CROWD SOURCING IN RECRUITMENT – AN ADOPTION TECHNIQUE TO INDIAN CONTEXT

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Abstract
Crowdsourcing is defined as a sourcing model in which organizations predominantly use advanced internet technologies to harness the efforts of a virtual crowd to perform specific organizational tasks. Crowdsourcing is an online, distributed problem solving and production model that leverages the collective intelligence of online communities for specific purpose. An emerging body of research is exploring the Crowdsourcing applications. Since the success of a Crowdsourcing activity is significantly determined by the number of participations, it is desired to identify the factors that influence the number of participations herein defined as motivators. Human motivations can be grouped into three broad categories: Intrinsic motivations, Extrinsic motivations, and Internalized extrinsic motivations. The study makes use of these categories to analyze individuals' reactions to different recruitment strategies in the context of recruitment through Crowdsourcing. The evidence revealed by literature survey suggests the most important motivators for individuals in the crowd. Survey research is to be designed based on specific ad words using a web site to study and identify the motivational triggers that are most effective in attracting potential members and contributors. Validation of Click-Through Rate (CTR) is used as a tool to assess the effectiveness of various motivators for the study.

Introduction
Existing human capital is abundant and it is yet to be tapped into value adding skilled human resources though there is continuous and increasing demand. Industries are clear about what they need. They demand most-experienced, best-trained, best-educated, most-flexible, and most-adaptable human force[1]. Innovative solutions are sought to identify the best for the industry. Rigorous talent management systems are significantly developed and practiced to ensure the availability of human talent. The challenges faced by the industry are meaningful and creative to retain and to utilize that increase the productivity and profitability.

In this context, recruitment will see a more competitive hiring. The competition will increase up to 69% among recruiters in the coming year. Five key trends are observed by the Industry that can help the recruiters to understand what they are in need. Some of the trends are briefly discussed below that ensure the successful sourcing and hiring.

Increased Focus on Quality of Hire
Global recruiting leaders are given top priority to the quality of hire for its most valuable metric for measuring a recruited team performance. Referrals, ob boards and social professional networks are used as a source for quality of hire.

Increased Emphasis on Using Social Networks
Social recruiting is a new concept and it is used as a platform to identify the potential of recruits. LinkedIn is one of the social sites that hire around 79% recruits and thus it remains as a champion of all the sites. While 94% of recruiters are using LinkedIn, Facebook is next in line which is used by 66% of recruiters.

Closing the Gap between Active and Passive candidates
Active candidates (those who are currently seeking employment) are the main focus. Passive candidates (those who are not looking but speak openly to a recruiter) are the key talent pool that is not to be missed. In fact, 75% of professionals would categorize themselves as "Passive". This potential is greatly untapped. Passive candidates are recruited only by 61% of companies. Recent poll reveals that on LinkedIn, 63% of members are not actively looking but may be interested in new job leads.

Embracing the Concept of Talent Branding
Talent branding is the social, public version of a company that seeks to promote the brand as a great place to work and to attract new talent. Company focuses on the impact produced by the good brand and on its culture in the hiring process.

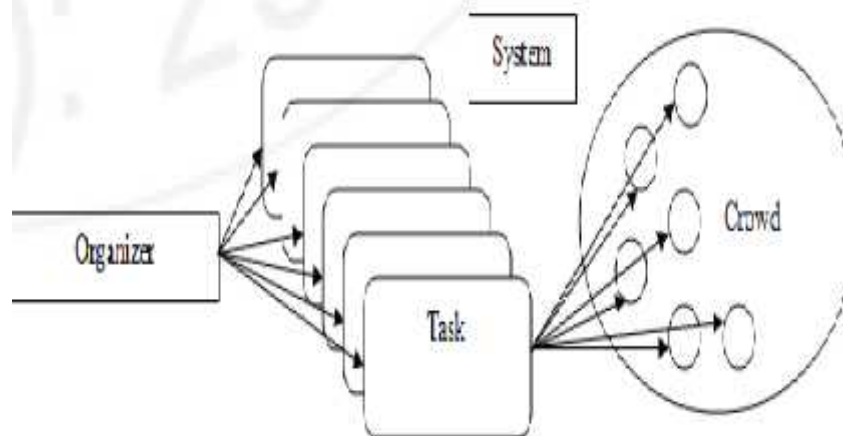### Recruiting : The Changing Scenario
Industries witness the major changes through the value chain in cognizance with the trends. Companies are forced to change the hiring patterns due to increasing competition to cope with the higher standards. Retirement rates are at peak resulting in

