore be managed using the internal company quality checking processes. The results in terms of the majority of participant responses being interpreted into this category, as well as the literature, supports this finding. In line with internal processes being the main form of checking the quality of crowdsourcing solutions, the quality criteria should be defined upfront but not shared with the participants. However, the problem to be solved, or the desired outcomes, should be made clear to crowd participants. The researcher's conclusion that the quality criteria should not be shared with the crowd participants is based on participant responses and the researcher's interpretation that sharing quality criteria upfront may limit creativity of innovation solutions. Then lastly along with using internal company quality processes for crowdsourced solutions with the criteria having been defined upfront but not shared with the crowd participants, once the solution has been selected for implementation and produced, feedback should be obtained from the market.

6.5 Research question 3

Is the use of crowdsourcing as an external source of Open Innovation only suited to specific types of business models or can it be used for any business model?

In order to ascertain the use of crowdsourcing based on types of business models, the participants were asked whether the use of crowdsourcing was only suitable for certain types of business models or whether it could be used by any company whether it be a start-up company or a large corporate. In a separate question the participants were asked on the use of internal (closed) innovation versus external (open) innovation by South African companies to ascertain the current perceived level of openness by South African companies which is a requirement of the business model.

6.5.1 The suitability of the use of crowdsourcing to business models

The majority of participants said crowdsourcing was suited to any type of business model whether it a start-up business or a large corporate. The factors that were highlighted as being important included the internal culture and maturity of the organisation in being open to external sources for innovation. This idea is supported by Saebi & Foss (2015) in that for a company to get performance out of using open innovation, there needs to be alignment between a company's business model and the open innovation strategy. Furthermore the successful use of open innovation also required alignment between the open innovation strategy of the company and the internal design, practices and capabilities, to be able to exploit innovation derived from external resources (Saebi & Foss, 2015). So ultimately, if a company wants to pursue an open innovation strategy the company needs to be willing to make the required internal changes to get performance (Saebi & Foss, 2015).

Another factor highlighted was the internal structure of the organisation being linked to the successful use of crowdsourcing as an external source of innovation. In the innovation poll jointly conducted by Innocentrix and Digital Bridges on South African companies, the structure of South African organisations, more specifically in terms of the hierarchical structure was highlighted as resulting in slower implementation of innovation. The organisations that were polled in the Innovation indicated that innovation was not necessarily an organised process but rather ad hoc and implemented using trial and error (Mayer, 2012). A participant stated that in relation to the structure of the organisation, a larger corporate may have more to lose than a smaller start-up in the event that the use of crowdsourcing is unsuccessful. This means that for a company to succeed in crowdsourcing as an external source of innovation, it needs to be willing to open its business model to gain new ideas, resources and capabilities that it lacks and also be willing to work with external collaborators (Dahlander & Gann, 2010). Giesen et al. (2010) reiterate the same idea in that business models that are successful at being able to innovate have a common characteristic of being able to collaborate with external partners.

The approach and applicability was another factor that was highlighted as success criteria in the business model in both start-up companies and large corporates. Contrary to the view that a start-up company would have more to lose, other participants indicated that larger corporates have more at stake than start-up's which is supported by Pellissier (2012) in that the size of the organisation plays a role in its ability to innovate and smaller companies have more flexibility and could innovate much more easily than larger companies that may be hindered by rules.

The business model is an important aspect of success related to the use of crowdsourcing. As highlighted in chapter 1 in the problem statement that led to this research study, an innovative business model can be achieved using an organisations existing capabilities and assets in new ways which could include opening up by collaborating with external parties. This is one of the ways in which business leaders can deal with the rapid change of the business environment (Giesen et al., 2010).

6.5.2 The use of internal and external collaboration by South African companies pursuing innovation

In this section, participants were asked whether South African companies mostly use internal collaboration (closed innovation) or external collaboration (open innovation) as a source of innovation. Nine of the sixteen participants, said South African companies mostly pursued innovation through internal collaboration. The main themes that emerged from these responses were related to issues of trust and control, preference to work with trusted partners and not having a full understanding around the legalities of IP when using crowdsourcing, which impacts on ownership of innovation. These themes are associated with one of the risks identified in table 3 which is that given that the use of crowdsourcing requires a company to open up to external resources, there is the potential for loss of competitor intelligence (Marjanovic et al., 2012; Xu et al., 2015) as the crowd participants are not within the control of the company using crowdsourcing (Marjanovic et al., 2012; Chesbrough & Appleyard, 2007). Furthermore the use of closed innovation gives companies control in relation to the innovation process from generating the ideas, developing these ideas, producing, marketing, distribution, financing and support (Chesbrough, 2003).

Three of the 16 participants believed that South African organisations do collaborate externally. Some participants said this was because it was still a new concept in South African companies but that it was necessary for global competitiveness.

Four of the 16 participants believed that South African companies use both internal and external sources for innovation. Some of the participants believed that South African companies will start out closed (internal) then go open (external). However the emerging theme was that, in going external, South African companies preferred to do so with trusted partners rather than crowdsource with unknown external resources. The use of trusted partners can be used from a South African perspective through partnering with crowdsourcing intermediaries. These intermediaries act as middlemen between the company using crowdsourcing as a source of innovation and the crowd participants providing solutions

(Chanal & Caron-Fasan, 2010). One of the main advantages of using an intermediary is the screening of ideas (Marjanovic et al., 2012).

6.5.3 Conclusion on Research Question 3

The successful use of crowdsourcing requires an organisation to be willing to open up to the external environment (Djelassi & Decoopman, 2013; Dahlander & Gann, 2010). Therefore, the perceived reluctance of South African companies to open up due to issues of trust and control as highlighted by the majority of participants can be addressed through the use of crowdsourcing intermediaries enabling the company using crowdsourcing to maintain a certain level of control through electing to remain anonymous to the crowd participants.

The participants that highlighted that South African companies do use external collaboration to pursue innovation, asserted that the preference was to collaborate with trusted partners which also supports the finding to use crowdsourcing intermediaries.

In the section related to the types of business models suitable for the use of crowdsourcing, the results indicate that even though the use of crowdsourcing was indicated by the majority of the participants to be suitable for use to all types of business models, there are important factors that need to be taken into consideration. These factors were identified as alignment of the strategy of open innovation and the internal structure of the organisation, the openness of an organisation through its willingness to collaborate with external parties and ultimately the willingness of an organisation to make the required changes in its internal structure to open up to external parties as a source of innovation to deal with rapid change in the business environment.

6.6 Research Question 4

What are the business value drivers that would lead companies to use crowdsourcing as an external source of open innovation and how can these be measured?

In order to answer research question 3, the researcher interpreted the data collected on the, the benefits of crowdsourcing and the business the value drivers and associated measures that can lead to the use of crowdsourcing as an external source of open innovation.

6.6.1 Benefits of Crowdsourcing

Participants identified 28 potential benefits which as presented in chapter 5 (section 5.4.5) were grouped into the five main categories of speed, resourcing, customer, innovation and financial. Table 15 provides the identified benefits and the supporting literature.

Table 15: Benefits of crowdsourcing

Category	Listed Benefits	Supporting Literature
1. Speed	<ul style="list-style-type: none"> - Agility - Instant benefit - Speed to market 	<p>One of the identified advantages or benefits of open innovation is speed to market and this has been described as the success of entrepreneurs who use open innovation is the ability it gives to them to get their products or services to markets quicker than their competitors (Ozkan, 2015).</p> <p>Some of the other advantages of using open innovation has been identified as the ability to accelerate internal innovation for an organisation through leveraging off external knowledge (Saebi & Foss, 2015).</p>
2. Resourcing	<ul style="list-style-type: none"> - Flexibility - Flexible resourcing - Information gathering - Access to global talent - Larger pool of knowledge - Diversity of skills and minds - Virtual consulting firm on demand - Larger selection of solutions 	<p>Crowdsourcing gives a company access to a large pool of resource as and when needed without having to incur the cost of a permanent staff member and obtaining the required skills on demand (Nevo & Kotlarsky, 2014; Ford et al., 2015).</p> <p>Some of the other advantages of using open innovation has been identified as the ability to accelerate internal innovation for an organisation through leveraging off external knowledge (Saebi & Foss, 2015).</p>
3. Customer	<ul style="list-style-type: none"> - Cost effective market research tool - Buy in to new solutions - Access to untapped market - Effective and accurate target marketing - External insight 	<p>Companies such as Best Buy have used crowdsourcing internally using the tool Blue Shirt Nation wiki to connect 24 000 staff members. The tool allows the staff members to share customer services tips and to also discuss internal operational issues (Prpi et al., 2015).</p> <p>Gassmann & Enkel (2004), define a framework for open innovation through three processes one of which is described as a the Outside-in process and identifies customers, suppliers and external knowledge sourcing as the key sources to increase a company's knowledge base while at the same time increasing innovation within the company.</p>
4. Innovation	<ul style="list-style-type: none"> - Robust solutions - New networks - Diverse solutions - Solving problems - Creating disruptive innovation 	<p>Some of the highlighted benefits of crowdsourcing are relatively low cost, quality in the number of tasks achieved, positive network externalities, reduction in risk for the initiator and motivation and incentives for the crowd (Schenk & Guittard, 2011).</p> <p>One of the factors that will make organisations successful at innovation is to use external and internal connected networks (Mayer, 2012).</p>

	<ul style="list-style-type: none"> - Unintentional new discoveries - New ways of using your services externally - New Collaboration points 	
5. Financial	<ul style="list-style-type: none"> - Affordability - Lower development costs - Focused spend - Source of investment 	<p>Crowdsourcing is a way of reducing the human resource needs of organisations, however in order to do this effectively, an organisation needs the required capabilities in the form of the business model (Nevo & Kotlarsky, 2014).</p> <p>Crowdsourcing is not necessarily free, however it can be less costly than employees. The crowd essentially works like a volunteer workforce. The company can save on the cost of employment and benefit from increased productivity of the crowd (Bergvall-Kåreborn & Howcroft, 2013).</p> <p>The use of crowdsourcing can help companies save on costs (Ford et al., 2015) and also make more proficient use of company resources (Xu et al., 2015).</p>

6.6.2 Conclusion on the benefits of crowdsourcing

There are many benefits associated with the use of crowdsourcing with participants having identified the top 3 by the major categories of innovation, customer and resourcing. All the identified benefits were found to be supported by literature as documented in table 15 above.

