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LEVERAGING THE POWER OF CREATIVE CROWDS FOR INNOVATIVE BRANDS: THE EYEKA CROWDSOURCING INITIATIVES

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Leveraging the power of creative crowds for innovative brands: the eYeka crowdsourcing initiatives

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Abstract

Crowdsourcing constitutes an innovative pattern for enhancing collaborative works based on challenges open to professionals and amateurs willing to contribute to a specific task launched through a web platform or a specific company website. Literature on crowdsourcing is emergent, and much is still left understudied. In this work we propose to distinguish between ideation and content production contests, trying to look for specific features of the crowd that lead to win the one or the other type of contest. Moreover, we take in account the importance of belonging to a community in order to win the contests. To conduct the exploration, we led a case study, taking the crowdsourcing platform eYeka as object of the research. eYeka is the leader in the crowdsourcing sector, being used above all for fast moving consumer goods companies. We first collected data about the 23 most used crowdsourcing platforms, isolating the functioning and performance of the eYeka platform, second we analysed in detail the contests launched by eYeka in 2017. Starting from a wider analysis of platforms, we conducted a descriptive research aiming at highlighting the main trends of the field. After having performed a statistical examination, we were able to provide some original results on the features leading to successful contribution to crowdsourcing platforms.

Keywords

Crowdsourcing, innovation, eYeka

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1. Introduction

The crowdsourcing phenomenon could be defined as an innovative pattern for work where groups of people can overstep professionals, contributing to the solution of firms' problems by exploiting knowledge from other fields and working together towards the same objective, in an ecosystem which is based on cooperation, creativity and aggregation (Brabham 2013).

It is evident how this last conception is more contemporary than the one proposed originally by Howe (2006), which was based on the simple sum of the terms "crowd" and "outsourcing" from which the word crowdsourcing is composed. Accordingly, this innovative framework enables the creation of a sort of dedicated market for amateurs in which they could gain from their passions. In fact, as supported by Kohler (2015), competition is no more based on inherent product value, but instead on the value generated through platforms deploying profitable interactions between two main actors: a company and a crowd of contributors. This fact aligns with the advent of a networked logic of value generation, in which everyone, inside or outside firms' boundaries, is able to participate in a collective creative action.

Communication, marketing research and new products development are the main areas in which crowdsourcing is implemented by brands. The recourse to external collaborations empowers the internal corporate capabilities and opens up to new streams of opportunities, within an open innovation framework (Chebrough, 2003b). In the case of search for marketing support from the crowd, the latter is moving from being "external provider of ideas" to become "augmented marketer" (eYeka 2017b). In the existing literature, crowdsourcing has been mainly investigated in the sense of simple "low cost craftsmanship" tool for assignments, which does not require to individuals higher creative or cognitive exertions to be performed. This paper adds too previous literature on the topic by shading light on the specific features required by the crowd in order to

successfully participate in creative contests. In particular we isolate two important aspects: the type of task required and the presence of a community engagement.

In Section 2 we provide an overview of the existing literature, the origins and the essential features of crowdsourcing. In Section 3 we present the research context and methodology. In Section 4 presents the findings, while Section 5 discusses the results and put forwards some conclusive remarks.

2. Theoretical context

2.1 The crowdsourcing phenomenon: definition and main features

The word crowdsourcing can be split up in two terms, "Crowd" and "Outsourcing", which embody the concept in the simplest way. Howe (2006a, p.1) is the first that defines crowdsourcing as: "*the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined – and generally large – network of people in the form of an open call. This can take the form of peer-production – when the job is performed collaboratively – but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential labourers*".

Nevertheless, Brabham (2013) points out that crowdsourcing cannot be intended with the meaning of peer-production, not even in the case it involves more than one individual, because in the former case the locus of control is not in community's hand, as in the peer production case, but in the contest organizers. Moreover, as stated by Pénin et al. (2011), from Howe's point of view, it is only when ideas obtained from the "crowd" are converted into products and sold, that the entire process can be effectively defined crowdsourcing. Howe (2008) strengthens the fact that crowdsourcing activities cannot be compared with user-generated content production, even if it can be frequently used as starting point to create a business. In the attempt of clarifying what

crowdsourcing is and what it is not, it might be useful to remind that crowdsourcing should be considered as a more complex model with respect to outsourcing, because people that compose "the crowd" need to be included from outside in the project, and not be treated merely as "low cost craftsmanship". According to Zhao et al. (2014), it is simple to underline differences between the two phenomena, first of all because outsourcing is performed with a previous selection of the product or service provider that is bound to meet contractual duties. In crowdsourcing, on the contrary, this sort of selection and "recruitment phase" lacks, because there is no direct identification of providers; the whole process starts with an open call to an unknown public on voluntary base, making clear that to compare the two practices could be misleading. A crucial aspect of crowdsourcing is also that this model allows to break down costs between professionals and amateurs, creating a sort of dedicated market in which they can gain from their passions (Howe 2006; 2008).

Crowdsourcing, in an organizational contest, can be translated as "*deliberate blend of bottom-up, open, creative process with top-down organizational goals"* (Brabham 2013, p.xv). Furthermore, the shared bottom-up process is carried out by the crowd, that in some cases might lack the necessary expertise (Hosseini, Phalp et al. 2014), while top-down management is fulfilled by who is accountable to reach the firm's interests. Faradani et al. (2011) accented that online websites became the new workplaces and, as a result, the market in which demand meets supply; but not merely, this circumstance enables also the creation of a sort of "Freelance Economy" (Weinswing 2016, p.2). Basically, "*the crowd has become a fixed institution available on demand*" (Boudreau, Lakhani 2013, p.5), which was more consolidated than if there was a sort of hypothetical button to be clicked in order to engage people worldwide to add firms' value through ideas (Wilson, Bhakoo et al. 2017). By means of social web, advanced Internet technologies and related tools, crowdsourcing has been able to bind the energies of the virtual

crowd to perform specific organizational tasks (Saxton, Oh et al. 2013, p.2). More in detail, companies are able to transfer crowd's skills, knowledge and human workforce into products and services belonging to the digital information era (Geiger 2016).