the crunch of current industries. Industry's response is to shift its focus on young professionals and graduates. Specialized technical expertise at a very demanding level is required to tackle major technical challenges, such as figuring out how to turn around reserves on the verge of depletion.

Thus, hiring is aimed towards engineers and highly specialized recruits who have the knowledge and skill to create effective solutions, such is the demand for talent; Investment of the companies are at higher levels to source the best-of-the-best talented, experienced, highly valued candidates to enjoy the immediate return on investment. Companies build detailed plans into their budget processes to fortify the talent pools and improve the capabilities. Specialized skills are more valued today than at any other time in the past two decades. It is imperative to develop effective recruitment strategies with more focus on asset based models to get a better handle on costs, to identify specific technical needs, and to build effective solutions. The idea is to develop strong, differentiated core capabilities-an important ingredient for sustainable growth. This requires rigorous and focused recruitment, training and development, and retention programs. Now, the hiring pattern is to seek out fresh and talented recruits who can learn and grow to fulfill the long-term need to sustain in the industry-learning the industry's old arts to bring in creative and innovative ideas.

Crowdsourcing in the Context of Recruitment
The idea is to utilize Crowdsourcing for the application of various stems from outsourcing a large base of crowd. Crowdsourcing is a modern business term coined in 2005 and it is a process of obtaining needed services, ideas and contents by soliciting the contributions from a large group of people. Crowdsourcing is an effective, in part, because it draws upon the diverse experience and the knowledge of a large, heterogeneous audience to reach at innovative solutions. Crowdsourcing mirrors the social-collaborative mind-set of young audiences who are accustomed to communication and knowledge sharing in a world where information is freely available with no organizational barriers. Following is the general architecture of Crowdourcing[2]:

Fig. 1: General Architecture of Crowdsourcing

Most of the researches focus more on the platform and the general purpose of Crowdsourcing such as Amazons, Mechancial Turk (AMT Turk)[3.] However a very little research exists on Crowdsourcing in the context of recruitment either on software development or on the application integration. Though the topic Crowdsourcing is widely discussed, there is significant potential in bringing innovations for recruitment through outsourcing. Research is to be done in a broader way in order to understand how to build this optimally.

The paper analyses the importance of identifying the motivational triggers and the factors that contribute to the participation of crowd in recruitment. It describes a conceptual theory in developing an empirical model that explains the intricacy of recruitment through crowd sourcing using extrinsic and intrinsic motivators. The study on literature states that the recruitment framework of novel opportunistic participants supports organizers to recruit effectively and efficiently. It also proposes to study the feasibility of the approach through theoretical studies on analytical model and simulated experiment on real world mobility model. The model is expected to provide an understanding of its performance and in particular the trade-off between online and traditional recruitment strategies by comparing effectiveness, cost and other metrics.

The study is an exploratory research with the aim to identify the significance of analyzing the underlying factors that lead to an effective participation of the crowd and proposes the improvement to the model for transition from traditional recruitment to crowd sourcing recruitment. The paper also describes the tools to be used while conducting the survey and on collecting the data.