6.6.3 Value drivers for the use of open innovation

In this section, participants were asked what the most common value drivers were for pursuing open innovation by organisations, with crowdsourcing as a type of open innovation. The researcher interpreted the responses in this section into 6 main value drivers. Participants were only given 3 options to select, either profit, competitiveness or other (in which participants were left open to provide their own value drivers). In the other category the researcher then categorised four sub-categories as: Marketing, Customer, Financial (excluding profit) and Opportunities. The majority of participants selected more than one option. The central theme of strategic intent also emerged in this section with some of the participants responding that the value drivers will be determined by the intent of the company in using crowdsourcing.

Profit was identified as the top business value driver for pursuing crowdsourcing with 8 participants selecting it as an option. This is in line with literature that confirms that the use of crowdsourcing should translate into innovation which increases profits (Schenk & Guittard,

2011). Furthermore, the use of crowdsourcing should provide a wider variety of ideas at a lower cost (Schenk & Guittard, 2011).

The next most selected option was competitiveness with six of the participants selecting it. As part of the problem statement in chapter 1, it was highlighted that the result of globalisation and increasing competition required that companies be able to innovate in order to sustain their businesses (Ozkan, 2015) further supported by Mayer 2012 through the Innovation Poll conducted by Innocentrix and Digital Bridges on South African companies which asserted that South African organisations view innovation as a source of competitive advantage.

In the category of 'other', the top two subcategories with 5 participants were the Customer and Financial categories. In the sub-category of Financial, excluding profit given that this had already been categorised as one of the major categories. When companies innovate it is done with the aim of realising value for the users of the innovation which are its customers and the broader society (Marjanovic et al., 2012).

Some participants made comments relating to some organisations pursuing innovation only as a buzzword and not really being innovative. One participant stated that in the technology industry, the value driver is for executives to make personal gains as opposed to really making a company innovative. Prpi et al. (2015) somewhat corroborates this sentiment in that given that it is hard to show how crowdsourcing adds value, some managers may be hesitant to use it. However, companies such as P&G have been able to translate the use of crowdsourcing as an external source of innovation into measurable value with this success being attested to the crowdsourcing methods and tools used, the process followed and the organisation and culture (Bartl et al., 2010).

6.6.4 Measuring the achievement of value drivers for using open innovation

This section followed from the value drivers. Participants were asked how they would measure the achievement of value drivers that they had identified as per section 6.5.5. The central theme related to strategic intent also emerged in the responses. Some participants highlighted this an important element of measuring value through crowdsourcing as an external source of innovation. The use of crowdsourcing needs to be aligned to the company's objectives to obtain quality solutions and be specific in its requirements which are aligned to the objectives (Lee et al., 2015). Although measuring the success of innovation is difficult, it can be achieved through linking innovation metrics to strategy to provide a clearer picture of performance (Davila, Epstein & Shelton, 2006).

The researcher performed both Atlas.ti coding as well as manual analysis in Excel 2013 for this section. Firstly the responses were coded then the resulting codes were mapped to the major value driver into various codes. These codes were then mapped to the categories of value drivers for pursuing crowdsourcing as discussed in section 6.5.5 above. Table 16 below is the resulting measures per major value driver defined.

The first value driver mapped was profit. The measures identified for this value driver, based on participant responses, was: change in revenue. Six of the participants highlighted this measure. The success of innovation can be measured through how different a service or product is from its previous version, how useful it is and the profit it generates (Pellissier, 2012).

The second value driver mapped was competitiveness. The measure defined by the researcher, based on interpretation of participant responses, was improved market share with one participant acknowledging it as a measure. In the literature, Mobil's retail division was highlighted as having success in its innovation measurement system, and one of the measures identified was market share in the specific segments (Davila, Epstein & Shelton, 2006).

The third value driver mapped was marketing and the accompanying measurements defined by the researcher, through interpreting participant responses, were employee engagement based on using crowdsourcing as a tool for internal marketing, increase in brand equity and increased customer lifecycle. Two participants identified these as measure of value drivers.

The fourth value driver mapped was customer and the identified measures were customer feedback, new clients and repeat business. Eight of the participants identified these measures. In the example used on Mobil's retail division, they identified the success of specific innovation measures and the return on investment on new products as well as the product acceptance rate and long term value captured (Davila, Epstein & Shelton, 2006).

The fifth value driver mapped was financial (excluding profits) and the identified measures were cost efficient, the ability for an organisation to offer fair market price, ROI, share price and increased sales volumes. Nine participants identified these measures.

The last value driver mapped was opportunity and the identified measure was increased opportunities. Two of the participants identified this as a measure.

Table 16 below is a summary of the coded measurement per value driver discussed in section 6.6.4

Table 16: Measures per value driver

Value Driver	Measure
PROFITS	Change in Revenue
COMPETITIVENESS	Improved Market Share
MARKETING	Changes in employee engagement - Internal Marketing
	Increased Brand Equity
	Increased Customer Lifecycle
CUSTOMER	Customer Feedback - customer surveys, - focus groups, - social media - complaints
	New Clients
	Repeat Business
FINANCIAL	Cost Efficiency
	Offering Fair Market Price
	Return On Investment (ROI)
	Share Price
	Increased Sales Volumes
OPPORTUNITIES	Increased Opportunities

6.6.5 Conclusion on business value drivers and measurements

Although participants were asked two specific questions in this section, the questions are linked in that the theme that emerged was that value drivers could not be had without strategic intent for using crowdsourcing which has been a common theme throughout the results of the data collected. Secondly the measures of the value obtained from using crowdsourcing as an external source of innovation are determined by the value drivers. The researcher's interpretation of this is depicted in Figure 13 below.

Figure 13: Value drivers for crowdsourcing



Source: Researchers own interpretation of the data

A company that embarks on the use of crowdsourcing as an external source of innovation should define the value drivers based on the desired outcomes linked to the strategic intent of the organisation and select the relevant measures, which are normal business measures, based on the drivers. The results indicate that the financial drivers and measures are the most important, given that companies are in business to make a profit.

6.6.6 Overall conclusion on research question 4

Successful innovation can only be recognised by an organisation once it is implemented and adds value to the organisation (Mayer, 2012). For innovation to be successful within an organisation, it has to be a strategic imperative, with senior leadership support backed up by a culture of innovation ingrained within the organisation.

The strategic intent of the organisation for pursuing crowdsourcing as an external source of innovation will determine the business value drivers in pursuing crowdsourcing as an external source of innovation. Profit was identified as the top value driver for pursuing innovation which was also found to be the top most benefit of using crowdsourcing. In line with this to ascertain the value derived from the use of crowdsourcing as an external source of innovation, a company needs to be able to measure the value drivers in order to demonstrate the value obtained from crowdsourcing. There are various measurements that were identified and ultimately the company needs to be able to view the value in relation to the before and after use of crowdsourcing.

6.7 Concluding remarks

The central theme, mentioned several times, is that the use of crowdsourcing by an organisation as a source of external innovation and value addition needs to be driven by the strategic intent of the organisation in relation to innovation. The results in research question 1 indicate that the profile of crowdsourcing participants can be defined by screening based on the purpose of an organisation in crowdsourcing. The desired crowdsourcing outcomes will determine the profile of the crowd using and thus obtaining the requisite skills to achieve this it. Although the main finding relating to the suitability of crowdsourcing for certain business models was that it could be used for all types of business models, the internal structure, innovation culture of the organisation and willingness to open up to external partners as a source for innovation were identified as important considerations in the use of crowdsourcing in any type of business model.

In answering research question 2, the quality checking processes of the work produced when using crowdsourcing was highlighted as a challenge. The main finding was that the process of checking the quality of the work produced needed to be owned and controlled internally by the company. As well as managing the process internally, the quality criteria must be defined upfront. Lastly, obtaining market feedback closes the loop on research question two on managing quality when using crowdsourcing.

In answering research question 3, the main finding related to the use of internal versus external collaboration was the emerging theme of trust and control and thus the prevalence of internal collaboration (closed innovation) by South African companies. This preference to use internal innovation goes against the findings related to business models suited to the use of crowdsourcing being shown to require a strategy of collaborating external. In order to deal with this issue, the researcher concluded that given that the use of crowdsourcing is not as prevalent in south African companies as it is overseas, the use of trusted partners through crowdsourcing intermediaries provides a solution to encourage South African companies to use more crowdsourcing open innovation and transfer the issue of trust and control onto the intermediary by remaining anonymous to crowd participants.

The findings related to research question 4 firstly showed that there were many benefits highlighted to show the value of using crowdsourcing as an external source of innovation and value addition to companies. The top 3 major categories of benefits for a company using crowdsourcing were defined as innovation, customer and resourcing. The second aspect related to research question 4 that a company's strategy, related to innovation, will determine the business value drivers for pursuing crowdsourcing and the associated measures will be determined by these value drivers.

Chapter 7: Conclusion

7.1 Introduction

Crowdsourcing is a tool that can be used for open innovation (Marjanovic et al., 2012). The purpose of this research was to explore whether crowdsourcing can be used as an external source of innovation and value addition by South African companies. The study had three objectives to be achieved by answering three research questions. This will be discussed in section 7.2 in the principal findings.

7.2 Principal findings

This research study set out to achieve three objectives. The three objectives, as well as the related research questions stated to achieve the set out objectives, were achieved as demonstrated through the discussion of the results in chapter 6.

The methodology followed to achieve these objectives was qualitative research using the abductive approach, which is suitable for this type of research. The aim of collecting data when using the abductive approach was to identify themes and patterns to develop a conceptual framework (Saunders et al, 2012). The researcher elected to use the qualitative research method to explore the topic specifically from a South African perspective, given that when searching for literature on this topic, there was very limited academic literature on the topic from a South African perspective.

The main finding of this research study, which emerged as a central theme, was that the use of crowdsourcing as an external source of innovation by companies needs to be driven by the strategic intent of the organisation. Its use needs to be aligned to the company goals and objectives. When a company undertakes to crowdsource, it needs to be specific about its requirements which should be aligned to the company's objectives as one of the ways to increase the chances of obtaining quality solutions (Lee et al., 2015).

The use of crowdsourcing is not limited to certain business models, the imperative point is that companies need to be fully aware of the intention when using a tool such as crowdsourcing as an external source of innovation. The companies that have been successful in their application of open innovation have flexibility and a willingness to change their existing business models to those better suited to open innovation (Saebi & Foss, 2015).