Hosseini et al. (2014) identifies four main elements of the crowdsourcing: 1) the crowd, 2) the crowdsourcer, 3) the crowdsourced task and 4) the platform. The crowd (1) is composed by people that actively participate in a crowdsourcing activity. They are characterized by being heterogeneous, unknown and numerous. The crowdsourcer (2) may be represented by any organization, both profit and non-profit, institution or individual who seeks the fulfilment of a task through the potential of a crowd. The crowdsourced task (3) encompasses all the assignments that regard the open call from the crowdsourcer to the crowd. Finally, the platform (4) is the place, usually a sort of virtual workplace or marketplace, in which tasks are proposed, accepted and delivered. In a similar vein, but with slightly different conclusions, Estellés-Arolas and Gonzalez-Ladron-de-Guevara (2012) consider only three main elements that classify crowdsourcing practices: 1) the crowd, 2) the initiator and 3) the process. In their perspective the crowdsourced task and the platform are considered jointly as "the process". This fact emphasizes the importance of isolating a specific process characterizing the specific crowdsourcing activity, which blind a platform with a specific task. This intuition is fruitful and leads to the discussion that follows in the next sessions 2.2 and 2.3, which also identify our major contribution.

Finally, in order to synthetize the crowdsourcing practice, we report the framework proposed by Palacios et al. (2016), represented in Figure 1.

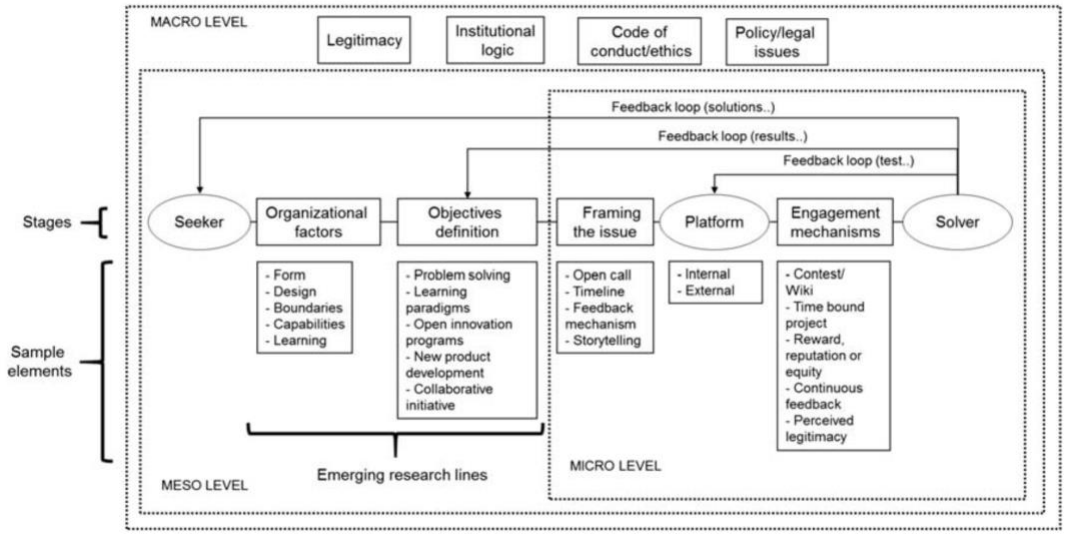

Figure 1: Mapping out the components in crowdsourcing (Palacios, Martinez-Corral et al. 2016, p.1835)

As is reasonable to assess analysing the figure, the entire process is centred in the existence of a platform. Similatly Brabham's studies (2013) suggest that the entire crowdsourcing phenomenon rely on 1) the organization that has a task to be performed, 2) the crowd that is voluntarily willing to fulfil the assignment, 3) the online environment that enables the existence of crowdsourcing and 4) the interaction between parts, ending with mutual benefits that the whole system of actors produces. This latter approach fills in an ecosystemic perspective of the organization of a crowdsourcing activity, where the technology enables virtual interactions around a specific task proposed by an organization that finally benefit from the crowd. The attention here given to the interactions, and therefore to the role of community of collaborators, will be further developed in Section 2.3.

2.2 The crowdsourcing objectives: tasks matter

Recent literature has explored the crowdsourcing phenomenon from different points of view. Schenk and Guittard (2011), aimed at classifying crowdsourcing in two main models: integrative vs. selective crowdsourcing. In the integrative modality, only the sum of the cumulative ideas grants firms to reach their objectives. This category of crowdsourcing is useful, for instance, when firms need to assemble a database without incurring in significant costs of collecting the required resources. Selective crowdsourcing best fits with proposed problems that don't have a demonstrably right answer, and where only the individual who proposes the best solution is awarded (Schenk, Guittard 2011). The authors also provided a classification of projects related to tasks, summarizing them in three main categories: 1) simple tasks, 2) creative tasks and 3) complex tasks. Crowdsourcing projects characterized by simple tasks typically fall in the integrative typology. When there is a higher level of engagement among contest participants – often animated by intrinsic motivations, we assist to projects characterized by creativity tasks. In this field, the ability to innovate is valued at most, due to the fact that collecting external points of view is more valuable than solving a specific well-described problem. This class of tasks can be useful both for solving integrative and selective contests, in the case in which only the more appreciated submission is awarded (Schenk, Guittard 2011). Crowdsourcing project characterized by complex tasks corresponds with the selective typology, because of its award mechanism, but it has also a great potential which is based on problem solving skills.

In search of an operative classification of crowdsourcing activities, Brabham (2013) distinguished between: 1) knowledge discovery and management, 2) broadcast search, 3) peer-vetted creative production, 4) distributed-human-intelligence tasking. Knowledge discovery and management (1) is an approach really similar to the one used in peer production, but with the

exception that the initiator clearly defines a priori the purposes and how information must be collected, by the use of standardized formats. Broadcast search (2) implies the resolution of empirical problems, therefore scientific problems are the more suited to be crowdsourced with this method. In peer-vetted creative approach (3), the crowd is entitled to create or to select creative ideas, which do not have a universal "right answer"; on the contrary, in electing the winning idea or ideas, all the crowdsourcers act a sort of market research. Distributed-human-intelligence tasks (4) process large scale data, that can be handled in an efficient and effective way only by human beings. These tasks are fraction of a displaced large problem, and for this reason they are so simple that neither creative nor intellectual efforts are required. With this classification, Brabham (2013) not only clarifies the set of problems that are more suitable to be solved adopting crowdsourcing organizational model, but sets the boundaries through which it is also possible to categorize platforms. By doing so, the author paves the way to move from general classifications of the actors playing in the crowdsourcing ecosystem, towards the identification of a set of features that allow a fine-grained analysis of the crowdsourcing practices. In the same vein, and conceptually adding to Brabham (2013), Pénin and Burger-Helmchen (2011) classified crowdsourcing practices focusing on the sorts of activities performed, and identifying three main ones: 1) routine work, where the size of the crowd is the most important factor rather than individuals' heterogeneity and skills; 2) content, where both the dimensions are fundamentals, and 3) inventive activities. It seems reasonable therefore to think at the functioning of the crowdsourcing practices alongside two main dimensions, each of one answering the questions: how is the crowdsourcing activity organized? And what is the objective of the crowdsourcing activity? Thinking at the objective we focus on a synthetic way to sum up all the above-mentioned contributions, distinguishing between ideation vs. content production

platforms. This is because these two categories allow to better define the crowdsourcing process and better understand the type of crowd that is more likely to win the contests.