Research Goal and Method
According to Howe,[4] Crowdsourcing is 'the act of an 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'. Crowdsourcing recruitment is a nascent face (ie. to know the body of published literature on organizations that use Crowdsourcing as a strategy for recruitment, limiting the opportunity to conduct the survey), an industrial case study is opted as a beginning step to explore. A very little in-depth research is available for Crowdsourcing in the context of recruitment; it is an emerging topic which evolves along with other concepts as depicted in Fig.2 below.
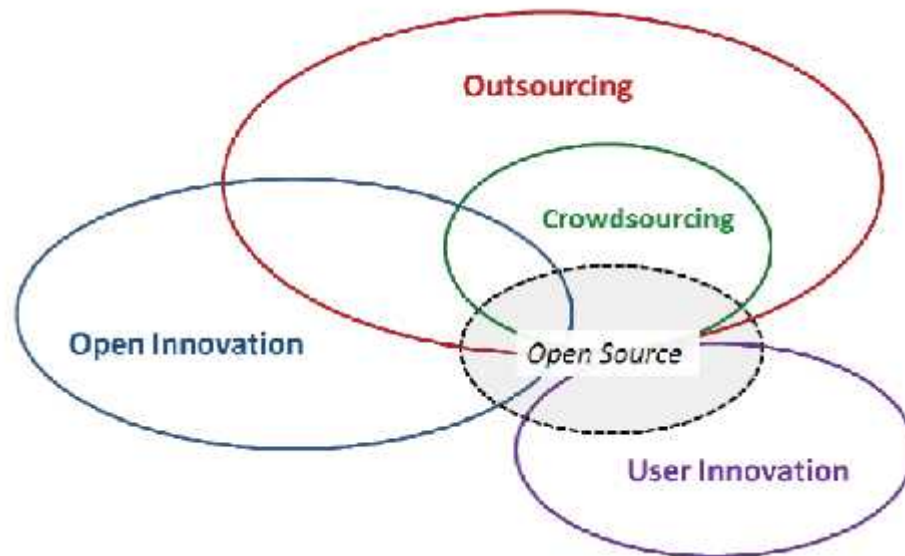

**Fig 2.: Overview of concepts[5] (Source: Schenk and Guittard, 2009, p 13)**

Three distinct stake holders are found through literature search to identify the variables that facilitate building a predictive empirical model. They are the Crowdsourcing customers, the Crowdsourcing workers and the Crowdsourcing platform providers. These stakeholders form the population of the case study and they will be sampled to elicit the required data appropriately. This is a highly appropriated method to explore contemporary phenomenon within a real world setting, where it is difficult to draw a clear boundary between the subject of the study and the context with which it takes place[6.] The study as an exploratory research is expected to achieve an understanding of how Crowdsourcing recruitment works in practice. This will be followed by surveys and controlled experiments in order to have a higher degree of generalizability and to relate various constructs quantitatively.

Theoretical frame work
As described by Dual et al, (2011)[7], Crowdsourcing is applied in the survey research area as an innovative, recruitment tool and as a method to collect data. Crowdsourcing can be used as a recruitment method to build a panel, similar to online recruitment method. It is used to collect responses for various questions from a large sample of respondents when surveys are posted on Crowdsourcing websites or in smart phone applications. Crowd sourcing constructs more diverse samples than traditionally recruited samples, such as in web surveys.

Researchers face many challenges to evaluate new methods and set standards since rapid changes are witnessed in information and communications technologies. The research framework in the study looks into a paradigm under which the roles of appropriate use of e-infrastructure resources that are utilized for survey research. The framework considers the impact of methods on both sampling error (sampling scheme, sample size, estimator choice) and on non-sampling error (specification, non-response, frame, measurement, data processing)[8].