The second research question related to the quality checking processes obtained from crowdsourcing as an external source of innovation highlighted that the management of quality when using external resources was a challenge. This was highlighted as one of the risks in chapter 2 (Table 3). The benefits of the openness of crowdsourcing to external knowledge have a downside due to dealing with an external workforce. As a result of this, the quality of the work produced cannot be guaranteed (Satzger et al., 2013). The main finding for this research question was that even though crowdsourcing uses external resources, the management and control of quality still remains the responsibility of the organisation. There are tools such as the Majority Decision Approach as well as the Control Group Approach (Hirth et al., 2013) which can be used to manage quality. Related to this finding, was that the crowdsourcing company is responsible for defining the quality criteria upfront. In doing so, the company should be cautious in its communication to crowd participants so as not to hinder the innovation process. This was reiterated in the literature through the association that exists between the quality of the innovation solutions and information provided to the crowd participants as well as the freedom given to crowd participants in developing the solution (Lee et al., 2015). Then finally, in line with the use of internal quality processes defined upfront to close the loop on the quality process would be to obtain feedback from the users of the innovation in the form of customers. This last part of the process is confirmed by Ozkan (2015) who confirms that companies that use crowdsourcing should consider the process through the external market.

The third and final research question also firstly highlighted the central theme of strategic intent as being top most when using crowdsourcing as an external source of innovation and value addition. The value drivers of using crowdsourcing as a source of open innovation were also found to be related to the central theme of the strategic intent of the company in crowdsourcing. The most prevalent value driver was found to be profit and the associated measure being change in revenue. The impact of innovation can be measured on its typology, how different it is from a previous version (whether it's a service or product), how useful it is and finally the profit it generates (Pellissier, 2012).

7.3 Proposed Crowdsourcing model for South African companies

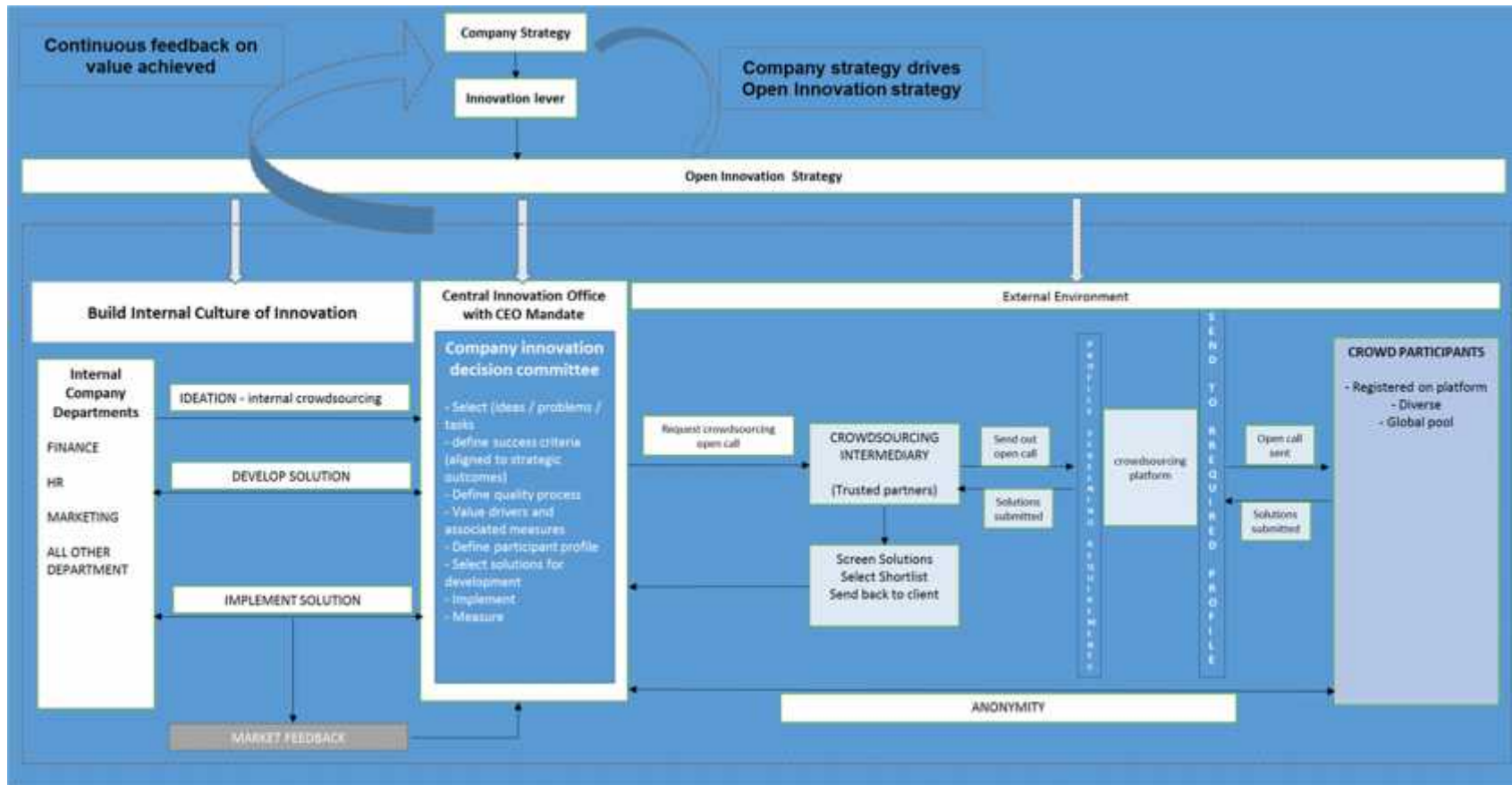
The use of crowdsourcing is dependent on the purpose of the organisation in terms of what it is trying to achieve in respect of whether it's to solve a particular problem or to get customer insights or gather information. Its use has to be specific to the achievement of particular criteria.

The research has highlighted that for innovation to be successful within an organisation, it should be driven from the top. Therefore in turn, to use crowdsourcing, innovation within a company must be a strategic imperative with senior leadership support, preferably at CEO level.

The research showed that the screening of participants must be conducted based on the purpose for which crowdsourcing is being used. The research showed that it could be used for any business model in any industry. However the organisation must be willing to open itself up to external collaboration while also ensuring that there is an internal culture of innovation and capability. South African companies prefer to open themselves up to open innovation only through trusted partners to maintain control and confidentiality, thus the model in the South African context is built for use through trusted third parties in the form of crowdsourcing intermediaries with control of the process still being maintained internally by the company in relation to the management of quality.

All these aspects were taken into consideration in designing the proposed model for the use of crowdsourcing as an external source of innovation and value addition by South African companies.

Figure 14: Proposed Crowdsourcing Model for South African companies



Source: Researcher – Katleho Khoza

7.4 Implications for Management

The pursuit of crowdsourcing as an external source of innovation and value addition for organisations needs to be driven through the innovation strategic intent of the company embarking on this type of innovation.

The successful implementation of innovation has been shown to be linked to the leadership of the organisation. Therefore in line with crowdsourcing requiring alignment to the strategic intent of the organisation, its use should be driven from the top by senior leadership and ideally through a central innovation office.

In order for an organisation to be successful in its use of crowdsourcing as a type of open innovation, it should be willing to open itself up to external parties. Given that trust and control is an issue for South African companies, and the use of crowdsourcing is not yet as prevalent as in overseas markets, its use in South Africa specifically can be performed through crowdsourcing intermediaries.

7.5 Limitations of the Research

The researcher bias is a limitation of the research given that it is a qualitative study and the interpretation is left to the researcher. However, given that the sample size included 16 participants, there was a lot of rigour in analysing the data and similarities in responses from the participants.

Given that this was a qualitative study, it is prone to error. The researcher did capture the responses as accurately as possible through the use of audio recorders and using professional transcription services. However in a qualitative study, the interpretation is left open to the researcher and as a result there may be some errors in the data.

The selection in relation to innovation experts was performed purposively. However, this was not performed using a scientific method of qualifying participants as innovation experts. The researcher performed some background research on each participant prior to the approach. This included obtaining information freely available on the internet; participants work history; and experience using platforms such as LinkedIn and Who's Who South Africa as well as information

through referrals. Furthermore each participant's exposure to innovation was confirmed in the interview in relation to their number of years working with innovation.

7.6 Suggestions for future research

7.6.1 Intellectual Property Rights

One of the insights that emerged through the data collected is the issue of ownership from an intellectual property (IP) rights perspective when using crowdsourcing as type of open innovation. This topic requires further research on the implications of IP law in using crowdsourcing as an external source of innovation by South African companies.

7.6.2 Reward system for the crowd participants when using crowdsourcing for innovation

The research focused on how South African companies currently reward innovation internally to try and ascertain whether the reward system for Innovation exists and whether it can then be carried out outside of the organisations. The responses from participants were inconsistent on the internal reward systems for Innovation. Therefore there is a need for more in depth research on a reward system for crowdsourcing when using it for innovation and more specifically on how to reward participants of the crowd. Different participants of open innovation have different motivations such as altruistic purposes, gaining recognition and funding (Almirall et al., 2014). The extrinsic motivation for crowdsourcing members to participate include financial reward and recognition. The intrinsic motivation includes competitive selection, diversity of knowledge, the complexity of the assigned task as well as the autonomy of completing the task. (Chan, et al., 2015)

7.6.3 Comparative study of crowdsourcing global best practise in comparison to South Africa

As highlighted in the research study, the availability of academic literature from a South African perspective and actual case studies on the use of crowdsourcing specific to South African companies was very limited. This means that opportunities exist to perform a study on how the

use of crowdsourcing in South Africa, which is not as prevalent yet as is the case in global markets, compares to its use in other markets.

7.6.4 The cost / benefit analysis of the use of Open Innovation by companies versus closed innovation which is run and controlled internal to the organisation

This research study highlighted the benefits of using crowdsourcing as well as the potential value drivers and measures. There is an opportunity for a deeper study on whether the use of open innovation potentially has lower cost implications and is more beneficial in terms of the gains from innovation solutions as opposed to companies running their innovation practices internally and within the control of the organisation and not opening up to external innovation.

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Appendix A – Letter of consent

Katleho Khoza
GIBS Full Time MBA Candidate
GIBS 26 Melville Road
Illovo, Johannesburg
2196
15384871@mygibs.co.za
+27 822574820

Subject: Consent to participate in an interview related to an MBA Research Study

Research Study Topic: The influence of Crowdsourcing as a credible external Source of Innovation and Value Addition for organisations

I, Katleho Khoza, am a full time Master of Business Administration (MBA) student at the Gordon Institute of Business Science (GIBS). As part of the MBA completion requirements I am conducting research on; the influence of Crowdsourcing as a credible external Source of Innovation and Value Addition for organisations.