Our first research question is, in fact, *are there any differences between the organization and functioning of ideation vs. content production contests?* And the second: *are there any differences between the profile of contributors participating in and winning ideation vs. content production contests?*

2.3 The role of communities in crowdsourcing

Works on creative production focused on the relevant role of communities in developing creative projects. Belonging to a community means interacting with peers and engaging in learning processes which lead to more successful ideas (Lave and Wenger, 1991). Wenger talks about communities of practice as the preferred locus where activating situated learning practices.

Traditional Communities of Practice are defined as « groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly» (Wenger 2014, p.1); as a consequence, the main characterizing factors highlighted in the definition are the sharing scheme towards problem solutions, the interaction and the learning aspect. Whether the term "community" does not need any illustration, for the term "practice" it is necessary to clarify its meaning in this field of analysis. Following the signification proposed by Wenger (2014), "practice" means the whole of knowledge, procedures and materials which members share and develop with one another to pursue their domain of interest. The procedure of "thinking together" is hence the core element of this theory; in fact, only through the mutual collaboration for common problems tacit knowledge can be indirectly enhanced (Pyrko, Dörfler

et al. 2017). Moreover, the same elements can be indeed easily observable in the community areas created by platforms such as eYeka.

One of the most interesting attributes that belongs to communities of practice is their ability to generate knowledge, and thus to renew themselves; as Wenger and Snyder (2000, p.143) ironically suggested, they are suited to provide « both the golden eggs and the goose that lays them ». This perspective is also supported by quite all the possible information which firms can collect analysing community's choices and behaviours. Community can not only enhance the quality of outputs, suggesting best practices and designing the route of actions via multiple interactions, but it can also reveal dynamics that might be far apart if compared with firms' perspective. Communities of practice can count on the heterogeneity of their members, which increase the creative potential, as it has also been stated by research by Amabile and her associates (Amabile, 1983; Amabile, Goldfarb, & Brackfield, 1990), which documents the value of examining the creativity of individuals and groups within their relevant social settings.

Following the suggestions proposed by Majchrzak and Malhotra (2013), contributors with different backgrounds and viewpoints can be definitely strongly useful in supporting members, in proposing alternative opinions and also in suggesting scratches of ideas which can stimulate the creation of more successful contributions. Basically, the heterogeneity is more valuable than the singular talent in collaborative crowdsourcing.

The research questions here are: *which is the role of communities in favouring the success of crowdsourcing platforms?* And *which is the role of being engaged in the community in favouring the probability to win a contest for contributors?* We can hypothesise that components of the crowd that are also engaged in a community are more prone to contribute successfully.

3. Research context and methodology

3.1 crowdsourcing platforms-related sample

The platforms-related sample is composed by 23 entries which are not strongly homogeneous in terms of size, typology and reward payment but which can be easily traced back to the classifications proposed by Brabham (2013). Accordingly, being the crowdsourcing ecosystem heavily miscellaneous, in collecting this sample of platforms we selected only platform which have been already considered in past studies. Moreover, platforms classified as "enterprise" offered limited data to be analysed, mainly because they are not transparent as the traditional generalist ones. In fact, this last category has been excluded from the results related to rewards offered and number of people involved, due to the lack of availability of the data; otherwise, they could offer interesting insights for what concerns the typology of reward offered and their specific operational mechanisms. As we can see in the Table 1, the sample mainly comprises 13 broadcast search platforms, 8 peer-vetted creative platforms and knowledge discovery and management, and distributed-human intelligence tasking are represented by one platform each. In the first case, it is a platform which pursues challenges for social good purposes, whilst in the second case the category is represented by the micro tasking platform Amazon Mechanical Turk. The examined sample reported the existence of a massive number of platforms established in US, mainly born in 2008 or so (6 platform over the 23 analysed); only eYeka, InnoCentive and TopCoder were founded just before the research field was discovered, even eYeka started to operate as a crowdsourcing platform in 2008.

Different size of platforms composed the sample. The number of hosted contests of Amazon Mechanical Turk platform is two times the ones recorded by the top platform, namely 99 Design (399.063 number of contest hosted) followed by Quirky (307.473), TopCoder (100.000), Lego Ideas (23.231), eYeka (1.171), Tongal (851), Challenge.gov (785) Mindsumo (617), Atizo (475),

Jovoto (474), Userfarm (368), Zooppa (282), Battle of Concept (261), Kaggle (260), Agorize (141), HYVE Crowd (134), InnoCentive (74) and Hyplos (54). Excluding the outlier platforms (Amazon Mechanical Turk) an average of 46.400 delineating a benchmark between the top-three and the rest of the sample. It is also fundamental to underline the fact that many platforms did not publish each single concluded challenge; however, they often simply declare the presumed number without leaving the possibility to directly assess its existence.

Seven platforms in the examined sample proposed contests regarding a specified subject. These platforms mostly host contests requiring solely the creation of design outputs, videos and other creative materials, whilst the remaining 16 involve diversified typologies of output demanded. In addition, examined platforms are primarily oriented to satisfy the needs of innovation departments, product design, marketing and communication. In this sense, goals and purposes of examined platforms seemed to be clearly oriented to creative and innovative aspects of the crowdsourcing phenomenon, leveraging the crowd to tap its insights, rather than engaging it for tasks which do not require creative and cognitive efforts.

Looking table 1 it is possible to notice that the cumulative rewards offered by platforms to potential contributors in not equally distributed across the sample. The most attractive platforms in this sense are the one belonging to the broadcast search typology, in fact they are mainly characterized by the solutions connected with innovation in the broader sense which can also encompasses the main R&D challenges proposed by companies. On the other side, peer-vetted creative production platforms are ranked as second with an average reward offered of about 9.000€. It is worth noting therefore that this kind of platforms mainly hosted creativity-based contests, which can be expressed in ideation or design effort rather than in the physical construction of the outcomes. The analysis regarding awarded rewards highlighted the three main typologies of prizes offered. In fact, in the 74% of the cases rewards conceive a payment of a

monetary amount. The remaining platforms instead have different prize mechanisms; for instance Quirky, P&G Connect+Develop and Lego Ideas based their rewards on a royalty mechanism, thus connecting the goodness of the submitted outcomes, to their effective results on the market. Moreover, only two platforms, Agorize and OpenIdeo, offered non-monetary prizes, mainly because they are structured to create challenges to be solved by students or for the social goods. In fact, for the former, prizes are not delivered in monetary terms but rather on gadgets, vouchers or work opportunities.