Figure 3 depicts the hierarchy of platform like GSS (highest defensibility, highest cost) and graduates (lowest defensibility, low cost) to a sample of Crowdsourcing stakeholders. Results are compared to a parallel studies employing the second and fourth entries of this hierarchy in the study. A website is created for the panel of Internet survey using the population sampling, and the suitable platform is identified to provide an accurate data for estimating the univariate characteristics[9]. (Baker et al. 2010).
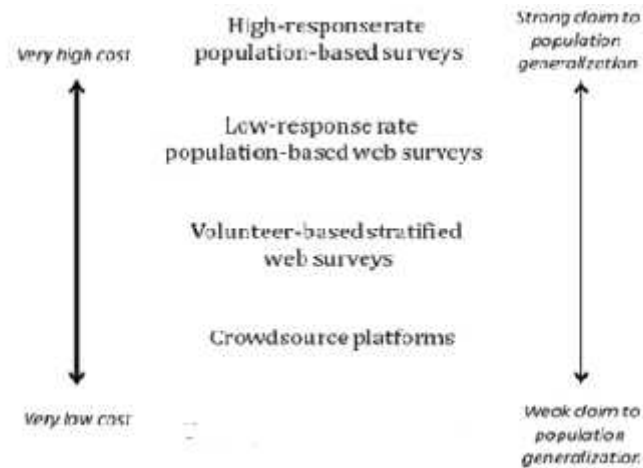
Figure 3: Hierarchy for Survey Platform by Cost and Generalizability

Since informed consent of survey participants are a basic tenet of scientific research on human populations, it is recognized to ensure ethical data collection with reference to confidentiality and privacy and with regard to the data collected during the process.

Hypothesis and Prediction Model
The following statements of hypothesis are derived from literature review that explains how variables are measured and how prediction models are finalized.

H_{01} : Higher participation will lead to a higher outcome in Crowdsourcing recruitments.
H_{02} : Extrinsic motivators will lead to a higher outcome in Crowdsourcing recruitments.
H_{03} : Intrinsic motivators will lead to a higher outcome in Crowdsourcing recruitments.
H_{04} : Highly specific tasks will have a lower outcome in Crowdsourcing recruitments.
H_{05} : The suggested type of sourcing will lead to different levels of outcome in Crowdsourcing recruitments.
H_{06} : The maturity of the marketplace will have a positive influence on the outcome of Crowdsourcing recruitments.
H_{07} : The brand-strength of Crowdsourcing customers will have a positive influence on the outcome of Crowdsourcing recruitments.
H_{08} : If the brand strength of a platform providers and rewards are high, it will generate a higher outcome in crowdsourcing recruitments.
H_{09} : The specificity of tasks will provide a positive response to the Crowdsourcing customers.
H_{10} : The requested type of responses will provide a positive feedback to the stakeholders of Crowdsourcing recruitments.

In order to verify, the data of derived hypothesis will be collected for analysis. The identification of potential factors explains the empirical model for Crowdsourcing recruitment

Variables Measurement
One of the key requirements for building a predictive model is to define variables from which the models are built. Defining variables require human intuition and ingenuity. However, for some data sources, such as the ones that come from monitoring human activity or behavior, there is still a need for human intuition to define variables for building predictive models. Literature search reveals that a new platform has been developed to address this problem. The platform breaks the projects into two phases: Feature Engineering and Modeling. During the feature engineering phase, data scientists are presented with a problem (independent variable(s)) and are asked to propose features (predictors) and brief explanations to prove them useful. A panel of judges evaluates the features based on the accompanying evidence and explanations. The

modeling phase is a traditional machine-learning competition (entries compete on standard quantitative metrics) that incorporates features culled from the earlier phase using date sets[10].

Testing the effectiveness of Crowdsourcing involves the creation of a website that would enable users to build an online survey consisting of questions that may be predictive of a specified response variable. Contributions are obtained from the members of online communities who are interested in subjects related to the area of research that are being studied. Allowing users to answer preexisting questions and allowing adding new questions to the survey will result in a substantial amount of data on hundreds of potentially related variables. The data could then be used to determine which of the proposed factors are mostly correlated with the outcome of interest. Strongly correlated variables could later be studied in depth with future experiments. Though this experiment specifically aims to identify factors that are predictive of someone's personal savings, the method of Crowdsourcing can be replicated by researchers in any field of study[11].(Berger. A 2014)