I am conducting an exploratory study to gain an understanding on the use of Crowdsourcing as a service offering in the South African market. There is currently limited academic research on Crowdsourcing from a South African perspective and this research study will contribute to academic research on the topic in an effort to contribute to Corporates that use Innovation to develop and grow their business.

I will be conducting semi structured interviews and would appreciate your participation. The semi-structured interview is expected to last approximately for an hour and a half. Your participation in the interview is voluntary and you can withdraw at any time without penalty. All data will be kept confidential. If you have any concerns, please contact my supervisor, Dr Irfaan Khota or myself. Our details are provided below.

Researcher name: Katleho Khoza
Email: 15384871@mygibs.co.za
Phone: +27 (0) 82 257 4820
Signature of researcher: _____

Research Supervisor: Dr Irfaan Khota
Email: irfaank@idc.co.za
Phone: +27 (0) 11 269 3621

**Gordon Institute
of Business Science**
University of Pretoria

Date: _____

Signature of participant: _____

Date: _____

Appendix B – Interview Schedule

Interview Questionnaire for Crowdsourcing Semi-structured Interviews

Section A:

1. Job Title:
2. Management Level (Junior, Middle, Senior):
3. Number of years' experience working in Technology and/or Innovation:

Section B – Category (Level of Innovation)

4. Do South African organisations actively pursue Innovation?

Yes

No

-
5. At what level of the organisation is Innovation pursued?

Innovation office

Department

Business Unit

Individual Job

-
6. What is the most prevalent type of innovation being pursued by South African companies?

Technological

Product

Process

Service

Section C – Category (Innovation Methods Used)

7. Do South African organisations pursue Innovation through internal or external collaboration or partnering? (Collaborate within the company across departments and / or with external parties?)

Internally
Externally
Both

8. Please provide your understanding of what crowdsourcing is?

9. Do South African organisation use Crowdsourcing?

Yes
No

10. Is the use of crowdsourcing more prevalent in certain industries and please specify which industries

11. What do you think are the key factors in screening the participants (solution providers) of the crowdsourcing initiative? (Experience, Interest, Expertise, Qualification)?

12. Do you think that the use of crowdsourcing is only suited to certain types of business models or can be used by any company? Please elaborate?

12.1 How would you use crowdsourcing in your own company?

12.2 What do you think companies can benefit from using crowdsourcing for innovation?

Section D – Category (Quality Control)

13. When using external resources for Innovation, how is the quality of the work controlled and measured?

14. What criteria is used to determine the quality of Open Innovation pursuits?

Section E – Category (Rewards for Innovation)

15. Do South African organisations reward Innovation?

Yes

No

16. How is Innovation rewarded?

Financial

Non-Financial

17. What defines the type of rewards (whether financial or non-financial)?

18. Please elaborate on the type of rewards that companies use for incentivising innovation

Section F – Category (Measuring Innovation)

19. What are the most common value drivers for pursuing Open Innovation in organisations?

Profits

Competitiveness

Other

20. How is the achievement of these value drivers measured in organisations?

21. Please provide any closing thoughts on crowdsourcing and its future in the South African context?

Appendix C – Actual responses by participant on number of years experience

Participant	Number of Years' Experience Innovation / Technology
1	7 years
2	2.5 years
3	2 years
4	10 years
5	>10 years
6	15 years
7	10 years
8	15-20 years
9	>20 years
10	26 years
11	22 years
12	8 years
13	6.5 years
14	5-7 years
15	7-8 years
16	7 years

Appendix D – Participants responses on the use of internal versus external collaboration by South African companies

The table below shows the responses of the participants that agreed that South African companies mostly use internal collaboration (closed innovation)

	Number of Participants	Participant Response	General Reasons coded
Internal Collaboration	9/16	<p><i>“I think it’s because they don’t want to share what they have because they might lose their competitive advantage.” (Participant 2)</i></p> <p><i>“And that’s why I don’t think there’s been that many disruptive innovations in South Africa. We’ve got a culture of you know large organisations and I would say the extent of innovation is mostly closed and internal, despite, you know, a lot of literature, like Henry Chesbrough’s stuff, pointing the obvious, the obvious results of embracing open innovation” (Participant 3)</i></p> <p><i>“I think almost exclusively internal innovation, so closed, and I think the big reason for that is I think companies generally look to try and solve problems that they are more sensitised to and there’s a reluctance firstly to open it up to innovation out there because of confidentiality issues, control issues, you know, when you use open source generally even if you use open source coding as an example, once that becomes available in the domain of the public it’s very very difficult to monetise those solutions. So when you look at android for example then you look at what they’ve been able to do with open source coding, it requires a level of accountability and responsibility that I think is really really difficult for South African companies at this stage of our lifecycle to adapt.” (Participant 7)</i></p> <p><i>“I think again we are talking generics here, I think overall the trend in South Africa is that companies are unsure on how to handle intellectual property, so they are not capacitated enough to handle intellectual property, so they shy away from open innovation. Not because they don’t believe in it see the value of it, because they don’t have the competency to drive it.” (Participant 9)</i></p> <p><i>“I would say that South African companies are generally speaking, but it is changing, more focussed internally.” (Participant 11)</i></p>	Trust Control Intellectual Property Competency

		<p><i>“I would say it is mostly internal, again for the bigger guys, but there are a lot of organisations that are starting to try and get to foster innovation between companies”</i></p> <p><i>“They don’t want to share. Obviously I always think of the big banks, I mean when they have got something they want to make sure that they are first to market, they don’t want to share it with any of the other banks and lose that advantage. And I don’t know, I think that it is something that if anyone makes something it can always be duplicated. It is more about how you do it than what you actually have.”</i></p> <p><i>“But people are always worried that they are going to get their ideas stolen and it is kind of stupid to think that way because if you are thinking that way, chances are that it is going to happen.” (Participant 12)</i></p> <p><i>“One, I think it is still unknown, collaboration means that you have to open up your business to others and certainly in some of the businesses that I have been involved in are 40 – 50 year old businesses that have obviously been stuck in their ways and innovation, if it does take place, invariably they would like for it to happen organically within the business as opposed to solicit collaboration outside of the business.” (Participant 13)</i></p> <p><i>“It is all closed. Simply because like I said, we focus on incremental innovation. So we will take something we already have and make it even better. Make it a bit cheaper, make it a bit faster and that works on a closed system. The day we start doing those big bang ideas, those step changers, then that is where we will see us innovating with external partners. I know for example, Discovery have tried doing it. I know this piece of work they are doing now with launching their own bank and they will do work with Apple, to me that speaks to where innovation is going to go, but I don’t think all of us are there yet.” (Participant 15)</i></p> <p><i>“I think they should do it, but right now I’ve only really experienced internal which, one of the reasons I think, why the innovation is actually failing is because they are not – using external parties for innovation makes you lean and currently everyone is trying to do it internally for their own brand outside of the external factors and that is actually what is kind of stopping innovation.” (Participant 16)</i></p>	
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The table below represents the participants that believed that South African companies pursue innovation through external collaboration. Participant 1 answered the question based on the options provided and chose external collaboration and did not elaborate any further on the selection.

	Number of Participants	Participant Response	General Reasons coded
External Collaboration	3/16	<p><i>“So I’ve seen some examples of partners that have tried to solve problems internally and have migrated to bringing in external parties. So in our space specifically, I’ve seen some of our financial services partners go and say, hey, I need to partner this business in the US. I think we’ve seen Discovery do something simple, similar, from our point of view, considering the pace at which change needs to happen. So it’s becoming more and more difficult for us to keep up with the world as its evolving. It’s impossible for us to do all that internally. But I think it’s not something you would do easily. So we are in the middle of, I suppose a transition. But I mean, I think good examples of, I mean if you go back to the Discovery and FNB examples of innovation, those models were not built by themselves in house. There were partners, whether it was Apple or C-track Digicore around some type of technology or the fact that they are partnering Cambridge telematics overseas says that the two most top of mind successful innovators recently being FNB and Discovery, partnered. And that’s a got an outsource flavour to it”</i> (Participant 4)</p> <p><i>“My experience is, I run the crowdsourcing business for [REDACTED] and part of that is around open innovation, but it is very nascent in South Africa. In Europe and in North America there is a lot more work being done with generating crowds or talent outside of your four walls</i></p>	None

		<p><i>and tapping them for insights and expertise. In South Africa, I think probably because it is still an emerging market, a developing economy, there is a much greater emphasis on companies that want the likes of us to come in as a business partner in that process and they would lean on us to provide the ideation and the process and the management and execution of those ideas. So we are starting to work with companies to do some open innovation work but it is very, very new and it is a pretty radical concept for most of the companies that we are talking to” (Participant 5)</i></p>	
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The table below is a representation of the participants that believe that South African companies use a combination of internal and external collaboration for innovation.

	Number of Participants	Participant Response	General Reasons coded
Internal and External Collaboration	4/16	<p><i>“Both. Both to varying degrees. Obviously there is a very big generalisation as it varies from company to company, but I think if you look at the guys who are getting it right they have certainly realised that you can’t just innovate from internally. The world these days is effectively a big collaboration space so you need to collaborate with others to innovate. Those that have been most successful now are reaching out to external parties to help innovate and to partner on innovations.” (Participant 6)</i></p> <p><i>“I think what we see is that South African companies are collaborating and they do understand the importance of that. Who they collaborate with is an interesting topic and something that we wrote about as well. From a</i></p>	<p>Trusted partners</p> <p>Challenge: Trust in going beyond trusted partners</p>