Obviously, crowdsourcing owed its effectiveness on the ability to tap large numbers of individuals or even the best performing ones. In fact, in this sense it is interesting to evaluate the crowd volumes connected with the different typologies of platforms. As it is reported in the Table 1, platforms offering complex tasks are more suitable to engage a higher number of participants, whilst simple and creative tasks respectively absorbed the residual share of participants recorded in this sample.

Looking the Table 1 and comparing the number of engaged contributors with respect to the number of contests hosted and with rewards offered by each specific platform, it is possible to observe that the most "crowded" platforms are the also the top-hosting ones in terms of challenges published. At the same time instead, they are not displayed in top positions with regards to the level of reward awarded. Moreover, data suggests that the three top-generous companies in the prize field are conversely below the average for what concerns the ability to engage a crowd. Consequently, as some theories suggest, in many cases motivations of contributors are not only driven by monetary reward, and in this sample this evidence seems to be quite supported.

Platform Name	Typology	Areas Involved	Typology of Outputs	Task Typology	Total N° of Ideas Submitted	Total N° of Contests Hosted	Cumulative Rewards Paid in € by the Platform	N° of Concluded Projects	N° of Project Still Opened	Reward Typology	Available Concluded Projects Reward	N° of Available Concluded Projects	Average Reward per Contest	N° of Crowdsourcers	Skills Requirements	Facebook Score	Twitter Score	LinkedIn Score
eYeka	Peer-Vetted Creative Production	Marketing & Communication	Diversified	Creative Task	123832	1172	7785250	790	7	Monetary	6389642	761	8396	383306	NO	4	3	4
Agorize	Broadcast Search	Innovation	Diversified	Complex Task	-	141	-	115	26	Non Monetary	-	-	-	4300000	YES	5	3	4
Atizo	Broadcast Search	Product Design/ Marketing	Diversified	Complex Task	160000	475	660000	472	3	Monetary	597591	432	1383	24000	NO	3	3	2
Battle of Concept	Broadcast Search	Innovation	Diversified	Complex Task	13049	261	1515600	255	6	Monetary	1515600	255	5944	21300	NO	4	3	3
HYVE Crowd	Broadcast Search	Innovation	Diversified	Complex Task	121815	134	913424	132	2	Monetary	627865	134	4686	97639	NO	4	3	4
Jovoto	Peer-Vetted Creative Production	Product Design/ Marketing	Diversified	Creative Task	-	474	3198450	469	5	Monetary	3198450	469	6820	80000	YES	4	4	3
Mindsumo	Broadcast Search	Innovation	Diversified	Complex Task	-	617	495491	610	7	Monetary	495491	610	812	250000	YES	3	4	3
OpenIdeo	Knowledge Discovery and Management	Social Good	Diversified	Complex Task	15577	53	-	48	5	Non Monetary	-	-	-	-	NO	4	5	3
Tongal	Peer-Vetted Creative Production	Marketing & Communication	Specified	Creative Task	-	851	19570981	796	55	Monetary	19565133	796	24579	120000	NO	4	4	4
Userfarm	Peer-Vetted Creative Production	Marketing & Communication	Specified	Creative Task	-	368	2524739	352	16	Monetary	2524739	352	7173	120000	YES	4	3	4
Zooppa	Peer-Vetted Creative Production	Marketing & Communication	Specified	Creative Task	-	282	4276485	279	3	Monetary	3094764	279	11092	450000	NO	4	4	4
99 Design	Peer-Vetted Creative Production	Marketing & Communication	Specified	Creative Task	3944638	399063	124557820	398171	892	Monetary	35503	100	355	1000000	YES	5	4	5
Amazon Mechanical Turck	Distributed-Human-Intelligence Tasking	Human Intelligence Task / Crowdworking	Diversified	Simple Task	-	867025	-	-	867025	Monetary	91	100	1	500000	NO	0	4	1
Challenge.gov	Broadcast Search	Governamental	Specified	Complex Task	-	785	207596366	767	18	Monetary	118640416	438	270869	250000	NO	3	4	0
Hypios	Broadcast Search	Innovation	Diversified	Complex Task	-	54	599293	52	2	Monetary	599293	52	11525	950000	NO	3	4	3
InnoCentive	Broadcast Search	Innovation	Diversified	Complex Task	62000	74	41519273	49	25	Monetary	1002275	49	20455	380000	NO	4	4	4
Kaggle	Broadcast Search	Innovation	Diversified	Complex Task	-	260	5612764	243	17	Monetary	5612764	243	23098	67559	NO	4	5	5
Quirky	Peer-Vetted Creative Production	Product Design/ Marketing	Specified	Creative Task	2121563	307473	9121570	126	13918	Royalty	-	-	-	1240586	NO	5	5	5
TopCoder	Broadcast Search	Innovation	Diversified	Complex Task	-	100000	66430837	-	39	Monetary	122250	100	1223	1000000	YES	5	5	4
Deloitte Pixel	Broadcast Search	Consulting	Diversified	Complex Task	-	-	-	-	-	Monetary	-	-	-	-	YES	0	0	0
P&G Connect+Develop	Broadcast Search	Product Design/ Marketing	Diversified	Complex Task	-	-	-	-	-	Royalty	-	-	-	-	YES	0	0	0
The Unilever Open Innovation Submission Portal & Unilever Foundry	Broadcast Search	Product Design/ Marketing	Diversified	Complex Task	-	-	-	100	84	Monetary	-	-	-	-	YES	0	4	4
Lego Ideas	Peer-Vetted Creative Production	Product Design/ Marketing	Specified	Creative Task	-	23231	-	21371	1860	Royalty	-	-	-	825448	NO	5	5	0

Table 1: the sample

As it is possible to see in the Table 1 the majority of platforms have no restrictions towards the typology of skills requested to fulfil the assignment; it is the contributor himself who evaluating his competencies self-selects the challenges to apply for. On the other hand, "specific skills required" is the category often most used by broadcast search platforms due to their inclination towards innovative challenges in the stricter sense of the term, which means that specific knowledge is strongly requested. This evidence should probably be matched also with the fact that this is on average the most rewarding category, suggesting that in such a way the higher level of knowledge required is also evaluated in monetary terms with higher prizes, which can also act as incentive with regard to high-skilled individuals.