Conclusion
Crowdsourcing could be considered as an evolving research tool in the field of psychology and social science. A method of rigorous research is to be developed to test the proposed research model. In terms of data collection, previous studies are either on objective data collection from the crowdsourcing platform or on subjective data collected from sponsors and solvers. The study will attempt to incorporate both objective data and subjective data in the empirical investigation. The existing Crowdsourcing systems are built on supporting a set of specific, micro-tasks in a particular domain and on a distinct part of the product lifecycle. Researchers are building a platform for Crowdsourcing to address the identified gaps in architectural support for building crowdsourcing service and to conduct survey and validate data based on crowdsourcing environment.Population and crowdsource based methods of recruitment could be expected to open up many avenues for empirical research as the landscape of population research is making rapid strides. The challenge for researchers is to determine the cost effective and valid ways of combining evidence from both.

References
1. P.C. Bahuguna HR Discussion Vol. 10 // No. 3 // 2014.
   http://www.spe.org/twa/print/archives/2014/2014v10n3/05_HRDiscussion_v10n3.pdf.
2. P.Stiles and J.Trevor, Best Practice And Key Themes In Global Human Resource Management: Project Report, 2006 pp 1-52.
   http://www.cihrm.jbs.cam.ac.uk/research/downloads/ghrra_report.pdf.
3. Social Recruiting Survey Results 2014, Jobvite Survey.
   https://www.jobvite.com/wpcontent/uploads/2014/10/Jobvite_SocialRecruiting_Survey2014.pdf.
4. Howe, J. (2006), ' The rise of Crowdsourcing', Wired Magazine, 14(6),
   www.wired.com/wired/archive/14.06/crowds.html.
5. Eric Schenk, Claude Guittard,2009 'Crowdsourcing: What can be Outsourced to the Crowd, and Why ?', p.13
   https://halshs.archives-ouvertes.fr/file/index/docid/439256/filename/Crowdsourcing_eng.pdf.
6. Yin, R.K. 2003. Case Study Research: Designs and Methods , 3rd ed., pp 181 Sage, Thousand Oaks, CA.
7. Dual, S., Bailey, J.T and Link, M.W. (2011), ' Data Collection method innovation: utilizing a Crowdsourcing application to collect factual information in Africa', paper presented at the 36th Annual Conference of the Midwest Association for Public Opinion Research, Chicago, IL.
   www.mapor.org/confdocs/absandpaps/2011/2011 slides/3d2Duan.pdf.
8. Paul Biemer, 2010, 'Total Survey Error Design, Implementation, And Evaluation', Public Opinion Quarterly, Vol. 74, No. 5, 2010, pp. 817–848.
9. Baker et al., 2010. "Research Synthesis: AAPOR Report on Online Panels." Public Opinion Quarterly 74(4):711-81. http://dx.doi.org/10.1093/poq/nfq048.
10. Kiarash Adl. Feature Factory: Crowd-sourced feature discovery.
    http://groups.csail.mit.edu/EVODesignOpt/groupWebSite/uploads/Site/LAS_finalCopy.pdf.
    http://groups.csail.mit.edu/EVO-DesignOpt/groupWebSite/uploads/Site/kiarashAdl.pdf.
11. Berger, Alex, "Using Crowdsourcing to Discover Correlational Relationships" (2014).
    UVM Honors College Senior Theses. Paper33. http://scholarworks.uvm.edu/hcoltheses/33.html.
12. Sam Gager et al., '4th Annual Report 2015 Global Recruiting Trends Win The War For Talent By Staying Ahead Of These Industry Changes.
13. Veena M.E , 2013 , ' Predictive Models for Behavioral Outcomes through Crowdsourcing', International Journal of Science and Research (IJSR) Volume 4 Issue 1, January 2015, 92-94Ipeirotis, P.G. 2010. Analyzing the Amazon Mechanical Turk marketplace, XRDS, 17, 2, 16-21.