	<p><i>South African perspective, I think like I said before, the innovation activity and how we manage it is very often related to our innovation maturity level. And we seem to, in the market, get the feeling that in South Africa, we start closed. We try and engage internally, we drive innovation, we impact on that maturity and innovation capability and as we grow in that, we tend to go more open. Now, again, the same situation is not true for everybody. So some organisations might have a need for open innovation with regards to a certain challenge that they want solved, that they want input on and that they can go there directly. So for me open innovation is a methodology of innovation management. It's one of the tools that we can use. There are various things that we can do and that will depend on the organisation's needs, requirements and I think very often but not always necessarily linked to, but quite often you do see that an organisation will start with internal innovation before they go semi-open. I think there's a difference between that as well. I don't like to call innovation closed innovation because closed innovation is not going to work. I would like to refer to it as innovation management methodology. Internal and then we can say semi-open which means the organisation with its stakeholders and its ecosystem and engagement around ecosystem and open in my mind means a complete open innovation methodology, which means let's find the best solutions wherever they are in the world. So we can do semi-open innovation or internal open innovation which just means to us and our organisation or us in our ecosystem, our stakeholders, the people immediately next to us that we want to innovate</i></p>	
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		<p><i>with, and then open innovation. So whether one can say it's sequential, you go internal innovation and then you go semi-open innovation where you engage with your ecosystem, and then you go open innovation, I don't think you can really classify it in rigid blocks like that. I think it depends on what the organisation wants to achieve and it's very important for the organisation to know what that is, first of all. We've got challenges but it needs to be defined, it needs to be understood and very often repositioned in order to get the correct responses. But it's not only that. It's about that engagement model. Because the success of open innovation and semi open innovation and in my opinion, any innovation for that matter is that community that you are going to use. Your engagement model around that, how you are going to plan and structure for that to happen and what communities are you putting together to make sure you that you get the results that you are after. It's like rocket science, but it's not. Let's just do it while it's going to work." (Participant 8)</i></p> <p><i>"I think they start off innovation in a closed loop, as internal, and then you will find they start to rely on their partners in a partner ecosystem based approach to drive more of an external based innovation approach, so then using the partners to actually help them drive whatever innovation they are looking to. I think where there is a bit of a challenge is the lack of driving outside of the existing partner base, so using means beyond the known. A lot of it is still done within who I know, what I know, how much I know versus the breaking the barriers beyond that." (Participant 10)</i></p>	
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		<p><i>“Again a mix. Often if they have got a dedicated lab or centre of innovation a lot of that will be driven in-house, but certainly my exposure has been because they are partnering with agencies or consultants to, either as experts in their field or to facilitate different types of thinking.” (Participant 14)</i></p>	
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Appendix E – Definitions of crowdsourcing provided by the participants

Participant	Definition	Entrepreneur / Employee / Both	Innovation Expert / Crowdsourcing Service Provider / Both
1	<p><i>“The ability to analyse big data to get information that you can possibly use to take one innovative initiatives within a company or an organisation, not only big data I mean crowdsourcing can happen at a smaller scale.”</i></p> <p><i>“On a smaller scale I could be submitting a questionnaire within my organisation and maybe there’s about 200 people within the organisation and I get feedback from those individuals you can consider that as crowdsourcing in my opinion.”</i></p>	Employee	Innovation Expert
2	<p><i>“My definition of crowdsourcing would be utilising a mass number of people to collect a certain type of information. So there’s two types of crowdsourcing, from my perspective. One would be participants, you asking them the questions and they giving you the answers, another type of crowdsourcing would be, for example, users, I’m just going to give you an example. In YouTube videos people that have minimum views which shows how many people actually clicked on that link and watched the video, so that’s also considered crowdsourcing. So one of them, the participants are aware of it and in the other perspective they not.” So information would be collected both ways. So you can actually tell them you are going to be a part of this study, can you provide us this amount of information based on your experience, and so on, and another you can just get the information from them by them just simply using the technology or from experience”</i></p>	Employee	Innovation Expert
3	<p><i>“It starts with a problem that you are trying to solve, be it within an organisation or a department and putting that problem out to a network of people not necessarily in your organisation and not constrained by your geographical boundaries and allowing them to solve it, on your behalf.”</i></p>	Employee	Innovation Expert
4	<p><i>“Simply making use of skill outside your circle of influence.”</i></p>	Employee	Innovation Expert
5	<p><i>“They way that we definite it or think about it is, the act of accessing knowledge information or input from a distributed group of individuals,</i></p>	Employee	Current crowdsourcing service providers

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	<i>usually over the internet or through technology, but certain individuals that exist outside the four walls of your organisation.”</i>		and Innovation expert
6	<i>“So crowdsourcing, without it being a particularly scientific definition, is effectively when you pose a – not when you pose a question, more when you seek a solution by putting out a question to a crowd or people. Be it an internal crowd in your company or be it more commonly an external group of people from outside your company, and ask them if they have thoughts, ideas, solutions which can solve something that is a challenge for your business.”</i>	Entrepreneur	Current crowdsourcing service providers and Innovation expert
7	<i>“Making a problem known to a constituency that it stems outside of an organisation and then inviting for solutions to become available. And as part of that invitation process, to encourage collaboration across different constituencies as well. So instead of trying to solve for a problem yourself you would then invite other participants to look at how to solve them, whether its innovation, whether it’s marketing, it doesn’t really matter, but the thinking is collective group thinking to try and solve for a problem.”</i>	Employee / Entrepreneur	Innovation Expert
8	<i>“In my opinion crowdsourcing is engaging the correct community to assist you to solve a problem. It sounds simplistic but ja. To me that is what it is.”</i>	Entrepreneur	Current crowdsourcing service providers and Innovation expert
9	<i>“Okay, crowdsourcing is not necessarily the same thing as open innovation, I think it is an expression of open innovation. But crowdsourcing is where you mobilise a crowd, it could be a contained crowd or an open crowd, so it could be a closed crowd, to give you inputs into your idea to market cycle and that idea could be a service, product, process, business model doesn’t matter.”</i>	Entrepreneur	Current crowdsourcing service providers and Innovation expert
10	<i>“Crowdsourcing is really using a mechanism that takes you out into the market, that gives you access to different geographies, different people, different cultures, different landscapes, the people aspect of that across the world in a much easier fashion to be able to garner the right idea, innovative approach from a massive landscape of individuals, if I could put it that way. So it is not the narrow minded approach of the few, it is the get the information from the many. There are some interesting challenges with that because you are now relying on everybody having the same level of intellect, not just intellect but same level of understanding of</i>	Employee	Innovation Expert

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	<i>the problem. So how you actually manage the outcome of that innovation you put out into crowdsourcing could be quite interesting because you may get stuff back that is not necessarily solid, if I can put it politically correct. You may get junk back."</i>		
11	<i>"So crowdsourcing is the tapping into collective experience and wisdom to solve challenges."</i>	Entrepreneur	Innovation Expert
12	<i>"Combining your ideas and other ideas to, I hate to use the word, synergistically make better ideas."</i>	Entrepreneur	Innovation Expert
13	<i>"Crowdsourcing, from how I understand it, is an alternative means of sourcing either investment, collaboration with large groups of individuals within a specific either technology, product space etcetera, but mostly it applies around entities looking to solicit investment through a collective, as opposed to worry about institutional investors. So actually individuals, people, investing in ideas and/or technology."</i>	Employee / Entrepreneur	Innovation Expert
14	<i>"I think the classic crowdsourcing is that we engage with an external group of people, who may or may not be stakeholders, but I guess by the fact that they engage back makes them a stakeholder, who present ideas and the theory is that there is perhaps some kind of collaboration with that and that through this a best or unusual idea becomes available to be implemented."</i>	Employee / Entrepreneur	Innovation Expert
15	<i>"Crowdsourcing is sourcing of ideas, concepts, funding, basically resources through a large network of people that may not be connected to one another using a central tool. So for example if you look at sites like Kiva, I am not sure if you are familiar with Kiva, check it out Kiva.org it's a fantastic tool to crowdsource, where they connect lenders with borrowers, but borrowers are from developing communities. So for example, if you are a Kickstarter but for developing countries. So for example, if your name is Ruth and you are in rural Congo and you want to start a micro-enterprise selling ground nuts, you can then go to Kiva, put your profile up and then Kiva will then crowdsource funds for you from around the world. So people donate a dollar here, 10 dollars there, a rand here, track your progress to your target and then afterwards you get your funding. That to me is pure pure crowdsourcing. And it works for ideas, it works for raising funds, it works for anything really. People naturally are collaborative and naturally people are innovative. It is providing an environment and a</i>	Employee	Innovation Expert

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	<i>system and a structure that allows them to be that way.”</i>		
16	<i>“So there is crowd sourced funding where you pretty much kick start a type of model, you put out your idea, you hope that the community that is interested in your idea will fund it, right? But then crowdsourcing in itself can mean merely attaining or acquiring anything from a crowd or a group or a community of people, including innovation itself. So if you were to get a group of people to ideate it with you, you can actually push innovation quicker. That is my understanding of that.”</i>	Employee	Innovation Expert

Appendix F – The use of crowdsourcing by South African companies

The table below provides a detailed account of the negative (“No”) responses by participants in relation to the use of crowdsourcing by South African companies.

No	Reason Provided by participant
	<p><i>“I think South African organisations are very old-school in their type of the way they run their businesses and there’s a perception that all the vision and all the directions and all the innovative ideas come from senior management or c-suite level, whereas I believe the most innovation actually comes from the people who are engaged with the clients, technology and everything else on a day to day basis.” (Participant 1)</i></p> <p><i>“Most companies are reluctant to use it because they don’t believe it’s credible, which I feel is wrong, they should be able to use it and then they should criticise it, whether it is credible or not instead of just assuming it’s not credible, just because it’s not backed up by any academic research.” (Participant 2)</i></p> <p><i>“So, I haven’t read enough literature to indicate that South African companies are using it. All the examples are out of America. Companies like GitHub which you know allow you to contribute code towards. We have been chatting to another huge bank in South Africa, Standard Bank. Who have embraced open innovation as their primary strategy towards innovation and have had some successes, the likes of snap scan had a role which was contributed to by a bunch of students down in Stellenbosch. So that’s one of the few examples that I know, but in large I would say they don’t.” (Participant 3)</i></p> <p><i>“I think my answer would be that more don’t. There are some that do, but I think the majority don’t” (Participant 4)</i></p> <p><i>“Some just don’t know what it is, others are still kind of fixated in the traditional way of sourcing investment, which is institutional, obviously your banks etcetera, private equity. They do not really have enough experience understanding the power of individuals as a collective that essentially amounts to the same thing.”(Participant 13)</i></p> <p><i>“Look I think globally no-one really uses crowdsourcing. People say they do and there are all these different levels whether it is from a crowdfunding point of view, yes we can talk about Wikipedia as a crowd sourced platform, but I think that there is a lot of reticence, both globally but maybe just a particularly South African thing, about the kind of information that you need to give away to open up your problems and challenges to a wider audience. So there is a lot of secrecy around that. And then I know because of a business I was exposed to, a very big challenge that corporations or organisations have with engaging with a crowdsourced model, is who owns the IP. And the legal issues around the ownership and implementation do matter, so there is not just the idea ownership but then there is the financial gain for it.” (Participant 14)</i></p> <p><i>“I am still looking for an example of one, so not to my knowledge, no. It may be happening but maybe behind closed doors, for all I know, but I haven’t seen one big example where you can say, wow, that was awesome.” (Participant 15)</i></p> <p><i>“IP seems like a big deal for our South African companies. When they have generic IP. Second thing is, I have seen internal innovation being done with think tanks, but these don’t get grown into a public think tank of sorts, they don’t open it up to public people generally. So I don’t know if it is a fear of competitors or lots of IP. I am not actually sure why.” (Participant 16)</i></p>

The table below provides a detailed account of the positive (“Yes”) responses by participants in relation to the use of crowdsourcing by South African companies.