A further element that needs to be inquired is the ability of platforms to engage and attract new potential contributors. In this sense, we developed a score to rank the level of this fundamental ability whit respect to the dimensions of the network created by each category of platform (Figure 1). Looking at Facebook and LinkedIn scores what is evident is that the category of Knowledge-Discovery and Management is the best one, but it has also to be pointed out that it is composed only by one platform, OpenIdeo which is based on social purposes and not monetary rewards. Due to its characterization, this last category could be defined by different dynamics and its score cannot directly be compared with standard platforms. As a consequence, it seems evident that best platforms in terms of social networks performances are the ones belonging to the peer-vetter creative production typology.

Looking the average contributors for each typology and its correspondent social networks score (the social score assume value 0 - 5 considering the level of the social network participation), we can see that a greater presence in the social network environment is not directly connected with a higher level of contributors enrolled in the platform. In fact, the broadcast search category is at the same time the most "crowded" and the less social, whilst the opposite happened for the peer-vetted category, which before was previously ranked first. From this evidence, what is clear is that being not possible to assess the portion of active or inactive contributors for each category, the insights provided by the chart have to be

intended in a broader sense. In fact, the number of contributors could be intended as a proxy of the size of the crowd in which it is possible to find the "right" solution.

3.2 Analysis

The goal of this paper is to analyse the differences of platforms based on creative tasks (ideation) with respect to the others and to find a classification model, to cope with the higher heterogeneity characterizing the examined sample. We chose to conduct this analysis based on the different characteristics identifiable in two sub-classes of the whole population; the first is composed by platforms requiring **creative tasks** and the other is instead composed by platforms that requires other kind of tasks. The examined sub-samples are tested with regards to the **number of contest hosted**, the **average reward** granted, the **number of contributors** registered in the platform, and the **social network score**. The presence or absence of the Creative task requirement was the dichotomous variable utilized to classify the two sub-samples at the base of the examination. The Table 2 summarizes the Wilcoxon-Mann-Whitney U test results respect the four variables. We test the hypothesis that the creative-tasks platforms are characterized by significantly different levels than the ones of non-creative platforms.

number of contest hosted			
creative tasks	0bs	mean	sd
0	11	9.350.364	30066.07
1	9	177771	300342
z =		-2.621	
Prob > |z| = (p-value) =		0.0088	
P{N_Cont_Host(Crea_Task==0) > N_Cont_Host(Crea_Task==1)} =			0.152

average reward			
creative tasks	0bs	mean	sd
0	9	37777	87800.85
1	7	8.345.178	8.248.919
z =		0.370	
Prob > |z| = (p-value) =		0.7110	
P{Avg_Rew(Crea_Task==0) > Avg_Rew(Crea_Task==1)} =			0.556

number of contributors			
creative tasks	0bs	mean	sd
0	10	734049.8	1303360
1	9	524371.1	415384.8
z =		-0,94	
Prob > |z| = (p-value) =		0.3471	
P{N_Crowd(Crea_Task==0) > N_Crowd(Crea_Task==1)} =			0.372

social network score			
creative tasks	0bs	mean	sd
0	14	3.088.432	147.932
1	9	3.818.531	.9945208
z =		-1.386	
Prob > |z| = (p-value) =		0.1657	
P{N_Cont_Host(Crea_Task==0) > N_Cont_Host(Crea_Task==1)} =			0.325

Table 2: Wilcoxon-Mann-Whitney U test among the two groups (Author's personal elaboration)

Observing Table 2, and in particular **number of contests hosted** variable, it is possible to see that there was a strong statistical significance to reject the null hypothesis (α = 0,01); consequently, the tested assumption could be confirmed. Essentially, it is possible to affirm that the number of contests hosted is different between the two typologies of platforms. Moreover, as suggested by the observed values, the estimated probability for the number of contest hosted to be larger for the Creative tasks platforms is about 85% (P=1-0,15). The **average reward** variable suggested that there was no statistical significance to reject the null hypothesis. As a consequence, the tested proposition could not be confirmed. It is to say that the values of average rewards offered cannot be intended as different between the two typologies of platforms. Additionally, given the acceptance of the null hypothesis, the esteemed probability for the

average rewards to be greater for the non-creative task platforms did not give useful insights. The test on the **number of contributors'** variable highlighted that there was no statistical significance to reject the null hypothesis (p-value= 0,34). Accordingly, the tested proposition could not be supported. It is not possible to affirm that the numbers of contributors are different between the two categories of platforms. Likewise, looking at the estimated probability it could not provide any additional insight given that the null hypothesis has been accepted. Finally, test's result on the **social network scores** reported that there was no statistical significance to reject the null hypothesis (p-value = 0,16). Consequently, the tested assumption could not be validated. Even in this case, the esteemed probability for the social network scores to be greater for the non-creative tasks platforms did not give useful insights due to the acceptance of the null hypothesis. Summarizing, it is possible to assess that, with respect to the number of contributors and the value of network scores obtained, creative-tasks platforms are not characterized by significantly different levels than the ones of non-creative platforms. In this sense, it seems interesting how both categories are able to reach quite satisfactory social networks scores, probably due to the fact that the two groups are characterized by both high and low performers in this field. Moreover, obtained evidences highlighted the lack of significant differences between the two categories in terms of registered contributors. Furthermore, also average rewards of platforms requiring creative-tasks proved to not be significantly different from the ones of non-creative tasks. Additionally, it has to be reminded that creative-platforms are mainly characterized by faster contests, which do not necessarily require the production of some kinds of tangible outputs. In fact, it has been proved that the number of contests hosted by creative-platforms is significantly different from the ones of the other categories, probably because challenges are more demanding in terms of innovation and imagination efforts rather than in problem solving ones.

4. EYeka contests-related findings

We deepened the analysis considering the contests hosted by the eYeka platform, the global leader in crowdsourcing field. We collect the 20% of the most recent projects concluded (which were 790), by focusing on contests' categories proposed by eYeka. In this sense, the majority of recorded contests were divided among content, communication and product innovation categories, respectively with the 28%, 25% and 18% on their total amount. EYeka Report underline that the ideation contests are in the large majority of the industries, with the only exception of Personal Care, which is still driven by content challenges. In particular, moving from the industry point of view towards the company one, it is possible to say that the multinational companies, with an effective organizational structure, tailored at best for deploying the outcomes provided by this kind of contests. The top three ranks, in fact, are occupied by the same three companies as before: P&G, Unilever and Nestlé, which not only proposed a huge number of contests but also pursued a sort of diversification strategy, publishing from 2 to 3 contests for each brand they owned. Moreover, these companies own strong brands in which contributors can easily identify themselves, and consequently firms can also exploit this indication for their goals. Nevertheless, in the great majority of the cases contests are not labeled with the company name, but rather with their brands; in fact, companies can have more than one brand and contributors could be engaged by some brands more than others. Usually, the relation between average total prize and average first winner prize in most of the cases follows the same pattern, some exceptions are observable when the distance between the two lines is thin, namely when the prize of the first winner severely matches with the total prize offered.

4.1 EYeka crowd

It is interesting to assess the magnitude of the crowd, and its main demographics and creative traits. To this purpose, we collected some demographics variables, which have been used in defining the identikit of the winner. Averaging the available age of the top three winners for each contest, it resulted that the average winner age is 34, thus stating that crowdsourcing is essentially a phenomenon which is targeted to Millennials' generation, aimed at attracting and engaging them in the co-creation pattern. In the top-three winners, only 27% of contributors were women. Considering that creative score is a sort of signal of the contributors' participation and achievements obtained on the platform, it can be considered the fact that women are depicted as more active in the entire creation process but less able to reach winning positions. Moreover, the 37% of the top-three winners recorded the existence of a personal website. This fact could be a signal in defining this typology of individual as "professionals" in the sectors in which they operate, since a platform structured as eYeka could however provide the creation of a personal network and recognition among creatives. Another insight refers to the average number of contributors for each company. Without any doubt, also small groups of solvers could secure successful outcomes; in fact, even if these companies lack in attracting large number of contributors, they are probably able to engage the most performing ones, so much to push them in the top-ranked companies based on the number of contests proposed on eYeka. It is also important to underline the fact that there is not a one-to-one relation between number of contributors and entries submitted; in fact, on average the proportion of the latter is 1,44 times the former. To be precise, in the case of Ideation contests this fraction slightly increases to 1,47 explaining, even if in a feeble sense, that this typology of contest might be more suitable to accommodate more than one submission from participants. In fact, by construction, Ideation contests are less demanding in terms of output submitted; what is valuable in this typology of contest is the right idea, or the right insights but not the implementation of them. This last element could be a

strong incentive in the supply of Ideation contests; on the other side, being aware of the above-mentioned dynamics for the Content category, the ratio decreases to 1,38, as it might be expected. Moreover, it seems also curious to understand if contributors, in the examined case first winners, are "veterans" or "novices" in this kind of crowdsourcing initiatives. Looking the share of contests that awarded as first winner an individual, which was already the first winner in one or more other contests it is possible to say that two out of ten first winners might be considered as "serial ones".

4.2 EYeka Community effect

An additional field of analysis is the one referred to the presence of a community provision in the contests hosted by eYeka. In the analyzed sample, 107 challenges out of 159 (namely 67%) recorded the existence of the community, restricted to contributors who decide to enroll in those specific contests. Community is present in almost all the interested industries, and in a consistent value with respect to the total number of projects proposed, as the cumulative data suggested. The role of the community is not restricted solely to interactions between contributors, in fact, it provides also a useful secondary mechanism of "leaderboard" in which contributors vote one the other about three main subjects: quality, originality and storytelling. Community participants are useful even in picking ideas, and could be leveraged by companies to select winners, task which generally is performed by an external professional team not belonging to eYeka. Not only community seems to be an efficient tool in enhancing the potential of crowdsourcing, but the 107 community projects are characterized by a greater average amount for first winner prize, with respect to contests without the community. The largest fraction of winners of community contests belongs to the class registered in eYeka in 2016 (27%); as a consequence, they are active since less than a year with respect to the collection date. The other two relevant classes in this sense are the ones of 2014 and 2012, which in fact could count on a greater timeframe and then experience greater level of creative scores inevitably larger than the other classes. Summarizing, it is possible to argue that community contests are characterized by higher price levels;

conversely, these contests are won "novices" that probably are able to ensure novelty, freshness and uncommon outcomes, that are appreciated by proponent firms.

4.3 EYeka sample Results

The following analysis was finalized to understand the impact that both the community presence and the Ideation contests typology have towards the number of attracted contributors, the number of winning positions to be assigned and finally on the average prize awarded. Table 3 presents the correlations matrix between the most important variables. In the table only significant correlations, the ones with a significance level α=0,10, are available, and the ones with a significance level α=0,05 are highlighted with the asterisk symbol.

Correlation Matrix						
Variable	Tot_Prize	N° Winners	First-winner prize	N° of creative score winners	N° of contest participants	N° of entries submitted
Tot_Prize	1.0000					
N° Winners	0.3199* 0.0000	1.0000				
First-winner prize	0.9126* 0.0000	0.2146* 0.0066	1.0000			
N° of creative score winners	-0.1936* 0.0145		-0.2078* 0.0086	1.0000		
N° of contest participants	-0.2453* 0.0018	0.2659* 0.0007	-0.2928* 0.0002		1.0000	
N° of entries submitted.	-0.2948* 0.0002	0.2443* 0.0019	-0.3431* 0.0000		0.9596* 0.0000	1.0000

Table 3: Correlation Matrix (Author's personal elaboration)

Total prizes tend to move in the same direction with respect to the number of pre-established winners. Consequently, all the indications are in the sense that at an increase of total prizes offered correspond also an increasing number of winning positions. Total prizes are even strongly correlated with the portions of prizes reserved for first winners (0,91), being this last a predetermined fraction of the former. On the opposite direction lies the correlation between the total prize and the first-winner creative score. As reported by the matrix, this relation has a negative sign (-0,19), implying that at increasing levels of total prizes offered individuals' creative scores tend to decrease. Moreover, also the number of

contributors moves on the contrary direction with respect to total prizes, suggesting that when the latter increases the former decreases as well. The same exact effect is observed in case of the number of media submitted, which are often more than one for each contributor; actually, the number of contributors and the entries submitted are strongly correlated (0.95). Another couple of variables, which showed a higher significance level in the correlation matrix, is the one composed by number of pre-determined winners and the fraction of total first winners prizes. As it is possible to see, even if the positive correlation is not so strong, at the rising of one of the two variables, tends to correspond a similar behavior of the other. At the same level of intensity lies also the positive correlation between the predetermined number of winners and the number of contributors. This same-direction movement can depend to the fact that at the increases of the number of vacant winning positions also the number of contributors tends to increase.

After having described the most important evidences from the correlation matrix, we decided to explore the presence of the community feature and the belonging of the project to Ideation category. The variables examined are: the **number of winners**, the **total prizes** assigned to the contest, the **first-winners prizes**, the **first-winners creative scores**, the **number of contributors** joined in the contest and the **number of media entered** categorized in two groups by the dichotomous variable "community". Using the Wilcoxon-Mann-Whitney U test we test the hypothesis that the value or the number of the variables under analysis are different between the two kinds of community contest. The results are summarized in the Table 4.

number of winners				total prizes				first-winners prizes			
community	0bs	mean	sd	community	0bs	mean	sd	community	0bs	mean	sd
0	52	3.442308	1.243232	0	52	7119.231	7761.267	0	52	3724.038	3702.43
1	107	3.700935	1.716814	1	107	9011.215	7270.337	1	107	4620.093	3505.917
z =		-2.621		z =		-2.631		z =		-2.538	
Prob > |z| = (p-value) =		0.0088		Prob > |z| = (p-value) =		0.0085		Prob > |z| = (p-value) =		0.0112	
P{Num_W(Com==0) > Num_W(Com==1)} =			0.447	P{Tot_Prize(Com==0) > Tot_Prize(Com==1)} =			0.372	P{W_Prize(Com==0) > W_Prize(Com==1)} =			0.377

first-winners creative scores				number of contributors				number of media entered			
community	0bs	mean	sd	community	0bs	mean	sd	community	0bs	mean	sd
0	52	531621.3	929587	0	52	66.21154	40.45784	0	52	97.30769	69.82907
1	107	317757.2	572718.4	1	107	57.85047	31.77599	1	107	82.75701	55.81807
z =		0.619		z =		1.188		z =		1.438	
Prob > |z| = (p-value) =		0.5361		Prob > |z| = (p-value) =		0.2349		Prob > |z| = (p-value) =		0.1506	
P{W_CreatScore(Com==0) > W_CreatScore(Com==1)} =			0.530	P{N_Contrib(Com==0) > N_Contrib(Com==1)} =			0.558	P{N_Media_Acc(Com==0) > N_Media_Acc(Com==1)} =			0.570

Table 4: *Wilcoxon-Mann-Whitney U test among the two groups of communities (Author's personal elaboration).*

Looking the Table 4, and in particular the number of pre-determined winners variables, the result suggested that there was no statistical significance to reject the null hypothesis (p-value=0,20). As a consequence, the tested proposition could not be confirmed. Basically, it is not possible to affirm that the number of pre-determines winners are different between the two kinds of contest. The opposite is true for the total prize offered variables. In this case, the result suggested that there was strong statistical significance to reject the null hypothesis (α = 0,01); accordingly, the tested assumption could be confirmed. It is to say that the values of total prizes offered are different between the two kinds of contests. Moreover, looking at the estimated probability displayed by the test and at the observed values, the difference in total prizes seems likely to be greater in the case of the contest owning the community feature (P=1-0,372=63%) and the same is true for the first-winners' prizes offered variables (the results are similar thanks to the greater correlation between the two variables). There is no statistical

significance to reject the null hypothesis, instead, for the first-winners' creative scores (p-value=0,53); for the numbers of contributors (p-value = 0,23) and for number of media uploaded (p-value = 0,15) variables. Namely, it is not possible to affirm that the variables analyzed are different between the two categories of contests.

The results suggest that challenges did not demonstrated to experience significant differences in the number of contributors joined and the same are true for the number of uploaded outcomes. Moreover, even the number of pre-determined winners and the first-winners' creative scores do not differ significantly between the two categories, thus suggesting that community contests are not created in a different fashion with respect to the other ones.

4.3.1 Ideation contests results

We run again the Wilcoxon-Mann-Whitney U test using a second dichotomous variable employed to classify the two groups: the Ideation category. The Table 5 summarizes the results.

number of winners			
Ideation	0bs	mean	sd
0	67	4	2.139102
1	92	3.336957	.9051401
z =		2.475	
Prob > |z| = (p-value) =		0.0133	
P{Num_W(Ideation==0) > Num_W(Ideation==1)} =			0.597

total prizes			
Ideation	0bs	mean	sd
0	67	13805.97	8646.665
1	92	4450	2278.302
z =		7.020	
Prob > |z| = (p-value) =		0.0000	
P{Tot_Prize(Ideation==0) > Tot_Prize(Ideation==1)} =			0.824

first-winners prizes			
Ideation	0bs	mean	sd
0	67	6885.821	4204.812
1	92	2463.587	1074.431
z =		6.913	
Prob > |z| = (p-value) =		0.0000	
P{W_Prize(Ideation==0) > W_Prize(Ideation==1)} =			0.818

first-winners creative scores			
Ideation	0bs	mean	sd
0	67	385681.8	770279.6
1	92	389170.1	673515
z =		-1.653	
Prob > |z| = (p-value) =		0.0982	
P{W_CreatScore(Ideation==0) > W_CreatScore(Ideation==1)} =			0.423

number of contributors			
Ideation	0bs	mean	sd
0	67	52.89552	34.20754
1	92	66.18478	34.58988
z =		-3.161	
Prob > |z| = (p-value) =		0.0016	
P{N_Contrib(Ideation==0) > N_Contrib(Ideation==1)} =			0.353

number of media entered			
Ideation	0bs	mean	sd
0	67	73.23881	59.04238
1	92	97.91304	60.46262
z =		-3.722	
Prob > |z| = (p-value) =		0.0002	
P{N_Media_Acc(Ideation==0) > N_Media_Acc(Ideation==1)} =			0,327

Table 5: *Wilcoxon-Mann-Whitney U test among the two groups of ideation category (Author's personal elaboration).*

In the Table 5 we test the hypothesis that that the value or the number of the variables under analysis are different between the two kinds of ideation category contest. Looking the table 5 it is possible to assess that, regards the number of pre-determines winners variables, there was quite strong statistical significance to reject the null hypothesis. Basically, it is possible to affirm that the number of pre-determines winners are different between the two typologies of contest. Moreover, the probability for the number of winners to be larger for the Content contests is about 60%, providing indications in line with the ones obtained from the observations. The result provided by the test suggested that there was strong statistical significance to reject the null hypothesis also for the total prizes variable ($\alpha = 0,01$), for the first-winners' prizes ($\alpha = 0,01$), for the number of contributors and for the number of the media entered ($\alpha = 0,01$). There was a not so strong statistical significance to reject the null hypothesis for the

values of first-winners' creative scores. In fact, with a significance level $\alpha = 0,05$ the null hypothesis could not be rejected.

The results suggest that the Ideation contests are characterized by lower levels both of prizes proposed and of number of winners awarded. The lower level of prizes could be explained by the smaller productive exertion required in the fulfillment of the assignment with respect to the Content ones. Furthermore, what is extremely interesting is the fact that Ideation contests category significantly proved to be characterized by a higher number of contributors, and as a consequence a higher number of entries submitted with respect to the Content category. To conclude, comparing the Table 4 with the Table 5, community contests appeared to be the most rewarding ones, thus attracting the participation of extrinsically motivated contributors. Furthermore, Ideation contents seemed to be more suitable to engage a larger number of contributors, promoting them as a useful tool for firms, which want to deploy at best a large audience potential.

5. Discussion and conclusion

Crowdsourcing has rapidly turned tables in less than two years, moving to an always stronger relevance of ideation contests against content creation; consequently, we decided to research its core elements to provide a significant contribution for what concerns this contemporary research area. In this sense, we tried to move beyond the crowdsourcing phenomenon intended as a mere micro-task production, outlining key features of the main typologies of contests which a firm could select in pursuing this Business Model. The paper provides the more suitable contests format that a company can implemented to reach the desired objective, by tailoring not only challenges, but also incentive mechanisms to engage the right crowd even in terms of motivational aspects. A limitation of this research consisted in the impossibility to conduct a linear regression analysis, which could have explained implications about the

effect that community or ideation features could have on economic outputs of firms that adopt crowdsourcing.

The first subject that we analysed was platform's environment. For what concerns this topic, it is possible to assess how inevitably, the smaller size of the sample (23 observations) and its stronger heterogeneity proved to be a challenging issue in the examination. First, with respect to the reward component, data has shown how platforms which recorded the larger volume of contributors registered are not the same which offered larger rewards, thus suggesting that on average participants seem not to be driven by extrinsic motivations in pursuing crowdsourcing challenges. Another counterintuitive fact is that platforms' above-average social networks performances did not prove to be concretely converted in a higher number of participants engaged. In addition, more than half of platforms provided the presence of a virtual community place in which participants could collaborate or interact, with the aim to reach greater results. Furthermore, another controversial aspect is represented by the fact that only the 40% of the considered platforms allowed interested individuals to access proposed challenges without being registered. This circumstance hence can be considered as a two-edged sword, since it could discourage enrolments but at the same time it protects brands from leaking of information from competitors. For what concerns the statistical examination instead, we analysed the main characterizing features of creative task platforms with respect to the ones, which required other tasks to be performed. Accordingly, variables tested have been the ones which represented at best platforms performances. The whole results, apart from the number of contest hosted, did not prove the existence of any difference in variables among the two groups created. In this sense, it possible to suggest that platforms hosting crowdsourcing challenges could be more suitable to host a larger number of contests due to their specific features. The second statistical investigation was a Cluster analysis, that has been performed with the aim to cope with the greater heterogeneity of the collected sample and to obtain further indications about

the platforms' environment. As expected, the four obtained groups were characterized by a high level of variability; in fact, only one cluster composed by two elements proved to be the worst one, whilst another one reported to be the top-performer one, with the other two lying in the middle. With respect to the role covered by contests on eYeka platform, we had exanimated in detail a sample of its most recent initiatives; firstly, with a descriptive analysis, and after with a statistical test. In this sense, it is important to remind that obtained results should be interpreted by reminding that they depend on that the whole sample has been extracted from the eYeka platform. The first insight obtained from the descriptive examination refers to the number of contests proposed by each company, which not surprisingly demonstrated that companies publishing a greater number of challenges are the ones which own a great variety of brands. This evidence suggested that brands could be considered more engaging than the name of their holding company in attracting customers for dedicated challenges. Moreover, it is counterintuitive that companies or brands in the top ranks for the number of contests proposed, reported instead a below-average number of contributors enrolled; obviously, a smaller number of participants does not necessarily indicate less successful outcomes, it only increase the possibility to find the best solution among a larger audience. Furthermore, also in this area of enquiry, data reported how the pattern concerning the level of contributors with respect to the prize offered seemed not to follow reward-oriented logics. As stated before, it seems plausible to ascribe this trend to an intrinsic motivational schema. As for participants, most of first winners resulted to be registered from less than a year. This indication was strongly interesting, mainly for the interpretation of creative scores as a measure of the goodness of challenges' contributors. Moreover, a sort of serial effect has been observed; in this field in fact, at least 2 over 10 first winners were recorded as first winners in other contests. For what concerns the presence of the community feature, it was included in the 67% of challenges; what is unexpected is that in the 19% of the cases community members were able to select the same contributors that have been awarded in the official contest. Additionally, Ideation contests were the 58% of the

analysed sample, but reaching even higher levels for specific industry-related contests. As for the statistical examination, these last two variables were the ones to be investigated. Both aspects were analysed with respect to the main characterizing features which a company should consider when tailoring and offering a crowdsourcing contest, in this case above all on eYeka.

Obtained results supported, with statistical significance, that community contests appeared to be the most rewarding ones, whit respect to the ones lacking this provision. Ideation contests instead, reported to be more suitable in attracting a greater number of contributors with respect to the Content ones. These latter on their side, are characterized by a larger amount of rewards. From these findings, it is possible to suggest how in the case of community contests probably extrinsically motivated contributors could get involved, attracted mainly from the higher rewards offered. At the same time, as suggested by the theory (Kosinski et al. 2012), this occurrence could not only influence the number of individuals, which in this case demonstrated to be not strongly reward-oriented, but rather mine the quality of the achievable results created in a context of stimulated interactions. For what concerns Ideation contest instead, it could be successfully promoted as a useful tool for firms which want to deploy the greater potential audience obtainable. In conclusion, it is possible to raise awareness not only among multinational firms, which in this study constitute the source of main findings, but also between less well-known enterprises, which could gain advantages even in terms of brand images rather than only from an innovation point of view. Moreover, considering that Ideation contests are always gaining more rooms in the crowdsourcing scenario, they could be intended as an augmented tool that enhances the role of contributors as active partners in the value creation process. Companies' managers thus, should have clear in mind that this practice would lead to a win-win situation for both parties, in which contributors do not feel exploited but rather valuable for the brand for which they decide to co-create with.

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