Yes	Reason Provided by participant
	<p><i>“Most of the stuff has been around what we would call consulting work. Market entry strategies, competitor scans, benchmarking, that type of exercise. Really stuff that Deloitte would sell anyways, but we are using crowdsourcing as a value differentiator in terms of either the quality of the insights that we are gathering because we are tapping a large crowd for knowledge, or it is more agile or more cost-effective. So consulting insights definitely one. Technology, design and development is another. This is similar to open innovation type of exercise where we have got almost a million people sitting waiting to provide input into technology design and development work. And as a result, the client gets a huge amount of value out of the exercise. Because when you say I want to design the landing pitch for my website by using a crowdsourcing platform to do that, you get 40 examples of what that page could look like. Which is hugely valuable in that work as opposed to we would typically go, since we contract with our client, and say, we are going to build you the website and we come back and we give them three maybe four examples and they have got to choose any hit rate off of that. Here we have got this breadth of examples to choose from, so the solution is more robust, there is more to choose from and also the cost is significantly lower and quicker to actually execute on. We have done some data science but it is a very early stage practise for us, biggest constraint there really is around the cost of the exercise, so you need to be able to throw a couple of hundred thousand rand at the problem minimum, sometimes up to a million rand. And that again defines who you are going to, who your clients would be for that exercise. Some of these certain clients can afford to do that. And then we have done a couple of open innovation style projects in South Africa, quite a few globally in Deloitte. Sorry, I keep mentioning the company, but quite a few globally in the firm but not that many in South Africa, just two examples locally.” (Participant 5)</i></p> <p><i>“So I have seen some that do, I haven’t seen it done too successfully frankly. I know some of the guys we work with have specific crowdsourcing programs and I think the truth of it is that one’s that I have seen have been frankly so unsuccessful that the guys have started switching them off.” (Participant 6)</i></p> <p><i>“I think they do. And its prevalent from what you see happening in the market. You see all the crowdsourcing platforms, you see the crowd funding platforms that’s really coming up. And I think organisations do it. I think the ones that are good at it have learnt some lessons and I think they realise that it’s about engagement, that it’s about follow through, that it’s about engaging with the right people at the right levels, that it’s about how do we sustain this and make sure that we manage it in such a way that there’s value for everybody and that we keep those communication channels open and that we keep it focused in terms of what it is that we want to achieve. You will find a good case study on that in our lead report of the case study from the medical research council. Because they are quite good at this. They’ve made excellent strides and have had huge successes. And we asked them that question, you know, what did you learn and what can you share. And they gave us excellent pointers.” (Participant 8)</i></p> <p><i>“I think, without calling it crowdsourcing, any brand survey asking opinions of customers is an expression of crowdsourcing. So with a different tag, yes, definitely a lot. But using the word crowdsourcing and open innovation, not a lot. So it is definitely words that need a lot more adoption.”(Participant 9)</i></p> <p><i>“Very few, if there are any. I personally haven’t come across any organisations out there that are using crowdsourcing enough. I think they use a, it is not a true crowdsourcing model, they use a hybrid model of that where they will spa source or partner source type crowdsourcing models but</i></p>

not true crowdsourcing as let's open this up into the market and see what comes out.” (Participant 10) So I think it is because of the level of trust that the information coming back from the crowd. It is an unknown thing. You could come out with some phenomenal ideas but you could come out with some serious junk and the problem is, is how much appetite does – I think it goes down to the level of how much appetite the business has to drive a much wider thought process and see what comes out. It also depends on how much your business has got invested in the need to have this innovation approach. So if this innovation approach is potentially going to impact the bottom line of your business in such a way it could drive revenue up by eight percent but it could also, if it fails, it could kill your business. I think you will be a lot more risk mitigation applied to how you apply crowdsourcing approach versus if you are just looking for new revenue streams and you want ideas from the market and new channels to market and you are going, well, hold on a moment, I am looking for new ways of channels and then you go out into the different layers, as you are aware, the different layers out in the market and start to use crowdsourcing to gather information about the elements like that. I think that would differ.” (Participant 10)

“...so crowdsourcing on two layers. The, let's go practically look for solution is a little bit low. The, oh my God, don't we need to find a solution because the way we are doing this is just not sustainable, absolutely, yes. So then you are actually being forced to become innovative, whether it is delivering pharmaceuticals on a bicycle in Cape Town.” (Participant 11)

“I would say yes, internally, and again for me I think crowdsourcing can be done both internally and externally. That being said, there are companies that have started to use it in South Africa. We were talking about one earlier that is DotNext where they are trying to bring management consulting into the more crowdsourcing frame of mind.” (Participant 12)

Appendix G - Screening of crowdsourcing participants

The table below represents the responses of the participants that were of the view that participants of crowdsourcing should not be screened.

Question asked	Frequency	Response
What do you think are the key factors in screening the participants (solution providers) of a crowdsourcing initiative? (Experience, Interests, Expertise, Qualification)	Four of the sixteen (4/16) participants did not believe that the crowd participants should be screened by qualification or experience or expertise.	<p><i>"I believe any ideas is an idea worth evaluating because if we screen people we preventing ourselves from thinking out of the box"</i> (Participant 1)</p> <p><i>"...I don't think you should limit anyone from providing input"</i> (Participant 2)</p> <p><i>"I don't think that that is so important but what I think is important is to have the correct communities and the reach because we very often use a term in terms of a sniper, the sniper approach, the whole open approach just aiming it and shoot. So for me it's the value that you are going to get back from crowdsourcing is going to be linked to the communities that you have access to. The stronger, the deeper, and the richer your communities, the better your results should be."</i> (Participant 8) <i>"I think the more diverse the group, probably the better because you need that diversity and different viewpoints because it's not say that because you are from this industry, you are the only person that can have this answer. It doesn't work like that at all. We know that. So, it is important to have that diversity but it's also important to have a richness in the ecosystem and to have a community that will give you that rich deeper insight. You can't just hope for the best. It's a semi structured approach in terms of how you will get to the right community while containing the diversity of the people."</i> (Participant 8)</p> <p><i>"It should definitely be open. For me you don't know where the best ideas are going to come from. Like you obviously want people who are thinking differently to you. But you start screening for people who have the same qualifications, the same experience and all of that you are going to get the same ideas. So you want to open it up to as many people as possible and then, from there, when you have all the ideas, then you screen them."</i> (Participant 12)</p>

The table below represents the participants that agreed that crowdsourcing participants should be screened.

Question asked	Frequency	Response
<p>What do you think are the key factors in screening the participants (solution providers) of a crowdsourcing initiative? (Experience, Interests, Expertise, Qualification)</p>	<p>Five of the sixteen (5/16) participants believe that the crowd participants should be screened.</p>	<p><i>"We've relied on other institutions to do screenings for us. So we've got relationships with selected universities in South Africa as well as the CSIR. And we've put a few challenges to them and they then use their knowledge to do the screenings. So we've got a buffer. That's all our experience to date has been around an intermediary involved. A company or a university or an institution." (Participant 3)</i></p> <p><i>"I would be very sceptical about throwing core information out to the ether and saying you know just go and have some fun with it." (Participant 4)</i></p> <p><i>"So you've got to be cautious about who does what. I don't think it can ever be a free for all, here it is, let's see what the world pops out." (Participant 4)</i></p> <p><i>"So how we've leveraged the phenomenon is that we have gone into the market and formed partnerships with platforms that provide services. Consulting insights and subject matter experts and technology design and development and open innovation. " (Participant 5)</i></p> <p><i>"So we lean on our partners to provide the methodology by which those participants are screened but at a higher level what we look to do in the open innovation space is you are really looking to find four key groups." (Participant 5)</i></p> <p><i>"The first is your kind of radical innovator, your sort of your ideation people. Second is what we call incremental innovators. So people that can take an idea and say, okay, but if we tweak it like this it would be even better. The third is how we would think of our organisation, which is really around people who can visualise and look for places where you can plug different things together and create something new. So real kind of innovators in that space. So not so much ideators but saying, well if we took this company and this company and we added that service, then we could come up with something that was completely brand new. And the fourth is the influencers or the shapers, the people who are going to participate and call it but are not necessarily going to provide ideas on their own, but they are helping to shape and mould what is being provided. And so what we work with</i></p>

		<p><i>our partners to do is then, using their selection criteria, they have questionnaires that help to screen and select the individuals that we are looking to build the crowd with a specific percentage of each one of those groups. And then we work with them then to create participation in that community and then to drive the ideas from initial inception all the way through to something that is actionable. So you are shaping it the whole way until you get to an up that you say you are going to work with that idea” (Participant 5).</i></p> <p><i>“ ...if you focus on organisations more than people and on organisations that have a known quantity and have a track record on innovating in that space, but it is open because they are not your organisation, you are going outside. That is where we see a lot more success.” (Participant 6)</i></p> <p><i>“I think the moderation aspect of who manages and taps into the crowd to source innovation is paramount. Everybody has a contribution to make but you can’t have a jungle of contributions on the table that doesn’t actually lead to something.” (Participant 11)</i></p>
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The final set of participants, seven of the sixteen participants, responded that screening of participants depends on the purpose of using crowdsourcing by a company. The table below contains their responses.

Question asked	Frequency	Response
<p>What do you think are the key factors in screening the participants (solution providers) of a crowdsourcing initiative? (Experience, Interests, Expertise, Qualification)</p>	<p>Seven of the sixteen (7/16) participants believed the screening of crowd participants is dependent on the purpose of the company embarking on using crowdsourcing as a tool for innovation, so in other words what problem the company is trying to solve or what solution they are looking for.</p>	<p><i>“I think again it depends on the kind of problem you are solving for, but for an institution like ours and in the industry that we are working, confidentiality is very very important. So you can’t make a problem known to too many people, particularly if this crowdsourcing venture is also consulting to competitors in the industry, and sometimes it’s very difficult to know what you can share and what you can’t share. So I think that for me is important and I think it influences when companies will go out looking for solutions. I think other industries are a little bit more open, I think sales type industries where all they are looking for are sales, they are looking for apps that will help get customers and get customer behaviour insights, I think</i></p>

		<p><i>those ones are easier to get going.” (Participant 7)</i></p> <p><i>“I think it depends on the problem. So if the problem is a highly technical expert driven problem it is completely idiotic to bring in a lot of people who have never dealt with the problem. But, if you design it that it becomes so exclusive that you get internal thinking instead of external thinking, then you are also not getting the benefit from the crowd. So I think the design is extremely important and at least go across industries. So if you can, we are talking about a highly technical problem now, if you can frame the problem in such a way that it becomes industry agnostic, if I can give you an example. Proctor & Gamble did a challenge where they were trying to find a replacement for an iron on a shirt. So if you can put the shirt in a washing powder that when, after it has been washed, it is also ironed. That would be a fantastic solution for them. So instead of going to the crowd and saying, we are looking for a replacement for an iron, they looked at the science of what will make a shirt be ironed. And the science behind it is the fibres of the shirt should relax. So they went and said, we are looking for substances, chemicals, solutions, mechanical solutions, whatever, that actually relaxes fibres in materials. Now, you are not going to look at the typical crowd that actually does ironing traditionally and a Stanford Professor got that contract and he was in chips manufacturing and he used a spray on his board to relax the fibres when he did his research. And it was not a spray known to that industry. So that is really the benefit of the crowd in many circumstances, that unexpected solutions from cross-industry collaboration. And if you design your crowd you can design that in. You don’t have to be so inclusive that you have to deal with millions of solutions and then ultimately you stuff the system so much that you can’t get to a proper answer. But when you design, design cleverly.” (Participant 9)</i></p>
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	<p><i>“I think it once again depends on the topic of innovation you are crowdsourcing. So that topic would, depending on that topic, could apply multiple different things. If it is a heavy, let’s take an engineering type topic, if it is heavy engineering there is no ways I am going to be listening to or putting that out into a market of 13 year olds, but I may want to get it into the universities where there is great R&D happening in engineering, that is changing. So my demographic may play a part. The areas that you go into in the market, so in that example I would probably want to go out into the engineering fraternity at the universities. So I don’t think it is a single thing, I think it depends on the idea and how you coach that idea forward and how you structure your thought process in what you want to do when you go out to crowdsourcing.” (Participant 10)</i></p> <p><i>“Open Field.” “I think it would determine in terms of what the intent of seeking investment and/or individuals to buy into either an idea or technology. And, given that, for instance if it is something, it could be financial services space based for instance, it is very important to ultimately then vet the individuals that will be ultimately providing you with or making allocations towards the crowdsourcing format. Given that you have to then adhere to FSB and all these other elements that you need to kind of get to. But outside of that, technology from what I have seen, because obviously technology sells solutions, so in essence they say technology doesn’t really have any real restriction in terms of who can participate. I think around that it is obviously around critical mass of participation. So ja, like if you are ready to bend in terms of the sector orientation, in terms of what the sector requires and in terms of the regulatory elements associated with the sector.” (Participant 13)</i></p> <p><i>“I think it all comes down your economic model. So at what point you are parting</i></p>
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	<p><i>with, like what is the whole value, chain or value equi-system for it? So at what point are you paying for people, whether you are paying it all, obviously it is not just about money it is about time investment and kind of, I guess, risk some exposure. I mean that would all feed into like a strategic approach to crowdsourcing rather than a one-size-fits-all. And I guess the kind of challenges that you are trying to solve.”</i> (Participant 14)</p> <p>The researcher confirmed twice with participant 14 that the response was that the screening of participants depends on the purpose of using the crowd and thus the criteria of screening depends on this purpose. The participant confirmed that the researcher was interpreting the response correctly.</p> <p><i>“It all depends what you want from the crowd, doesn’t it? All right. So for example if you are doing a piece of research on a very technical matter, you want people to know what they are talking about right. You want people, so from crowdsourcing or a solution to a SAP ACM system, I am not going to talk to somebody who is involved in distribution, inside their field. I want to speak to SAP technicians, I want to speak to SAP specialists. So to my mind it is the quality of what you get depends on the structure that you use. With your crowdsourcing for funding, for example Kiva, anybody is welcome, right? So the issue all depends on what you are busy trying to crowdsource.”</i> (Participant 15)</p> <p><i>“It depends on the concept. So if I have already designed something and I need input to optimise it I would then look for skilled professionals or people within the field, or if I am pivoting to create something that supports like a complementary service of some sort, I would find people in those service areas. So I will always look for the skill. But if it is something where we are trying to literally come up with green field’s</i></p>
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		<p><i>innovation, it would be pretty much around a brainstorming session, depending on what the direction you are going for is. I would find people that would have a linked interest in that direction. In terms of IP protection, that is where you want to screen people but I am guessing it will only be on a competitive basis really, more than anything.” (Participant 16)</i></p>
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Appendix H – Quality checking process responses by participants

Emerging theme	Participant Response	Frequency
1. Market Feedback	<p><i>“Well from, I can only speak from a technology point of view, how we could measure the effectiveness is only through having whatever innovation that comes out of the crowdsourcing initially being tested out there in the field where we can gather the data around the usage of whatever initiative is and adoption and take on and up and whatever feedback we can extract from social media and various other feedback platforms. So I would say the only way to measure the quality is when you actually go ahead with the initiative because with some innovations it may seem ridiculous when you assessing them and looking at them but you may find that out there in the market it takes off. So in my environment definitely, I wouldn't be putting those organisations reputation at risk so obviously you would test it with a subset of your whole market, so you select a few so it's sort of a pilot” (Participant 1)</i></p> <p><i>“...piloted, try get customers feedback. And our customers set our standards. So without their input it's worthless to us.” (Participant 3)</i></p> <p><i>“Pilot.” (Participant 4)</i></p> <p><i>“Then I think, typically, and this is very common if you do, call it rapid prototyping, so you build something with that outside organisation but quickly and affordably in a way that you are prepared to switch off if it is not working. And then you can grow your comfort levels to the point where you are prepared to take solutions to your customers.” (Participant 6)</i></p> <p><i>“So I think things like look and feel what the customer experience would be like, how the customer will interact with the solution. Like I said earlier on, you can't take applications that are developed fairly quickly and maybe even loosely and then try and figure out how do you make it work for your company. That is why I think you need to use crowdsourcing for what it is and for me it is getting a better understanding of what customers are experiencing, getting a view on how customers would like to interact with the solution once you have understood the problem and you have tried to solve for it. The actual solution for me I think is further down the line and you can then dedicate resources to the solution in a different way. But in the innovation process I would rather figure out what it is that the problem that needs solving, when you solve for it, how is it the customers would interact with it. And if you think of all of the really good solutions out there and the good innovations, the ones that have really scaled, curiously enough they go beyond what MBA text books teach. So for example and MBA text books would say to you, don't struggle with different segments, if you want to be cost leader go with cost leader, if you want to differentiation, go with differentiation. The really good solutions are the ones</i></p>	<p>Six of the sixteen participant's responses were categorised in this section.</p>

	<p><i>that just go and develop scale across all of the segments. You think of WhatsApp for example, everybody uses WhatsApp and WeChat as well, and you have targeted your solution exclusively along segmentation lines of one dominant segment, you probably would have found that you are misrepresenting how big the innovation could be. Exactly the same thing with a smart phone. Everybody from a child through to somebody in their seventies would want a smart phone. So I think those are the solutions that work very well and the reason those solutions work well is because they tap into a common customer need, and that is what I think crowdsourcing really should be about.”</i> (Participant 7)</p> <p><i>“As I said, I don’t come from an IT background, I come from a customer strategy background where the customer is always king. And like I am saying, the problem we have is that we have a bunch of very smart people who think they know better than customers. So maybe the customer says, no, I want a black Samsung phone, not a white Samsung, but you in your world are thinking no but we have invested so much money in a factory to make black Samsung phones, we are going to make black Samsung phones, we are just going to add bits of things and call that innovation. That is not really innovation. And that is not the value of crowdsourcing.”</i> (Participant 15)</p>	
<p>2. Apply internal company quality controls</p>	<p><i>“So on a technology side, it would come back to us and we would stress test it. So we’ve got our own engineers and IT people who are very qualified. So they go through a large amount of screening to come and work for us at [REDACTED]. We would then create an environment where the innovation would come in and it would be tested and scrutinised, piloted, try get customers feedback. A large part of open innovation unfortunately ends up as an innovation orphan inside a company because no one has ownership over it. So, change control is a very good, you know, point to bring up because you know, you need to know what impact this new innovation is going to have on current processes, current systems, departments. Is everyone aware of it, have people been trained on It? So, I think that’s where a lot of companies fall down. We get a lot of ideas and innovations coming in and you don’t know how to manage them once they are in. We would use the same processes that we use internally for our own ideas. An external idea goes through our internal processes and if we are comfortable with that then we should be comfortable that we can push it out to our customers.”</i> (Participant 3)</p> <p><i>“We have processes within the business that we set up. So for example, if we doing something from a product point of view internally, there are gates that it needs to get through. And in those gates would involve people or areas within the business will not give it the go ahead unless they are</i></p>	<p>Twelve of the sixteen participant’s responses were categorised in this section.</p>

satisfied that it delivers. So if it was a piece of technology it's going to need to be tested and signed off by someone I think. That sets the standards. And change control boards and things like that. So if you're doing something understand that I'm going to do this and this is the impact.” (Participant 4)

“One is that we leverage our partners so we investigate our partners very carefully in terms of how their quality control and how they manage the process to get to and output and the second is that we engage very closely in that process to make sure that we have people on our side that are involved in the process. So project managing to a successful delivery, ensuring up front that everyone understands what success criteria looks like, defining the outputs. So the challenge that we have is that we don't always know up front what the exact thing we are solving for is but the crowd doesn't interpret your need. The crowd only executes on your request. So if we are saying we want or are looking for an innovation solution around water purification, for example, you need to know specifically that that's what you are looking for. If you are mixing in like waste water treatment with that then the crowd is not going to be able to read your mind and then interpret, okay, we need to be structuring it this way, right? So that is the biggest hurdle, is getting clear upfront about what it is that you are looking to get done. But easily the most challenging part of the process. So we have offloaded some of that risk on our partners and leveraged their mechanisms but we do stay very close to it in the process as well” (Participant 5)

I wouldn't, I wouldn't try to manage the quality from what we are getting from an external vendor, or I would let them do this as best as they can and then once you have a solution or a pilot or a prototyping model, to then almost retread that solution in terms of the standards that we have. Because if you are asking again to impose a quality model on a crowdsourcing initiative, I think you are constraining them and you are forcing them to think in a certain way. So for example, if a financial institution uses a certain development lifecycle and uses specific software for coding solutions and your crowdsourcing solution is very different to that, you can't automatically discount the solutions because it doesn't comply with what you have. I would rather let them build a solution and then retread and refit or retrofit the solution that comes by. That way you keep quality control separate from the process of innovation and the process of being able to solve for problems. It is easier for a large company and large organisation to take a solution and retrofit it, as opposed to a large organisation imposing its development standards and its coding standards on some small outfit that is engaged in crowdsourcing. You would waste too much

	<p><i>time and I think you would probably hurt the innovation thinking process.” (Participant 7)</i></p> <p><i>“Then the processes that follow that in terms of how we are matching and suggesting and taking forward towards implementation. So you need to work with people who know what they do. And then as an organisation, you need to build that capability.” (Participant 8)</i></p> <p><i>“...so I don’t think there is an easy solution, I think with crowdsourcing you do not avoid the issue of you must still own the process. So the crowd does not own the process, the crowd does not own the outcome. You are busy with developing your own idea to market cycle, so you are building whatever it is, whether it is upping your toothpaste sales, that is you that owns that problem. So when the crowd input is make the hole bigger, then you still, you might have forgotten about it, it is opening an avenue, but then you still need to play around with that. So the process remains your responsibility, and the quality.” (Participant 9)</i></p> <p><i>“But you need to make sure you have built a robust team of open minded thinkers that are applying the quality criteria in the information that comes back. It is a massive thing. It is not an auto adoption either. So you don’t just adopt everything that comes back, you have got to apply a rigorous approach through an internalisation of the information coming back through that quality criteria to make sure that you are driving the right outcomes for your business.” (Participant 10)</i></p> <p><i>There is two approaches and both work unfortunately, so this is not the greatest answer. On the one hand you do want to have clear rules, quality control and ability to know that you can integrate, but you also don’t want to kill the solutions that could come out, simply because you were blinded by your own limitations within the company. Just because your developers always code it A, B, C that means they will be blind to D, E and F. So it is a very fine balance on that.” (Participant 11)</i></p> <p><i>“I would say you want to get as much as possible in the beginning and so there is always going to be a quality issue and from there it is just going to be how you sift through those ideas to see what you think is actually going to work. There is a bit of a problem in this because what you think might be a good idea, it might not be the best idea and obviously that is where the quality problem comes in. For me it is a form of a committee, whenever we get a bunch of ideas we go through, let’s say we have 20 ideas like inside the business unit, we will discuss them, we will see which we think are the best ideas. From there we will then go to a higher member in the organisation, speak to them, do simple little business model canvasses around each</i></p>	
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	<p><i>idea, if it is that type of idea. Rather just speak to as many people as possible to weed out the ones which nobody thinks is a good idea. So it is a process of speaking to a lot of people, basically that is the filtration method for us, ja.” (Participant 12)</i></p> <p><i>“Yes, especially as you hit volume. So you can try and manage as much as possible in terms of the criteria and the way people are submitting information. You would ideally have a very simple matrix in a group of people that reviews things to push them through, but to be honest to me none of it seems like a really good use of smart peoples time.” (Participant 14)</i></p> <p><i>“Because I come from a customer strategy background and something I have always had as a golden rule is you can’t filter information before you have received it. Okay? Because then you are getting a biased sample. And if you get a biased sample then there is menace, and the menace will be robust in any way. What you want is to be able to get information, unfiltered and uncensored, so to speak, and then you can say, well, what works for us and what doesn’t work.” (Participant 15)</i></p> <p><i>“Or you can templatize the whole thing, which doesn’t always give you, you pretty much stop innovation by creating boundaries. Do you get me? So you would almost be relying on volume more than quality, then you would have to sift through it and make it into a solid idea. The third way I can think of is consolidation and aggregation of concepts and then turning that into a concept.” (Participant 16)</i></p>	
<p>4. Working with experts</p>	<p><i>“Look we have seen some very good results from our quality. I think it depends on your mind-set. So there is a guy who spoke at a show in London, I forget his name, about two years ago and he made a statement which is actually very true, as much as big corporates probably wouldn’t like to hear it. And the statement he made is that there probably isn’t anybody in the world who is the top of their field who is in a big organisation. And of course there are some at Google and at Facebook and things like that, but he is not looking at them as those big old organisations. And what he was basically saying was to a bunch of organisations there like a Barclays and a Vodafone and a whatever, if you guys don’t go and work with these more start-up type companies who have got brilliant people who have gone and formed their own business, then you are not going to work with the best people around. So I think the key is you need to have an open mind to say, we as a big organisation, big corporate, probably don’t have the best people in every field. There is just no ways you can have, I mean you can’t have the best person around in security and in compliance and in CRM. I mean it is just</i></p>	<p>Three of the sixteen participant’s responses were categorised in this section.</p>

	<p><i>impossible. So have an open mind to work with these guys. But then what we are seeing is we are seeing a lot of success, let's take the Matchi platform, is if you put out a mind-set of ideas don't count, you need guys who have actually done stuff, they have built, they have implemented, they have got something real and, ideally, and this is the sweet spot of what we see, is somebody who has done something successfully in a different geography or at a different organisation or whatever. And you can see that they have got something real, they have got test cases, they have got proof points, but they are still in the early days of their organisation and they are hungry to get more business and do more, then those are the kind of organisations that you can tap into very successfully and get good innovations from them at very good pricing. Look I think there is kind of a criteria before you work with them, which is it is all the normal stuff, what have they done before, who have they worked with, what results did they get? ” (Participant 6)</i></p> <p><i>“You would need to work with people that know what they do. That's the first thing. So open innovation is expensive very often because it comes with a whole set of services that support that. Now as we build an innovation capability in organisations, that will become less and less important, but I think it's around working with experts that have got the experience.” (Participant 8)</i></p> <p><i>“So from our control perspective it would be first obviously people who prescribe to the same values. Secondly would obviously be, not critical but preferable to have people that also have some type of experience within the area in which we are trying to get into, maybe around the technology innovation space. That would be helpful.” (Participant 13)</i></p>	
<p>5. Define the quality criteria upfront:</p>	<p><i>“That's a tough one. I think, so what I did with the project that I was busy with, I had a list of data quality attributes, attributes being for example accuracy, believability, understandability, context. There is a whole bunch. I think there is over like 50 different data quality attributes. So I am a very quantitative person, right? So I work in numbers the best, so that is how I understand everything. I selected attributes that most related to the environment, the most important attributes. I think I came up with 15 to 20 attributes and then I had a weighting scale on all the attributes. And then I rated them from 1 to 5 and I literally went through every single piece of information that every user provided and I said, okay, 3 for believability, 4 for accuracy, context 1 and so on. And all got a number and I had a threshold of 70 percent, if they were higher than 70 percent I considered that high quality information. That's quite a big process.” (Participant 2) “Yes, there is one more step, you can also provide weights on the data quality attributes, where it has been accuracy is very important so</i></p>	<p>Six of the sixteen participant's responses were categorised in this section.</p>

	<p><i>that's times 5. Believable or not is times 2. So then based on the ratings, if they have got a 4 for believability and believability is not that high, say $4 \times 2 = \text{rate}$. And then overall that is a percentage, so let's say I have 20 attributes, maximum they can get is 5 out of 20 and then you can get a percentage from that." (Participant 2)</i></p> <p>Participant 2 had worked on a crowdsourcing project while he was a student and the detailed description provided was based on the criteria that was used to measure the quality of the data that was received back from the crowd. The participant did mention that by the time he graduated, the crowdsourcing project had not been completed so he did not know whether it had been successful or not.</p> <p><i>"It's around, right from the beginning, how you formulate to who you put out to, to how you down select the technological reviews that goes with that, your evaluation process needs to be well designed, that goes with that, the way that you engage and communicate, to the way that you down select." "...quality control is going to be very important and you need to understand what it is. Very often, for me it always starts there. If you do innovation you need to understand what the end goal is going to be. We identify those success criteria upfront to be able to track back."(Participant 8)</i></p> <p><i>"Okay, the most important trick of the trade is the framing of the problem. So the more effort you put in to the thing that you want to be solved by the crowd, and I think this is where people really fold with crowdsourcing, is they think the more open they are, the more interesting concepts they will get, they fail, over and over. The more specific you are about what you are looking for and the more sure you are about what the outcome is that you seek, the more you own the problem and the better you mobilise the crowd." (Participant 9)</i></p> <p><i>"I think before you even go out into the crowd you have got to define your quality criteria. And don't forget, you are going to get things back from a crowd perspective that challenge the ethos of what you are doing. Okay? So you have got to define your quality criteria on how you are going to measure what you are looking for, but you cannot make it so stringent that every idea that is outside of the horizon falls off the radar. And the definition of that is going to depend on what you are doing, it is going to vary totally differently, okay? But you need to define that upfront before you go out. Actually, I wouldn't put that quality criteria out into the crowdsource, because it may hinder the information you get back." (Participant 10)</i></p>	
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“This is where it comes back to the first point we made, which was the moderator who is in charge of scoping the problem, tapping into the collective wisdom and distilling it, that wisdom into something that is practical, that is going to be critical. It is very, very difficult to add. There are not that many, I generalise, there are many but not enough talented individuals who are able to translate the crowd knowledge into something that is institutionalisable. If there is such a word.” (Participant 11)

The participant was probed further to clarify the participants view on whether the quality criteria should be set up front.

“It is a very good question. In my personal experience the answer is a strong yes, because otherwise you are going down a never ending road. You don’t want to close a scope, limit it, you need a very clear – so this is the problem set in which we operate and we need very specific solutions and these solutions it must be clear who can integrate with each other. So in my experience the answer is a strong yes.” (Participant 11)

“Okay, firstly to get the quality input you would need to do a wealth of context setting for that community. You need to make them understand what you are trying to achieve, if it is that you have something to achieve, or if you are brainstorming around what problem you are trying to solve. Okay, so a good problem analysis would actually give a good link to how you can start measuring your quality. So you can set up goals or objectives, you can use that method, and so there are exceptions criteria to the inputs that come in. Do they satisfy the following things? And if they do they can go through the gateway.” (Participant 16)

Appendix I – GIBS Ethical Clearance Approval

Dear Katleho Khoza

Protocol Number: **Temp2015-02075**

Title: **The Influence of Crowdsourcing as a credible external Source of Innovation and Value Addition for organisations**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker