



UNIVERSITA' DEGLI STUDI DI PADOVA

**DIPARTIMENTO DI SCIENZE ECONOMICHE ED AZIENDALI
"M. FANNO"**

CORSO DI LAUREA MAGISTRALE IN

**BUSINESS ADMINISTRATION – ECONOMIA E DIREZIONE
AZIENDALE**

TESI DI LAUREA

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

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ANNO ACCADEMICO 2016 – 2017

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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 by Howe in 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 the two main actors: the company and contributors. This fact supports the advent of a networked logic for generating value, in which everyone, inside or outside firms' boundaries, is able to enhance the level of value creation.

Moreover, being Crowdsourcing an umbrella term under which many different initiatives are ascribed to, this thesis focuses on the innovative role assumed by Creative Crowdsourcing, which encompasses challenges characterized by ideation assignments rather than micro-tasks fulfilment. Communication, marketing research and new products development are the main examples of the various marketing-related activities in which Creative Crowdsourcing is adopted by brands.

Furthermore, firms' experts will not lose their position but, on the contrary, external contributions will improve companies' strategies, aiding organizations in sustaining their competitive advantage. As a consequence, crowd will move its status from mere "external provider of ideas" to "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 do not require to individuals higher creative or cognitive exertions to be performed. This thesis instead analyses the opposite side, trying to fill the lack in this field, deepening above all the contemporary facets of Creative Crowdsourcing.

In order to conduct the examination, I created two databases with hand-collected data about the two main areas of research: platforms' environment and contests offered by the eYeka platform.

The eYeka platform in fact, is considered a global leader in the Creative Crowdsourcing sector, above all for fast moving consumer goods companies, and for this reason it has been selected as subject for the enquiry regarding the challenges area.

Starting from a wider analysis of platforms, I conducted a descriptive research aiming at highlighting the main trends of this field; namely, size, rewards, crowd and ability to engage through social networks. In addition, I considered the platforms' ecosystem with a focus on distinguishing features among platforms hosting creative tasks to be fulfilled with respect to the others. After having performed a statistical examination, for what concerns the number of contest hosted, creative-platforms provided to be the most performing ones. Furthermore, since the sample I collected was strongly heterogeneous, I conducted also a Cluster analysis aiming at classifying platforms with respect to selected dimensions.

Moreover, moving towards the assessment of contests in detail, I started as before with the descriptive analysis of the most relevant features: the role of the industries, the brands involved, the contributors' performances and the presence of the community feature. On the other side, I compared Ideation challenges with Content-production ones through a statistical enquiry, in order to obtain a clear idea about their characterizing elements. Accordingly, also contests equipped with the community provision were analysed with respect to the ones in which it was missing. This analysis as whole, was aimed to understand what could be the main attributes a company should be aware of when selecting the typology of contests to offer.

As a result of performed studies, Ideation contests evidenced to be the most suitable to engage a larger number of contributors and entries, whilst on the other side, challenges equipped with the community feature appeared to be the most rewarding ones.

The first chapter of the thesis deepens, through an overview of the existing literature, the origins and the essential features of Crowdsourcing.

Moving to the second chapter instead, a detailed list of Creative Crowdsourcing practical implications will be provided. In this chapter, previous studies regarding Absorptive Capacity and Community of Practice theories are also analysed, which could be intended as complementary elements in the representation of the phenomenon.

To conclude, the third chapter encompasses all the empirical analyses, starting from the methodology description and moving towards the databases clarification. Furthermore, comprehensive descriptive and statistical insights, which have been obtained for both the areas of interest, are available in the final part of the dissertation.

CHAPTER ONE – THE EVOLUTION OF CROWDSOURCING

1.1 THEORETICAL BACKGROUND

In analysing Crowdsourcing phenomenon there is no way of getting around from its pioneer: the Open Innovation concept.

1.1.1 OPEN INNOVATION

Open Innovation lies on the assumption that « [...] knowledge is distributed worldwide. Hence, firms cannot rely solely on their know-how, rather they need to explore knowledge from external sources » (Hossain 2016, p.13).

The only way to survive to the increasingly stronger competitiveness in an industry is to innovate. It is not a coincidence that companies are the epicentre of any scheme of innovation, and this is due to the massive presence of relationships between them and their external stakeholders. Relationships with partners and external actors improve, sometimes indirectly, new processes, forcing firms to employ internal technological capabilities they own (Vega-Jurado, Juliao-Esparragoza et al. 2015).

The first definition of Open Innovation (OI) is accredited to Chesbrough (2003, p. xxiv), who set the notion as follows: « Open Innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology ». This definition has changed during years, focusing above all on the importance of the management of the innovation process, the vehicle through which organizations can pursue their goals.

From the literature review performed by Hossain (2016) it appears clear how Open Innovation has become a managed routine *modus-operandi*, involving knowledge flows (inside and outside the firm boundaries) convertible in internal innovation and following the Business Model guidelines.

As consequence, Tucci et al. (2016) stated that OI re-interprets the Research and Development function in a completely new way: moving the activities of the department from a state of internal detection to external engagement. As it is possible to notice in Figure 1, Chesbrough (2003) established the “Contrasting principles of Closed and Open Innovation”, aimed to define the underlying values that firms need to internalize in their organization to

pursue this transformation¹. Furthermore, the author also observed the presence of a significant decline in gains from R&D expenditure, thus suggesting to move towards the Open Innovation philosophy.

CONTRASTING PRINCIPLES OF CLOSED AND OPEN INNOVATION		
OPEN INNOVATION PRINCIPLES	DIMENSION ANALYZED	CLOSED INNOVATION PRINCIPLES
Not all the smart people work for us. We need to work with smart people inside <i>and</i> outside our company.	PEOPLE	The smart people in our field work for us.
External R&D can create significant value; internal R&D is needed to claim some portion of that value.	R&D	To profit from R&D, we must discover it, develop it, and ship it ourselves.
We don't have to originate the research to profit from it.	RESEARCH PATERNITY vs. PROFIT	If we discover it ourselves, we will get it to market first.
Building a better business model is better than getting to market first.	TIMING	The company that gets an innovation to market first will win.
If we make the best use of internal and external ideas, we will win.	IDEAS GENERATION	If we create the most and the best ideas in the industry, we will win.
We should profit from others' use of our IP, and we should buy others' IP whenever it advances our own business model.	IP	We should control our IP, so that our competitors don't profit from our ideas.

Figure 1: Contrasting principle of Closed and Open Innovation (personal adaptation from (Chesbrough 2003, p.xxvi))

In line with previous opinions, Laursen and Salter (2006) set themselves in favour of the existence of a positive impact on the level of performances related to innovation from the openness to external sources; these practices enable firms to integrate their technological assets with the external ideas provided and so, to exploit the first in a powerful way. On the same line, the results proposed by Hossain (2016) suggest how companies adopting Open Innovation are able to benefit from a considerable expansion of their R&D efficiency.

As a matter of fact, the Open Innovation paradigm anchors their existence on the “exchange” action and, for this reason, an additional element that deserves to be pointed out is the “size” of the knowledge exchanges inside and outside firms' boundaries. In the beginning

¹ Other authors like Trott and Hartmann (2009) support the theory that firms have always adopted Open Innovation in their innovation processes and that no firms have ever followed Closed Innovation claiming that, as a consequence, it doesn't exist a real paradigm from the closed to open approach.

scholars assumed that for each organization that received an inbound flow, another organization should have done an outbound transfer, but they neglected that the two sides of the exchange not necessarily need the same level of involvement. Indeed, it is not a coincidence that the overall literature dedicates more interest to the inbound Open Innovation (Stanko, Fisher et al. 2017). With reference to this crucial facet, Vanhaverbeke and Cloudt (2014) concretized the idea of an actual “exchange” with formal arrangements of organizational coordination, like alliances, licensing agreements and spin-offs. As for this point, the authors suggest companies that want get in touch with Open Innovation to take into consideration the make-buy-ally² constant decision-making process³.

The main actors involved in the OI framework are usually classified depending on the direction of the knowledge flow with respect to the firm’s boundaries (Enkel, Grassmann et al. 2009):

- Inside-out process: The firm is the main figure that profits transferring its ideas to external environment;
- Outside-in process: Suppliers, customers and competitors are integrated in the innovative process and firms can leverage also on non-customers and non-suppliers or even on intermediaries;
- Coupled process: Combination of the Inside-out and Outside-in processes based on co-creation through alliances, cooperation and joint ventures with complementary partners; reciprocal knowledge sharing is required.

As a consequence, Crowdsourcing is positioned in the Outside-in process of Open Innovation. For many scholars, it is even embedded under OI definition (Ebner, Leimeister et al. 2009), while for others, after Howe’s definition (2006b), the topic has gain independency in the economic field (Hossain 2016).

During an interview, Chesbrough wanted to stress the fact that innovation doesn’t derive from outside knowledge, which people conceive as “ready to use”; but on the contrary, the knowledge is raw, and not directly ready to be put in the market. Companies need to make a huge work to integrate the overall R&D process, and to make it ready to absorb and transform ideas in profits, when presented to the market (Euchner 2011). Additionally, it becomes fundamental to underline that closed innovating companies will face in the future the threat of

² The definition for the term “alliance” is: « Strategic alliances are voluntary agreements between firms involving exchange, sharing, or co-development of products, technologies, or services. They can occur as a result of a wide range of motives and goals, take a variety of forms, and occur across vertical and horizontal boundaries » (Gulati 1998, p.293).

³ The constant decision-making process refers to the core of the *transaction costs theory* of Williamson (1975) (Vanhaverbeke, Cloudt 2014).

income erosion, and then a decline in the ability to sustain internally innovation, caused by competition and supply-related factors. Otherwise, OI companies can rely on revenues and savings from the Outside-in/Inside-out processes as is possible to see in Figure 2 (OECD 2008). Laursen and Salter (2006, p.146) also suggest being aware because « external sources need to be managed carefully so that search efforts are not dissipated across too many search channels ».

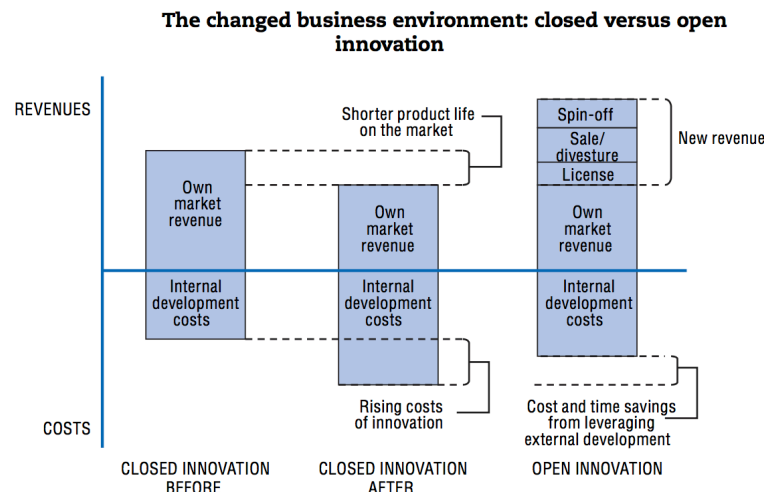


Figure 2: The changed business environment: Closed vs Open Innovation in (OECD 2008, p.28), adapted from (Chesbrough 2007)

In order to make Open Innovation works, it is not only necessary to focus on the right management approach but also on the trade-off generated by the “Paradox of Openness”. This paradox puts in opposition the crucial openness needed to generate value with the protection that is required in the commercialization phase (Laursen, Salter 2014). Companies have thus to balance not only the knowledge flows (in the sense of size and direction) but also the appropriate level of “closeness” that allows the organization to gain the maximum from Open Innovation practices.

In the field of product innovation Internet has proven to be the right place for developing a cooperation environment, enabling to shorten distances between firms and their external sources of knowledge; in this sense, customers suggesting ideas that will be translated in more desirable products become pivotal (Jelonek 2010, Stanko, Fisher et al. 2017). Von Hippel (2005) first affirmed that innovation is being democratized, in the sense that users want to create what lacks in the market and even to enjoy from learning, these users are called “lead users”. What described above put the attention no more on Open Innovation *per-se* but on the phenomenon that make possible for people located worldwide to collaborate, providing their work or ideas with the aim to create something innovative, namely Crowdsourcing.

1.1.2 CONTACT POINTS WITH CROWDSOURCING

Crowdsourcing phenomenon (Howe 2006) emerged after three years from the birth of Open Innovation studies. The two concepts are considered increasingly closer and sometimes even overlapped, mainly because they are built on the same paradigm: « knowledge is distributed and the opening of a firm's R&D processes can be a source of competitive advantage » (Schenk, Guittard 2011, p.96).

According to Estellés (2012), Crowdsourcing is aimed to achieve other objectives as well as the innovation process, that is actually the core goal of Open Innovation. Practices like Crowdfunding⁴ or Crowdvoting⁵ for example, which have nothing to do with the literal meaning of “innovation”, are however subsectors of Crowdsourcing, but follow other economic logics which are far from the Research and Development area. Moreover, an additional difference between the two practices involves the economic perspective: while Open Innovation adopts the outside knowledge to boost revenues, the use of Crowdsourcing has usually been considered as a tool to cut costs by exploiting the crowd (Ali-Hassan, Allam 2016).

Following Chesbrough's archetype (2003) it is also possible to affirm that Crowdsourcing will generate an increasing number of ideas; focusing on their selection and retention, this phenomenon can enlarge the concept of Open Innovation Funnel in the innovation branch (Figure 3).

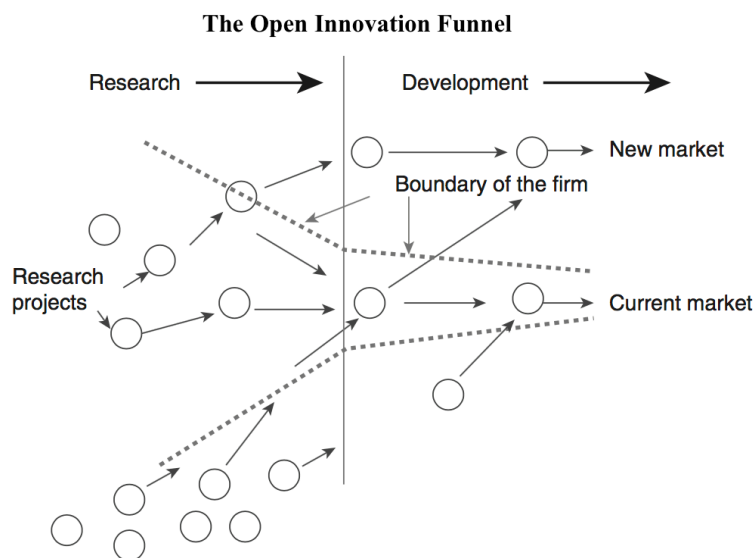


Figure 3: The Open Innovation funnel (Chesbrough 2003, p.xxv)

⁴ « In Crowdfunding initiatives, an individual, organization, or company seeks for funding from the crowd in exchange for a reward » (Garrigos-Simon, Gil-Pechuán et al. 2015, p.36).

⁵ Crowdvoting represents a sort of free market research, collecting « feedbacks from users on a particular topic or product, for which the participants contribute their opinion or evaluation [...] and it is carried out by voting » (Garrigos-Simon, Gil-Pechuán et al. 2015, p.79).

This circumstance is made possible, and above all amplified, by the ITC advent; moreover, it boosted potential advantages from distributed knowledge for innovation, even considering that a specified expertise is usually needed but not readily available in the “neighborhood” of the organization (Blomqvist, Tavilamp et al. 2017, Stanko, Fisher et al. 2017). It must be known that through social media, users not being constrained by organizational procedures are capable of creating completely new ideas or improving existing ones, allowing firm to cope with changing contexts in a more flexible way (Mount, Garcia Martinez 2014). The main threat in this case is linked with the transfer of knowledge that is limited in terms of its « internalization [...] for open innovation » (Mount, Garcia Martinez 2014, p.139).

In accordance with Ebner et al. (2009) managers and researchers need to translate the massive potential of the “collective brain” to widen the dimension of the “Open Research and Development” also exploiting common elements between Crowdsourcing and Open Innovation, like the risk reduction and the decrease in product development timing (Schenk, Guittard 2011). To accomplish this goal, each company must align and match « the nature of its innovation, the motivations of the innovators and its business model », otherwise efforts will become meaningless (Boudreau, Lakhani 2009, p.75).

The comparison with Open Innovation thus involved only the Crowdsourcing sphere related to innovation and creativity while crowd in reality can cover a wider range of activities. Crowd can therefore assume the role both of worker of ordinary task and of partner in the innovation process; the discussion then moves towards the “degree of innovation” inherent the phenomenon, intended as an Open Innovation supportive tool or just as outsourcing of simple tasks (Ghezzi 2017). By following evidences proposed by Estellés (2012, p.1), it is possible to conclude that even if there is a common zone between Crowdsourcing and Open Innovation, « nor all crowdsourcing initiatives involve Open Innovation, nor any Open Innovation activity has to be carry out through a crowdsourcing initiative » demonstrating that Open Innovation can be deemed as a reason to crowdsource while Crowdsourcing became a means through which apply Open Innovation (Ali-Hassan, Allam 2016), allowing an interpretation of Crowdsourcing as an independent phenomenon to be analysed.

1.2 A CROWDSOURCING FRAMEWORK

Whilst in previous paragraphs it has been possible to get a broad impression of Crowdsourcing meaning, the aim of this section is to deepen all the characterizing features of the phenomenon, its historical roots and the main challenges that have to be faced when adopting CS business models.

1.2.1 DEFINITION AND ACTORS

Starting from the literal meaning, the word Crowdsourcing (CS) can be split up in two terms, “Crowd” and “Outsourcing”, which themselves embody the concept in the simplest way. According to the very first definition, Crowdsourcing is defined as: « the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined – and generally large – network of people in the form of an open call. 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 » (Howe 2006a, p.1). Thanks to Jeff Howe, the author who coined the term with Mark Robinson⁶ in 2006, it became possible to categorize this phenomenon and to open the discussion about this emerging trend.

It has to be clarified also the fact that Crowdsourcing cannot be intended with the meaning of peer-production⁷, not even in the case it involves more than one individual, because in the former case the *locus of control* is not in the hand of the community⁸, as although happens in the peer production case (Brabham 2013). Another detail that Pénin et al. (2011) remind is that from Howe’s point of view it is only when ideas obtained from the “crowd”⁹ are converted into products and sold, that the entire process can be effectively defined Crowdsourcing; this fact highlights the strategic intent of the firm behind the adoption of this practice. Howe (2008) himself also strengthen the concept that Crowdsourcing cannot be compare with user-generated content production, even if it can be frequently used as starting point to create a business, with Crowdsourcing premises, around it.

⁶ The Executive Editor of WIRED at that time.

⁷ Peer Production is a production model in which projects are managed and created without the traditional hierarchical organization and that relies on self-organizing communities.

⁸ In fact, in Crowdsourcing the control is in the hand of the “outsourcer” that performs the open call.

⁹ The Crowd in this sense can be intended also as “Masscapital”, because it refers to the capabilities of a large group of people that are relevant for the organization (Garrigos-Simon, Gil-Pechuán et al. 2015).

Furthermore, Crowdsourcing has to 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”.

This model also allows to break down costs between professionals and amateurs, creating a sort of dedicated market for this last category in which they can gain from their passions (Howe 2006, Howe 2008).

To sustain this theory, it is also possible to focus on existing formal differences between Crowdsourcing and Outsourcing contractual forms. 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, otherwise, 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.

In accordance with Brabham (2013), Crowdsourcing constitutes an innovative pattern for work where groups of people can overstep professionals, contributing to the solution of internal 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. As a consequence, Crowdsourcing in an organizational contest, can be translated as « a 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.

It is evident how from the Howe’s definition onwards, most of the following scholars added an important term, to the traditional binomial “Crowd” - “Outsourcing”, in order to tailor the original definition with the state of the world and one of its future trends: the “Web”. Howe (2006) noticed that not only companies that were born with Internet, but also the old ones, should have benefit from the productive potential of “the crowd” also shortening the geographical distances, that for the latter ones represent a difficult matter to manage.

Internet and all its technologies are the channels through which the entire mechanism is sprayed, it is not only the base for the network between people but it also enables firms to propose and promote challenges; its potential support for Crowdsourcing is not measurable, it is sufficient to imagine that the Internet is planned to reach almost five billion users in 2020, enlarging the latent-future users that could become “the crowd” of the next revolutionary open calls (Deloitte 2016).

Moreover, 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 « harness the efforts 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). Ultimately, according to Erickson's definition¹⁰ (2011), the digital technology is not an essential element of the Crowdsourcing process, even if it may act as catalyst to augment the strength and coverage of the phenomenon.

Until now, in the above definitions it has been neglected another important feature that characterizes Crowdsourcing: the "Reward" component. In fact, to the extent of legitimate Crowdsourcing, Brabham (2008a) emphasized that it cannot be solely compared with models that promote contests and award prices, because it is an intrinsic complex problem-solving model. Crowdsourcing is defined as a problem-solving model, because it is a paradigm that allows organization to face problems that needs to be solved through a huge increase in tasks; to this extent, the internal resources are often not enough, thus opening the solver base to the collective intelligence of online communities (Malone, Laubacher et al. 2009, Brabham 2013).

After an accurate literature review, Estellès-Arolas and Gonzalez-Ladron-de-Guevara (2012, p.9) describe Crowdsourcing with a detailed definition, that encompasses all the main features previously highlighted: « [it] is a type of participative *online* activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary *undertaking of a task*. The undertaking of the task, of variable complexity and modularity, and in which the *crowd* should participate bringing their work, money, knowledge, and/or experience, always entails *mutual benefit*. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of

¹⁰ Erickson's definition: Crowdsourcing means « Tapping the perceptual, cognitive or enactive abilities of many people to achieve a well- defined result such as solving a problem, classifying a data set, or producing a decision» (Erickson 2011, p.1)

individual skills, while the crowdsourcer will obtain and utilize to their advantage that what the user has brought to the venture, whose form will depend on the type of activity undertaken ». From a Deloitte Report (2016) it is expected that starting from 2014, the 75% of high-performing enterprises will in some form adopt Crowdsourcing by 2018. As a consequence, it is possible to imagine that in four years the range of activities that fit with this business model will be strongly increased, creating solutions that are lower in cost with respect to the internally developed ones and above all, superior in quality and scalability. The even stronger engagement of large firms is directly identifiable in the results proposed in its report by eYeka¹¹ (2017), that exhibits the growing rate of +30% from 2015 to 2016 for what concerns the number of contests promoted by the two more active FMCG¹² companies in the platform: Procter & Gamble and Unilever. Furthermore, eYeka assessed that this rate is underestimated, due to the fact that many contests are presented as unbranded, preventing the possibility to calculate the real share of growth of contest promoted on the platform. Both the above-mentioned reports gave insights about the expansion phase that Crowdsourcing is facing, becoming a quite mainstream or must-have practice; they also highlight the quality of results that push to the firms' adoption of this organizational model in a continuative and integrated way.

As Surowiecki¹³ suggested in “The Wisdom of the Crowd” (2005), slightly before the birth of the term coined by Howe in 2006, the crowd, intended as large group of individuals, is smarter than the smarter individuals in them, under the right circumstances. No matter how brilliant, well-informed or rational each individual is, the group is better at solving problems, fostering innovation, coming to wise decisions and even predicting the future. These are the words that inspired the creation of the Crowdsourcing philosophy, acting as a *leit-motiv* in its applications.

Crowdsourcing actors and characterizing features

Analysing the available definitions of Crowdsourcing, Hosseini et al. (2014) identifies four main elements that are essential to constitute the backbone of the analysed phenomenon: the Crowd, the crowdsourcer, the crowdsourced task and the CS platform. Despite Crowdsourcing can be adopted in completely different contexts or in combination with other

¹¹ eYeka is the global market leader in online consumer co-creation and Creative Crowdsourcing. (Pétavy, Céré et al. 2012)

¹² FMCG is the acronym for Fast Moving Consumer Goods.

¹³ Surowiecki was acknowledged from Howe in its blog (2006, p.1), for the insights, that were considered “eye-opening” in “The Wisdom of the Crowd” book (2005).

organizational methodologies, the above-mentioned elements are the only ones that, from the authors' point of view, can qualify an organizational strategy as Crowdsourcing.

In their contribution, Hosseini et al. (2014) derived the four pillars of Crowdsourcing:

- The Crowd: it is composed by people who actively participate in a Crowdsourcing activity. They are characterized by their heterogeneity, unknown-ness, largeness, randomness¹⁴ and suitability in participating the contest;
- The crowdsourcer: it may be represented by any organization, both profit and non-profit, company, institution or individual who seeks the fulfilment of a task through the potential of the crowd. The distinctive features of this figure are: incentive provision (financial, social or entertainment), open call, ethical provision and the privacy provision;
- The crowdsourced task: it encompasses all the assignments that regards the open call from the crowdsourcer to the crowd. Its attributes are: traditional operation¹⁵, outsourced task, modularity, complexity, solvability, automation characteristics, user-driven, contribution type (individual or collaborative);
- The CS Platform: it is the place, usually a sort of virtual workplace or market, in which tasks are proposed, accepted and delivered. Its main characteristics are: crowd-related interaction with the platform, crowdsourcer-related interaction with the platform, task-related facilities and platform related-facilities.

What is certain, is the lack of a homogeneous approval about what should be considered a crucial feature and what can be considered an accessory one, so the above list is one of the several characterizations of the matter (Hosseini, Phalp et al. 2014).

Otherwise, Estellés-Arolas and Gonzalez-Ladron-de-Guevara (2012) argue that there are three main categories that classify CS: the Crowd, the initiator and the process; so basically, tasks and platforms that were considered two main factors for Hosseini et al. (2014) are here reallocated to the process section. This fact emphasizes the whole merger among all the elements that lie between the Crowd and the initiator, not only the platform agent but its role in and of itself.

¹⁴ Characteristic that is present in contests in which there are no limits in the selection of participants based on their skills (Hosseini, Phalp et al. 2014).

¹⁵ It refers to the way a task would have been performed if it was not crowdsourced, so either in-house or outsourced (Hosseini, Phalp et al. 2014).

In practice, to have a more tangible vision of the idea of what a Crowdsourcing initiative can mean, it is possible to observe the framework created by Palacios et al. (2016) represented in Figure 4.

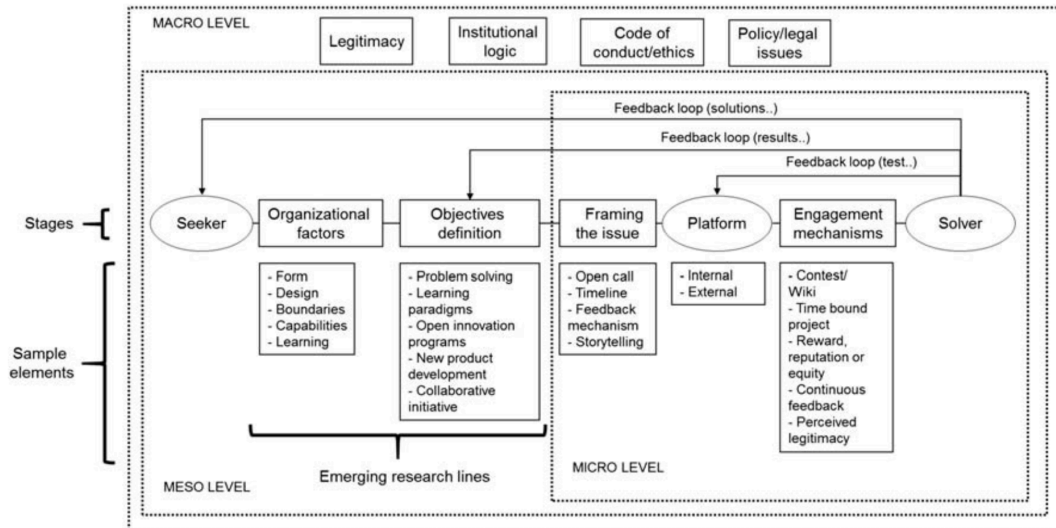


Figure 4: Mapping out the components in Crowdsourcing (Palacios, Martinez-Corral et al. 2016, p.1835)

As is reasonable to assess analysing the figure, the entire process goes around the platform, that is the crucial cog which effectively makes Crowdsourcing existing.

To conclude, according to Brabham's studies (2013), it is possible to summarize the entire Crowdsourcing phenomenon not only relying on its pivotal actors but also on intrinsic elements of the definition, such as: the organization that has a task to be performed, the crowd that is voluntarily willing to fulfil the assignment, the online environment that enables the existence of CS and the interaction between parts, ending with mutual benefits that the whole system of actors produces. It is possible now, having deepened the overview, to go back to milestone cases that have spread the awareness of Crowdsourcing.

1.2.2 FROM HISTORY TO CURRENT DIRECTION

Without the existence of Web 2.0 revolution, probably Crowdsourcing would literally have never happen, or at least not in the way it is known as yet. Firms would not be able to easily get in touch with a large number of people and the process by which ideas from outside would have been taken into consideration would be massively expensive and time consuming. Essentially, there would be a lack of correspondence between all the key elements that could have undermined the diffusion of Crowdsourcing. Crowdsourcing business and organizational model has been used as a fruitful approach in many different specialties, from the more technical ones like computer science to psychology and obviously not leaving aside management sectors (Geiger, Rosemann et al. 2012).

To disprove the myth that Crowdsourcing started to exist only after the introduction of Internet, the history has the evidence on its side. The oldest case of a rudimentary Crowdsourcing initiative is the one proposed by the British Government in 1714, with the aim to find a way to detect the position of ships. But it was not the only one, about 50 years later King Louis XVI in France, awarded who was able to separate sea salt in the easiest and cheaper way, and the Oxford English Dictionary, in its earlier edition, was crowdsourced to a huge audience of experts that invested many decades to complete the project (Brabham 2013, Weinswing 2016). These historical examples demonstrate how CS was, since its origins, dedicated to solve scientific problems, with a broad scope of application and not firms' specific cases, probably because at that time companies would not be able to attract and engage external individuals in their innovative process.

According to Howe's studies (2008) the birth of the Crowdsourcing phenomenon was closely related with the birth of the stock photography field. It is also not a coincidence that, even before the formulation of its definition, Crowdsourcing was quickly identified with the foundation in 2000 of iStockPhoto, a « giant, royalty-free stock photography agency » (Brabham 2008b, p.2). It essentially represented a marketplace for the amateur photographer, where images could be shared at affordable prices¹⁶ that overtook its competitors. With the adoption of such business model, companies leveraged the creativity of the crowd which could be considered more appealing from clients' point of view, not only for the variety of suggestions that they offer but also for their affordability (Yeomans 2013). In the past apparently, firms would never have thought to consult and ask for advice to parts of community. Another emblematic example is the Coca-Cola one, that with a contest hosted in eYeka Platform, was able to convert in viable and profitable elements the 100% of the creative material provided by

¹⁶ A user could gain from \$1 to \$5, up to \$40 for high resolution images (Howe 2006)

the contributors, and so to achieve a 92% of cost efficiency in respect with agency fees and internal costs of production (Roth 2015).

Ten years after the takeover of Crowdsourcing, the consumer good companies are ranked as the more active firms in this field, getting over the technological firms that were in a leading position in the first period, probably because of their dimension, and the competitive environment in which they operate (see Figure 5). These organizations operate in a global market and coexist with the fear to stay behind, not being able to remain fresh and keep up with their customers' needs (Olenski 2015).

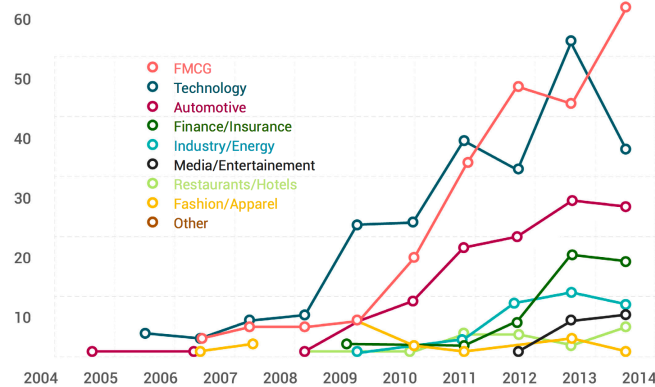


Figure 5: Evolution of Crowdsourcing usage by the Best Global Brands, broken down by sector (Roth 2015, p.7).

Furthermore, eYeka reports that video content and ideas are the most crowdsourced types of content, respectively the 45% and the 23%, from the 85% of the Best Global Brands that in ten years have embraced the Crowdsourcing philosophy until 2014 (Figure 6) (Roth 2015).

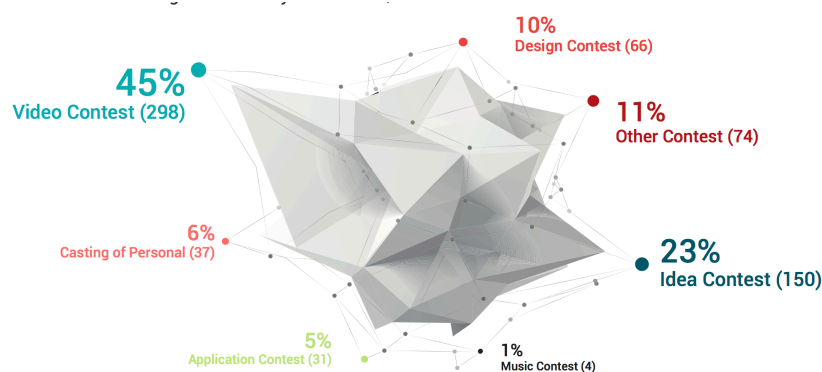


Figure 6: Type of content Crowdsourced in the last ten years by the Best Global Brands (Roth 2015, p.11)

The Danish bricks toy manufacturing LEGO, is a further example of pioneering in Crowdsourcing; already in 2000, the companies established its e-commerce and e-branding initiatives and from 2010 it operates with its partner Cuusoo to exploit the strategic potential of its community members (Schlagwein, Bjørn-Andersen 2014). Nevertheless, the hidden

potential becomes inspiration five year before, when the company realizes that it could have access to 120,000 individuals that voluntarily help LEGO in product innovation other than their designer staff; the community thus would be considered as a key asset and the organization adapted itself, with the creation of dedicated departments, enhancing this evidence (Schlagwein, Bjørn-Andersen 2014). But LEGO did more, it was able to engage the crowd in the overall production process, not only in the idea creation but also in the after-launch phase, given the fact that their efforts could be payed-off only by a royalty on the sales revenue from their creation.

Unilever¹⁷ and P&G¹⁸ with their corresponding innovation and Crowdsourcing initiatives are two further examples of firms that strive to use CS as driver of business change and growth; these initiatives have some restriction in respect with the general and basic definition of Crowdsourcing, because the company acts both as initiator and as platform. What described is probably due to their corporate structures that allow firms to manage also external contribution (Yeomans 2013). In supporting the validity of this model, it is possible to state, looking at P&G, that the venture successfully concluded more than 2,000 CS agreements (Deloitte 2016). Nonetheless, these big corporations do not rely solely on their “proprietary platform” but on the contrary, they are also massive users of open CS platforms. Following the trend outlined by the eYeka Report in 2015, it is identifiable that in 2014 the Best Global Brands have progressively enhanced the use of Crowdsourcing platforms (76% of all initiatives in 2014) significantly more than social media and websites (24%) for their CS initiatives (2015). Furthermore, in less than two years, trends were rapidly turning tables, moving to an even stronger relevance of ideation contests against video content creation. The top 16 FMCG firms thus increased, from 2014 to 2015, their efforts in ideation contest of more than 95%, while the video creation decreased consistently (-12%), and in the year after, the path followed the same pattern (Figure 7) (Roth, Petavy et al. 2016).

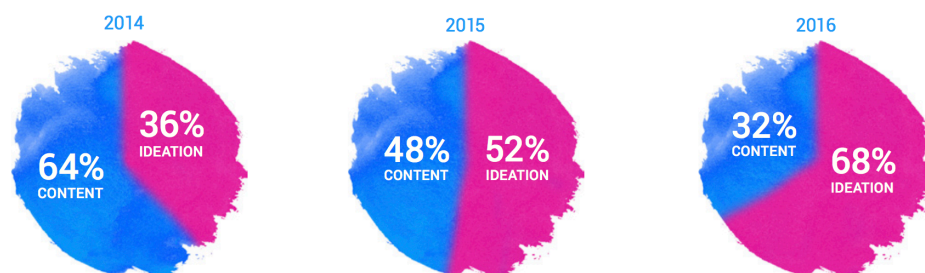


Figure 7: Evolution of Ideation and Content Crowdsourcing briefs (eYeka 2017, p.7)

¹⁷ Unilever crowdsourcing platform is Unilever Foundry (Unilever 2014)

¹⁸ P&G crowdsourcing platform is P&G Connect+Develop (P&G 2013)

It seems natural to inquire the meaning of the ideation contests; even the report refers to ideation as the « conceptualization of various elements of the marketing mix, be it product or service (mostly referred to as innovation), communication messages, packaging solutions (be it graphic or structural), brand and product naming, consumer engagement initiatives (often referred to as marketing activation), point of sale materials » (Roth, Petavy et al. 2016, p.8) that are essential elements to pursue a route of innovation.

The directions taken by the phenomenon thus give insight about the role that the crowd is going to cover in the Crowdsourcing landscape. It will become a source of inspiration for experts, that will not lose their position but, on the contrary, external contributions will improve the firms' strategies, aiding organizations in sustaining their competitive advantage; hence, crowds will move their *status* from mere “external provider of ideas” to “augmented marketer” (eYeka 2017).

1.2.3 THE CROWDSOURCING PARADIGM

Nowadays Crowdsourcing is at its maximum expansion, and as a consequence, pretty much every assignment that can be executed through Internet, both ICT, HITs¹⁹ and/or creative projects, can be performed by the crowd. As a matter of fact, “crowd-” becomes a suffix that acts as an umbrella term in defining any activity that can be performed following this a CS model, as for example Crowdcreation, Crowdfunding, Crowdsolving, Crowdvoting and Crowdwok as well (Weinswing 2016). How it is possible to imagine, activities like Crowdfunding, in which the crowd provide seekers direct financing (Garrigos-Simon, Gil-Pechuán et al. 2015), have nothing in common except for the form of inputs, the crowd, with activities like Crowdwork, in which solvers have to perform simple one-time tasks (Ross, Zaldivar et al. 2010). Howe (2008) categorizes the phenomenon in four main clusters: Crowd-wisdom (or collective intelligence), Crowdcreation, Crowdvoting and Crowdfunding. The first one basically refers to the assumption that «groups contains more knowledge than individuals » (Howe 2008, p.280) and it can find an elementary practical example in the suggestion boxes; for what concerns Crowdcreation instead, the author refers to all the activities requiring a creativity impact, such as redesign or video production until language translation. Moreover, Crowdvoting is aimed at exploiting the contribution of the crowd and at organizing and selecting huge volumes of information when a preference choice is proposed. Paradoxically it is the mechanism used by Google to rank search outputs. As for the last approach, Crowdfunding is the more “financial-oriented”, given that here the crowd plays the part of lenders in supporting projects that need funds to be launched, obtaining in most of the cases rewards of equity shares as a return.

From this point onward, Crowdsourcing classification is performed focusing on its key aspects, literally intended as « distributed problem-solving and production model that leverages the collective intelligence of online communities to serve specific organizational goals » (Brabham 2013, p.xix) excluding thus from the inquiry the Crowdfunding category, since its open calls refer to collect financing from the crowd, and it is not directly related with the contribution in form of individual knowledge, work or creativity efforts.

Due to the increasing interest in Crowdsourcing during the years, scholars analysed the subject and each one proposed its personal classification, aimed to highlight dedicated aspects.

An example is the study conducted by Schenk and Guittard (2011), aimed to classify the model in two main streams: the first one refers to Integrative Crowdsourcing while the second one is referred to Selective Crowdsourcing.

¹⁹ HIT is the acronym for Human Intelligence Tasks, individual tasks on which contributors work on, this name refers to the micro tasks proposed by Amazon Mechanical Turk platform.

The main difference between the two classifications, is the role of the individual contribution; in fact, in the Integrative process the single output is worthless, only the sum of the cumulative ideas grants firms to reach their objectives. On one hand, this category of CS is useful when firms need to assemble a database without incurring in significant costs of collecting the required resources; on the other hand, Selective Crowdsourcing projects provide firms plenty of options generated by the crowd. In this sense, this model best fits with proposed problems that don't have a demonstrably right answer, and where only the individual who proposes the best solution is awarded²⁰ (Schenk, Guittard 2011). In the latter case, each individual contribution can potentially be strongly valuable for the organization who leveraged on this type of Crowdsourcing model.

The authors even provided a classification of the projects related tasks, summarizing them in three main categories: Simple Tasks, Creative Tasks and Complex Tasks.

Crowdsourcing projects characterized by simple tasks are the practical examples of what the authors wish to embody with the Integrative typology: assignments are completed without any particular cognitive effort and the condition of being "human" usually is sufficient to perform this kind of tasks. For firms, projects that are possible to fulfil with this kind of tasks are valuable in terms of saving costs from the scalable effect of the crowd participation, also thanks to the lower reward granted to all the contributors.

Moving to a higher level of engagement of contest participants it is possible to find 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 contests and for Selective contests in the case in which only the more appreciated submission is awarded (Schenk, Guittard 2011). On the other side, in respect to the Simple Task classification, and in a slightly higher position than the one of Creative Tasks, it is possible to find Complex Tasks. This last group of assignments perfectly corresponds with the Selective Crowdsourcing typology because of its award mechanism, but it has also a great potential which is based on problem solving skills. These skills can either conduct to disruptive solutions to the posed problem, thus justifies the higher reward level, or have the drawback to be totally ineffective, lacking the guarantee about the success of the job.

²⁰ Winner-takes-all mechanism

A summary table collecting key elements of the Tasks Classifications proposed by Schenk and Guittard (2011) is available below see Figure 8.

Task Typology	Crowdsourcing Model	Skills Required	Contributors' Involvement Level	Reward	Value Created
Simple Tasks	Integrative	No skills required	Low	Micropayment	Lowering costs on large scale
Creative Tasks	Both Integrative and Selective	Creativity	Medium	Intermediate (~ 100 \$)	Innovative Ideas
Complex Tasks	Selective	Problem Solving	High and Situation Specific	High (> 10.000 \$)	Solution of Complex Problems

Figure 8: Personal summary table about tasks classifications (Schenk, Guittard 2011)

Another interesting aspect to be taken into account, additionally to the role of the contributors and the typologies of tasks proposed, is related to the problem that contests are aimed to solve. Brabham thus decides to adopt a «problem-centric vein» (2013, p. 44) in categorizing CS practical applications, inspired by the issues that this model is best suited to deal with. The four problem-focused Crowdsourcing typologies are named as follows: Knowledge Discovery and Management, Broadcast Search, Peer-Vetted Creative Production, Distributed-Human-Intelligence Tasking.

- Knowledge Discovery and Management: it 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 using of standardized formats. In this field, it is desirable to engage large group of people since this model is aimed to satisfy information gathering problems and reporting issues.
- Broadcast Search: this approach implies the resolution of empirical problems, and for this purpose, scientific problems are the more suitable to be crowdsourced with this method. For this kind of problems, companies don't know the answer to their challenge in advance, even if it must be empirically provable. Usually, in this type of Crowdsourcing pattern, the winner is a single individual, an "outsider" that is able to translate its past experiences in different fields into a viable solution.
- Peer-Vetted Creative Production: with this approach, the crowd is entitled to create or to select creative ideas, that do not have a universal "right answer"; on

the contrary, in electing the winning idea or ideas, the entire group is performing a sort of market research. Given the fact that crowd is a sort of “collateral-customer”, the evaluation itself is valuable for the firm almost as well as the best idea. The majority of the contests refers to this approach, which involves innovative and creative ideas for new products, media content and design productions.

- **Distributed-Human-Intelligence Tasks:** the goal of these typology of assignments is to 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 CS platforms.

Adding further details to the overview, Pénin and Burger-Helmchen (2011) classified CS focusing on the sorts of activities performed, and identifying three main sectors: Crowdsourcing of routine work, where the size of the crowd is the most important factor rather than individuals’ heterogeneity and skills; Crowdsourcing of content, where both the dimensions are fundamentals, and Crowdsourcing of inventive activities. This last type is the most interesting one given that it focuses on bringing innovative and creative ideas, solution and knowledge. It can also be seen as a mashup between the above-proposed Peer-Vetted Creative Production approach and the Broadcast Search one, thus highlighting the fundamental importance of both the heterogeneity of crowds (in knowledge and creativity) instead of their size and of the winner-takes-all mechanism.

In deciding what Crowdsourcing detailed configuration best fits the initiator requests, Deloitte (2016) proposes a decision-making map to support firms in implementing the analysed business model (Figure 9).

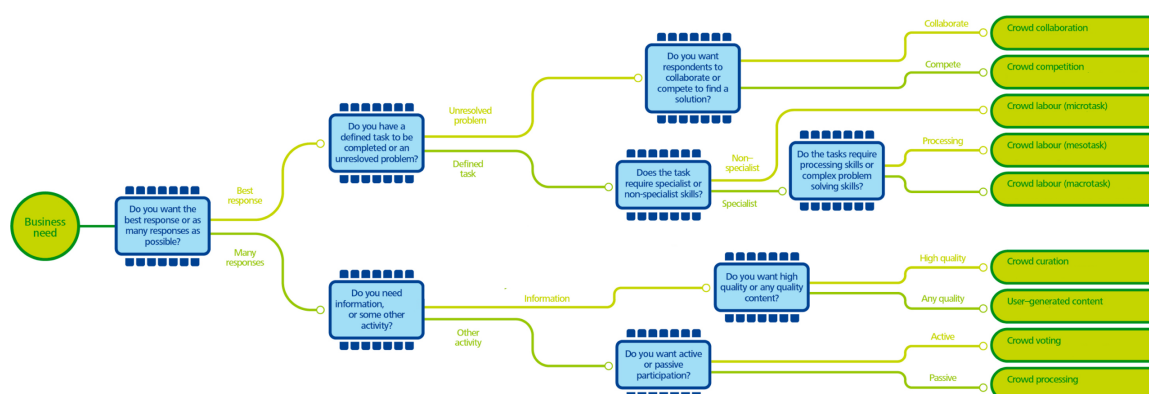


Figure 9: Decision Making-Process about Crowdsourcing approaches (Deloitte 2016, p.4-5)

The initial and pivotal decision to make, is about the choice between an Integrative or Selective approach; thus, between having as much contribution as possible or looking for best responses. The second hub instead moves the choice between the tasks that need to be performed to reach the objective, while at the third level it is possible to observe several specific questions that qualify in great detail the best CS setup to be used. The entire decision-making process conducts to seven specific typologies of Crowdsourcing that directly correspond to the qualifications of the fields of action of the platforms.

Generally, even if the substance of the building blocks is the same, each author named the Crowdsourcing types with distinguishable aliases; the two cases in which is possible to find strong similarities are the taxonomies proposed by Geiger et al. (2012) and the ones proposed by Estellés-Arolas et al. (2015). In fact, for the former authors, the main typologies are Crowdrating, Crowdcreation, Crowdsolving and Crowdprocessing, that are perfectly compatible with the meaning of the latter authors classifications Crowdopinion, Crowdproduction, Crowdcontest with the exception of the last one that in this specific circumstance is divided in Crowdsearching and Crowdanalyzing (Estellés-Arolas, Navarro-Giner et al. 2015).

The evolution of the phenomenon has led to new shades of Crowdsourcing, enlarging the range of configurations available for adoption. One example is the case of Crowdsourcing implemented in B2B firms, in which the open call is not directly addressed to the unknown group of individual identified as general crowd, but also to pre-qualified participants and communities, trusted partners and even to firms' own employee (Simula, Vuori 2012). B2B firms unfortunately cannot rely solely on the general crowd to crowdsource its challenges mainly because of the lack of direct contact with customers that reduce success in engaging external knowledge flows. For the authors, there is probably a further issue: for what concern the role of the brand, it may be not so strong to attract external contributions, and for this reason what B2B firms consider "crowd" has to be necessary closer, or indeed inside its boundaries.

A similar approach was proposed by Stiger et al. (2012) who highlighted the potential in exploiting the "internal crowd", underling also drawbacks and limits arising from its adoption, mainly because of the trade-off between expertise and diversity²¹, that could negatively affect the scope of innovation. On the other side Shaqrah and Noor (2017) represents an equal but opposite in side example, aimed to integrate only customers as source of external inputs. Shared value and vision, customer experience and heterogeneous skills are key points

²¹ This trade-off is intended with a positive impact of expertise that can be offset by limits in the diversity due to the environment in which the employee works.

to sustain the validity of this approach, treating CRM²² as a tool by which leverage on its innovative potential.

It is worth to note the changing nature of this phenomenon, reasonably due to its youthfulness, that makes it difficult statically categorize it. Crowdsourcing models have limitless possibility of setting up that can be fitted for almost every kind of circumstance, granting thus flexibility in tailoring firms own business model. After having considered definitions and actors involved and the classifications described above, it is possible to move towards the motivations that drive the decision to adopt CS, in particular Creative Crowdsourcing.

With respect to the following sections of this dissertation, it will be used both the terms “Creative Crowdsourcing”, “Ideation Crowdsourcing”²³ and “Crowdsourcing for Creative Works” meaning a hybrid Selective approach²⁴, with mainly Creative and even Complex tasks to be performed, and with a Peer-Vetted Creative Production problem-focus. This decision came from the fact that eYeka, the CS platform on whose data the empirical part is based on, provides these typologies of Crowdsourcing contests.

²² CRM is the acronym of Customer Relationship Management

²³ This name refers to the Ideation concept coined by eYeka and explained in section 1.2.2

²⁴ It is a sort of winner-takes-all mechanism applied to more than one contributors, so that for example the three best submission are awarded.

1.2.4 BENEFITS AND CHALLENGES OF CREATIVE CROWDSOURCING

In deciding whether to invest or not in Creative Crowdsourcing tools, firms have to weight benefits and risks resulting from this structural choice that will inevitably modify the organizational model and the related routines. To encourage firms towards this transformation Poetz and Schreier (2012) demonstrate that crowds has outperformed experts²⁵ in many phases of product ideation, proving indeed to be a promising complementary ideation provider. In many circumstances in fact, contributions from the crowd can be seen as wealthy raw materials that must be processed by firms' professionals to be exploited at its maximum potential. It is no accident that in its Report eYeka (2017) underlines this trend, suggesting that successful creative campaigns are the outcomes of dedicated strategies, and that strong execution processes. Such processes match the expertise of firms' professionals with the freshness of the crowd to achieve the necessary competitive advantage. However, CS it is not all gold, it has also deficiencies that highlight the magnitude of all the interdependent relationships and mechanisms, and that deserve to be managed whenever tool is adopted (Bloodgood 2013).

Benefits

In describing what could be the main advantages in adopting Creative Crowdsourcing it is fundamental to start from the roots: the benefits of employing an even larger pool of external talents and their collective intelligence. The heterogeneity of contributions deriving from worldwide individuals is itself a positive incentive to exploit this model. It is not a case, that the premise of Crowdsourcing is that knowledge can be anywhere, exploiting thus its scalability effect (Weinswing 2016); this concept describes the possibility to collect myriads of point of view, ideas and opinions that are strongly valuable for firms that strive to innovate. The abundance of creativity overcomes the cost saving advantage, forcing down experimentation costs but simultaneously improving the quality of outputs (Deloitte 2016). Moreover, the mentioned abundance allows to discover disruptive ideas, insights and pattern of responses that can give even more interesting food for thought for the entire organization and not only for the limited scope of the challenge proposed (Tongal 2016). But it is not all, from one hand with this scheme it is possible to derive insights from the best customers, target customers and even competitors' customers, thus gaining benefits in terms of competitive advantages. On the other hand, an expression submitted by a large fraction of participants, shows companies the direction to follow. Additionally, the overall material collected can be

²⁵ Their results are based on one specific case study, and the same authors suggest deepening the analysis in other different industries to give strength to their demonstration.

used in the most vary contexts and functions even if the purpose of the challenge was totally different, addressing in one time more than one goal.

This last logic conducts to another relevant advantage: speed. Both eYeka (2017) and Tongal²⁶ (2016) highlight in their reports the role of this fundamental advantage; the fact that a macro problem can be split in smaller fractions, accelerates the solution to the overall company challenge. At the same time, it is possible to collect all the small pieces and thus assemble them in the final solution with a great saving in times. Furthermore, to reach the best possible outcome, each contributor should fulfil only challenges that are more suitable for its competencies, skills or interests. It is not a case in fact, that Deloitte proposes in its Deloitte Pixel Crowdsourcing service, a solution-model designed by following exactly this shortcut (Deloitte 2017). Firms using Crowdsourcing tools can become even more elastic to changing market conditions, accelerating the time to market and the agility in responding to customer needs after having interiorized in advance the customers signals and then forecasting possible changing trends (Brabham 2013).

Another important implication in Creative Crowdsourcing refers to the mechanism of self-selection in challenge participation. This phenomenon is strongly positive for a firm who wants to be sure about the quality of outcomes that a campaign could achieve, since only motivated contributors would invest their time and efforts in that contest, considering that the probability to be awarded decreases at the increase of the number of participants (eYeka 2017). Contributions thus should present quality standard that might therefore satisfy the minimum level requested from the initiators. In addition, firms have to provide all the necessary information to allow participants to reach an adequate fulfilment of the task, balancing freedom of expression with boundaries that should not be too restrictive to preclude the rise of innovative insights. Many platforms, in order to face the issues of submissions quality level, established a sort of mechanism usually based on scores, that act as a kind of signalling which impacts the users' reputation thus discouraging malicious behaviours (Weinswing 2016).

From this practice firms can also gain an internal advantage, since it emerges that open calls to external sources trigger an “increase competition between solvers”; in other words, internal teams feel in antagonism with the worldwide contributors, increasing as a consequence the level of incentive of internal research and also decreasing the fear of organizational changes (Pénin, Burger-Helmchen 2011).

²⁶ Tongal is a Platform which develops content strategies and produces video for every platform, allowing brands to engage audience more effectively (<https://tongal.com/business/what-tongal-delivers/>).

Apparently, when someone hears for the first time the term Crowdsourcing, and erroneously associate it in whole with outsourcing, the first advantage that come up is cost saving.

Although many rewards are high, most of the times firms obtain access also to not awarded submissions, reducing the impact of the investment in a small fraction per contribution. In any case, the return to the investment is heavily higher than the one occurred if the process would have been conducted internally. With respect to this collection of innovative ideas, if the same process would have been carried out by employees, firms has to pay them just for this process; in this way firms will pay a higher price than with CS thus relying on a smaller source of newness and inventive. Furthermore, there will be also a lack of collateral information that CS permits to collect. Crowdsourcing consequently allows firm to « outsource the risk of failure » paying only for the satisfactory outcomes, and give it the power to cope with risky projects characterized by ambiguity in evaluating costs (Pénin, Burger-Helmchen 2011, p.247). Even if the cost advantage is the one drives many firms to undertake CS, at this point it should be clear how the above-mentioned advantages easily overcome the one created by costs.

Another interesting benefit in implementing Creative Crowdsourcing processes consists in network externalities, based on the evidence that a CS platform became more appealing and valuable at the increase of its registered members; as matter of fact the more individuals are engaged in a platform the more probability to find the right idea exists (Schenk, Guittard 2011, Van Alstyne, Di Fiore et al. 2017). Firms hence exploit the attractive power of platforms to reach their objectives, by outsourcing in some ways the recruitment phase. Considering the importance of the selection of the right platform, it must be taken into account that a wrong choice at this level can conduct to the failure of the whole campaign. Furthermore, Schenk and Guittard (2011) highlighted also what they call “the agency issue”, that is to say that the risk of dependence about the fulfilment of the contract in this case vanishes, due to the fact that the contract is not set up ex ante, and that also the monitoring aspect misses as a whole.

Risks

In adopting Creative Crowdsourcing, companies need to be aware of risks that they would face in the future, and to be prepared in handling them to reach the desired value. The first problem companies have to deal with is a sort of ethical dispute about the ideas of replacement of employees with lower costly voluntary individuals (Whitla 2009). If this point of view is strongly externally perceived, creators may feel exploited or cheated and this effect may strongly interfere with the achievement of the desired performances (Djelassi, Decoopman 2013).

To fight against these beliefs, brands have to develop the ability to engage individuals in this kind of projects, by enhancing and transmitting to crowd the greater value that individual efforts represent for the firm. Otherwise, it could happen that this negative loop brings to the worst imaginable scenario: the scarcity or even the lack of contributors. The stumbling block to be jumped over is thus the reaching of the minimum mass of contributors capable of ensuring the feasibility of the contest; to guarantee this fact, companies should act with proper incentives schemes²⁷ even through the role of platforms hosting the challenge (Schenk, Guittard 2011).

Not only the ethical issues could discourage the participation of individual to Creative Crowdsourcing Contests, but also the winner-takes-all formula. Van Alstyne et al. (2017, p.3) discover that if 99% of registered members never won, this fact leads to a robust fall in the willingness to participate to future challenges (about 98%); only wise platforms thus are able to address this drop, by providing « enough value from interaction that they increase engagement over time ». As it is possible to understand, crowd it is not so easy to recruit, especially for qualified people who hardly would propose themselves deliberately; as a consequence, firms have to have clear in mind the fact that creators at least need to feel their ideas are taken seriously into consideration (Brabham 2013, Weinswing 2016). Moreover, for Weinswing (2016) submissions to challenges do not involved the achievement of the crowdsourced task, because individuals are not obliged to deliver the requested contest, they also could intentionally deliver misleading productions, or deliver nothing at all causing a huge failure in the investment.

Management need to be prepared to have responsive strategies also in case contributions are mainly constituted by jokes and, if necessary, firms need to be able to play the game and use in any case the material to its advantage; in the creative field, any ideas even the unthinkable one can be converted in valuable sources of advantages (Wilson, Robson et al. 2017). Differently, the situation in which negative contributions take control of the entire contest could harm the image of a brand: the same tool that allows people to cultivate fruitful interaction in favour of a company may prove to be a two-edged sword and also boosts the spreading of negative entries that requires giant efforts to be contained. Following the opinion proposed by Bal et al. (2017), consumers who have primarily experienced unpleasant situation with the brand are pushed by a sort of revenge sentiment that encourages these negative reaction; the same authors thereby underline that it is not a case that, in most of the times brands that have misbehaved, mainly in term of social responsibility, are the most cheated ones in a sort of what goes around comes around system.

²⁷ Rewards dimension or motivations are the most relevant incentives in Creative Crowdsourcing practices (Schenk, Guittard 2011).

At this point, the cost advantage that many companies take into consideration for pursue Creative Crowdsourcing could be mined by the large amount of hidden costs, such as the cost for evaluating the proposal, the management of the contests related strategies, the time and the monetary efforts in reward incentives if there is a potential risk of insufficient submissions level (Ye, Kankanhalli 2015).

Another relevant challenge to be managed is the one related to the confidentiality matter; since many contests are open to everyone or at least to the platforms audience, briefs, processes and in some cases even results are accessible for anyone, included potential competitors (Weinswing 2016). To prevent this issue, eYeka (2017) reported how there is an increasing trend in hiding brand name from contents, in fact, in 2016 about 60% of contests were run anonymously. This circumstance therefore signals a trade-off between disclosure and open ideation, which can be compared with the “Paradox of Openness” discussed in the Open Innovation section.

Creative Crowdsourcing thus demonstrates to be a not so easy configuration to be adopted, with its limits and advantages, but it can guarantee wealthy outcomes, even in related fields such as marketing researches or customer relationships management. It has not to be adopted with the aim of merely cutting costs, but rather with the awareness to implement an exhaustive tool that is able to get along firms and external creative crowds, gaining the best possible responses to sustain creativity and competitive advantage over time.

CHAPTER TWO – CREATIVE CROWDSOURCING

2.1 ESSENTIAL PREREQUISITES FOR CROWDSOURCING VALUE CREATION

In maximizing their potential value through Creative Crowdsourcing, firms have to be prepared to evaluate the state of their organizational structure. It is not sufficient to make an open call, to collect insights and to sum them up; indeed, Crowdsourcing requires the company's ability to merge and internalize external knowledge with internal innovation tools. In this paragraph, there will be explained both the organizational prerequisite that allows firm to deal with external sources of innovation in a profitable manner and the frameworks adopted by platforms and firms to understand the value creation process, namely Absorptive Capacity and Business Models.

2.1.1 ABSORPTIVE CAPACITY

A fundamental consideration that must be taken into account when adopting a Crowdsourcing business model consists in the ability of the firm to recognize, assimilate and apply external knowledge flows, namely Absorptive Capacity (Cohen, Levinthal 1990).

Crowdsourcing is not over at the end of the campaign; indeed, it is after that phase that firms have to translate in valuable resources all the collected material, and as it is possible to imagine it is not that easy to match external ideas with a consolidated organizational mind-set.

As Cohen and Levinthal (1990) suggested, firms need to own a basic level of prior related knowledge to be able to manage innovation flows, otherwise it can happen a sort of misunderstanding in which the organization is not able to internalize external contributions in a profitable way. As a result, R&D capabilities and complementary assets have become crucial elements to be deployed to perform a successful integration process (Hossain 2016). Practically speaking, the two sides of the relation must be able to communicate at the same frequency, otherwise the entire process will be a waste in term of money, time and effort. The presence of the “relevant prior knowledge”, such as basic skills, shared language and also technological knowledge in the related field, is fundamental but not sufficient to reach the objective in the best possible way. All things considered, the individuals' Absorptive Capacity of employees belonging to the organization, thus started to play a fundamental role in the innovation process (Cohen, Levinthal 1990).

Furthermore, it deserves to be pointed out that the Absorptive Capacity of the organization is not merely composed by the added value of the ones of its employees, but it

cumulatively develops till the firm is able to successfully exploit the external contributions, and not only to collect or assimilate them. Being this concept strictly intangible, it is not so simple to define the boundaries above which the optimal level can be considered as reached; for this reason, Cohen and Levinthal (1990) proposed a practical model.

The pivotal element in this theory is the investment in R&D, that « generates innovation and facilitates learning »; such investment is hence seen as the mean through which the investment in Absorptive Capacity is performed (Cohen, Levinthal 1990, p.149). As a consequence, firms that neglect the relevance of R&D investments will be considered less attractive and in some way obsolete, in “speaking the same language” of the external innovative flows to be integrated.

Similarly, when the external knowledge an organization wants to acquire is unrelated with its traditional activities, the organization itself must converge all its effort in the creation of Absorptive Capacity; otherwise, it will face the failure in combining new ideas with an incompatible innovation structure. Considering the R&D process no more as a whole, but disaggregating it in its two main stages, namely research and development, the Absorptive Capacity and its supportive strategies might differ in practical application from one stage to the other (Fujikawa, Motohashi 2017).

According to the studies proposed by Blohm et al. (2013), in raising Absorptive Capacity it is fundamental to develop five main capabilities, which work as a golden rule to drive the entire Crowdsourcing process to fruitful results. In fact, it is suggested to design CS platforms which maximizes the quality of the inputs, to early remove faint contributions, to integrate CS platforms in the organizational practices of the initiator firm, to manage the information exchange between the crowd and the initiator’s employees and lastly to foster the reaching of a critical mass of contributors embodying them into a community (Blohm, Leimeister et al. 2013). All these arrangements should be preparatory practices to an efficient innovation absorption process, and they can also be deemed as milestones of the business model.

A similar approach was adopted by Zhao and Xia (2016, p.7); when defining the capabilities required in a Crowdsourcing system, they refer to the « means that businesses or organizations pursue market opportunities with the public innovation resources and obtain commercial profits ».

As it is possible to see in Figure 10, considered capabilities about the initiator side are: Search Acquisition Capability, Absorptive Assimilation Capability, Commercialization Capability, Resource Investment Capability, Innovation Process Capability and Innovation

Management Capability²⁸. From the authors' point of view these capabilities are strictly connected, and are also necessary to accomplish a co-creation path with the crowd, through online CS platforms. These capabilities retrace the basic actions performed by firms, starting from the scanning phase of the collected contributions and the assimilation phase in which information is absorbed to be further transformed in commercialized products. In many cases, firm-specific-technology-related capabilities are the result of benefits from access of external technological inputs, the level of which depends on the grade of Assimilation Capacity of the organization (Zobel 2016).

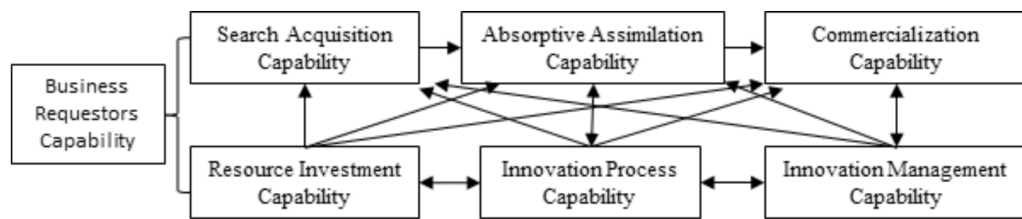


Figure 10: Business requestor's capability of Crowdsourcing System (Zhao, Xia 2016, p.7)

Additionally, the Resource Investment Capability is affected by capitals, both physical and human one, that are employed in the R&D phase of Crowdsourcing products. This last element, in combination with the production and sales abilities, represents the integration of external resources and firm's production factors in the so-called Innovation Process Capability. The Innovation Management Capability instead, refers to the activities performed by managers in integrating and coordinating the external knowledge flows with the corporate routine processes (Zhao, Xia 2016).

A counterintuitive situation is then proposed by Fujikawa and Motohashi (2017), who highlighted the fact that often organizations with important technological capabilities are not inclined in dealing with crowdsourced flows of innovation, preserving a sort of internal status quo, and thus lagging behind in respect with "less innovative" competitors. On the other hand, firms that are struggling to increase their technological efforts, are both more inclined and prepared to engage external knowledge flows to reach their goals (Fujikawa, Motohashi 2017).

For what concerns external contributions derived from Crowdsourcing initiatives, in facing the tough issue of the integration management, Vanhaverbeke and Cloudt (2014) proposed a completely opposite strategy with respect to the Absorptive Capacity one. Specifically, outside-coming knowledge should be managed externally, rather than in an

²⁸ For the sake of completeness, the proposed framework of Crowdsourcing capabilities comprehends, in addition to the business requestors capability, the network platform capabilities and the public creativity (Zhao, Xia 2016).

“inward knowledge transfer”. In suggesting this approach, the authors refer to the first stage of the open innovation funnel, but probably, in the current Crowdsourcing field method could not be so efficient.

In order to create valuable outputs, it is worth considering even current trends towards the importance of Crowdsourcing ideation contests, where contributors’ ideas strongly need to be internalized in innovation processes by firm’s experts. If this kind of ideas, mainly with a broad-applicability, were managed outside the firm boundaries, there would be the risk to lose synergies and collateral positive effects from an unexpected use of materials. This risk would not exist or would not have been instantly detected if ideas were immediately processed by firms dedicated departments, that are able to gain benefits from all the facets of the collected materials. In conclusion, to reap benefits from Ideation Crowdsourcing, firms need to focus on their ability in deploying Absorptive Capacity, playing itself a fundamental role in translating ideas into viable outputs for firms.

2.1.2 CROWD-BASED BUSINESS MODELS

Changes in how value is created are the imperative to understand the current Creative Crowdsourcing state of play, thereby implying a deeper analysis of the underlying business models. Currently, organizational boundaries are becoming even less strict, so much to allow to the chain of value to move from a direct process to a networked one, which encompasses bottom-up approaches, decentralized practices and a wider awareness about the external environment (Kohler 2015). Crowdsourcing therefore cannot be considered only as a marketing tool, but as a method to exploit an always greater variety of innovation capabilities that inevitably affects the firm's practices (Djelassi, Decoopman 2013).

The value creation process thus, depends solely on the crowd contribution and as a consequence, on the management of its collective intelligence for the benefit of adopting firms (Saxton, Oh et al. 2013). The goal to be achieved is to describe and to deepen the architecture by which value is created, delivered and captured; moreover, it is fundamental to assess the existence of the Business Model tool in Creative Crowdsourcing contexts.

For the sake of completeness, a Business Model can be defined as a bundle of detailed activities aimed to fulfil market needs of a firm; in addition, it also describes the actors that conduct the referred activities, and the way in which these ones are connected on each other (Amit, Zott 2010). Furthermore, following Chesbrough et al. (2006) point of view, the main point to be highlighted concerns the division between value creating and value capturing activities.

Business Models for platforms

Considering that this dissertation regards external innovation mechanisms, it could be useful to start from the three most important platform business models, created to deal with this specific circumstance. In designing this classification, Boudreau and Lakhani (2009) focused on the role that platforms play among creators and its consumers²⁹ in the value network system. The first typology is the integrator platform business model, which is characterized by the high degree of control from the platform, since its role is based on collecting contributions from the participants and selling them to initiators. In this approach, the value is generated by the integration of crowd creations, transforming inputs in viable outputs.

In the second model otherwise, creators deal with proponent firms quite directly, and the platform is able to influence control through the adaptation of the core technologies utilized by the crowd to perform the task; as a consequence, platforms adopting the so-called product

²⁹ In this case the customer is the initiator firm, which launch its open call to collect insights from the crowd.

platform model, are able to profit from any value creating member of the network. Supporting crowd development is thus the relevant activity that characterizes the product platform model, and companies who act in accordance with this principle are also aimed to extent its own functionalities. Additionally, the third category differs from the previous ones, due to the lack of any platform intervention, thereby creators and firms communicate directly in what is named two-sided or multisided model (Kohler 2015).

A practical example of the application of some of these models is represented by eYeka. The platform indeed, moved from a two-sided business model to an integrator one; by doing so, eYeka became able to shift from being the “ground” of the direct relationship between crowd and final customers to a more relevant role, which consists in the management of the creative contests and in selling them to innovative brands. This approach ensures eYeka the control over the entire process of value creation and therefore to capture a substantial fraction of it.

It is not a case that platforms were able to increase their value through network effects generated by interdependencies between the parties involved in the business model. This consideration origins a virtuous circle in which the more the contributors, the more are the firms attracted by the phenomenon, and in turn even more contributors will gravitate towards. This dynamic consequently allows platforms to be granted at least for the stability of their offer, or rather to increase their potential (Kohler 2015).

Value creation driver

Starting from the design themes proposed by Amit and Zott (2010), which defined the activity system which characterized common business models, Wilson et al. (2017) suggested some dedicated additions concerning Crowdsourcing ecosystem. With the application of these design themes, it is possible to understand the key value creation drivers involved in the analysed process, where the generic ones are represented by “novelty”, “lock-in”, “complementarities” and “efficiency”. The former authors, with “novelty” wanted to highlight the potential in value creation generated by new ideas and by their linkages with the overall activity system; differently, the “lock-in” element is intended as a tie towards third parties business model participants, granting thus stability to the activities. Moreover, “complementarities” refer to the higher value generated by running activities simultaneously rather than apart; lastly, “efficiency” is intended as a method to reduce transaction costs. Further to these general value drivers, the ones dedicated to Crowdsourcing are “attraction/engagement”, which is strongly connected with the activities that a firm has to perform in order to gain access to crowd, “innovation” and “size/scaling” (Wilson, Bhakoo et al. 2017). These drivers hence allow the three main actors involved in the business model to

gain from specific value benefits: first of all, firms could exploit competitive advantages, enhance both commitment and trust with the crowd and produce both social benefits and profit from scalable businesses. On the other hand, career development, alternative source of income, team skills and leadership are the main benefits that the crowd can experience from its presence in the Crowdsourcing arena. Final customer therefore, can enjoy larger choices, “better, faster and cheaper” outcomes, lower risks and participatory engagement. The overall mechanism, if performed adequately, seems able to guarantee satisfactory outputs and a win-win situation to all the actors involved (Wilson, Bhakoo et al. 2017).

Business Model framework

In the traditional framework, business models are composed by nine building blocks, divided in two main areas: the left one, that refers to the efficiency dimension, and the right one, that concerns the value creation. In the efficiency side, it is possible to find key partners, key activities, key resources and the cost structure blocks; in the left part though, the value generating one, there are customer relationships, customer segments, channels and revenue streams. Only the value proposition block lies between the two sections since it both absorbs and generates value, due to the cost of its creation and the profits from its transactions. Following the analysis proposed by Djelassi and Decoopman (2013), the above-mentioned building blocks can easily be traced back to four main areas of business: the infrastructure, mainly connected with the inputs used to create the value proposition, the offering, namely the value proposition, the customer dimension, and finally the financial viability, which encompasses both revenue and cost streams. The authors summarize their conclusions on the Crowd-based business model below (Fig. 11).

Typically, Ideation Crowdsourcing efforts are expected to increase the potential of innovative processes, new product ideation or to reveal new market trends; as a consequence, these are the functions that need to be reset with a view on the crowd influence.

Corporate functions such as prototyping, development and commercialization instead, would suffer the influence of the “external knowledge” only in a marginal way, mostly remaining unchanged in their business model sections. The additional value is created thus by offering a user-oriented value proposition, which is tailored and co-created by the crowd who supported the innovation process (Saebi, Foss 2015).

The crowd hence cannot be compared with partners that co-produce some not well-defined good, but, on the contrary it has to be considered as “work at the immaterial level”, as much as contributors suggest ideas irrespectively from the firm’s strategies, only with the satisfaction to gift to markets their intuitions (Cova, Dalli 2009).

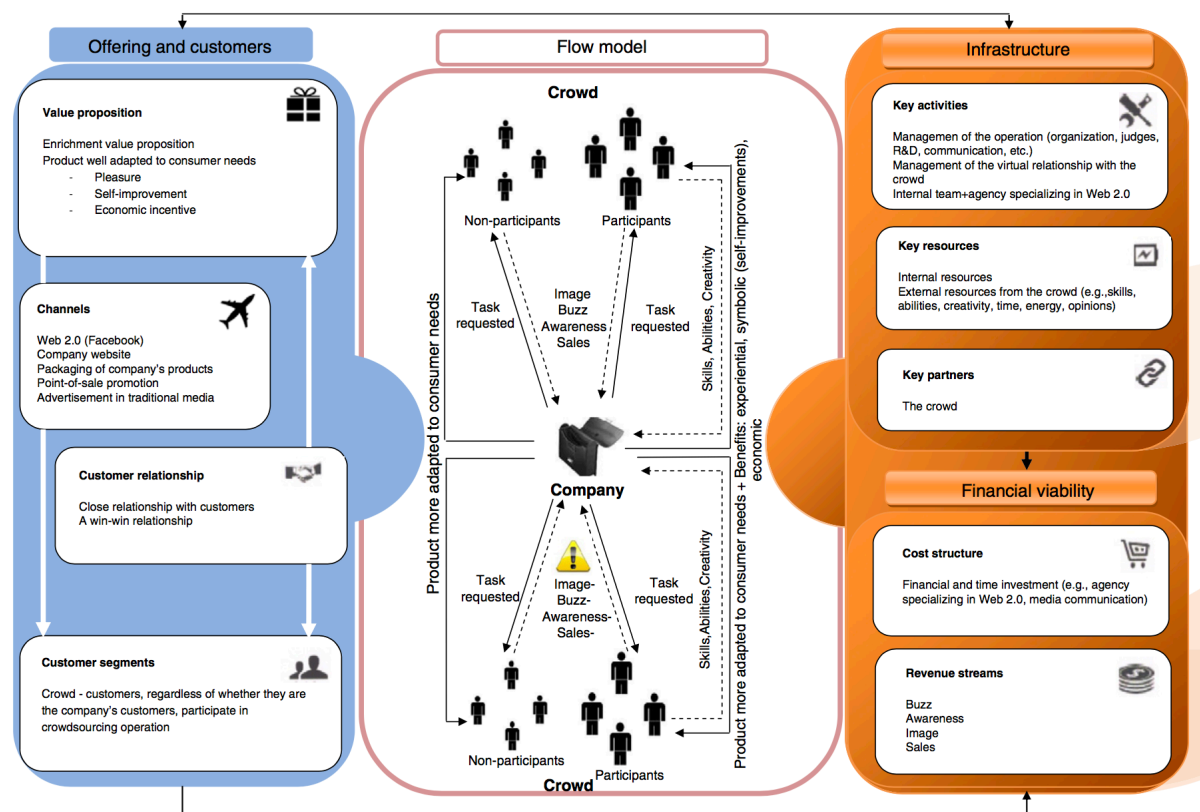


Figure 11: Suggestion for an Open Business Model based on Crowdsourcing (Djelassi, Decoopman 2013, p.689)

In respect of the general framework, Crowdsourcing business models are *a priori* potentially able to generate added value by deploying resources that are totally external to the organizational context of the firm (Chanal, Caron-Fasan 2010).

An additional element that has to be considered in analysing the structure of business models applied on Creative Crowdsourcing is its intrinsic changing nature. The community presence, the opinion exchange and the possibility to tap insights from all over the world are the milestones by which it is possible to define the business model design and development as an ongoing learning process (Chanal, Caron-Fasan 2010).

A firm's perspective

Owing to the above-mentioned consideration, it is impossible for a firm to consider the creation of a business model as a one-shot task to be performed and that would have lasted forever. On the contrary, results from each contest can be such unexpected that can raise unthinkable consequences for what concerns the organizational structure; this last indeed, has to be able to accommodate the emerging challenges that firms should face, and also the business model has to be constantly adapted accordingly.

A well-designed business model enables the company to clearly have in mind the direction to follow and the activities that are value creating, in such a manner that allows to

perform at best in reaching the organizational goals. If firms are not able to do that, platforms have to manage the method used to involve contributors in value creation, accordingly to the firm's guidelines; moreover, they might be charged with the curation of the core value, discerning high-quality entries from the low-quality ones. If platforms fail in this task, the overall structure might suffer from a value leak; it is not a case indeed that the most successful platforms offer a sort of feedback system to handle the curation phase (Kohler 2015).

In a similar direction lies the position highlighted by Kohler (2015), concerning the fact that a growing number of firms tests Crowdsourcing as a value creation alternative, but only a small fraction of them converts its CS initiatives into successful platforms with a powerful business model³⁰. Firms thus mainly act as mere users of the infrastructure, and rarely promote themselves as platform, with the meaning of tool (and also virtual place) by means of which the crowd can fruitfully submit solutions about a specific contest proposed (Hosseini, Phalp et al. 2014). This evidence can lead to the assessment of a loss about the whole value achievable, which inevitably has been shared between initiator and the hosting platform.

Firms' challenges

It is noteworthy that, for firms which are expecting to move towards a crowd-based business model, there are some strategic challenges that need to be taken into consideration to pursue this phase in the best way (Kohler 2015). First of all, the focus of the whole system is on the crowd, and as a consequence, the firm has to tailor a sort of incentive mechanism that is able to retain and sustain its involvement during the entire innovation process (Saebi, Foss 2015). The contributor hence, is capable of changing its status from passive consumer to empowered co-creator, and this fact is sufficient to oblige the company to modify its position from the bottom to the top of the business model.

As stated before, Crowdsourcing business models for platforms need the presence of the crowd both in sense of quality and breadth, although these characteristics are not always required simultaneously. In some instances, being able to collect as much contributions as possible is a successful result; this circumstance thus allows to magnetize, using the huge variety of skills, as many interested initiators as possible, while for other cases only high-quality contributors are relevant for firms who don't want to deal with a large amount of entries to be selected (Dawson, Bynghall 2011b).

³⁰ As reported in the previous chapter, P&G and Unilever are two examples of firms that created their proprietary platforms, from which they can directly control the creation and the capturing of the value generated by Creative Crowdsourcing initiatives.

On the same line, the main enabling factor that guarantees a sufficient presence of contributors is the trust; in fact, it acts as a positive incentive for the crowd, that firm can leverage not only for innovation purposes but also to enlarge its customer base (Wilson, Bhakoo et al. 2017).

Another interesting aspect about the competition logic is proposed by Kohler (2015), which stated that competition is no more based on inherent product value but instead on the value generated through platforms; the challenge is thus the ability to allow profitable interactions between the two sides of the relation: the initiator and contributors. This fact supports the advent of the networked logic of value creation, in which everyone, inside or outside firms' boundaries, is able to enhance the level of value creation. Furthermore, before Crowdsourcing started to exist, the value was commonly captured through sales transactions, in which the transfer of ownership occurred, or through service-provisions. At this last point instead, the value is generated by interacting and not in a one-way direction; as a consequence, also the monetization phase is entirely different. The income infrastructure thereby depends on the point in which the company is located inside the value network chain, and it is a firm's duty to understand whom to charge for the collaborative value created among the firm itself and the crowd components (Kohler 2015).

Surely firms have to arrange project management processes with the aim of driving the changing phase towards an open business model; not only the process has to be monitored but also its quality needs to be assured. The quality control mechanism has to reach the maximum efficiency action in a consistent and cost-effective way; in fact, it raises a sort of trade-off since to achieve the maximum efficiency it is necessary to increase costs about commitment, incentives and training of crowds, but otherwise, to pursue cost-efficiency these cost items should be limited. In this sense Dawson and Bynghall (2011) suggested to externalize the quality control function to benefit from scalability gains.

Ultimately, after having deepen the main drivers at the base of the business model creation, it is not surprising that platforms play the role of the fundamental cog without which the entire system would collapse. Platforms are hence able to « combine community dynamics and market relationships, internal and external human resources, non-financial and financial rewards, contribution by both experts and laymen », thus enabling the existence of the Creative Crowdsourcing phenomenon (Chanal, Caron-Fasan 2010, p.338). Even if a firm has not established its own business model with the recommended guidelines, the one adopted by platforms is itself a warranty for successful results, proving once again their indispensable standing.

2.2 THE LEVERS OF THE CROWD

Creative Crowdsourcing involves the usage of a wide range of organizational tools to be efficiently performed, among which are included the ability to internalize external innovations and the business model to track the value creation pattern. But taking a step backward, without the crowd contribution, none of the above actions would be relevant. The fundamental issues inquired in this paragraph are thus the role of motivation in driving individual choice to take part in contests and the existence of a community effect in the Creative Crowdsourcing playground.

2.2.1 MOTIVATIONS AND INCENTIVES TOWARD CREATIVE PARTICIPATION

Among Creative Crowdsourcing practitioners, there exists a paradigm named “Rule for Participation Inequality in Online Communities”³¹, which highlights an interesting fact impacting the quality and the size of potential external contributions. For the sake of simplicity, this imperative is also called the “90-9-1 Rule”, which classifies the fractions and the roles played by several typologies of individuals composing the promising crowd who inhabits the virtual community environment. As the name suggests, the rule requires the existence of three main classes: the 90% of the individuals involved are called “spectators”, since they are concerned about what is going on but they do not contribute, the 9% instead are named “enthusiasts”, and this group is mainly composed by people which actively share content and ideas but who are not meant to be creator, while the last group instead is composed by the remaining 1% of individuals, who are labelled as “creative consumers” (Pétavy, Céré et al. 2012). By owing superior creative capabilities and being able to actively create contents which the residual 99% will either share³² or utilize in the future, “Creative consumers” are the engine of communities such eYeka.

After having assessed that only a small fraction of the web population is predisposed to be actively involved in interactions with platforms, and that an even smaller one is willing to contribute with creative solution, it is now worth to deepen the aspects that push individuals to behave in this fashion, and the activities that platforms should put in practice to tap the right crowd.

³¹ This paradigm was created by Jakob Nielsen, co-founder of Nielsen Norman Group, a leading company in the user experience field (Pétavy, Céré et al. 2012).

³² The residual 99% is not “useless” for the purpose of Creative Crowdsourcing; on the contrary, they have a greater potential when involved in consumer researches or focus groups, and also in spreading the awareness (Pétavy, Céré et al. 2012).

Motivations are therefore the factors which encourage individuals to contribute with their points of view; as a wide range of different contests to be solved there exists, also the involved motivations linked to them are very heterogeneous. Generally speaking, motivational factors range from money to simple fun, personal identity or actually reputation and status (Boudreau, Lakhani 2009). Marsden (2009) suggested indeed that the overall typologies of motivations for Creative Crowdsourcing, can be boiled down in the 4Fs: Fame, Fortune, Fun and Fulfilment. Otherwise, the literature usually refers to motivational factors mainly parting the intrinsic ones from the extrinsic ones.

As Hossain (2012) recalled in its researches, it is fundamental to assess the main differences between the two broad groups of motivations. On one side, when talking about intrinsic motivations it is essential to highlight the central role covered by the task, since people are stimulated from that specific reasons to perform the assignment without expecting anything in return. In this sense, the task *per sé* is sufficient to satisfy contributors, who are not subjected to external pressures. On the other side instead, there are extrinsic motivational factors which characterize individuals who are not solely interested to the task achievement, but rather on the obtainable reward, both in monetary terms and in any kind of prize, even recognition. External incentives are thus the drivers of the extrinsic motivations (Hossain 2012).

Furthermore, Kaufmann et al. (2011) proposed a motivations categorization, which defines two sub-classes of the intrinsic ones, that are the “Enjoyment based motivations” and the “Community based motivations”. The first sub-category encompasses all the motivations related to the practical application of the large variety of skills owned by the contributor, its satisfaction in being able to complete an assignment, its autonomy in the creation phase and the entertainment-hobby aspects. As for “Community Based Motivations” instead, it involves the possibility to create relationships and the sense of belonging towards the community itself.

The extrinsic motivations conversely, are composed by three main classes: “Immediate Payoffs”, “Delayed Payoffs” and “Social Motivations”. The first class clearly refers to the extrinsic motivation *par excellence*, the monetary reward; otherwise, the second type comprises the possibility to be recognized as a contributor and even to send strategic signals deriving from the participation. Additionally, the opportunity to improve contributors’ own skills to gain future benefits from them can be ascribed in this category. The last typology alternatively comprehends the willingness to comply with the social environment established in the community, commendation, or even due to the forced participation to the community in order to avoid sanctions (Kaufmann, Schulze et al. 2011). Moreover, it can happen that, when intrinsic motivational contributors collaborate with extrinsic motivational ones, the latter tend

to influence the former's motivational scheme, thus causing a heterogeneous mix of reasons in engaging the proposed assignment (Brabham 2013).

An additional important facet is the role of cost factors, hence not only motivations. In fact, in deciding whether to participate in a Creative Crowdsourcing challenge, the contributor also performs a costs-benefits analysis whatever would be the motivations involved. In this sense, the cost can be indented not only referring to the monetary meaning, but also in terms of time and cognitive resources employed (Ye, Kankanhalli 2017).

Moreover, Boudreau and Lakhani (2009) pointed out that in considering extrinsic and intrinsic motivations, it is even useful to assess the kind of market involved in the analysis; in fact, there are evidences that open markets tend to be more in-line with extrinsic motivational factors, while in communities there exists a tendency to be drove from intrinsic motivations. This evidence is due to the fact that usually markets are led by more formal and contractual relationships while communities are provided with more informal interactions (Boudreau, Lakhani 2009).

Findings and trends from existing literature

Many scholars conducted researches about the motivational branch in Creative Crowdsourcing subject, which main related insights are proposed as following.

One first contribution is the one of Tongal (2017) which discovered in its report that creative users are mainly driven both by personal engagement with the brand and/or with the assignments, and by the possibility to be free in expressing their vision rather than in winning some monetary rewards. In fact, only the 18% interviewed affirmed that money is the first reason in submitting creative contests. On the opposite side however, lies data collected by iStockPhoto, in which it is evident as quite the 90% of the contributors affirmed that the opportunity to make money represents the principal motivation for platform's contests participation; moreover, the second reason is more extrinsically oriented, since it is related to the possibility to gain benefits in enhancing creators' own skills (Brabham 2008). In this sense, it is also evident how for iStockPhoto participants social relationships inside the network are subordinated to individual fulfilment and, above all, to profits pursuing.

For the sake of transparency, it should be emphasized that different typologies of platforms have been involved in the comparison. Precisely, iStockPhoto can be traced back to the Knowledge Discovery and Management typology, while Tongal's platform encompasses contest that are included in the Peer-Vetted Creative Production. As a consequence, it seems

evident as in “less creative” tasks³³ the motivational focus is on the extrinsic factors, while in contests requiring a higher level of creative and innovative effort, the reasons to participate are not driven by external pressures but mainly by the positive personal outcomes that contributors draw from them.

As supported by additional studies, « creativity-relevant processes and intrinsic motivation were found to characterize participation decisions related to creative tasks » but apparently, they do not influence the quality of the creative output (Mack, Landau 2015, p.61). Following this last evidence, the quality of the contributions is another point that deserves to be clarified: in fact, the indication that the more powerful and persistent is the level of the engagement³⁴ the higher is the output created in terms of creativity and quality is supported by Garcia Martinez (2015). As a consequence, the way in which the creative experience is designed has the potential to increase the commitment towards contests and thus to enhance the level of the creativity. On the contrary for Mack and Landau (2015), successful contributors are the one pushed by extrinsic motivation and owning domain-relevant skills, hence with non-significant intrinsic motivations.

In suggesting further reasoning, Matthews (2013) performed in its blog a general survey about the state of Crowdsourcing by interviewing more than 2,000 crowdsolvers to inquire their main motivations. Obtained results were in favour of the monetary reward trend, but the 28% and the 26% of the respondents respectively affirmed that being involved in Crowdsourcing initiatives is a pleasant pastime and that they feel entertained in do it. By supporting these trends, Ye and Kankanhalli (2017) reported that individuals’ participation is positively affected by monetary rewards, skills improvement, work independence, amusement and trust; whilst, on the contrary, the cost of the cognitive effort undermines the participation rate.

Another interesting consideration is the one proposed by Füller (2010), who created four main classes to describe behaviours of the main types of consumers involved in co-creation practices. For the author in fact, participants can be classified as Reward-oriented, when they are interest in competitions only for monetary purposes, as Intrinsically-interested, when they participate with the aim of benefitting merely from the experience, as Curiosity-driven and Need-driven, when they want to create something new due to a lack in existing products. In this case, the Intrinsically-interested individuals are the ones who proved to exhibit the higher motivation and skills towards creativity challenges, which means that people considered more qualified for co-creation tasks are likewise more interested in co-creation contests. This

³³ In the iStockPhoto case participants have to entry their photos to submit specific requests that do not imply the use of any kind of creative-solution skills.

³⁴ Intended as a psychological involvement (Garcia Martinez 2015).

conclusion leads back to the above-proposed results from Garcia Martinez (2015), which one more time underline the importance in attracting, more properly engaging, the right crowd for the right Crowdsourcing initiative. Füller's conclusions (2010) lied on the same line of thought; in fact, rather than for Reward-oriented consumers, monetary incentives do not cover a fundamental role in engagement in virtual co-creation practices. Instead, the creation of a community could be perceived as an interesting method to enhance engagement mechanisms.

An additional perspective is the one offered by Hossain (2012), which demonstrated that extrinsic motivations have a negative impact on creative tasks, while they are more effective on simple task performances; on the contrary, intrinsic motivations seemed to boost creativity in a positive way. Sometimes, it can also happen that intrinsic motivations becomes extrinsic ones, for example due to a fixed reward provision, hence damaging again Creative Crowdsourcing performances (Hossain 2012).

Finally, Mack and Landau (2015) supported that creative tasks are driven by intrinsic motivations, while individuals with greater creative potential are more extrinsic-oriented, thus enhancing the importance for firms and platforms of developing a proficient strategy to understand what are the right creators, to be involved in Creative Crowdsourcing contests, and to solve the incentive dilemma.

Engaging the right Crowd

In creating the best incentive mechanism to attract the more adequate contributors, firms and platforms have to consider several factors that could either help them or even void the entire strategy. First of all, the attention is captured by monetary rewards, being the most controversial discussion point connected with the role of extrinsic motivational factors. In this sense, Kosinski et al. (2012) advised to be careful in setting the level of the monetary reward, given that its level might influence not only on the number of individuals involved, but also the quality of achievable results. Furthermore, higher amounts could also encourage free-riding behaviours, mostly in simple tasks challenges and not directly in the creative field (Gadiraju, Kawase et al. 2015). In the Ideation Crowdsourcing environment, the effort is absorbed only by the idea generation phase, rather than the one concerning the physical production of the content; many times, in fact, contests require only the insights' explanation and some sort of scratches regarding the practical feasibility of the submitted ideas. In this sense, there is no possibility to adopt malicious behaviours since there is not such a heavy practical exertion to be avoided.

Furthermore, if the aim of the platform is to cope with intrinsic motivations, Ye and Kankanhalli (2017) suggest providers to strongly communicate fun and enjoyment related to

Crowdsourcing initiatives participation, also designing experience-sharing virtual spaces in which the power of the “word-of-mouth” can have a positive pulling power towards new creators. Moreover, according to the authors, it could be an interesting solution to leverage the “learning matter”, boosting the positive impact that the enhancement of solvers’ skills can have over the crowd. Another important element to be prevented is the cost perception connected with contests’ submission; to pursue this goal, platforms should minimize the costly efforts by providing supporting tools which facilitate the entire process for solvers.

In designing the incentive structure, platforms should also be aware about the possibility that “tasty” incentives could primarily engage in virtual co-creation individuals who might produce worthless entries (Füller 2010). To manage this contingency, many scholars suggested adopting a sort of “reputational score”, which encourages contributors to behave and perform in an appropriate fashion (Kosinski, Bachrach et al. 2012). This mechanism proved to properly work in a study about Amazon Mechanical Turk; but it can be even easily applied in Creative Crowdsourcing contests. It is not a case that eYeka implemented the same mechanism, adopting the so-called “Creative Score”. Such instrument has a two-fold aim: on one side, it helps firm in identifying the most active and profitable contributors, while on the other side it supports the acknowledgement between solvers belonging to the eYeka community; in addition, it is also a positive stimulus towards the creation of contributors’ work-reputation (eYeka 2017a).

Later on, following the pattern adopted to sustain the reputational factor, the activity based on crowdsolvers comments is a further incentive to enhance positive outputs production. In fact, as Bayus (2013) suggested, the commenting action, especially if performed by serial contributors even from different fields, should be improved and simplified since it proves to be a valid support in the generation of implementable ideas. According to the results proposed by the author, serial creators in addition are more suitable in producing implementable ideas, but on the other hand they are hardly able to repeat their success. It is fundamental hence to find the right facility that would secure the ongoing provision of valuable ideas from the crowd in the future (Bayus 2013).

In closing, Di Lucchio (2015) suggested a paradigm based on the evidence that businesses are built and developed starting from the crowd stimuli, principally betting on the individuals’ reputations and their relationships both among them and towards companies. It is the paradigm of the Human to Human, that is affecting the entire Crowdsourcing phenomenon. Starting from this suggestion, the role of motivations and the incentives to attract the right crowd for the right task became focal. As said since the beginning, without the crowd there will be no Creative Crowdsourcing initiatives at all.

2.2.2 COMMUNITIES OF PRACTICE

Effects about the presence of a community³⁵ with regards to the Creative Crowdsourcing scenario are not such a novelty. Internet and the Web 2.0 Revolution were the first advocates in the development of this aggregating phenomenon, that can be easily traced back to the Community of Practice theory.

In this sense, the community meaning is not so different from the one that is created in the social network environment, considering that, as it has been possible to assess in the previous section, platforms are striving to exploit the positive effects deriving from individuals' interactions, resulting from communities adoption (Bayus 2013).

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).

It is not a case that the above-underlined elements are the ones which differentiate Communities of Practice from social networks mechanisms. Moreover, the same elements can be indeed easily observable in the community areas created by platforms such as eYeka.

Therefore eYeka, by providing this tool for each contest which requires it, generates a virtual place in which contributors who submit at least one entry can interact with each other and browse the entries of all the other creators. In addition, members of each contest-specific community can vote³⁶ best ideas, and create a parallel leaderboard with respect to the one of the official winner of the contest, in which they rank the most appreciated creators. Nonetheless, the process implemented by eYeka can strongly be compared with the one described by Wenger (2014), but given the strong importance of technology as a sharing mean, the phenomenon can be labelled as “Virtual Community of Practice” (Chrisentary, Barrett 2016, Mercieca 2017).

³⁵ The Crowd is considered by Kozinets et al. (2008) as an online community characterized by a small concentration of collective innovation spread among a huge number of participants and by their voluntary collaboration in a particular project.

³⁶ The eYeka community can vote entries on three main dimensions, the quality, the originality and the story-telling.

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.

Even stronger brands can count on their affiliates; in analysing this phenomenon, Bal et al. (2017) propose a sort of classification of communities' typologies which a brand should have to deal with. Before briefly mentioning these classes, it is fundamental to pinpoint that brands with feeble awareness should be careful in undertaking Crowdsourcing initiatives since crowd opinions could backfire the brand itself. This kind of brands, should instead focus its effort on the strengthening of its communities, with the aim to work with them at the right moment. The categories designed by the authors refer to two main reference points: the brand control³⁷ and the above-mentioned strength of the brand community.

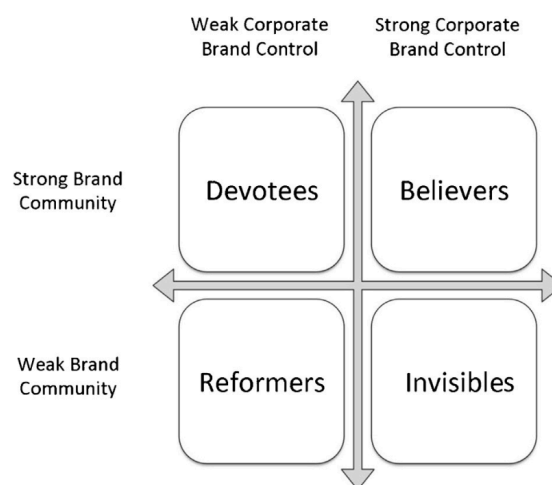


Figure 12: Brand communities (Bal, Weidner et al. 2017, p.224)

As it is possible to see in Figure 12, the first quadrant includes the Devotees brand community, which is the most desirable typology, because of its loyalty and strength which act as protection from threats with regard to brands. Next to Devotees is situated Believers class, which differs from the former for the greater control ceded to customers, aiming at increasing the engagement. On the lower side reside Reformers and Invisibles brand communities; the former one should be transformed in Believers, giving individuals the possibility to solve

³⁷ Measure the divestiture of control of the brand from firms towards customers (Bal, Weidner et al. 2017) .

marketing problems and enabling them to get along with the aim of strengthening the engagement towards the brand. On the down-right corner is instead located the Invisibles brand community, which is a hazard in Crowdsourcing practices adoption; in this case brands should first of all strive for the creation of a belonging feeling and boost them to an upgraded level (Bal, Weidner et al. 2017). Before encompassing communities in their strategies, brands should be aware of these indications, and they should create an *ad-hoc* strategy to exploit at best their resources.

Moreover, platforms cannot artificially create and supervise Communities of Practice inasmuch they thrive quite spontaneously; being many times requested by contributors themselves, and due to their peculiarities, Communities of Practice are extremely resistant to interferences and prone to be cultivated (Wenger, Snyder 2000, Pyrko, Dörfler et al. 2017).

To pursue the aim of nurturing them on an ongoing basis, platforms and firms should provide them adequate infrastructures, which shall ensure participants the possibility to effectively exploit the shared expertise, and to valorise and support themselves in reaching their full potential (Wenger, Snyder 2000). In addition, even if Communities of Practice are self-driven by definition, platforms ought to set clear goals aimed to increase responsibilities and motivations towards the domain of interest; hence, even the establishment of a sort of “leadership role” and routine processes can enhance the group consistency (Borzillo 2017).

In considering the role of Communities of Practice, it is also relevant the aspect concerning its own composition, as it can influence the community performances.

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.

In eYeka entries are initially individually proposed, but with the impulse of the variety of community components, many solvers could be motivated to produce and submit more outcomes for the same contest, likely to be even better in quality. It is interesting to underline that each eYeka community, being created for every single challenge which requires it, lasts for the time span dedicated to the referred contest; only “serial contributors” can hence act in continuative way. Otherwise, for sporadic participants, Communities of Practice’s mechanism could retain and engage them in a virtuous circle, by encouraging them to submit other challenges and to get in touch with other creators, which can be profitable for both the platform and potential winners.

The heterogeneity of members on the other side, can hide some drawbacks. Many times, its positive impact depends on the reference field, and the main risk which can occur is the lack of a mutual language, clearly referred to the domain interest, which could lead to severe communication obstacles, conflicts and a cohesion drop (Wang 2017).

In this sense, firms cannot get scared by these risks; they rather have to act with the willingness to deal with them and to find smart solutions to take full advantage from results offered by the community instrument. The economy is running always faster on knowledge and firms cannot be unprepared to cope this revolutionary way to boost innovative creation: crowd, as a sum of individuals, is not enough; the greater value is generated only by interactions, that must be deployed at best (Wenger, Snyder 2000).

2.3 CROWDSOURCING STRATEGICAL ASPECTS

Creative Crowdsourcing constitutes one of the main revolutionary practices in the marketing field. Its applications are unlimited and the opportunities for brand in leveraging this stream of novelty are strongly appealing. In this chapter hence, there will be assessed the main marketing strategies associated with Ideation Crowdsourcing and the advantages that this tool could provide to firms which decide to adopt it. Moreover, the final section is dedicated to the leading perceived threat that this practice could pose, that is the intellectual property issue.

2.3.1 CROWDSOURCING AS A MARKETING TOOL

By considering the great engagement which consumers experience in Creative Crowdsourcing practices, brands should exploit to their own benefit the interesting marketing opportunities that this phenomenon is providing. The capability of empowering brand communities is strongly valuable for firms, thanks to the condition in which the feeling of being taken into account in some aspects of the business management is powerfully perceived by customers (Bal, Weidner et al. 2017). It is not a coincidence in fact, that the role of brands assumes a huge importance in this context, since the stronger is the brand in terms of image and history, the higher could be the positive impact of the crowd engagement.

Communication, marketing research and new product development are the main examples of the various marketing related activities in which Ideation Crowdsourcing can be used to enhance and augment brands' value creation (Gatautis, Vitkauskaite 2014). Basically, marketers are crowdsourcing the promotion phase, the content creation phase and also the phase in which innovative ideas are developed and problem are solved mainly to brand enthusiast contributors (Marsden 2009).

For what concerns product development, the contribution of Creative Crowdsourcing can be pinpointed when providing inputs and advices which are coupled with the internal R&D department's efforts in innovation (Whitla 2009). Many times, contributors could also provide the whole product, rather than just the ideas, but this trend is progressively decreased during years, as mentioned in the eYeka report (2017). Of course, in the former case rewards are more cost-effective, in contrast with the rewards offered for the mere ideas, which in this sense are more abstract and hence need subsequent stages of processing (Huang, Singh et al. 2014).

In the advertising and promotion field instead, crowd can be deployed for either the creation of promotional campaigns or for basics tasks that the initiator firm has neither the time nor employees to devote; examples of this last circumstance could be either the creation of a tagline or just the graphics design, which do not involve contributors in the creation of the

whole project (Whitla 2009). More precisely, when consumers generate advertising material by their own, and not within a co-creation program, the phenomenon is called “consumer-generated ads”. The existence of this practice is seen as a contemporary form of word of mouth; in fact, it has been proved that when consumers know that a commercial has been created by other consumers, its persuasiveness increases under specific circumstances (Bal, Weidner et al. 2017). Moreover, it is hardly surprising the contrary: contributors strive to share their creations with their network and try to build buzz around it, which involuntarily increases brand’s fame.

Noticeably, the easier task a marketer could exploit the power of the crowd with is undoubtedly marketing research. In fact, crowdsourcers’ creative contributions in its domain is limited; any kind of insight is interesting for firms and above all, there are not right or wrong answers, but only powerful visions to be converted in valuable business actions. Following the researches proposed by Lang et al. (2016), the evidence that Crowdsourcing can improve market-oriented outcomes prediction is corroborated. In details, the authors stated that Crowdsourcing generated outcomes are preferable for more than a half of the business decisions undertaken by the firm; the crowd insights superior quality is hence triggered by the diversity in the information collection and in the interpretation method, with respect to the one internally adopted by a firm.

Nonetheless, it has also to be taken into consideration that the selection process adopted by firms in selecting insights and ideas is considered more suitable for corporate goals. As Piezunka and Dahlander (2015) reported, despite companies struggle to attract as much external contributions as possible, they are more prone to listen to closer suggestions, rather than to the ones which represent distant knowledge. This circumstance could be easily connected with the consideration explained above; indeed, companies which are not able to interiorize out of the ordinary suggestions, would not be able to capture insights about future trends, and will be easily overcome by competitors. Another interesting point of view is offered by Gatautis and Vitkauskaite (2014), who highlighted the main success factors connected with the use of Crowdsourcing in marketing activities. As it is possible to see in Figure 13, the key success factors are the ones related with contributors’ characteristics, with the reputation measures and with the activity performed by project managers.

It is pivotal to stress again the importance of the crowd both in sense of size and quality, and also about the management practices which should be implemented to properly profit when adopting CS business model. The relevant fact, in this case, is the reputational element which covers an essential role in two dimensions, the public and the internal one.

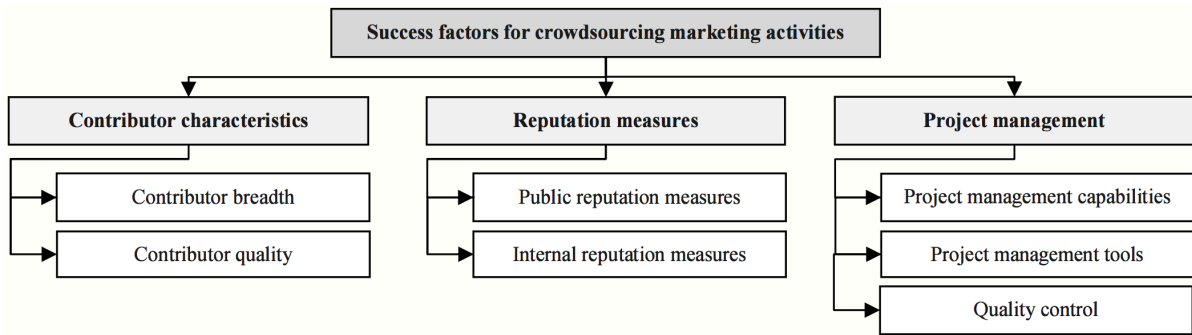


Figure 13: Success factors for Crowdsourcing in marketing activities (Gatautis, Vitkauskaite 2014)

With reference to the former, the public reputation is a fundamental lever both in enhancing the attractiveness towards possible contributors and even towards new clients, who could even transform themselves in contributors in the best scenario. The internal reputation instead denotes the significance of service providers, which have to be characterized by the highest quality in order to satisfy the needs of the crowd with whom it interfaces (Gatautis, Vitkauskaite 2014).

It is also noteworthy to recall the tendency towards co-creation. In fact, in the great majority of cases, creators do not perform the entire process of new product development; otherwise, they are mainly assisted or even treated as a starting point for projects which will be concluded internally by firms' experts. In this sense, individuals' insights can be just seen as the sole tip of the iceberg, and after a meticulous procedure, ideas could be transformed in valuable products or advertising. Co-creation process hence, is the perfect mix between market research and marketing (Pétavy, Céré et al. 2012). The role of R&D and marketing departments is thus crucial, even considering that the adoption of co-creating practices should grant relevant savings, based on the fact that the effort is absorbed principally by creative consumers.

Many times, this exertion is not so negatively perceived by creators, since they do not necessarily produce for the brands' interest but rather to compensate a lack they perceived in the market, by satisfying also needs of other customers in the same situation (Pétavy, Céré et al. 2012).

An experiment conducted by Nishikawa et al. (2017) highlighted the fact that when crowdsourced new products are labelled as "customer-ideated", its market performances increase by up to 20% in respect to the same new product not labelled. As a consequence, the signal that a product is conceived by a "non-expert" is perceived by customers as closer to their needs, and thereby preferable to similar products.

In accordance with this evidence, creators are able to add cultural and affective value to market offering, thanks to their immaterial output. The value is generated at the interpersonal relationship level, out of firm's control, but it is captured in the following level, that is the

represented by the market (Cova, Dalli 2009). The strength of this hunch is an interesting aspect which should encourage firms to adopt this method, thus exploiting not only the creativity of the crowd but also its attracting power which should secure firms to positively increase their bottom lines³⁸, and to easily overcome competitors (Nishikawa, Schreier et al. 2017).

The hastening of the innovation cycle and the minimization of market failure risks³⁹ throughout the engagement of customers, are additional benefits which crowd co-creation could ensure to firms adopting this approach.

In addition, as Poetz and Schreier (2012) stated, user-generated ideas often reach greater results in terms of novelty and in customer benefit, even if in some cases they could have experienced some deficiencies in terms of feasibility. Once again, these evidences are compliant with the necessity to coordinate external ideas with the internal expertise of the firm, in order to fill gaps produced by the absence of dedicated measures.

In selecting the best ideas deserving to be implemented, Schemmann et al. (2016) reported that the popularity of an idea, its potential innovativeness and the attention reserved to others' crowdsourced ideas, are key features in the referred choice; as for contributors' motivations or number of ideas suggested from the same individual, they appeared to be not relevant. Following the theory suggested by the authors, for what concerns the ideas popularity, the voting mechanism utilized by the crowd is without any doubt a two-edged sword. Indeed, assumed that when crowd votes for an idea, this one is considered the most interesting one, the firm is pushed in a sort of pressure towards its implementation, even if it can lack the needed resources to effectively accomplish the project. This evidence can lead to a damage in both trust and engagement, which can cause a dramatic drop in contributions, thus wasting all the efforts invested in the Creative Crowdsourcing initiatives.

Moreover, there is another point that deserves to be discussed; in fact, creators frequently tend to underestimate costs of ideas implementation which firms has to bear; on the other hand, they tend to overestimate the power of their ideas, especially in the first stages of the process, hence inducing the creation of an overcrowded markets of ideas that are unlikely to be implemented (Huang, Singh et al. 2014). However, the low-quality contributors become inactive during time, allowing the described market to host above-average quality contributions and to become less-crowded, thus granting its efficiency and not its failure⁴⁰.

³⁸ In the experiment conducted by the authors, results supported the evidence that « for each unit of the designer-ideated new product sold, the store sold an average of 1.55 units of the crowdsourced new product » (Nishikawa, Schreier et al. 2017, p.536).

³⁹ In this field, the risk of market failure occurs when products do not meet customers' needs.

⁴⁰ The failure in this kind of market can be caused by the inability to discern the high-quality and the low-quality submissions (Huang, Singh et al. 2014).

Furthermore, co-creation could not only be applied merely in the new product development field, but also in the consumer experience, in the business model development and even in corporate strategy design, thus demonstrating to be both a powerful and versatile instrument (Lang, Bharadwaj et al. 2016).

In accordance with the above statements, Marsden (2009, p.27) suggested the adoption of the “Open Marketing” expression when referring to brands which are able to make profits not through product innovation, but rather by identifying and selling creative works; in fact, for the author Crowdsourcing symbolizes « a future-proof vision for marketing itself, where marketing does its solving-peoples-problems-at-a-profit job by becoming an open platform linking creative talent with customers ».

An additional challenging conclusion is connected with the futuristic perspective of the “ideated by customer” tag, taped next to the traditional “Made in where” indication on products (Nishikawa, Schreier et al. 2017). According to such viewpoint, the value created through the integration between firms and its crowd would be the concrete prove of the effectiveness of the Creative Crowdsourcing approach in the marketing field.

2.3.2 INTELLECTUAL PROPERTY ISSUE IN CROWDSOURCING CONTESTS

After having deepened motivations that drive individuals to voluntarily respond to firms' open calls and the adoption of this tool in the marketing field, it is the time to focus on one of the most controversial sides of the Creative Crowdsourcing: the role of the intellectual property.

Particularly in the ideation field, the intellectual property issue is strongly perceived as a not well-defined matter; on the contrary, in the simple-task contests this problem is quite absent due to the lack of any cognitive and creative effort that should be worthy of protection. It is also important to underline that the intellectual property problem occurs not only from a contributors' perspective, but also from a firm centric point of view.

Obviously, when referring to the firm's side of the problem, it is impossible not to mention once more the paradox of openness, accenting the focus on the protection against competitors' harmful behaviours during the innovation process (Laursen, Salter 2014). Firms assessing whether to pursue a CS practice are often intimidated by the plausible vulnerability their intellectual property can suffer as a result of that circumstance; in fact, this fear often locks out firms from engaging the crowd in the innovation process (Dawson, ByngHall 2011a).

To maintain a certain level of confidentiality without waving the possibility to profit from Crowdsourcing initiatives, firms should act in a way that contributors cannot understand the entire picture of the project. The only way to hide the intended purposes of the whole project is to divide the referred challenge in small contests, so that it becomes hard for the single contributors, or eventually for competitors' fake contributors, to understand firms' original plans (Dawson, ByngHall 2011). This approach is without any doubt the most expensive and time consuming one, above all for the internal work that has to be done to rebuilt and to put the pieces together; as a consequence, this method should be used only when threats of damages to intellectual property are highly likely to occur.

To handle this kind of threat, it can happen that firms establish some non-compete agreements with respect to the employees, aiming at limiting their mobility but with the contemporary of potentially conducting to controversial consequences. First of all, as Seo and Somay (2017) suggests, when there is a strong presence of non-compete agreements acting as protection against the risk of losing R&D experts, firms are more likely to exploit external knowledge, especially if it has weaker appropriability, as in the case of the crowd. Moreover, undertaking actions in this sense, "bounded" employees cannot participate in the crowd environment as contributors, at least in their working related fields. If this fact was extended, the majority of the already-employed crowd would be excluded from the scope of open calls and the potential of Crowdsourcing in exploiting the crowd would dramatically decrease.

On the other side, the more companies are aware about potential and stability of their internal human sources, the more they feel confident about undertaking a path of integration of external sources (Seo, Somay 2017).

Noticeably, privacy, confidentiality and protection about information collected through Crowdsourcing depend on the system that holds the ownership of created contents (Ranj Bar, Maheswaran 2014). Therefore, a CS information system can have three main ownership models: creator owned, where the control over its content is performed by the creator himself, system owned, where contributors can't set any control policy for the content they create, and group owned, where outputs are collectively owned by groups components. In a Crowdsourcing system indeed, it is not so easy to understand the standard case, given that the ownership of contents varies from contest to contest, even on the same platform.

From a crowd perspective, it remains confused if contributors recognize merely profits and personal rewards from participating in CS contests or if they fear at the same time the risk that their intellectual property could be infringed (Foege, Lauritzen et al. 2017).

Starting from the axiom that participating in Crowdsourcing initiatives is voluntarily by definition and that the sharing knowledge is a necessity to win the contests, the risk of sell intellectual property without being sufficiently compensated is plausible. As Foege et al. (2017, p.1) highlight, « solvers have indeed strong value appropriation concerns and perceive crowdsourcing as comprising deficiently rich trading zones »; as a consequence, they implement combined forms of formal and informal value appropriation mechanisms⁴¹ with the aim to increase gains from their knowledge. The users' most adopted informal mechanisms are for example the selective revealing, in which not all relevant knowledge is disclosed, or the proposal of a non-disclosure agreement. Alternatively, creating complementary assets owned by the solver, that are fundamental for the functioning of the output, and preventing the publishing of the solution, can be the other informal mechanisms. In their detailed research, the authors furthermore state that value appropriation fears increase with the rising of openness level in the innovation process; moreover, the viewpoints diversity negatively influences the success of relationships. Clearly, an environment in which interactions are limited and the anonymity is the daily occurrence, cannot be perceived as a trustworthy place in which crowd would leave its own intellectual property. This phenomenon is even more enhanced for what concerns the huge fraction of not-winning entries, that are unprotected from initiators' opportunistic behaviours; on the subject hence, individuals' willingness to participate directly depends on their ability to protect their outputs (Foege, Lauritzen et al. 2017).

⁴¹ For "formal value appropriation mechanism" is intended the legal one, while the informal mechanism refer to the strategic one (Foege, Lauritzen et al. 2017).

Platforms, on one side, have the incentive to act against this lack of trust arising from the crowd in order to contain the risk of a participation drop, that in the worst case would undermine the system sustainability as a whole. On the other side, also crowdsourcers can act to grant the availability of their sources of innovation, mainly revealing their identity⁴² and managing the trade-off between confidentiality and disclosure; what can be named thus, as an identity disclosure practice, revealed itself to be even more effective for high status brands (Pollok, Luettgens et al. 2017). To maximize the appeal towards the crowd, initiators should make visible actions and perform transparently, with the aim to create trust and to boost quality and quantity of entries submitted (Bayus 2013, Afuah, Tucci 2012).

The intellectual property issue hence, turns as an important lever in designing the incentives that both contributors and firms have to take into consideration when dealing with Crowdsourcing; indeed, it can generate protection but at the same time discourage individual to put in practice their creativity. As Dawson and Bynghall (2011) suggested, many ideas have never been able to get off the ground and to succeed due to the mistrust of others; therefore, platforms and firms have the duty to cultivate a playground in which trust and transparency are the key ingredients to sustain the profitable growth of Creative Crowdsourcing.

⁴² Nowadays the trend for brands is characterized by the anonymity in publishing contests, as resulted in eYeka report (2017), that thus may lead to an increase in mistrust from contributors.

CHAPTER THREE - EMPIRICAL ANALYSIS

3.1 METHODOLOGY

In this section, the dissertation will describe the methodology used for the entire research. The whole findings are based on two hand-collected databases, which refer to the Crowdsourcing Platforms (CS Platform DB) ecosystem and to eYeka's contests (Contest DB). More in depth, the data collection process, the composition of the two databases and the tools employed to analyse them will be illustrated. Therefore, the overall analysis is based on different instruments, aiming at emphasizing at best the nuances and key features of the two databases.

Noteworthy, the two databases were personally built by the author; therefore, they are not available in any external source.

3.1.1 DATA COLLECTION

As a first step, I gathered information concerning the Crowdsourcing Platform ecosystem and subsequently I decided to deepen the eYeka platform contests. The data-gathering was performed starting from August 2, 2017 and lasted till September 12, 2017.

Samples criteria

In the CS Platform DB 23 platforms were collected; hence, in the following section it will be possible to assess both selection criteria and characteristics of the referred sample. This database covers a small fraction of the overall Crowdsourcing platforms landscape, and it has been utilized to understand diversities and similarities among entities. In creating this database, Crowdfunding platforms have not been considered because of their belonging to another segment of the crowd-environment, as stated in the previous chapter.

For further details on all recorded platforms see Appendix 1.

For what regards eYeka, 159 contests were entered, by considering for each contest category the 20% of the most recently concluded projects hosted by the platform. For the sake of clearness, I decided to use the 20% fraction because it guarantees the proportional presence of contests for each category; in such a way, the backbone of the classification structure of the platform were not biased. During this collection period, the platform hosted data about 790 contests divided in 10 main categories.

For further details on all recorded Contests see Appendix 2.

Data collection routine

The collection methods adopted to design the two databases were not homogeneous. In fact, for the CS Platforms DB, it was necessary to collect data from many diverse sources; on the contrary instead, the entire data gathered for the creation of the Contests DB was available solely on the eYeka website⁴³.

As for CS Platforms DB, not all the data was readily available in the considered platforms' websites, and sometimes the subscription was not sufficient to access required information; in fact, many times it requires researches on external sources.

The most used data collecting methods for the creation of CS Platform DB refer mainly to the scanning of platforms websites as a starting point. Whenever the research was unsuccessful, researches on platforms social network pages were the following step, followed by general researches on search engine. The above-listed methods mainly refer to qualitative raw data collection.

Otherwise, referring to quantitative raw data, the process was the following. Each platform provided information in completely different arrangements: in some cases, data was aggregated, in others they were unbundled. Consequently, I had not only to raise the information but also to convert it in a comparable format, in terms of either "size" or currency. This activity was strongly challenging to be performed, because in many cases I had to sum up about 800 records for a single platform to obtain the information I was looking for. Therefore, this activity *per-se* encompasses a significant risk of biases due to human errors.

Aiming at granting the reliability of the data collected from website contents changes or unexpected situations which could provoke an information loss, I decided to act in such a way: data was recorded in the databases only after the collecting procedure of the material, which consisted in saving and storing each contest-related file in dedicated folders.

⁴³ <https://it.eyeka.com/>

3.1.2 PLATFORMS DATABASE STRUCTURE

In this section, the structure of the Platform Database will be illustrated.

Platform details

This is the first subset of information regarding platforms and it is composed mainly by generic information, useful to describe at best each single circumstance.

- **PLATFORM NAME:** The platforms collected derive from three main groups:
 - Platform mentioned in the Report “The State of Crowdsourcing 2017” performed by eYeka [eYeka, AGORIZE, ATIZO, BATTLE OF CONCEPT, HYVE CROWD, JOVOTO, MINDSUMO, OPENIDEO, TONGAL, USERFARM, ZOOPPA];
 - Platforms mentioned in the following papers: “Advances in Crowdsourcing” (Garrigos-Simon, Gil-Pechuán et al. 2015) [INNOCENTIVE, TOPCODER, AMAZON MECHANICAL TURK, CHALLENGE.GOV]; “Crowdsourcing Cloud-based Software Development” (Li, Huhns et al. 2015) [99DESIGN]; “Personalized Task Recommendation in Crowdsourcing Systems” (Geiger 2016) [HYPIOS]; “Using the Crowd as an Innovation Partner” (Boudreau, Lakhani 2013) [KAGGLE, QUIRKY].
 - Enterprise Crowdsourcing Platforms, mentioned in the following papers: “Crowdsourcing: Seeking the Wisdom of Crowds” (Weinswing 2016) [DELOITTE PIXEL]; “Open Innovation in Global Networks” – OECD – 2008 (OECD 2008) [P&G CONNECT+DEVELOP]; “New frontiers in open innovation” (Vanhaverbeke, Cloudt 2014) [UNILEVER]; “Advances in Crowdsourcing” (Garrigos-Simon, Gil-Pechuán et al. 2015) [LEGO IDEAS].
- **URL:** Websites URL of the platform.
- **TYPOLGY:** Taxonomy of the platforms based on Brabham (2013), explained in depth in the first chapter. [BROADCAST SEARCH, DISTRIBUTED-HUMAN-INTELLIGENCE, KNOWLEDGE DISCOVERY AND MANAGEMENT, PEER-VETTED CREATIVE PRODUCTION].
- **PURPOSE OF THE PLATFORM:** “Areas of Interest” characterizing the value proposition of each platform. This data was collected analysing each platforms’ website and/or LinkedIn profile page if available.

- **AREAS INVOLVED:** Areas that will benefit from the output generated by the platforms' contests; Modalities were personally created to match the "Purpose of the Platform" descriptions and categorize them in macro-classes.
 - **CONSULTING:** Platforms act as a sort of "Talent Scout" searching the right crowd and dividing the client's request in smaller parts, these are then delivered to different solvers groups and finally the platform delivers to the client the overall solution of the contest;
 - **GOVERNMENTAL:** The output of the platforms is aimed to satisfy requests only from agencies and governmental institutions;
 - **HUMAN INTELLIGENCE TASK/ CROWDWORKING:** Outputs are called HITs (Human Intelligence Tasks) and refer to basic activities (like recognize some figures or words etc.) that cannot be performed by artificial intelligence;
 - **MARKETING & COMMUNICATION:** Outputs provided by this category of platforms is strictly related with the production of contents or ideas useful in advertising, marketing and communication fields (in the majority of the cases it refers to existing products, or new products created by the proponent company);
 - **PRODUCT DESIGN/MARKETING:** Platforms of this typology mainly provide outputs concerning the creation (or about brainstorming activities) of new products and their marketing elements, like the design of the packaging and related advertising activities to promote them;
 - **INNOVATION:** Problem Solving /Open Innovation are the main areas that interest these platforms, it is a residual class that includes platforms which provide above all ideas: technological and innovative outputs that are mostly, but not directly, connected with product creation (they usually involve students, developers, and data analysts);
 - **SOCIAL GOOD:** Platforms aiming to collect experiences, ideas and insights to make the world a better place, usually this kind of platforms do not provide any monetary reward.
- **TYOLOGY OF OUTPUTS:** This variable defines if a platform delivers one or more than one type of solution to hosted contests, giving a sort of measure of the range of the breadth of their value proposition and even appeal (both from a contest proponent and solver point of view). This value has been researched in each platform website.

- **TASK TYPOLOGY:** Based on the research proposed by Schenk and Guittard (2011); in this column, modalities used to classify the typologies of tasks proposed by platforms are recorded [COMPLEX TASK, CREATIVE TASK, SIMPLE TASK].

Numerical variables

- **TOTAL N° OF IDEAS SUBMITTED:** Number of ideas submitted; data collected through platforms website dedicated page.
- **TOTAL N° OF CONTESTS HOSTED:** Number of contests hosted; data collected through platforms website dedicated page, when data was not available, I used the sum of the concluded and open contests available at the date of consultation as proxy.
- **CUMULATIVE REWARDS PAID IN € BY THE PLATFORM:** Value in € (at the exchange rate on the date of 08.09.2017) of the cumulative reward (declared in the website) paid by the platform for concluded projects; data collected through platforms website dedicated page, when values were not available, I used the sum of the rewards of concluded contests available at the date of consultation as proxy.
- **N° OF CONCLUDED PROJECTS:** Number of concluded projects; data collected through platforms website dedicated challenge page, counting concluded projects available at the date of consultation.
- **N° OF PROJECTS STILL OPENED:** Number of opened projects; data collected through platforms website dedicated challenge page, counting the still opened projects available at the date of consultation.
- **REWARD TYPOLOGY:** Categories of reward offered by platforms:
 - **MONETARY REWARD;**
 - **NON-MONETARY REWARD;**
 - **MICRO MONETARY REWARD:** Average reward is lower than 1€ per task;
 - **ROYALTY:** Reward consists in a % of revenues from the sale of the product.
- **AVAILABLE CONCLUDED PROJECTS REWARD:** Value in € (at the exchange rate on the date of 08.09.2017) of rewards paid by the platform only for concluded projects available. Often these values were not provided by the

websites so I had to sum up the rewards of concluded contests available at the date of consultation.

- **N° OF AVAILABLE CONCLUDED PROJECTS:** Number of concluded projects available on platforms websites for which it is accessible also the correspondent reward; this data was collected through platforms dedicated challenge page, counting concluded projects with a reward available at the date of consultation.
- **AVERAGE REWARD PER CONTEST:** Number of average reward per contest. Result obtained by dividing the value of the available concluded projects reward with the available concluded projects.
- **N° OF CROWDSOURCERS:** Number of persons that each platform declared as available workforce for the challenges they offered.

Additional details

Information expressed in this section was collected through platforms webpages.

- **SKILLS REQUIREMENTS:** Typology of “workers” each platform requires:
 - **NO SPECIFIC SKILLS REQUIRED:** Challenges are opened and it is the worker that self-select the challenge he can address in the best way;
 - **SPECIFIC SKILLS REQUIRED:** Registration form ask for specific skills to address the challenges;
 - **NO SKILLS REQUIRED:** Challenges need human intelligence as skills, if some challenges request specific abilities, is the challenge itself to provide an access test to it.
- **SUPPORT ACTIVITY:** Platforms additional services provided both from the proponent point of view and from the solver one. If this service lacks, platforms act as a mere showcase that hosted contests.
- **TRANSPARENCY:** Possibility to access challenges without having been registered.
- **COMMUNITY PRESENCE:** Platform area in which registered workers can share ideas or ask for help and insights about the challenge in which they are working on.
- **N° OF SUCCESSFUL CASE STUDY:** Availability in platforms website of a dedicated section about case studies and their number.
- **MAIN PARTNER:** List of the main partners that collaborate with the platform.

Social presence

The data available in this paragraph was collected in the related Social Network dedicated pages of each platform.

- FACEBOOK: Number of Facebook likes of the platform page.
- FACEBOOK SCORE: The score value, that I created to evaluate the social presence, derives from a logarithm conversion (precisely natural logarithm of the number of likes) and ranked from 0 to 5, where 5 is the maximum value from each column.
- LINKEDIN: Number of LinkedIn connection of the platform page.
- LINKEDIN SCORE: The score value, that I created to evaluate the social presence, derives from a logarithm conversion (precisely natural logarithm of the number of connection) and ranked from 0 to 5, where 5 is the maximum value from each column.
- TWITTER: Number of Twitter followers of the platform page.
- TWITTER SCORE: The score value, that I created to evaluate the social presence, derives from a logarithm conversion (precisely natural logarithm of the number of followers) and ranked from 0 to 5, where 5 is the maximum value from each column.
- AVERAGE TOTAL SCORE: It is the weighted average total score (where Facebook weighs 50%, Twitter 30% and LinkedIn 20%)

General information

- YEAR OF FOUNDATION: Year of foundation of the platform; if it was not disclosed in the platform website or in their LinkedIn page, I used the date of the first project available as proxy.
- COUNTRY: Country in which the platform (or its holding company) is registered. This data was collected searching in platforms websites, Social Network pages, general Search Engines.

3.1.3 EYEKA CONTESTS DATABASE STRUCTURE

In this section, the structure of the eYeka Contests Database will be illustrated.

The overall data collected were available in the contest specific page, inside the eYeka platform website. Each contest dedicated section was composed by four main areas: one related to the summaries data about prize, number of contest and ending date, one related to the brief in which the assignment was deepened explained both in terms of tasks and outputs, the rule section in which in many cases the contest agreements were still available and the last one, related to the results section in which all the awards statistics and the winners' nicknames were displayed.

Contest

- **CONTEST CATEGORY:** List of the contest category provided by eYeka [ACTIVATION, BRAND IDENTITY, COMMUNICATION, CONTENT, INSIGHTS, NAMING, PACKAGING, POINT OF SALE, PRODUCT INNOVATION, SERVICE & EXPERIENCE DESIGN].
- **NAME OF THE PROJECT:** Name under which the contest is identifiable in eYeka.

Brand

- **NAME OF THE BRAND:** Name of the brand that published the challenge.
- **N° OF CONTESTS IN eYeka:** Number of additional contests published on the platform by the brand.
- **CASE STUDY:** Presence of case studies for that specific brand.

Company

- **NAME OF THE COMPANY:** Name of the company which owns the brand that published the contest.
- **N° OF CONTESTS IN eYeka:** Number of additional contests published by the company on the platform (this number summarizes all contests published by all the brands owned by that specific company).
- **CASE STUDY:** Presence of case studies for that specific company.
- **N° OF BRANDS WITH A CONTEST:** Number of different brands for each company that has at least a challenge on the platform.

Industry

- **INDUSTRY:** Challenge related industry [ALCHHOOL, AUTOMOTIVE, BEAUTY, CONSUMER ELECTRONICS, FASHION, FOOD & BEVERAGE, HEALTHCARE, HOUSEHOLD, NON-PROFIT, PERSONAL CARE, PET CARE, RETAIL, SERVICES, TECHNOLOGY, TELECOM, TRAVEL, UTILITIES].

Competition elements

- **TYOLOGY:** Challenge type qualifying *ex ante* some characterizing aspects of the challenge:
 - **STANDARD:** No dedicated provisions;
 - **EXPRESS:** Typology applied only for ideation contest and not for video production; it is a format targeted specifically at market research professionals who are used to work with customer insights. Such contests are shorter in time and have a smaller prize pool;
 - **GRANTS:** Contests characterized by the warranty about the covering of the costs for the production;
 - **# :** Contests identifiable with a hashtag are related to a specific company set of challenges.
- **CONTEST MODALITY:** It defines if the contest is an ideation or a content one; in the first case the challenge requires only insights or ideas and not the delivery of a complete and ready-to-use “output” as it is in the content contests, [IDEATION, CONTENT].
- **OUTPUT:** Typology of output requested for the fulfilment of the contest.
- **CONTEST CONFIDENTIALITY:** Disclosure of the contributors’ outputs:
 - **PRIVATE:** Contributors are allowed to see others’ works once the contest is over;
 - **PUBLIC:** Entries are visible for everyone, even during the contest. This is used for social contests where the brand is usually looking for maximum amplification.
- **AGE LIMITS:** Limitation for minors in some challenges.
- **FEEDBACK CIRCLE:** Availability of the community insights.

- SKILLS #1: First skill required for the completion of the contest, it is not mandatory or restrictive and it has the aim of qualifying the typology of the output requested.
- SKILLS #2: Second skill required for the completion of the contest, it is not mandatory or restrictive and it has the aim of qualifying the typology of the output requested.
- INTENDED MARKET: Presence of an indication about the target markets that the challenge refers to.

Task

- BRIEF: Output requested from the referred challenge.
- GOAL: Purpose of the assigned task expressed in broad terms.
- DEFINITION: Sentence provided by the initiator to explain, engage and attract contributors.

Timing

- ENDING DATE: Date in which the contest was closed.
- AWARDS DATE: Date in which the contest winners are awarded.

Awards

- GLOBAL PRIZE: Total monetary reward offered for the challenge.
- N° OF WINNERS: Number of contributors awarded.

Winners

This section is the same for the first, the second and even for the third challenge winner.

- PRIZE: Value of the prize for that specific winner position (it may differ between the three levels of winners).
- NICKNAME: Nickname of the contributor.
- CREATIVE SCORES: Score assigned by eYeka to the contributor, with the aim of signalling their contribution and to stimulate their active involvement.
- LEADERBOARD POSITION: Rank of the top 500 creators on a three-months base.
- PRIZE WON: Number of past contests won by the contributors.

- **PARTICIPATED CONTESTS:** Number of contests in which the contributor has been involved.
- **WORK IN PROGRESS CONTESTS:** Number of contests in which the contributor was involved at the time of the data collection.
- **ENTRIES ACCEPTED:** Number of solutions submitted by the contributor (for a single contest the contributor can upload more than one solution).
- **CONTEST JOINED:** Total number of contests in which the contributor applied for, even if he did not upload any solution.
- **ANSWER ACCEPTED:** Number of answers given by the contributor that were accepted in the contest community area.
- **QUESTION ANSWERED:** Number of questions answered by the contributor in the contest community area.
- **YEAR OF REGISTRATION:** Year in which the contributor joined the platform.
- **AGE:** Age of the contributor.
- **GENDER:** Gender of the contributor.
- **PRESENCE OF PERSONAL WEBSITE:** Availability of a personal website link of the contributor in its profile page on the platform.
- **COUNTRY:** Country of origin of the contributor, available in his profile page on eYeka.

Additional winners

- In this section I reported Prize, Creative Scores, Gender and Country for the fourth and fifth additional winners of the contests that specify their existence.

Number of community favorites

- Number of different persons selected by community participants (only in the contests with feed-back circle on) as three best contributors in these three areas: Quality, Originality, and Story-Telling. For these nine community winners, I collected this data:
 - **CONTEST WINNER:** This column takes the NO value if the winner selected by the community is not a final winner of the contest, while, it takes a numerical value if the winner of the community was also a final winner of the contest (the numerical value corresponds to the rank of the position in the final award list);

- NICKNAME;
- CREATIVE SCORES.

Awards statistics

- N° OF CONTRIBUTORS: Number of participants to the contest.
- N° OF MEDIA ACCEPTED: Number of uploaded solutions.
- N° OF COUNTRIES: Number of different participants origin countries.
- N° OF LANGUAGES: Number of languages in which the media are uploaded.

3.1.4 ANALYSIS TOOLS AND METHODS

With the aim of performing at best the data analysis, many different tools have been employed in this dissertation. The mentioned tools mainly belong to two data analysis software: Microsoft Office Excel and STATA.

Microsoft Office Excel 2016

In this thesis, Excel spreadsheets have been utilized primarily for the creation and management of the DBs structures, and subsequently for the data analysis.

The main tools and formulas deployed are the following:

- Subtotal Formulas: with the creation of dedicated cells, the adoption of this instruments allowed to perform a comparative examination between total values and subtotal ones, obtained from the application of filters.
- Pivot Table: being classified as a reporting tool, it has been implemented in order to summarize, explore and examine the available data, aiming at facilitating the consultation and comparison processes.
- Graphics: the adoption of this tool was aimed to facilitate the understanding of the main findings obtained from the other data analysis instruments.

STATA 14

STATA software allowed the creation of statistical models to corroborate many hypotheses about the DBs elements. Methods chosen to perform statistical analysis rely on a basic knowledge about Statistics.

- Multivariate Cluster Analysis: this functionality enables the creation of homogeneous groups of observations, named clusters, based on certain variables of interest; through a distance based criterion, the tool allows the merging in groups of analysed entities.
- Correlation Matrix: This tool creates a matrix which shows the degree of association among pairs of investigated variables. Since variables belonging to both databases demonstrated to have a lack in the linearity of relationships, the linear regression model was not suitable to be implemented. As a consequence, in order to better understand connections among variables, this matrix permitted to comprehend the strength and the sign of reciprocal effects among them.

- Wilcoxon-Mann-Whitney U Test: This test is a non-parametrical one, since in the referred DBs, most of the variables were not normally distributed. In fact, this test is considered as a suitable alternative to the traditional t-test in analysing differences between means in this specific circumstance. The adoption of this instrument was very useful to test the hypothesis of the equality against the one of diversity for median values of two independent groups. Moreover, in case of the existence of a significant difference, instead of providing the possibility to assess the unilateral alternative hypothesis as the t-test, this test estimates the value of the probability for the variable of the first group to be larger than the one of the second group.

3.2 CROWDSOURCING PLATFORMS-RELATED FINDINGS

In this section, the dissertation will cover the empirical aspects that concern the platform environment. The main features analysed are the trend for the number of contest hosted, the reward and the appeal levels towards crowd participants, and finally the social network pattern.

3.2.1 DESCRIPTIVE ANALYSIS

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 I selected only platform which have been already considered in past studies⁴⁴. 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.

Moving from the above-mentioned categories, as it possible to observe in Figure 14, the sample mainly comprises Broadcast Search platforms, 13 over the total, and Peer-Vetted Creative ones. Among such platforms is included the eYeka’s one, which I selected to perform the analysis on the state of Creative Crowdsourcing exposed later on.

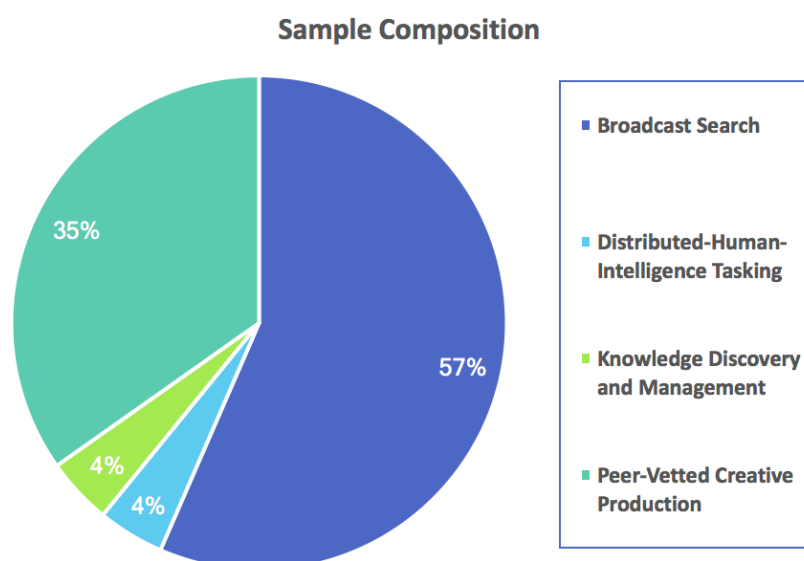


Figure 14: Sample composition (Author's personal elaboration)

⁴⁴ In the Database building section it is possible to know the references about the selection of platforms.

This classification is also very similar to the one proposed with reference to the type of task requested; in fact, each category is suitable to principally accommodate just one of them⁴⁵.

In the analysed sample, Knowledge Discovery and Management, and Distributed-Human Intelligence Tasking are represented by one platform each. In the first case, it is a platform which pursue challenges for social good purposes, whilst in the second case the category is represented by the micro tasking platform Amazon Mechanical Turk.

Furthermore, the examined sample reported the existence of a massive number of platforms established in USA, mainly born around 2008 (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 Creative Crowdsourcing platform in only in 2008.

Size

An additional interesting aspect to be considered is the scope of hosted contests, both concluded and still opened in each platform, at the date of data collection.

As reported by Figure 15, it is possible to convey which the sample provided very different values about the size of platforms.

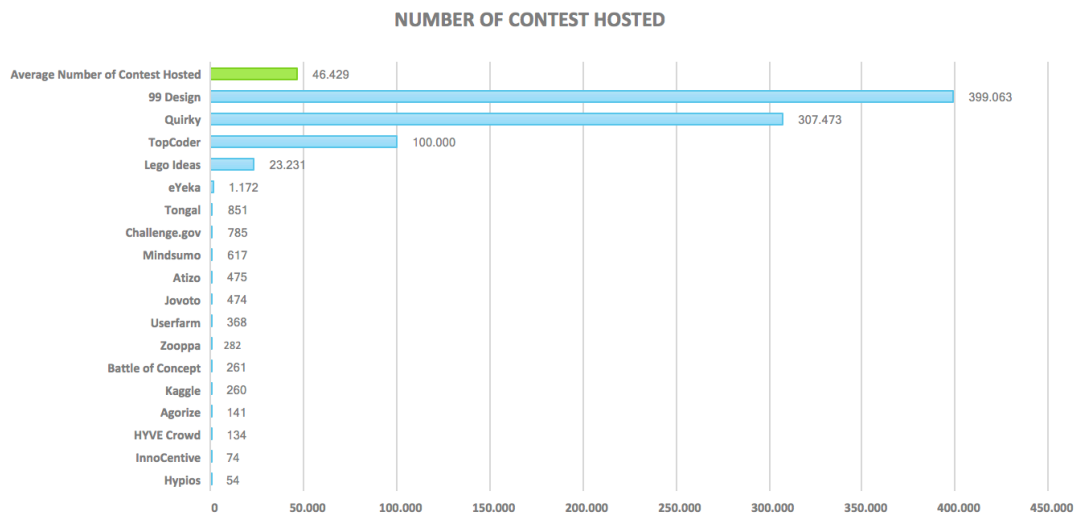


Figure 15: Number of contest hosted by platform (Author's personal elaboration)

It is also fundamental to know that in the creation of this histogram, it has been excluded Amazon Mechanical Turk platform, since its number of hosted contests is two times the ones recorded by the top platform, namely 99 Design.

⁴⁵ As a consequence, Creative tasks are mainly requested by Peer-Vetted Creative Production platforms, while Simple tasks are performed only by participants of Distributed-Human Intelligence Tasking. On the contrary instead, Complex tasks related principally to problem solving activities are necessary in the Broadcast Search category and in the Knowledge Discovery and Management one.

Moreover, after the exclusion of the outlier platforms, the average decreases at about 46.400, thus 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.

Noteworthy is also relevant that only 7 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.

Rewards

Another aspect to be taken into consideration is the one related to the cumulative rewards offered by platforms to potential contributors.

As it is possible to see in Figures 16 and 17, 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.

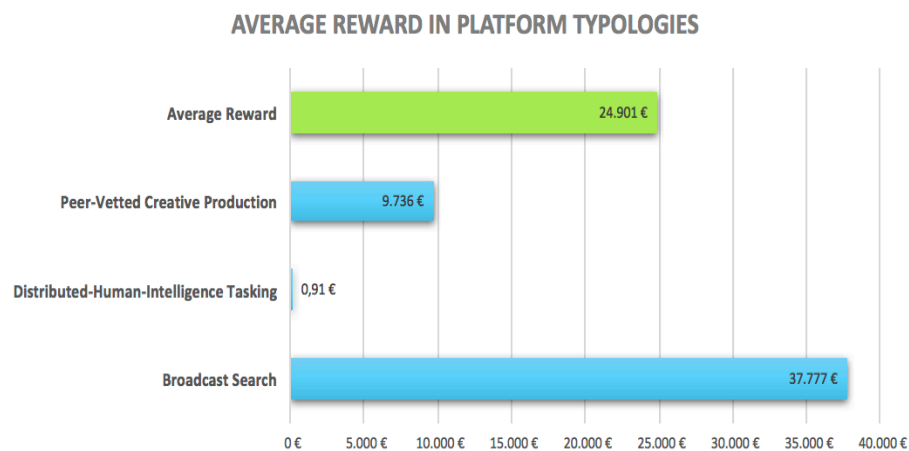


Figure 16: Average reward by typology of platform (Author's personal elaboration)

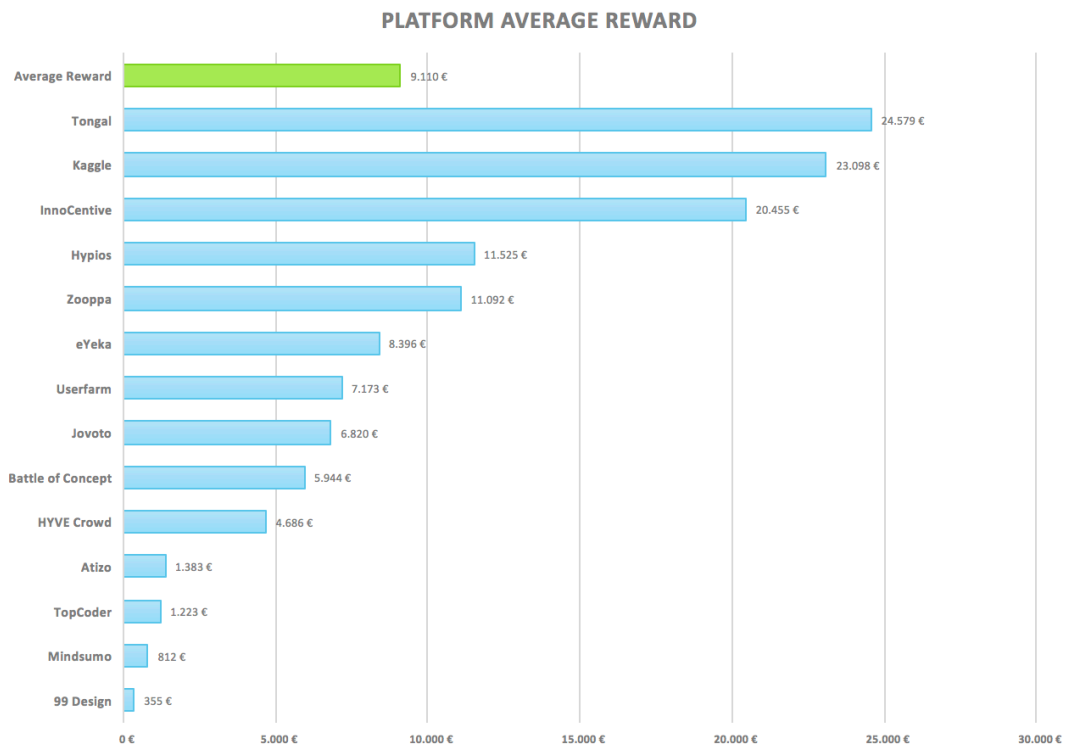


Figure 17: Average reward by platform (Author's personal elaboration)

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. Moving from such consideration, the reason which justifies the inferior level of prizes bid probably could be found in this last specific evidence.

As for this subsample, Challenge.gov had to be excluded, since its rewards were completely disproportioned with respect to the overall sample. In fact, this platform hosted challenges related to problems encountered by American agencies dealing with national security issues. Such challenges are complicated to be solved in a small period of time, and also require a specific knowledge background, with prizes which could on average be valued 270.000€ each one. Also Amazon Mechanical Turk is not present in the chart, due to its lowest level of average rewards which was calculated as lower than 1€ per task fulfilled.

The analysis regarding awarded rewards, highlighted also 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 market⁴⁶.

⁴⁶ For this reason, these platforms are not present in the chart of Figure 17.

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.

Crowd

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 understand what are the crowd volumes connected with the different typologies of CS platforms.

As it is reported by Figure 18, 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. For the sake of completeness, it is focal to remind that participants considered in the simple task fraction are only the ones provided by Amazon Mechanical Turk, being this last the only platform coherent with this criterion. As for the other two cases, the values are computed as average of the whole elements available.

AVERAGE NUMBER OF CONTRIBUTORS BASED ON TASK TYPOLOGY

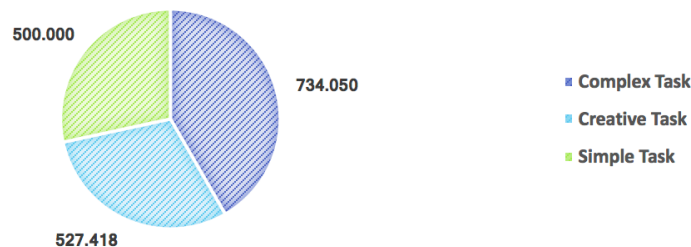


Figure 18: Average number of contributors based on task typology (Author's personal elaboration)

Conversely, this data could be even more interesting when comparing the number of engaged contributors with respect to the number of contests hosted and with rewards offered by each specific platform. Indeed, as it is possible to observe by Figure 19, the most “crowded” platforms are the also the top-hosting ones in terms of challenges published⁴⁷. At the same time instead, they are not displayed in top positions with regards to the level of reward awarded⁴⁸.

⁴⁷ See Figure 15.

⁴⁸ See Figure 17.

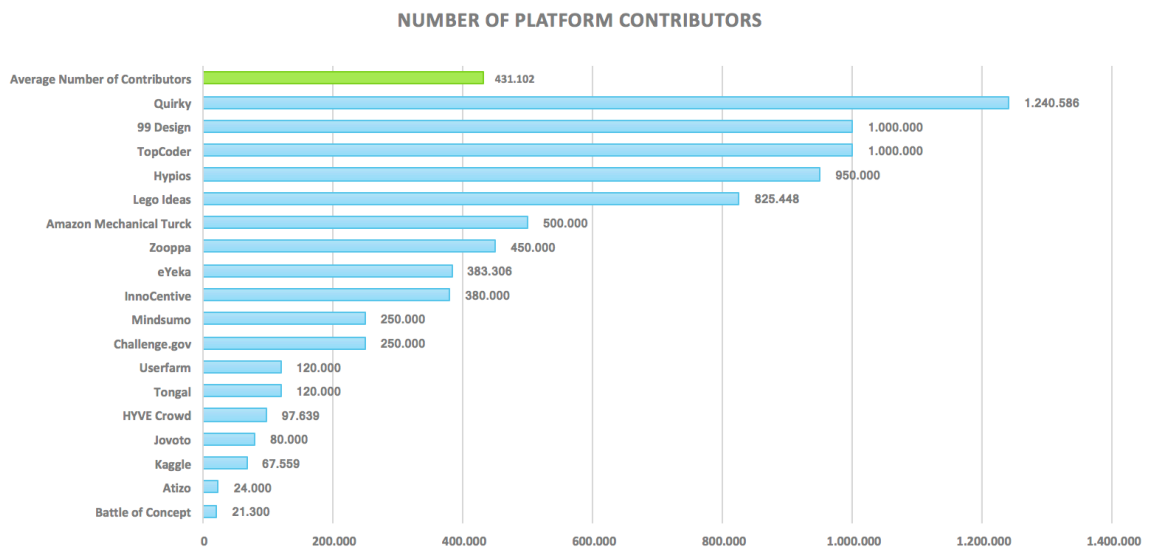


Figure 19: Number of contributors by platform (Author's personal elaboration)

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 crowd.

From these charts, it seems quite evident that the number of contributors are mainly matched with the variety of contests offered rather than on the reward posted. 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.

Furthermore, an additional element which could be challenging in the evaluation of the contributors' size is the restriction of skills performed by platforms as shown in Figure 20.

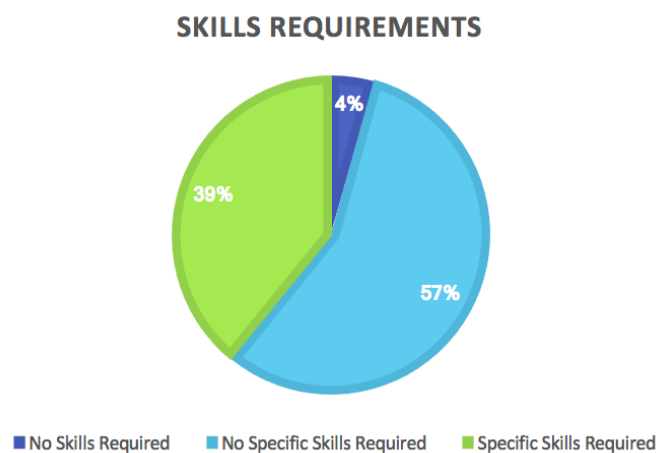


Figure 20: Skills requirements (Author's personal elaboration)

As it is possible to assess the majority of platforms have no particular 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.

In adding another detail, it is interesting also to record the presence of the community feature in about 52% of the platforms. Moreover, the Peer-Vetted Creative Production category demonstrates that creative tasks are the more suitable to be performed with the empowering effect of the community, mainly in terms of proficient interactions and also in terms of co-creation outcomes.

Platforms' engagement ability

A further element that needs to be inquired is the ability of platforms to engage and attract new potential contributors. In this sense, I developed a score to rank the level of this fundamental ability with respect to the dimensions of the network created by each category of platform.

Accordingly, Figure 21 displayed the scores created for the three main social networks through which a platform could implement communication strategies aiming at engaging more individuals as possible. 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 CS 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.

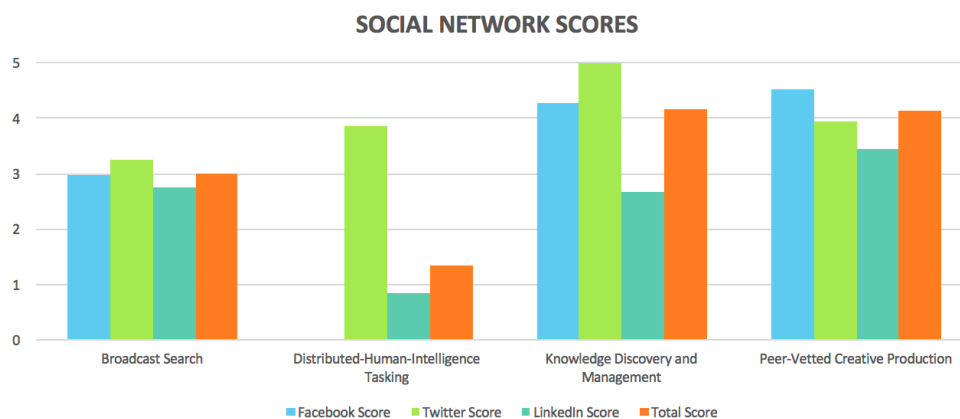


Figure 21: Social network score by platform category (Author's personal elaboration)

To better understand above proposed results, Figure 22 could provide a deeper explanation to the level of the score obtained from platforms.

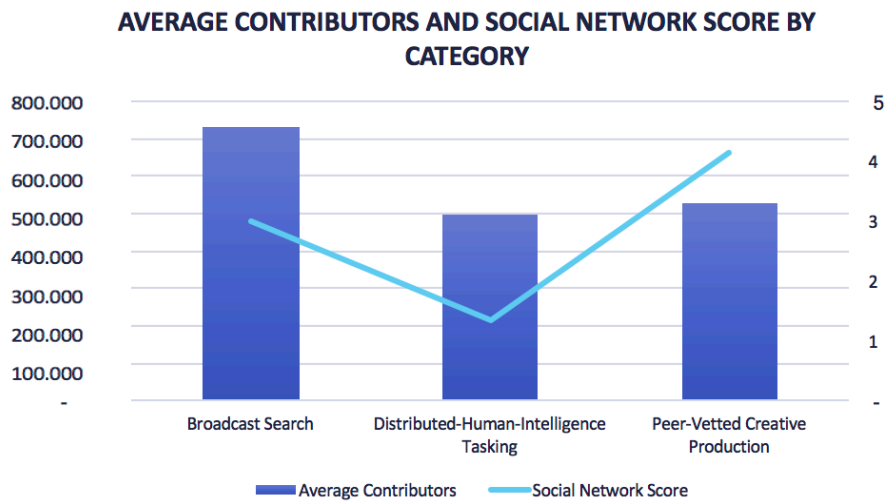


Figure 22: Average contributors and social network score by category (Author's personal elaboration)

As is possible to observe the chart shows the average contributors for each typology and its correspondent social networks score, demonstrating thus 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 the at the same time the most “crowded” and the less social ones, whilst the opposite happened for the Peer-Vetted category, which before was previously ranked as 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; for this reason, the chart would analyse the existence of just a relation between social networks score and number of participants.

In line with this consideration, also the level of openness towards the crowd could be investigated. In fact, it was possible to observe that for the 40% of platforms projects are not available before the subscription on the website; this fact is of course a limit to the possibility of involving a greater number of curious individuals, who might be converted in valuable crowdsourcers. Moreover, the majority of platforms that support this kind of transparency policy are the Broadcast Search and the Peer-Vetted Creative Production ones. Platforms belonging to these categories demonstrate also in this circumstance to be the most active in trying to draw the attention of as many individuals as possible; it happens not only through their social networks, but also inside the platforms themselves, which create an engaging playground in which whoever could be inspired and tempted to participate.

3.2.2 STATISTICAL ANALYSIS

This section is dedicated to the analysis of the Platforms database and aims at examining two main facets of the Crowdsourcing ecosystem. Actually, being this thesis focused on the aspects concerning the Creative Crowdsourcing field, the first feature to be analysed regards the differences of platforms based on creative tasks with respect to the others.

Moreover, the second goal refers to the possibility of finding a classification model, to cope with the higher heterogeneity characterizing the examined sample.

As it is possible to see, Table 1 lists all the variables considered to perform the evaluation.

VARIABLE NAME	DEFINITION
PL_Name	Name of the platform
Crea_Task	This variable assumes the value 1 if the contest requires the fulfilment of a creative task, 0 otherwise.
N_Cont_Host	Number of contests hosted by the platform.
Avg_Rew	Value of the average reward per contest.
N_Crowd	Number of contributors registered in the platform.
Score_SocialP	0 to 5 score associated to the level of the social network participation, considering Facebook score, LinkedIn score and Twitter score.

Table 1: Variable table (Author's personal elaboration)

Firstly, I decided to start with the analysis of the creative task aspect, then moving to the one related to the grouping issues, addressed by using the Cluster analysis tool.

Means comparison test

I have chosen 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 statistical tool selected to perform this evaluation was the Student t-test, this specific tool requires some specific assumptions to be effective, otherwise results might be biased.

The assumption of normality of the distribution and the sufficient sample size are thus two fundamental assumptions to fulfil. Accordingly, the Platforms database is composed by 23 observations, which in this case are under the minimum required by the t-test assumption (30 observations). Even if the t-test could be *a-priori* excluded as tool through which perform the examination, I decided to test in any case the assumption of normality of the analysed variables.

In verifying this prerequisite, I conducted the Shapiro Wilk test on the normality of the distribution for what concerns the variables of interest. Moreover, as shown by Table 2, the test strongly suggested to reject the normality assumption.

<i>Shapiro-Wilk W test for normal data</i>					
Variable	Obs	W	V	z	Prob>z
N_Cont_Host	20	0.47359	12.460	5.084	0.00000
Avg_Rew	16	0.37410	12.682	5.045	0.00000
N_Crowd	19	0.59321	9.287	4.476	0.00000
Score_SocialP	23	0.80634	5.065	3.299	0.00048

Table 2: Shapiro Wilk normality test (Author's personal elaboration)

Moving from this further confirmation, I chose to perform the study with the Wilcoxon-Mann-Whitney U test which is a non-parametrical tool suitable to be used as alternative of the t-test when the assumptions of the latter are not confirmed. It has to be considered therefore, even if it might conduct to slightly inferior results, the Wilcoxon-Mann-Whitney U test has to be intended as a valid approximation of the above-mentioned test. Precisely, the test works by ranking the observations and it relies on the median values, thus providing the p-value related to the equality of the two sub-samples with respect to the tested variable. Furthermore, another important value calculated by the test is the estimated probability for the first sub-sample to have larger median values of the tested variable with respect to the other sub-sample.

Creative task

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 starting point of the analysis was the NUMBER OF CONTESTS HOSTED by the platforms belonging to the two different groups. This variable is interesting for what concerns

the dimension of the market for open calls both solved and waiting to be completed; in this sense, the hypothesis formulated was the following:

H1: Platforms requiring the execution of Creative tasks are characterized by different numbers of contests hosted with respect to platforms requiring the execution of non-Creative tasks.

Summary for variable:		N_Cont_Host	
by categories of:		Crea_Task	
Crea_Task	mean	sd	N
0	9350.364	30066.07	11
1	177771	300342	9
Total	85139.65	214119	20

Table 3: Observed values for the average number of contests hosted of the two groups (Author's personal elaboration)

By observing Table 3, the average NUMBER OF CONTESTS HOSTED in platforms requiring Creative tasks was strongly higher than in the other group.

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Crea_Task	obs	rank sum	expected
0	11	81	115.5
1	9	129	94.5
combined	20	210	210
unadjusted variance		173.25	
adjustment for ties		0.00	
adjusted variance		173.25	
Ho: N_Cont_Host(Crea_Task==0) = N_Cont_Host(Crea_Task==1)			
z =		-2.621	
Prob > z = (p-value) =		0.0088	
P{N_Cont_Host(Crea_Task==0) > N_Cont_Host(Crea_Task==1)} =			0.152

Table 4: Wilcoxon-Mann-Whitney U test on numbers of contests hosted among the two groups (Author's personal elaboration)

The result displayed by the test (see Table 4) suggested that there was a strong statistical significance to reject the null hypothesis ($\alpha = 0,01$); 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 following variable to be tested is the one related to the AVERAGE REWARD awarded among the two different groups. In this sense, the hypothesis formulated was the following:

H2: Platforms requiring the execution of Creative tasks are characterized by different amounts of average rewards with respect to platforms requiring the execution of non-Creative tasks.

<i>Summary for variable:</i>		Avg_Rew	
<i>by categories of:</i>		Crea_Task	
Crea_Task	mean	sd	N
0	37777	87800.85	9
1	8345.178	8248.919	7
Total	24900.58	66076.2	16

Table 5: Observed values for the means of the average rewards offered among the two groups (Author's personal elaboration)

As it is possible to observe in Table 5, the mean of the AVERAGE REWARDS in platforms characterized by Creative task was intensely lower than in the other group.

The result provided by the test (see Table 6) 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.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Crea_Task	obs	rank sum	expected
0	9	80	76.5
1	7	56	59.5
combined	16	136	136
unadjusted variance		89.25	
adjustment for ties		0.00	
adjusted variance		89.25	
Ho: Avg_Rew(Crea_Task==0) = Avg_Rew(Crea_Task==1)			
z =		0.370	
Prob > z = (p-value) =		0.7110	
P{Avg_Rew(Crea_Task==0) > Avg_Rew(Crea_Task==1)} =			0.556

Table 6: Wilcoxon-Mann-Whitney U test on average rewards among the two groups (Author's personal elaboration)

The third variable to be tested among the two different groups was the registered NUMBER OF CONTRIBUTORS. In this sense, the hypothesis formulated was the following:

H3: Platforms requiring the execution of Creative tasks are characterized by different numbers of contributors with respect to platforms requiring the execution of non-Creative tasks.

<i>Summary for variable:</i>		N_Crowd	
<i>by categories of:</i>		Crea_Task	
Crea_Task	mean	sd	N
0	734049.8	1303360	10
1	524371.1	415384.8	9
Total	634728.3	968313.2	19

Table 7: Observed values for the average number of contributors of the two groups (Author's personal elaboration)

With respect to Table 7, the mean of the NUMBER OF CONTRIBUTORS in platforms characterized by the execution of creative tasks was lower than in the other group.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Crea_Task	obs	rank sum	expected
0	10	88.5	100
1	9	101.5	90
combined	19	190	190
unadjusted variance		150.00	
adjustment for ties		-0.39	
adjusted variance		149.61	
Ho: N_Crowd(Crea_Task==0) = N_Crowd(Crea_Task==1)			
z =		-0.940	
Prob > z = (p-value) =		0.3471	
P{N_Crowd(Crea_Task==0) > N_Crowd(Crea_Task==1)} =			0.372

Table 8: Wilcoxon-Mann-Whitney U test on numbers of contributors among the two groups (Author's personal elaboration)

Obtained result from the test (see Table 8) highlighted that there was no statistical significance to reject the null hypothesis ($p\text{-value} = 0,34$). Accordingly, the tested proposition could not be supported. Practically speaking, 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.

The analysis proceeded with the last variable to be examined, the SOCIAL NETWORK SCORES of platforms in the two different groups. In fact, this variable was useful in estimating the level of attraction towards new potential contributors. In this respect, the hypothesis formulated was the subsequent:

H4: Platforms requiring the execution of Creative tasks are characterized by different values of social network score with respect to platforms requiring the execution of non-Creative tasks.

Summary for variable:		Score_SocialP	
by categories of:		Crea_Task	
Crea_Task	mean	sd	N
0	3.088432	1.47932	14
1	3.818531	.9945208	9
Total	3.374123	1.336239	23

Table 9: Observed values for the average social network scores of the two groups (Author's personal elaboration)

Assessing values provided by Table 9, the mean of SOCIAL NETWORK SCORES in platforms characterized by the execution of Creative tasks was greater than in the other category of platforms.

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Crea_Task	obs	rank sum	expected
0	14	146	168
1	9	130	108
combined	23	276	276
unadjusted variance		252.00	
adjustment for ties		-0.12	
adjusted variance		251.88	
Ho: Score_SocialP(Crea_Task==0) = Score_SocialP(Crea_Task==1)			
z =		-1.386	
Prob > z = (p-value) =		0.1657	
P{Score_SocialP(Crea_Task==0) > Score_SocialP(Crea_Task==1)} =			0.325

Table 10: Wilcoxon-Mann-Whitney U test on social network scores among the two groups (Author's personal elaboration)

Test's result (see Table 11) reported that there was no statistical significance to reject the null hypothesis (p-value = 0,16). Consequently, the tested assumption could not be validated. In fact, it was not possible to affirm that the values of SOCIAL NETWORK SCORES are different between the two categories of platforms. 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.

Obtained findings

In analysing the available data about Creative Crowdsourcing platforms, the first thing which is possible to assess is 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. In conclusion, apart from this last circumstance, the two kinds of examined platforms seemed to be not so different one each other.

Multivariate Cluster Analysis

In dealing with the greater heterogeneity of platforms constituting the examined sample, it has been used the Cluster technique in trying to create some classes which can comprehend at best elements characterized by some commonalities, relying on a sort of distance.

To this purpose in fact, I started to evaluate what might be the most suitable variables for which commonalities, apart from the typical classifications, could have arisen; in doing so, I created many scatter plots charts, to compare the potential couples of variables.

As it is possible to see in Table 11, the variables taken into consideration to perform this preliminary checking were the NUMBER OF CONTESTS HOSTED, the NUMBER OF CONTRIBUTORS and the value of the SOCIAL NETWORK SCORE.

At this point, after having selected the grouping variables, I had to convert them in standardize ones in order to correctly perform the analysis; in fact, the standardization allows to obtain a better clustering.

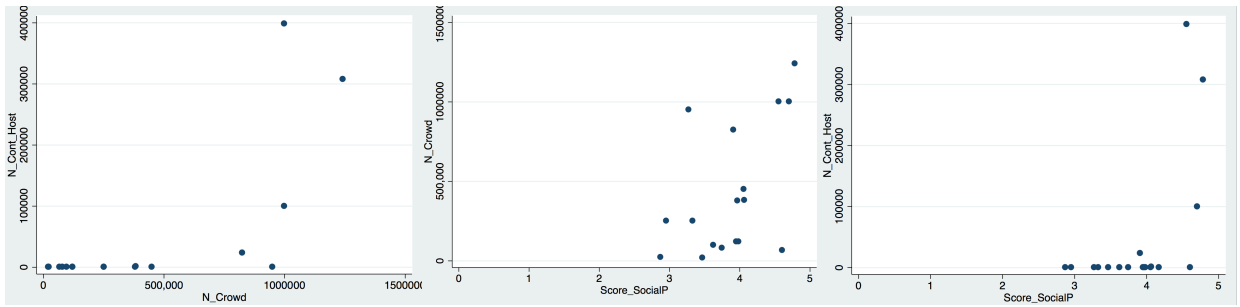


Table 11: Scatter plot graphs of Cluster Analysis variables (Author's personal elaboration)

After having assessed these preliminary aspects, I selected a hierarchical method in order to be obtain the dendrogram, a chart which allows to control the entire process of grouping made by the algorithm.

As it is possible to see in Table 12, I obtained a visual representation of grouping possibilities; in this respect, the most evident option seems to be the one implying the creation of two main groups, one with only two elements and another with the remaining ones.

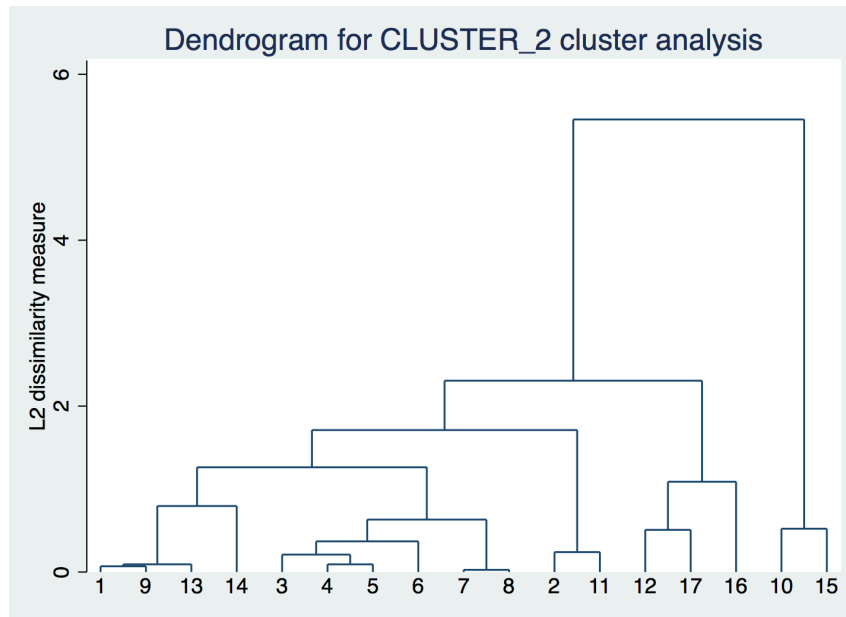


Table 12: Cluster Analysis Dendrogram (Author's personal elaboration)

An important consideration to be pointed out is that in the creation of the cluster analysis not all the 23 observations were included, in fact, some platforms' data about the number of contributors or the number of contest hosted was not available⁴⁹. Moreover, other two platforms have been excluded because they were extreme outliers enough to require their own clusters. Namely, the omitted platforms were Amazon Mechanical Turk and Agorize.

⁴⁹ The platforms not included in the cluster analysis were: OpenIdeo, Deloitte Pixel, P&G Connect+Develop and The Unilever Foundry. These last three, being Enterprise Crowdsourcing platforms, have stricter disclosure policies which preclude the possibility to access this kind of information.

Therefore, after having assessed the evidences provided by the dendrogram, and being conscious that the division in only two groups it is not sufficient to perform the desired level of analysis, I decided to verify the existence of a certain number of groups which can in a more efficient way provide desired results. In addressing this necessity, I adopted the Calinski/Harabasz stopping rule as shown by Table 13.

<i>Calinski/Harabasz Stopping Rule</i>	
Number of clusters	Calinski/Harabasz pseudo-F
2	23.29
3	21.41
4	21.99
5	21.06

Table 13: Calinski/Harabasz stopping rule (Author's personal elaboration)

As provided by Calinski/Harabasz tool, it was possible to state that the 2 clusters combination seemed to be the most efficient one, as anticipated. However, it did not satisfy my necessities, and for this reason the choices regarding the number of clusters falls on the 4 clusters combination, which was the second-best option.

Furthermore, a variable named CLU_CS has been generated, with the aim of assuming the values of clusters through which observation has been divided by the clustering algorithm. Therefore, it might be interesting to investigate which are the main characterizing features of created clusters. To this purpose, Table 14 displays summary statistics for the 4 groups.

<i>Summary for variables: N_Cont_Host, N_Crowd, Score_SocialP</i>				
<i>by categories of: CLUS_CS</i>				
CLU_CS		N_Cont_Host	N_Crowd	Score_SocialP
1	mean	449.3	196980.4	3.878622
	sd	342.9522	155657	.3613408
	N	10	10	10
2	mean	630	137000	2.911817
	sd	219.2031	159806.1	.0540249
	N	2	2	2
3	mean	41095	925149.3	3.964255
	sd	52312.93	89890.3	.717972
	N	3	3	3

4	mean	353268	1120293	4.669828
	sd	64763.91	170120	.1581875
	N	2	2	2
Total	mean	49151.41	427049.3	3.873075
	sd	118127.3	410164.6	.5797051
	N	17	17	17

Table 14: Cluster summary statistics (Author's personal elaboration)

Observing the table, it is thus possible to detect the different values which characterize each cluster with regard to the grouping variables. Moreover, the first row of each section defines the mean of the observations belonged to the examined cluster, while the second row highlighted the level of variability in each created group.

To have a greater insight for what concerns the performed grouping, it is possible to observe the Box Plot chart, which highlighted the values assumed in each cluster by variables adopted to perform the analysis (see Table 15).

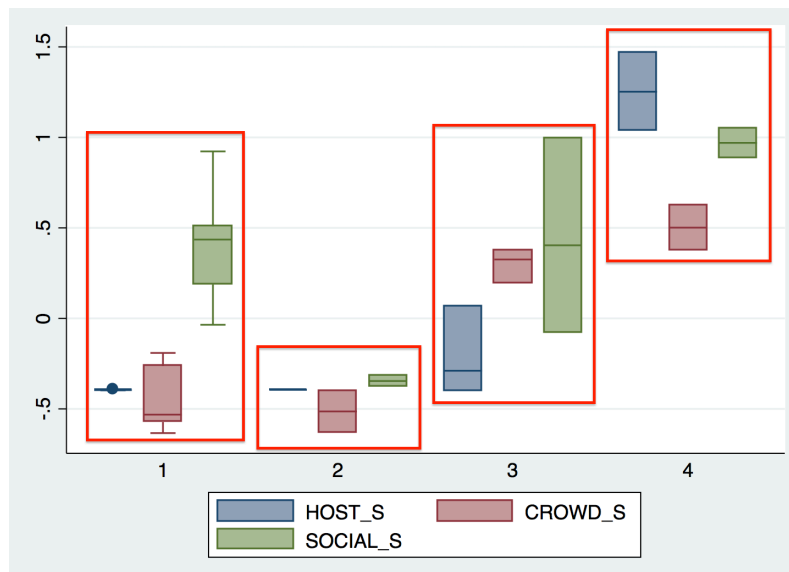


Table 15: Box Plot about Clusters (Author's personal elaboration)

In this sense, it is evident how the four generated groups are not completely different one with the other; however, it is possible to have some insights about their characteristics.

At a glance, cluster number 2 appear to be the less performing one; in fact, with respect to cluster 1, it is inferior in both social network score and number of contributors registered. As for what concerns the number of contests hosted, it has an average value which is slightly better than the one of cluster 1. Moving to cluster 2, it encompasses only two platforms with low appeal towards crowd participants and that offer, together with platforms of cluster 1, the lowest level of contest hosted in respect to the sample analysed.

Cluster 1 instead, as just said, has the lowest level of contests hosted (449) and also an average number of contributors which is less than half of the average; however, for what concerns the level of the social network score, it is able to reach the mean value calculated from the whole sample (3,87). As a consequence, it can be ranked as third on a hypothetical leaderboard. In addition, whilst the other clusters are formed by 2 or 3 elements, cluster 1 includes 10 platforms, giving interesting insights about the characteristics of the most platforms examined.

Furthermore, the discussion moves to the two top-performing clusters (3 and 4), indeed, they could be differentiated from the other two (1 and 2) due to higher levels of values assumed in all the analysed variables. For what concerns instead the level of variability of the number of contests hosted, they shown higher values with respect to the previous ones. In fact, as the Box Plot graph suggests, their blue columns are noticeably greater than the one of clusters 1 and 2.

In comparing cluster 3 and cluster 4, it is possible to assess that cluster 4 displays the highest values with respect to the overall sample in all the three dimensions examined, thus being considered the best performing group of platforms; on slightly lower levels lies cluster number 3. With respect to all the other groups, cluster 3 is the one which has a strong variability in the value of social network score, due to the fact that it is composed by three platforms which experienced different levels in the social networks field.

To have a better idea on which are platforms aggregated in each single cluster, it is possible to consider the schema displayed by Table 16.

<i>Cluster 1 - Composition</i>					
	PL_Name	N_Cont_Host	N_Crowd	Score_SocialP	CLU_CS
1	HYVE Crowd	134	97639	3.625364	1
2	Tongal	851	120000	3.9842512	1
3	Battle of Concept	261	21300	3.4657875	1
4	Mindsumo	617	250000	3.326999	1
5	Zooppa	282	450000	4.0551895	1
6	eYeka	1172	383306	4.0627485	1
7	Kaggle	260	67559	4.6069357	1
8	Userfarm	368	120000	3.9488856	1
9	Jovoto	474	80000	3.746593	1
10	InnoCentive	74	380000	3.9634673	1
Mean		449.3	196980.4	3.8786221	

<i>Cluster 2 - Composition</i>					
	PL_Name	N_Cont_Host	N_Crowd	Score_SocialP	CLU_CS
1	Atizo	475	24000	2.8736153	2
2	Challenge.gov	785	250000	2.950018	2
Mean		630	137000	2.9118166	

<i>Cluster 3 - Composition</i>					
	PL_Name	N_Cont_Host	N_Crowd	Score_SocialP	CLU_CS
1	Lego Ideas	23231	825448	3.9136846	3
2	Hypios	54	950000	3.2729051	3
3	TopCoder	100000	1000000	4.7061751	3
Mean		41095	925149.3	3.964255	

<i>Cluster 4 - Composition</i>					
	PL_Name	N_Cont_Host	N_Crowd	Score_SocialP	CLU_CS
1	99 Design	399063	1000000	4.5579722	4
2	Quirky	307473	1240586	4.7816832	4
Mean		353268	1120293	4.6698277	

Table 16: Cluster Composition (Author's personal elaboration)

Obtained findings

As it possible to see in detail, all the above described characteristics are easily verifiable by looking at Table 16. In fact, the top-performer cluster, namely cluster 4, is characterized by two platforms both belonging to the Peer-Vetted Creative Production typology, whilst for what concerns cluster 3 it can be defined as a “residual class” of platforms which were not sufficiently able to be included in the other groups.

Moving the discussion towards cluster 2, it encompasses two platforms belonging to the Broadcast Search typology, which share the same low level of social networks score, that is so bad to preclude the possibility for these platforms to be included in other clusters. Accordingly, cluster 1 is composed by platforms which have similar numbers of contests hosted and an above-average level of social networks score. This last one seems to be the cause of the impediment for platforms belonging to cluster 2 to be included in cluster 1. This evidence is moreover observable in Table 11, with the scatter plot about social networks score that seems to indicate the creation of a cluster with the observations located from just after 3 and 4 on the X-axis.

In conclusion, it is possible to assess that even if the variables related to the number of contests hosted and the number of contributors are strongly heterogeneous and difficult to be grouped, the greater contribution is offered by the social networks score which is more suitable to offer appreciable results with respect to the ability of platforms in exploiting and deploying their engagement power through this innovative communication mean.

3.3 EYEKA CONTESTS-RELATED FINDINGS

For what concerns the contests environment, I decided to analyse data deriving from contests hosted by the eYeka platform, the global leader in Creative Crowdsourcing field. This section will start exposing descriptive findings on the data collected, delineating the state of play and the insights provided by the sample.

Moreover, in the following section, a statistical analysis grounded on basic tools will be illustrated. The collected dataset has been examined to test some hypotheses and to provide statistical results in addition to the descriptive explanations.

3.3.1 DESCRIPTIVE ANALYSIS

The descriptive findings reported in this section are connected with three areas: the industry framework, the crowd composition and the community effect. For the sake of completeness, the Community presence effect will be then deepened in the following section.

Industry and proponents brands

With regard to data collection process, I decided to 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. Moreover, the relevance assumed by the content category, origins controversial questions about the rising of the ideation components in contest proposed, which has recently been assessed by eYeka in its Report (2017).

This simple consideration lead to move towards a deepen analysis of the composition of these categories in terms of industries and company initiators involved in the Creative Crowdsourcing arena.

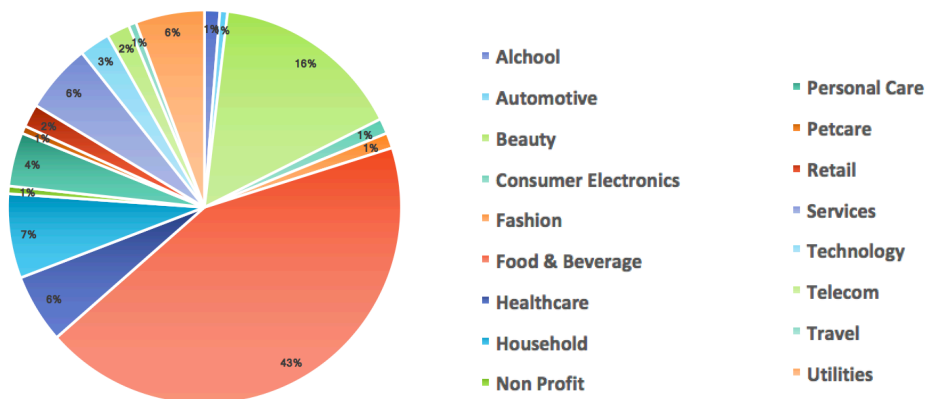


Figure 23: Contest industry classification (Author's personal elaboration)

As reported in Figure 23, the 159 challenges which I collected demonstrated to be proposed in the 43% of the cases by Food and Beverage companies, followed by the Beauty sector ones, which in any case have less than half of the proportion covered by the former. Furthermore, other industries cover a marginal share with respect to the sectors leaders, which absorb quite half of the contests analysed.

Moreover, Food & Beverage companies tend to prefer ideation contests (68%) rather than content contests in adopting Creative Crowdsourcing initiatives, being relevantly above of 10% if compared to the general trend, which recorded ideation contests for the 58% of the total contests in the sample. On the other hand, excepted for the Personal Care industry, evidences resulting from the sample suggest that other categories are driven by ideation contests (precisely for the 77%) as Figure 24 shows.

Noteworthy is the fact that trends reported by eYeka, in its Report, with reference to the last year data, are even more supported by evidences of the sample of the current year⁵⁰. In fact, as displayed in the histogram, it is possible to affirm that ideation contests are conquering even more share in the large majority of the industries, with the only exception of Personal Care which is still driven by content challenges.

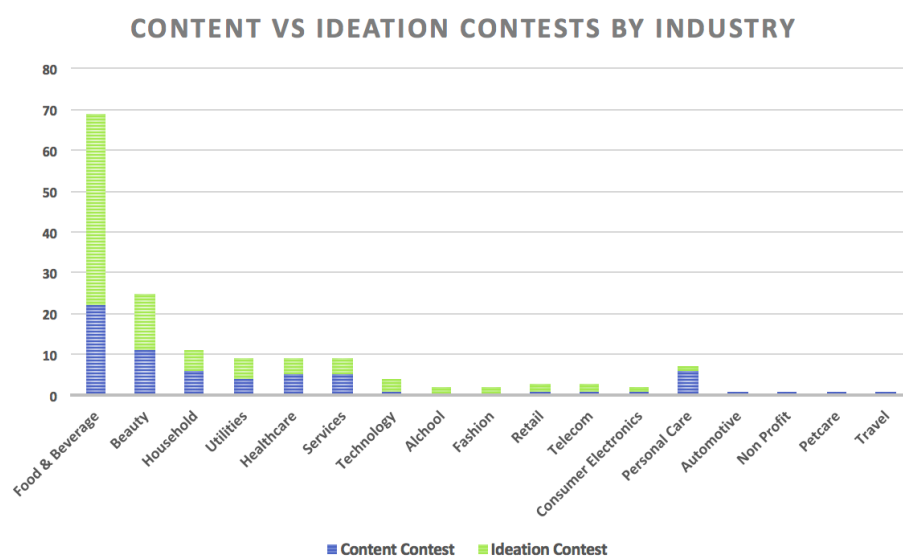


Figure 24: Content vs Ideation contests by industry (Author's personal elaboration)

Additionally, moving from the industry point of view towards the company one, it is possible to assert what are the most active companies in the very recent contests concluded (see Figure 25). As it is possible to state looking at the histogram, the above-average companies are the ones named as FMCG companies, which are mainly multinational companies, with an

⁵⁰ It is fundamental to recall that data was collected between August and September and for this reason the fraction of contest of 2017 collected were solely the ones ended at the closing of data collection.

effective organizational structure, tailored at best for deploying the outcomes provided by this kind of contests⁵¹.

NUMBER OF CONTEST BY COMPANY

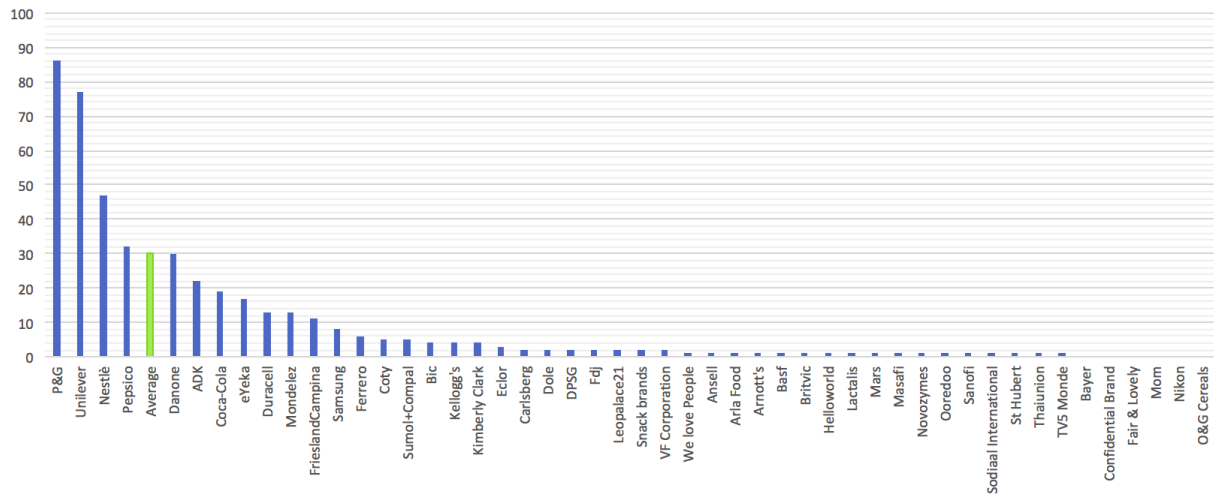


Figure 25: Number of contests proposed by company (Author's personal elaboration)

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 labelled 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. In sustaining this assumption, it is possible to observe Figure 26, in which companies are ordered according to the number of brands (with at least one contest concluded) each one owns.

NUMBER OF DIFFERENT BRANDS BY COMPANY

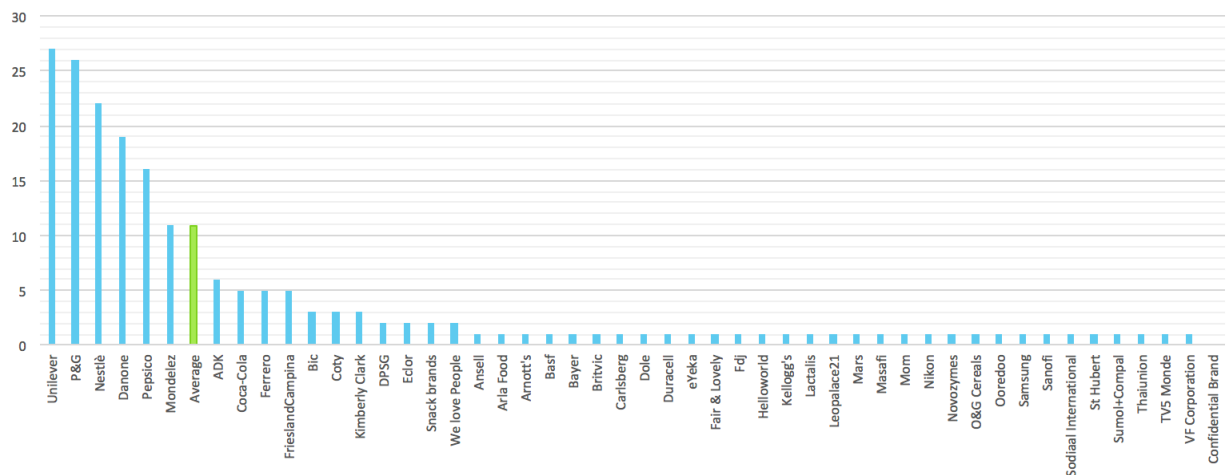


Figure 26: Number of different brands by company (Author's personal elaboration)

⁵¹ In this sense, it is possible to refer to the Absorptive Capacity concept (Cohen, Levinthal 1990).

Not surprisingly, top three ranks are occupied by the same three companies as before: P&G, Unilever and Nestlè, 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.

As a consequence, since the beginning of the collaboration with eYeka, each brand encompasses on average 3,5 contests against the 11 referring to its holding company.

Nonetheless, another interesting perspective is provided by Figure 27, in which the levels of the total prize, its portion reserved for the first winner and the number of contributors who submitted to the challenge are compared.

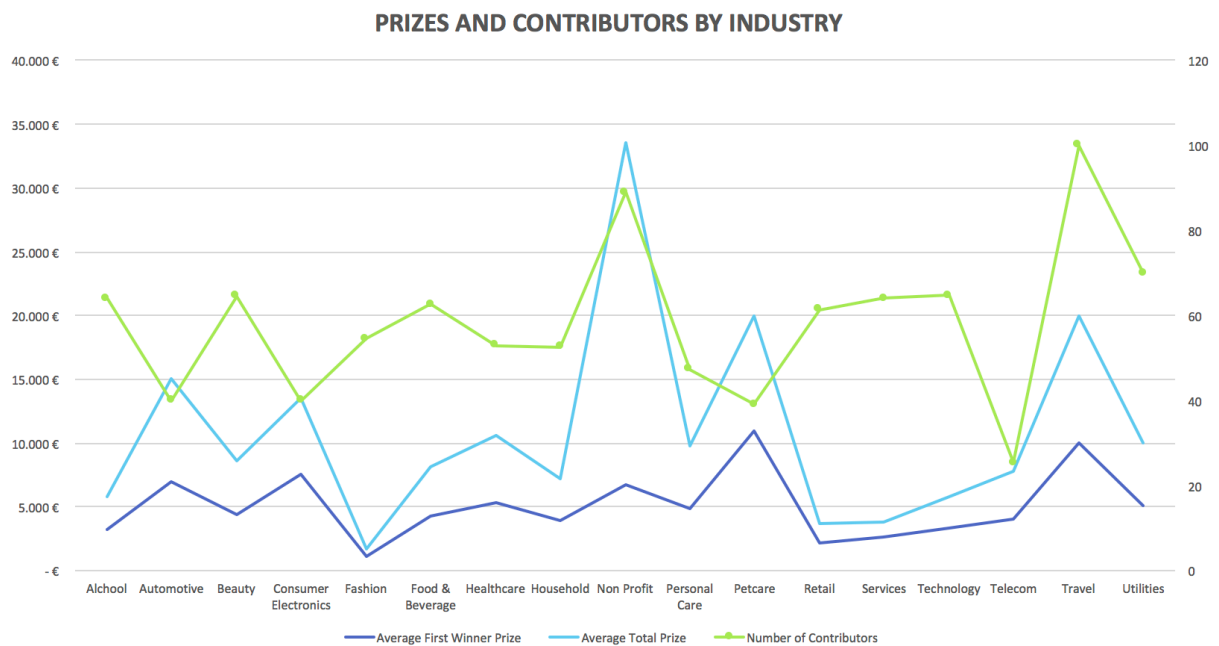


Figure 27: Prizes and contributors by industry (Author's personal elaboration)

As demonstrated by the chart, it is strongly perceptible how the level of the number of contributors did not follow the pattern defined by awarded prizes. In fact, even if in this case data was aggregated by industry, results show how some sectors, even offering inferior prizes, are able to attract more contributors on average. Some clear examples are provided by the Alcohol, Fashion, Food & Beverage, Retail and Services industries, which although having prize levels below the ones set out by Automotive, Consumer Electronic, Healthcare and Petcare, are however able to attract a greater number of contributors with respect to the latter.

This evidence is largely counterintuitive from a general perspective; if instead it would be analysed by referring to the whole bundle of motivational theories, a greater number of contributors in contests offering a lower value of monetary reward can be justified by the presence of intrinsic motivations driving contributors in joining and performing assignments, in line to what argued by Hossain (2012).

The sole two cases in which the traditional pattern is complied, basically the one in which at higher prizes correspond higher number of participants, are the ones from Non-Profit and Travel industries, which are considered to be quite outliers in this sample.

Of course, 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. In a broader sense, this case will constitute a similarity with the idea of winner-takes-all mechanism; in the analysed sample the percentage of the first prize over the total prize lied on average of 55%, suggesting that the described scenario is unlikely to occur.

Crowd

As for the other side of the phenomenon, it is also interesting to assess the magnitude of the crowd, and its main demographics and creative traits. To this purpose, I collected some demographics variables which have been used in defining the identikit of the winner.

In fact, averaging the available age of the top three winners for each contest, it resulted that the average winner age is 34, thus stating that Creative Crowdsourcing is essentially a phenomenon which is targeted to Millennials' generation, aimed at attracting and engaging them in the co-creation pattern.

Likewise, in the top-three winners, only 27% of contributors were women, suggesting indeed that men are the greatest fraction at least in the winners group. In terms of average first prize awarded, women can slightly overcome men in ideation contests, demonstrating as well to have a higher average number of creative score, not only with respect to man but also on the total average (see Figure 28).

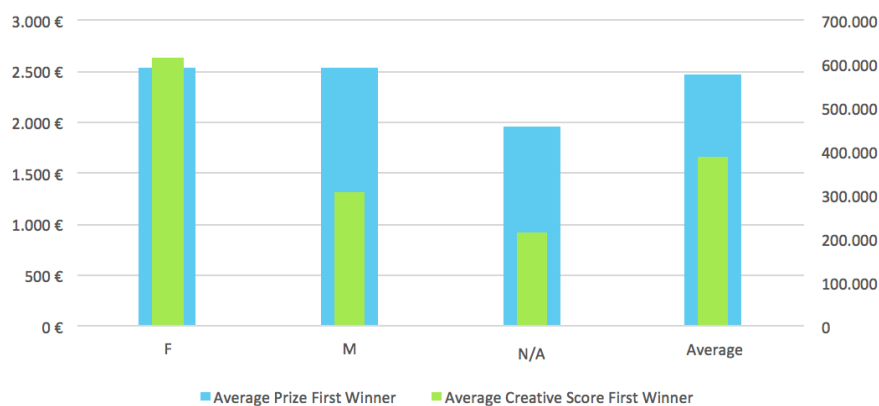


Figure 28: Prize and creative score by gender in Ideation contests (Author's personal elaboration)

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. In Figure 29 are thus shown the companies which offered at least a challenge, sorted by average number of contributors participating in them.

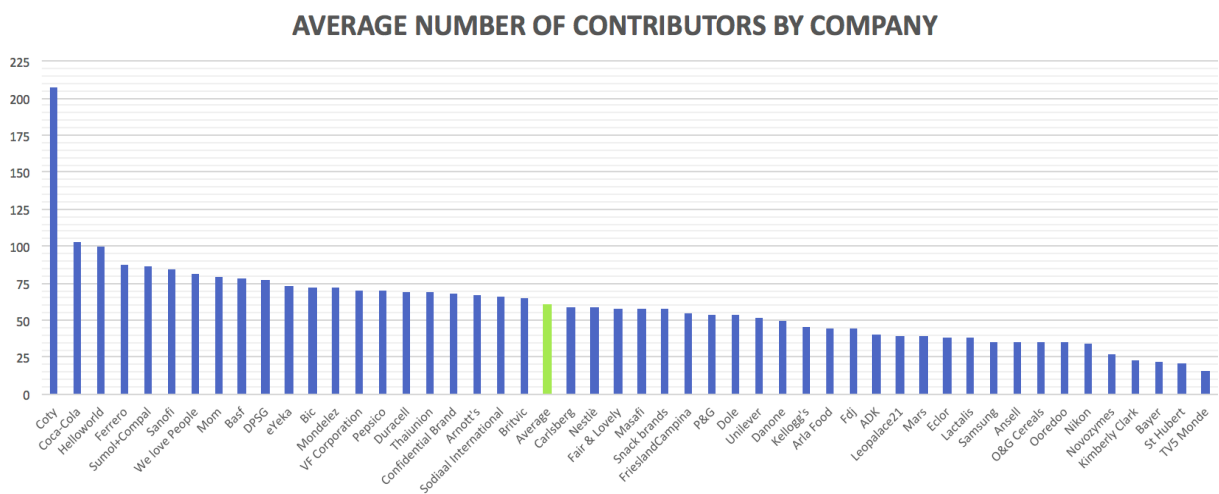


Figure 29: Average number of contributors by company (Author's personal elaboration)

An exception is represented by Coty, which has been able to attract more than two times the average of contributors per company. On the contrary instead, firms which in the previous section were considered the most active in terms of contests offered, in this histogram lie even under the average value, suggesting their inability to be ranked in the highest position with respect to this leaderboard.

Without any doubt, also small groups of solver 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 (see Figure 25).

Moreover, looking to Figure 30, Coty once again demonstrates to be the most able to attract contributors in setting the prize to be awarded. In fact, Coty is the only one able to attract on average the greatest number of contributors on equal level of prize offered, while many top-prizes-offering firms obtained a lower number of contributors with respect to the average level of the sample (last column).

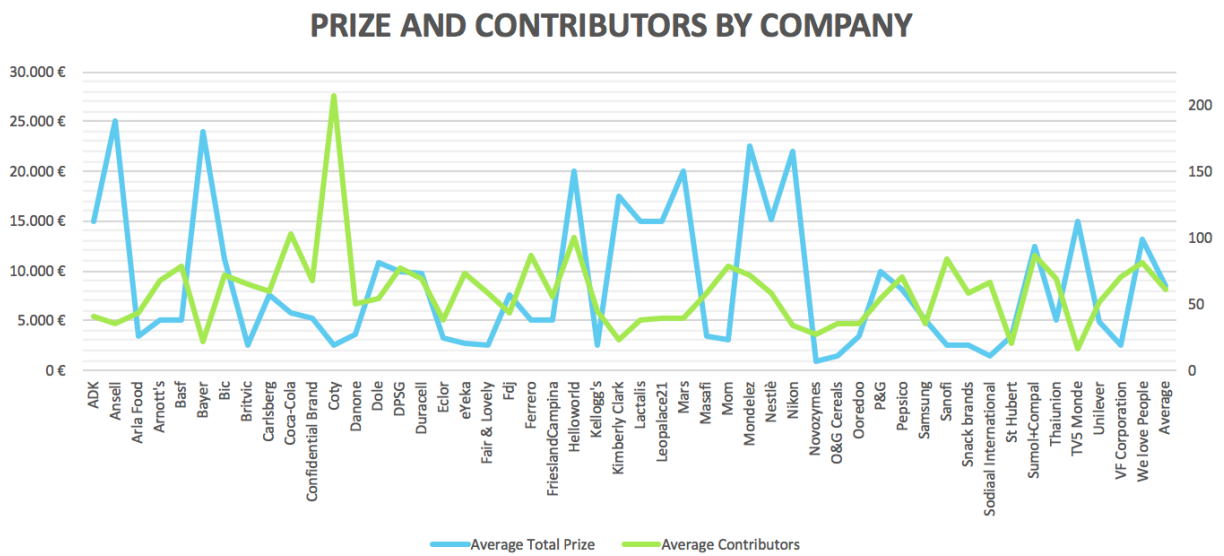


Figure 30: Prize and contributors by company (Author's personal elaboration)

This last evidence is the additional confirmation in supporting that the relation between offered prizes and attracting power, measured in number of contributors joined to the contest, it is not as simple as it could be imagined.

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 Creative Crowdsourcing initiatives.

With respect to Figure 31, it is thus possible to assess how the audience of first winners is mainly composed by individuals who joined to the platform on 2016, but who have at the same time a low level of creative score.

As stated before in the research, creative score is deemed as a measure of the performances and the engagement in platforms initiatives. Neither “veterans” nor “novices” assumed important values in the chart; in fact, the number of first winners registered on 2008 is very low, and as a consequence their creative scores are low as well. Given that at least 9 years are lasted from their registration, this circumstance may be caused by the lack of constant

participation on the activities. On the opposite side instead, for participants entered in 2017, the lower level of the score surely can be explained with the sort range of time in which they might have joined contests and collected creative points. Referring to creative score as a proxy of the goodness of contributors is an interesting aspect, but as for this specific case, its value must be reasoned with respect to the whole picture of the situation.

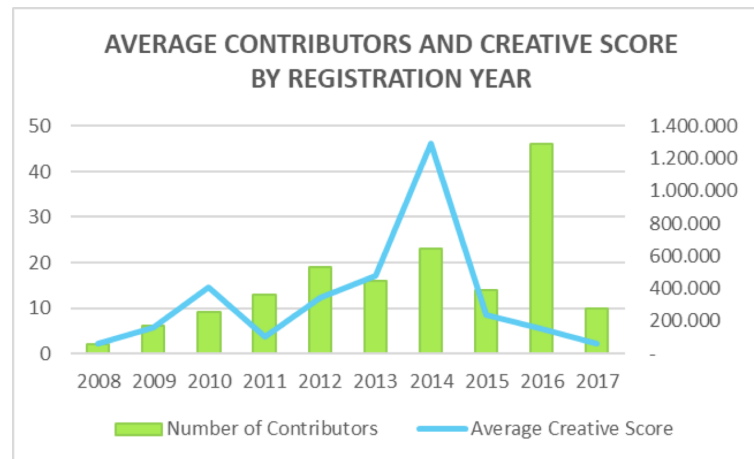


Figure 31: Total number of first winner contributors and creative scores by registration year (Author's personal elaboration)

Another worthwhile insight is the one provided by the share of contests that awarded as first winner an individual which was already the first winner in one or more other contests. In fact, in this case, in the 20% of the contests this circumstance arises, suggesting therefore that two out of ten first winners might be considered as “serial ones”.

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 analysed sample, 107 challenges out of 159 (namely 67%) recorded the existence of the community, restricted to contributors who decide to enrol in that specific contests.

As it is possible to see in Figure 32, 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.

CONTESTS WITH COMMUNITY PRESENCE BY INDUSTRY

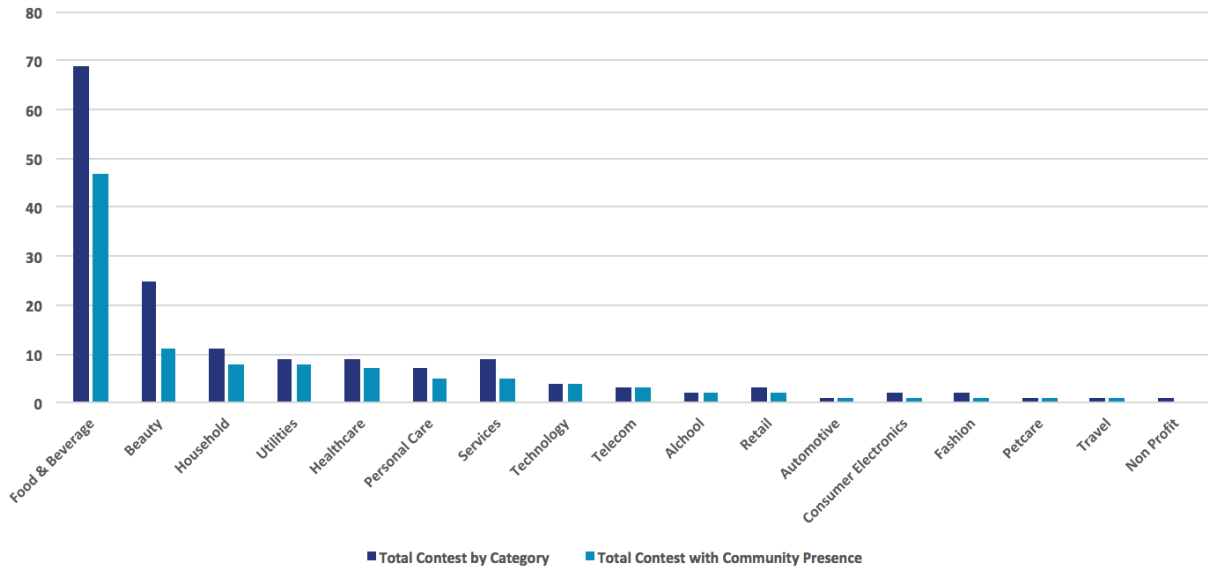


Figure 32: Number of contests with community presence by industry (Author's personal elaboration)

Furthermore, community components were able to identify on average at least 19% of the real winners in judging contributors' submissions. Basically, both the crowd and companies agreed on the best entries in 19% of the cases. 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 Creative Crowdsourcing, but as it possible to asses by Figure 33, the 107 community projects are characterized by a greater average amount for first winner prize, with respect to contests without the community.

WINNERS PRIZES AND CREATIVE SCORES IN BELONGING TO A COMMUNITY CONTEST

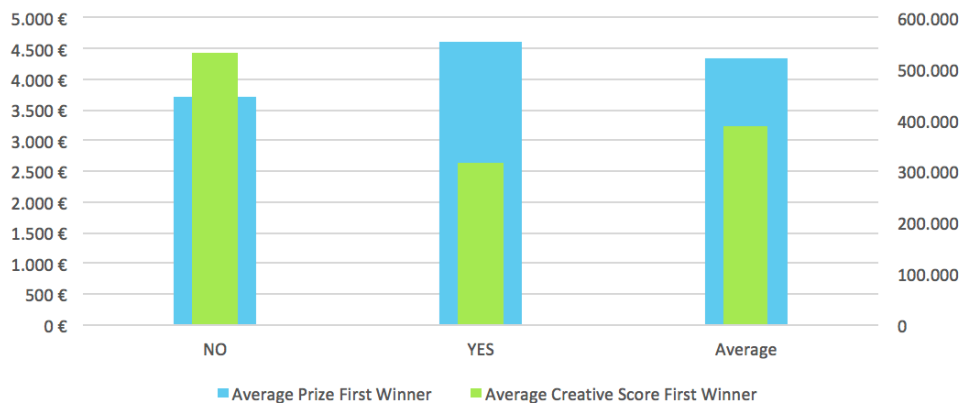


Figure 33: Winners prizes and creative scores in belonging to a community contest (Author's personal elaboration)

What is controversial for this chart though, is the level of creative scores which community projects displayed. In fact, an important suggestion derives from the fact that less “graded” individuals, were able to win higher prizes in community contests.

More in detail, the dataset shows that 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.

Turning back to results proposed by Figure 33, it is hence possible to argue that community contests are characterized by higher prize levels; conversely, these contests are won “novices” that probably are able to ensure novelty, freshness and uncommon outcomes, that are appreciated by proponent firms.

3.3.2 STATISTICAL ANALYSIS

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.

As it is possible to see, Table 17 lists all the variables considered to perform the evaluation.

VARIABLE NAME	DEFINITION
Com	This variable assumes the value 1 if the contest has the community provision, 0 otherwise.
Ideation	This variable assumes the value 1 if the contest belongs to the Ideation category, 0 otherwise.
Tot_Prize	Value of the total prize offered to contest winners.
Num_W	Number of pre-determined winners of the contest.
W_Prize	Value of the first-winner prize.
W_CreatScore	Number of creative score associated with the first-winner contributor.
N_Contrib	Number of contest participants.
N_Media_Acc	Number of entries submitted.

Table 17: Variable table (Author's personal elaboration)

First of all, I tried to verify if the sample presented the linearity requirements necessary to perform a linear regression; then, after having observed the scatter plot, not a single couple of variables comply with this prerequisite.

The linear regression model hence could not be applied in the examination of the phenomena; as a consequence, I started from the discussion of the correlation matrix in understanding the trends among variables.

Correlation Matrix

As it is possible to observe in Table 18, correlations between the most important variables are displayed. In the table only significant correlations, that is to say the ones with a significance level $\alpha=0,10$, are available, and the ones with a significance level $\alpha=0,05$ are highlighted with the asterisk symbol.

<i>Correlation Matrix</i>						
Variable	Tot_Prize	Num_W	W_Prize	W_CreatScore	N_Contrib	N_Media_Acc
Tot_Prize	1.0000					
Num_W	0.3199* 0.0000	1.0000				
W_Prize	0.9126* 0.0000	0.2146* 0.0066	1.0000			
W_CreatScore	-0.1936* 0.0145		-0.2078* 0.0086	1.0000		
N_Contrib	-0.2453* 0.0018	0.2659* 0.0007	-0.2928* 0.0002		1.0000	
N_Media_Acc	-0.2948* 0.0002	0.2443* 0.0019	-0.3431* 0.0000		0.9596* 0.0000	1.0000

Table 18: Correlation Matrix (Author's personal elaboration)

TOTAL PRIZES proposed in contests 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, this trend is also supported by a strong statistical significance. Obviously, 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 instead, 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 behaviour 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.

Means comparison test

After having described the most important evidences from the correlation matrix, I decided to deepen the following circumstances: the presence of the community feature and the belonging of the project to Ideation category.

As stated before, being impossible to test these variables with a linear regression model, I decided to conduct an analysis based on the different characteristics identifiable in sub-classes belonging to the modalities of the qualitative variables considered.

The variables examined with respect to just mentioned sub-samples, regard 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.

The statistical instrument chosen to conduct this analysis was the t-test; as described in the statistical section of the Platforms database, the assumption of normality of the distribution must be verify before its application.

In verifying this prerequisite, I decided to conduct the Shapiro Wilk test on the normality of the distribution; as it is possible to see in Table 19, it provided negative results to the tested assumption.

<i>Shapiro-Wilk W test for normal data</i>					
Variable	Obs	W	V	z	Prob>z
Tot_Prize	159	0.81452	22.688	7.099	0.00000
Num_W	159	0.72839	33.225	7.966	0.00000
W_Prize	159	0.80891	23.375	7.167	0.00000
W_CreatScore	159	0.51270	59.609	9.295	0.00000
N_Contrib	159	0.83257	20.481	6.866	0.00000
N_Media_Acc	159	0.77831	27.118	7.504	0.00000

Table 19: Shapiro Wilk normality test (Author's personal elaboration)

Moving from these results, I decided to perform the analysis with the Wilcoxon-Mann-Whitney U test as happened even for the Platforms section. In this sense, the functioning of the adopted tool is explained in the previous section of the statistical analysis.

Community presence

The first dichotomous variable utilized to classify the two sub-samples to be compared regarded the presence of the COMMUNITY feature in contests examined. After having

postulated the dimension which identifies the two groups I suggested many hypotheses to be verified.

The analysis started with the examination of the NUMBER OF PRE-DETERMINED WINNERS among the two different groups. In fact, this variable is useful in assessing the potential attracting power towards contributors since, higher the chances of being winner, higher the contributors that submit to the challenge (as supported by the correlation matrix above discussed); in this sense, the hypothesis formulated is the following:

H1: Contests with community presence are characterized by different numbers of predetermined winners with respect to contests without community.

<i>Summary for variable:</i>		Num_W	
<i>by categories of:</i>		Com	
Com	mean	sd	N
0	3.442308	1.243232	52
1	3.700935	1.716814	107
Total	3.616352	1.578329	159

Table 20: Observed values for the average number of pre-determined winners of the two groups (Author's personal elaboration)

As it is possible to assess by observing Table 20, the mean of the NUMBER OF PRE-DETERMINED WINNERS in contests characterized by the community presence was slightly higher than in the other group.

The result obtained from the test (see Table 21) 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 is different between the two kinds of contest.

Moreover, the esteemed probability for the number of winners to be larger for the non-community contests, did not provided any useful indications because of the non-rejection of the null hypothesis.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Com	obs	rank sum	expected
0	52	3867	4160
1	107	8853	8560
combined	159	12720	12720
unadjusted variance		74186.67	
adjustment for ties		-21587.91	
adjusted variance		52598.76	
Ho: Num_W(Com==0) = Num_W(Com==1)			
z =		-1.278	
Prob > z = (p-value) =		0.2014	
P{Num_W(Com==0) > Num_W(Com==1)} =			0.447

Table 21: Wilcoxon-Mann-Whitney U test on numbers of pre-determined winners among the two groups (Author's personal elaboration)

The second variable to be tested refers to value of the TOTAL PRIZE OFFERED among the two different groups. In this sense, the formulated hypothesis was the following:

H2: Contests with community presence are characterized by different values of total prizes with respect to contests without community.

<i>Summary for variable:</i>		Tot_Prize	
<i>by categories of:</i>		Com	
Com	mean	sd	N
0	7119.231	7761.267	52
1	9011.215	7270.337	107
Total	8392.453	7463.112	159

Table 22: Observed values for the average value of the total prizes offered of the two groups (Author's personal elaboration)

By observing Table 22, the average of TOTAL PRIZES in contests characterized by the community presence was greater than in the other group.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Com	obs	rank sum	expected
0	52	3449	4160
1	107	9271	8560
combined	159	12720	12720
unadjusted variance		74186.67	
adjustment for ties		-1147.71	
adjusted variance		73038.96	
Ho: Tot_Prize(Com==0) = Tot_Prize(Com==1)			
z =		-2.631	
Prob > z = (p-value) =		0.0085	
P{Tot_Prize(Com==0) > Tot_Prize(Com==1)} =			0.372

Table 23: Wilcoxon-Mann-Whitney U test on values of the total prize among the two groups (Author's personal elaboration)

The result provided by the test (see Table 23) suggested that there was strong statistical significance to reject the null hypothesis ($\alpha = 0,01$); 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 ($P=1-0,372=63\%$).

The third variable to be tested refers to value of the FIRST-WINNERS PRIZE OFFERED among the two different groups. In this sense, the hypothesis formulated was the following:

H3: Contests with community presence are characterized by different values of first-winners' prizes with respect to contests without community.

With respect to Table 24, the mean of the FIRST-WINNERS' PRIZE in contests characterized by the community presence was larger than in the other group.

Summary for variable:		W_Prize	
by categories of:		Com	
Com	mean	sd	N
0	3724.038	3702.43	52
1	4620.093	3505.917	107
Total	4327.044	3584.512	159

Table 24: Observed values for the average value of the first-winners' prizes offered of the two groups (Author's personal elaboration)

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Com	obs	rank sum	expected
0	52	3475.5	4160
1	107	9244.5	8560
combined	159	12720	12720
unadjusted variance		74186.67	
adjustment for ties		-1445.59	
adjusted variance		72741.07	
Ho: W_Prize(Com==0) = W_Prize(Com==1)			
z =		-2.538	
Prob > z = (p-value) =		0.0112	
P{W_Prize(Com==0) > W_Prize(Com==1)} =			0.377

Table 25: Wilcoxon-Mann-Whitney U test on values of the first-winners' prizes among the two groups (Author's personal elaboration)

Obtained result from the test (see Table 25) highlighted that there was statistical significance to reject the null hypothesis ($\alpha = 0,05$); therefore, the tested proposition could be supported. Practically speaking, it is possible to affirm that the values of FIRST-WINNERS' PRIZES offered are different between the two categories of contests. Likewise, looking at the reported probability, the values of first-winners' prizes seem likely to be greater in the case of contests with community feature. Indeed, the estimated probability of first-winners' prizes to be larger in the case of community presence is about 63%. Obviously, this result is similar to the one proposed by the H2 hypothesis due to the greater correlation between the two variables.

The analysis proceeded with the examination of the VALUE OF CREATIVE SCORES of first winners in the two different groups. In fact, this variable is useful in assessing the level of engagement and experience of contributors registered to the challenges. In this respect, the hypothesis formulated was the subsequent:

H4: Contests with community presence are characterized by different values of first-winners' creative scores with respect to contests without community.

<i>Summary for variable:</i>			
<i>by categories of:</i>			
Com	mean	sd	N
0	531621.3	929587	52
1	317757.2	572718.4	107
Total	387700.2	713521.9	159

Table 26: Observed values for the average value of first-winners' creative scores of the two groups (Author's personal elaboration)

According to values provided by Table 26, the mean of the FIRST-WINNERS' CREATIVE SCORES in contests characterized by the community presence was quite lower than in the other group.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Com	obs	rank sum	expected
0	52	4328.5	4160
1	107	8391.5	8560
combined	159	12720	12720
unadjusted variance		74186.67	
adjustment for ties		-3.88	
adjusted variance		74182.79	
Ho: W_CreatScore(Com==0) = W_CreatScore(Com==1)			
z =		0.619	
Prob > z = (p-value) =		0.5361	
P{W_CreatScore(Com==0) > W_CreatScore(Com==1)} =			0.530

Table 27: Wilcoxon-Mann-Whitney U test on numbers of first-winners creative score among the two group (Author's personal elaboration)

Test's result (see Table 27) advised that there was no statistical significance to reject the null hypothesis (p-value=0,53); accordingly, the tested assumption could not be confirmed. In fact, it is not possible to affirm that the NUMBERS OF FIRST-WINNERS' CREATIVE SCORES are different between the two kinds of contest.

Further, the examination moved to the NUMBERS OF CONTRIBUTORS who submitted in the contests of the two different groups. In fact, this variable is useful in assessing the availability of new potential ideas, based on individuals registered to challenges. In this sense, the hypothesis formulated was the following:

H5: Contests with community presence are characterized by different numbers of contributors with respect to contests without community.

<i>Summary for variable:</i>		N_Contrib	
<i>by categories of:</i>		Com	
Com	mean	sd	N
0	66.21154	40.45784	52
1	57.85047	31.77599	107
Total	60.58491	34.94613	159

Table 28: Observed values for the average number of contributors of the two groups among the two groups (Author's personal elaboration)

Considering Table 28, the average number of CONTRIBUTORS in contests characterized by the community presence is quite lower than in the other group.

The result obtained from the test (see Table 29) suggested that there was no statistical significance to reject the null hypothesis (p-value = 0,23).

Therefore, the data did not confirm the tested proposition. Hence, it is not possible to affirm that the NUMBER OF CONTRIBUTORS is different between the two kinds of contest.

Additionally, even in this case the estimated probability did not add interesting outcomes given the fact that the null hypothesis was not-rejected.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Com	obs	rank sum	expected
0	52	4483.5	4160
1	107	8236.5	8560
combined	159	12720	12720
unadjusted variance		74186.67	
adjustment for ties		-22.81	
adjusted variance		74163.85	
Ho: N_Contrib(Com==0) = N_Contrib(Com==1)			
z =		1.188	
Prob > z = (p-value) =		0.2349	
P{N_Contrib(Com==0) > N_Contrib(Com==1)} =			0.558

Table 29: Wilcoxon-Mann-Whitney U test on numbers of contributors among the two groups (Author's personal elaboration)

Ultimately, the last test to be conducted regarded the examination of the NUMBER OF MEDIA uploaded in contests of the two different groups. In fact, this variable is useful in assessing the quantity of collectable ideas for challenges. In this sense, the hypothesis conveyed was the following:

H6: Contests with community presence are characterized by different numbers of uploaded media with respect to contests without community.

<i>Summary for variable:</i>		N_Media_Acc	
<i>by categories of:</i>		Com	
Com	mean	sd	N
0	97.30769	69.82907	52
1	82.75701	55.81807	107
Total	87.51572	60.91859	159

Table 30: Observed values for the average number of media uploaded of the two groups (Author's personal elaboration)

As provided by Table 30, data stated that the average number of MEDIA UPLOADED in contests characterized by the community presence was lower than in the other group.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Com	obs	rank sum	expected
0	52	4551.5	4160
1	107	8168.5	8560
combined	159	12720	12720
unadjusted variance		74186.67	
adjustment for ties		-15.17	
adjusted variance		74171.50	
Ho: N_Media_Acc(Com==0) = N_Media_Acc(Com==1)			
z =		1.438	
Prob > z = (p-value) =		0.1506	
P{N_Media_Acc(Com==0) > N_Media_Acc(Com==1)} =			0.570

Table 31: Wilcoxon-Mann-Whitney U test on the number of contributors (Author's personal elaboration)

Outcomes reported by the test (see Table 31) suggested that there was no statistical significance to reject the null hypothesis (p-value = 0,15); as a consequence, the tested assumption could not be supported. Namely, it is not possible to affirm that the NUMBER OF MEDIA UPLOADED is different between the two categories of contests.

Ideation contests

The second dichotomous variable employed to classify the two groups to be compared regarded the belonging to the Ideation category for the examined contests. In fact, this circumstance is very useful to understand future trends which could impact on Creative Crowdsourcing ecosystem. After having postulated the dimension which identifies the two groups I proposed many hypotheses to be verified.

This second analysis started as well as the first, with the examination of the NUMBER OF PRE-DETERMINED WINNERS among the two different groups. In fact, this variable is useful in assessing the potential appealing power towards contributors since, the higher chances of being winner, the more contributors submit to the challenge. In this sense, the hypothesis formulated was the following:

H7: Contests belonging to Ideation category are characterized by different numbers of predetermined winners with respect to contests belonging to Content category.

Summary for variable:		Num_W	
by categories of:		Ideation	
Ideation	mean	sd	N
0	4	2.139102	67
1	3.336957	.9051401	92
Total	3.616352	1.578329	159

Table 32: Observed values for the average number of pre-determined winners of the two groups (Author's personal elaboration)

As it is possible to assess by observing Table 32, the average NUMBER OF PRE-DETERMINED WINNERS in contests belonging to Ideation category was slightly lower than in the other group.

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Ideation	obs	rank sum	expected
0	67	5957.5	5360
1	92	6762.5	7360
combined	159	12720	12720
unadjusted variance		82186.67	
adjustment for ties		-23915.86	
adjusted variance		58270.80	
Ho: Num_W(Ideation==0) = Num_W(Ideation==1)			
z =		2.475	
Prob > z = (p-value) =		0.0133	
P{Num_W(Ideation==0) > Num_W(Ideation==1)} =			0.597

Table 33: Wilcoxon-Mann-Whitney U test on numbers of pre-determined winners among the two groups (Author's personal elaboration)

The result obtained from the test (see Table 33) suggested that there was quite strong statistical significance to reject the null hypothesis; as a consequence, the tested proposition could be supported. Basically, it is possible to affirm that the NUMBER OF PRE-DETERMINES WINNERS is 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 subsequent variable to be tested refers to the value of TOTAL PRIZES offered among the two different groups. In this sense, the hypothesis formulated was the following:

H8: Contests belonging to Ideation category are characterized by different values of total prizes with respect to contests belonging to Content category.

Summary for variable:		Tot_Prize	
by categories of:		Ideation	
Ideation	mean	sd	N
0	13805.97	8646.665	67
1	4450	2278.302	92
Total	8392.453	7463.112	159

Table 34: Observed values for the average value of the total prizes offered of the two groups (Author's personal elaboration)

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Ideation	obs	rank sum	expected
0	67	7357	5360
1	92	5363	7360
combined	159	12720	12720
unadjusted variance		82186.67	
adjustment for ties		-1271.47	
adjusted variance		80915.20	
Ho: Tot_Prize(Ideation==0) = Tot_Prize(Ideation==1)			
z =		7.020	
Prob > z = (p-value) =		0.0000	
P{Tot_Prize(Ideation==0) > Tot_Prize(Ideation==1)} =			0.824

Table 35: Wilcoxon-Mann-Whitney U test on values of the total prize among the two groups (Author's personal elaboration)

By observing Table 34, the mean of the TOTAL PRIZES in contests belonging to Ideation category was lower than in the other group.

The result provided by the test (see Table 35) suggested that there was strong statistical significance to reject the null hypothesis ($\alpha = 0,01$). Accordingly, the tested assumption could be confirmed. Which is to say that VALUES OF TOTAL PRIZES offered are different between the two kinds of contests.

Moreover, looking at the esteemed probability displayed by the test and at the observed values, the difference in total prizes seems likely to be greater in the case of contents belonging to Content category, confirming the above described circumstance (82%).

The next variable to be tested refers to value of the FIRST-WINNERS' PRIZES offered among the two different groups. In this sense, the hypothesis formulated was the following:

H9: Contests belonging to Ideation category are characterized by different values of first-winners' prizes with respect to contests belonging to Content category.

<i>Summary for variable:</i>		<i>W_Prize</i>	
<i>by categories of:</i>		<i>Ideation</i>	
Ideation	mean	sd	N
0	6885.821	4204.812	67
1	2463.587	1074.431	92
Total	4327.044	3584.512	159

Table 36: Observed values for the average of first-winners' prizes offered of the two groups (Author's personal elaboration)

With respect to Table 36, the observed average for the FIRST-WINNERS' PRIZES in contests belonging to Ideation category was quite lower, even more than 2,5 times the one of the other group. As it is possible to imagine, this variable is strictly connected with the above described one (total prize), thus implying a similar behaviour.

Obtained result from the test (see Table 37) highlighted that there was, as expected, a strong statistical significance to reject the null hypothesis ($\alpha = 0,01$). Therefore, the tested proposition could be supported. Practically speaking, it is possible to affirm that FIRST-WINNERS' PRIZES are different between the two categories of contests. Likewise, looking at the probability reported, the value of first-winners' prizes seems likely to be greater in the case of contests belonging to the Content category.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Ideation	obs	rank sum	expected
0	67	7322.5	5360
1	92	5397.5	7360
combined	159	12720	12720
unadjusted variance		82186.67	
adjustment for ties		-1601.48	
adjusted variance		80585.18	
Ho: W_Prize(Ideation==0) = W_Prize(Ideation==1)			
z =		6.913	
Prob > z = (p-value) =		0.0000	
P{W_Prize(Ideation==0) > W_Prize(Ideation==1)} =			0.818

Table 37: Wilcoxon-Mann-Whitney U test on values of first-winners' prizes among the two groups (Author's personal elaboration)

The analysis proceeded with the investigation of the VALUES OF CREATIVE SCORES of first winners in the two different groups. In fact, this variable is useful in assessing the level of engagement and expertise of contributors registered to the contests. In this respect, the hypothesis formulated was the subsequent:

H10: Contests belonging to Ideation category are characterized by different numbers of first-winners' creative scores with respect to contests belonging to Content category.

<i>Summary for variable:</i>		W_CreatScore	
<i>by categories of:</i>		Ideation	
Ideation	mean	sd	N
0	385681.8	770279.6	67
1	389170.1	673515	92
Total	387700.2	713521.9	159

Table 38: Observed values for the average of first-winners' creative scores of the two groups (Author's personal elaboration)

Assessing values provided by Table 38, the mean of the FIRST-WINNERS' CREATIVE SCORES in contests belonging to Ideation category was slightly higher than in the other group.

<i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>			
Ideation	obs	rank sum	expected
0	67	4886	5360
1	92	7834	7360
combined	159	12720	12720
unadjusted variance		82186.67	
adjustment for ties		-4.29	
adjusted variance		82182.37	
Ho: W_CreatScore(Ideation==0) = W_CreatScore(Ideation==1)			
z =		-1.653	
Prob > z = (p-value) =		0.0982	
P{W_CreatScore(Ideation==0) > W_CreatScore(Ideation==1)} =			0.423

Table 39: Wilcoxon-Mann-Whitney U test on numbers of first-winners creative score among the two group (Author's personal elaboration)

Test's result (see Table 39) suggested that there was a not so strong statistical significance to reject the null hypothesis. In fact, with a significance level $\alpha = 0,05$ the null hypothesis could not be rejected. Accordingly, the tested assumption was not confirmed. In fact, it is not possible to affirm that the VALUES OF FIRST-WINNERS' CREATIVE SCORES are different between the two kinds of contest. However, with an $\alpha = 0,1$ the existence of a difference would have been significant.

Further, the examination moved to the NUMBER OF CONTRIBUTORS who submitted in contests of the two different groups. In this regard, the hypothesis formulated was the following:

H11: Contests belonging to Ideation category are characterized by different numbers of contributors with respect to contests belonging to Content category.

Summary for variable:		N_Contrib	
by categories of:		Ideation	
Ideation	mean	sd	N
0	52.89552	34.20754	67
1	66.18478	34.58988	92
Total	60.58491	34.94613	159

Table 40: Observed values for the average number of contributors of the two groups (Author's personal elaboration)

Considering Table 40, the average number of CONTRIBUTORS in contests belonging to Ideation category was higher than in the other group.

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Ideation	obs	rank sum	expected
0	67	4454	5360
1	92	8266	7360
combined	159	12720	12720
unadjusted variance		82186.67	
adjustment for ties		-25.27	
adjusted variance		82161.39	
Ho: N_Contrib(Ideation==0) = N_Contrib(Ideation==1)			
z =		-3.161	
Prob > z = (p-value) =		0.0016	
P{N_Contrib(Ideation==0) > N_Contrib(Ideation==1)} =			0.353

Table 41: Wilcoxon-Mann-Whitney U test on numbers of contributors among the two groups (Author's personal elaboration)

The result obtained from the test (see Table 41) suggested that there was strong statistical significance to reject the null hypothesis. Therefore, the data confirmed the tested proposition. Moreover, it is possible to affirm that the NUMBER OF CONTRIBUTORS is different between the two typologies of contest.

Additionally, in this case, the esteemed probability ($P=1-0,35= 65\%$), combined with the indication of the observed values, provided interesting insights about the ability to engage greater contributors than the other group.

Ultimately, the last test to be conducted regarded the examination of the NUMBER OF MEDIA uploaded in challenges of the two different contest typologies. In this sense, the hypothesis conveyed was the following:

H12: Contests belonging to Ideation category are characterized by different numbers of uploaded media with respect to contests belonging to Content category.

Summary for variable:		N_Media_Acc	
by categories of:		Ideation	
Ideation	mean	sd	N
0	73.23881	59.04238	67
1	97.91304	60.46262	92
Total	87.51572	60.91859	159

Table 42: Observed values for the average number of media uploaded of the two groups (Author's personal elaboration)

As provided by Table 42, data stated that the average number of MEDIA UPLOADED in contests belonging to Ideation category was higher than in the group of contests belonging to Content category.

Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test			
Ideation	obs	rank sum	expected
0	67	4293	5360
1	92	8427	7360
combined	159	12720	12720
unadjusted variance		82186.67	
adjustment for ties		-16.81	
adjusted variance		82169.86	
Ho: N_Media_Acc(Ideation==0) = N_Media_Acc(Ideation==1)			
z =		-3.722	
Prob > z = (p-value) =		0.0002	
P{N_Media_Acc(Ideation==0) > N_Media_Acc(Ideation==1)} =			0,327

Table 43: Wilcoxon-Mann-Whitney U test on the number of contributors (Author's personal elaboration)

The outcome reported by the test (see Table 43) suggested that there was strongly statistical significance to reject the null hypothesis ($\alpha = 0,01$). As a consequence, the tested assumption could be supported. Namely, it is possible to affirm that the NUMBER OF MEDIA uploaded is different between the two categories of contests.

Moreover, in this case exactly as in the previous one, the estimated probability of the number of media uploaded to be greater for contest belonging to Ideation category whit respect to the Content category, is even higher ($P=1-0,33= 66\%$).

Obtained findings

Conducted tests were performed on the two variables which could represent at best the current trends towards Creative Crowdsourcing contests. In this sense, for what concerns the community effect, the values assumed by variables of interest have been investigated.

With respect to the community feature, challenges which were equipped with did not demonstrated to experience significant differences in the number of contributors joined. Additionally, as it was possible to expect, the same was 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. Therefore, this last variable turned out to be not significant also in the comparison conducted with reference to Ideation contests. The only statistically significant difference instead, was the one related to the total prizes awarded; in respect to this variable in fact, community challenges proved to award higher compensations, which are likely to impact on the motivations of contributors.

For what concerns instead the analysis about Ideation contests, they evidenced to be characterized by lower levels both of prizes proposed and of number of winners awarded. Again, the lower level of prizes could be explained by the smaller productive exertion required in the fulfilment 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, 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.

CONCLUSIONS

Creative Crowdsourcing, has rapidly turned tables in less than two years, moving to an always stronger relevance of Ideation contests against content creation; consequently, I decided to research in this thesis its core elements in order to provide a significant contribution for what concerns this contemporary research area.

In this sense, I 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. This thesis thus advice companies on what kind of contests format is more suitable to be implemented in order 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 Creative Crowdsourcing.

The first subject which has been 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 of all, 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, I 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 is possible to suggest that platforms hosting Creative 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, I examined 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 have to 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 increases 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, the majority 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 Creative 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 Creative 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.

APPENDIX

APPENDIX 1 – PLATFORMS

In the Table below all the platforms recorded in the dedicated Database are displayed. The last access on the websites was on September 12, 2017.

Platform Name	URL	Areas Involved	Year of Foundation	Country
99 Design	https://99designs.com	Marketing & Communication	2008	USA
Agorize	https://www.agorize.com	Innovation	2011	France
Amazon Mechanical Turk	https://www.mturk.com	Human Intelligence Task / Crowdfunding	2005	USA
Atizo	https://www.atizo.com/servlet/hype/IMT?userAction=Brow	Product Design/ Marketing	2008	Switzerland
Battle of Concept	https://www.battleofconcepts.nl/	Innovation	2007	Netherlands
Challenge.gov	https://www.challenge.gov	Governmental	2010	USA
Deloitte Pixel	https://www2.deloitte.com/uk/en/pages/innovation/solutions/deloitte-pixel.html#5	Consulting	2016	USA
eYeka	https://it.eyeka.com/	Marketing & Communication	2006	France
Hypios	https://www.hypios-ci.com/welcome	Innovation	2008	France
HYVE Crowd	https://www.hyvecrowd.net/home.php	Innovation	2008	Germany
InnoCentive	https://www.innocentive.com	Innovation	2001	USA
Jovoto	https://www.jovoto.com/	Product Design/ Marketing	2007	Germany
Kaggle	https://www.kaggle.com/	Innovation	2010	USA
Lego Ideas	https://ideas.lego.com	Product Design/ Marketing	2008	Denmark
Mindsumo	https://www.mindsumo.com	Innovation	2011	USA
OpenIdeo	https://openideo.com	Social Good	2008	USA
P&G Connect+Develop	http://www.pgconnectdevelop.com/	Product Design/ Marketing	2013	USA
Quirky	https://www.quirky.com/	Product Design/ Marketing	2009	Usa
The Unilever Open Innovation	https://foundry.unilever.com/	Product Design/ Marketing	2014	Netherlands
Tongal	https://tongal.com/	Marketing & Communication	2009	USA
TopCoder	https://www.topcoder.com/	Innovation	2001	USA
Userfarm	https://www.userfarm.com	Marketing & Communication	2006	Italy
Zooppa	https://www.zooppa.com/it/	Marketing & Communication	2007	USA

APPENDIX 2 – EYEKA CONTESTS

In the Table below all the platforms recorded in the dedicated Database are displayed. The last access on the websites was on September 12, 2017.

Name of the Contest	Contest Category	Name of the Brand	Name of the Company
"Probably the Best"	Activation	Carlsberg	Carlsberg
3D App for Smartphone	Service & Experience Design	Trinamix	Basf
A Drink With Every Food Order	Activation	Coca-Cola	Coca-Cola
Age of Biology	Activation	Novozymes	Novozymes
Agusha -best support for mothers	Communication	Agusha	Pepsico
Always Liners - Unleash Femininity	Communication	Always	P&G
Always Origami	Product Innovation	Always	P&G
ARIEL - Big Spectacle	Communication	Ariel	P&G
Ariel Family	Packaging	Ariel	P&G
Ariel The Challenge	Content	Ariel	P&G
Bebelac - Packaging	Packaging	Bebelac	Danone
Berocca Social Content Video	Content	Berocca	Bayer
Bic 4Colours Coolness	Communication	4 Couleurs	Bic
Bic 4Colours Video	Content	4 Couleurs	Bic
BioMax, the challenger yogurt for great health	Communication	BioMax	Pepsico
Breakfast Innovation	Product Innovation	Confidential Brand	Confidential Brand
Bring Tuna Outside	Product Innovation	Petit Navire	Thaiunion
Catisfaction - Pack Attack	Content	Catisfaction	Mars
Chaussee aux Moines	Content	Chausee aux Moines	Lactalis
Chudo - inspiring family warmth	Communication	Chudo	Pepsico
CLEAR Dandruff Stories	Content	CLEAR	Unilever
CLEAR Ice Cool Menthol	Communication	CLEAR	Unilever
CLEAR Man -Shampoo Label Design	Point of Sale	CLEAR	Unilever
CLEAR Sustainable Living Plan	Communication	CLEAR	Unilever
Coca-Cola "Eyes Closed"	Communication	Coca-Cola	Coca-Cola
Cornetto Social Media - When Creamy met Crunchy	Activation	Cornetto	Unilever
Credit Card's Irresistible new Benefits	Service & Experience Design	Confidential Brand	Confidential Brand
Cup-a-Soup Anytime Anywhere	Activation	Coup-a-Soup	Unilever
Danao Well-Being	Product Innovation	Danao	Eclor
Digital Sampling	Service & Experience Design	eYeka	eYeka
Digital Vending Machine	Point of Sale	Confidential Brand	Confidential Brand
Discovering Luxury Fragrance	Point of Sale	Confidential Brand	Confidential Brand
Dole Get Naked	Content	Dole	Dole
Dole Japan	Content	Dole	Dole
Domestos Toilet Blocks	Product Innovation	Domestos	Unilever

Dressing the world positivity	Communication	Comfort	Unilever
Drink responsibly - A powerful message	Communication	Confidential Brand	Confidential Brand
Duracell Entertainment Video	Content	Duracell	Duracell
Duracell Lithium Coins	Communication	Duracell	Duracell
Duracell Portable Charger	Communication	Duracell	Duracell
Duracell Powercheck	Communication	Duracell	Duracell
Duracell Value for Money	Communication	Duracell	Duracell
Engaging with Nature	Service & Experience Design	Confidential Brand	Confidential Brand
Enhancing a novel Treatment for RA Patients	Activation	Confidential Brand	Confidential Brand
Escada Perfume - New Name	Naming	Escada	Coty
Eyeka Christmas Greeting	Communication	eYeka	eYeka
Fair & Lovely face	Communication	Fair & Lovely	Fair & Lovely
Febrez Odor Cleaning Aerosol Spray	Communication	Febrez	P&G
Feed the Hunger	Communication	Confidential Brand	Confidential Brand
Food Meets Mobility	Service & Experience Design	Confidential Brand	Confidential Brand
Fresh that lasts	Communication	Confidential Brand	Confidential Brand
Fruity Food Complement	Product Innovation	Confidential Brand	Confidential Brand
Fun Time Together	Activation	Lay's	Pepsico
Future of Hydratation	Product Innovation	Confidential Brand	Coca-Cola
Gillette Revolutionize the Deodorant world	Product Innovation	Gillette	P&G
Goodness of Nature	Naming	Confidential Brand	Confidential Brand
Head & Shoulders: Awkward Conversations	Content	Head & Shoulders	P&G
Helloworld	Content	Helloworld.com	Helloworld
Hijabi Women: Beautiful hair communication	Communication	Confidential Brand	Confidential Brand
Ice Cream Cabinet of the Future	Product Innovation	Unilever	Unilever
Interdependent Mobility	Service & Experience Design	Confidential Brand	Confidential Brand
Invent Application for Vicks VapoRub	Product Innovation	Vicks	P&G
Japanese KitKat	Content	KITKAT	Nestlè
JOY Dishwashing Suds/Fronth	Communication	JOY	P&G
Karicare Toddler	Packaging	Karicare	Danone
Kinder Surprise bring joy and Excitement!	Communication	Kinder Surprise	Ferrero
Kipling New Category Ideas for Asia	Product Innovation	Kipling	VF Corporation
KitKat -Snap Out of it - Storyboard	Communication	KITKAT	Nestlè
KitKat My Break	Content	KITKAT	Nestlè
Kleenex Moist Toilet Tissue	Content	Kimberly Clark	Kimberly Clark
Lemonade Packaging	Packaging	Sumol	Sumol+Compal
Leopalace21a	Content	Leopalace21	Leopalace21

Leopalace21b	Content	Leopalace21	Leopalace21
Lion Cereals - Hack our Ads	Content	Lion	Nestlé
Lipton - Afternoon Tea Break	Activation	Lipton	Unilever
Lipton Iced Tea Innovation	Product Innovation	Lipton	Pepsico
Making Safe Drink	Product Innovation	Pureit	Unilever
Malnutrition Awareness	Communication	Nutricia	Danone
Masafi - Deep earth water in a bottle	Service & Experience Design	Masafi	Masafi
Meta Morning	Content	Metamucil	P&G
Mountain Dew - It Doesn't Exist Until You Do it	Content	Mountain Dew	Pepsico
Nescafé - Mixes for Coffee Lovers	Product Innovation	Nescafé	Nestlé
Nescafé - Mixes for Young People	Product Innovation	Nescafé	Nestlé
Nescafé - Morning Start	Content	Nescafé	Nestlé
Nescafé Triggers Connections	Content	Nescafé	Nestlé
Nespresso 3D Shopwindow design	Communication	Nespresso	Nestlé
Nestea Reset your Day	Content	Nestea	Coca-Cola
Nestlé - Social Snacking Moments	Activation	Nestlé	Nestlé
Nestlé Ideal - The Magic of First Times	Communication	Ideal	Nestlé
Nestlé Nan Optipro - Father's Day	Content	Nan Optipro	Nestlé
Nestlé Temptations	Content	Temptation	Nestlé
Nestlé Wagner Pizza	Content	Wagner	Nestlé
New Medicines for Africa	Product Innovation	Sanofi	Sanofi
New Premium Haircare	Product Innovation	Confidential Brand	Confidential Brand
New Syrup Experience	Activation	Teisseire	Britvic
Nido Mothers Day Love	Content	Nido	Nestlé
Nikon's "What inspires your creative spark?"	Content	Nikon	Nikon
O&G Cereals	Content	O&G Cereals	O&G Cereals
Oral-B Electric Toothbrush - Demo	Content	Oral-B	P&G
Oral-B Electric Toothbrush - Print	Communication	Oral-B	P&G
Oral-B for Teenagers	Communication	Oral-B	P&G
Pantene - Extreme repair for severely damaged hair	Content	Pantene	P&G
Pantene - Valentine's Day	Insights	Pantene	P&G
Parions Web	Content	Parions Web	Fdj
Parions Web 2	Content	Parions Web	Fdj
Pepsi Celebration	Activation	Pepsi	Pepsico
Perfume Gifting	Product Innovation	Confidential Brand	Confidential Brand
Powdered Tea	Product Innovation	Confidential Brand	Confidential Brand
Quirky Food Complement	Product Innovation	Confidential Brand	Confidential Brand

Re-brannding of Ma Pause brand	Brand Identity	Ma Pause Fit	Mom
Reenchant Breakfast with Danao	Product Innovation	Danao	Eclor
Reinvent Perfume	Product Innovation	Confidential Brand	Confidential Brand
Relax with Canada Dry	Packaging	Canada Dry	DPSG
Running on Duracell print	Communication	Duracell	Duracell
Safeguard Sachet & Display Card Design	Packaging	Safeguard	P&G
Samsung Connection to the other	Service & Experience Design	Samsung	Samsung
Samsung: Introducing Quantum Dot	Communication	Samsung	Samsung
Say Cheese!	Communication	Apetina	Arla Food
Say eYeka	Content	eYeka	eYeka
Senior Fitness	Service & Experience Design	Confidential Brand	Confidential Brand
Services based on Photos from the Sky	Service & Experience Design	eYeka	eYeka
SK-II Destiny Moments	Content	SK-II	P&G
SK-II This is Me	Content	SK-II	P&G
SK-II This is Me Print	Content	SK-II	P&G
SKYN - Feel Everything	Content	SKYN	Ansell
St. Huber Omega 3	Communication	St. Hubert Omega 3	St Hubert
Store of the Future	Activation	We love People	We love People
Sumol Change Perspective	Content	Sumol	Sumol+Compal
Sunny Delight for Teenagers	Product Innovation	Sunny Delight	Eclor
Sunsilk Pink	Communication	Sunsilk	Unilever
Suzuki ALLGRIP	Content	Suzuki	ADK
Sweet Coffee Break	Product Innovation	Confidential Brand	Confidential Brand
Tagline for a fair dairy cooperative	Brand Identity	Sodiaal International	Sodiaal International
Tea for the new age Millennials -Packaging	Packaging	Lipton	Unilever
The Future of Telecoms	Service & Experience Design	Ooredoo	Ooredoo
The Story of Nutella at Christmas	Communication	Nutella	Ferrero
The Why Foundation	Content	The Why Foundation	We love People
Thinner chips are tastier chips	Communication	Thins	Snack brands
TimTam	Packaging	TimTam	Arnott's
Tommy Hilfiger in store	Activation	We love People	We love People
Too good to be true Insurance Product	Communication	eYeka	eYeka
Trèsor Krave Innovation for Teens	Product Innovation	Kellogg's	Kellogg's
TV5 Monde French TV on the Go	Content	TV5 Monde Asia-Pacific	TV5 Monde
U by Kotex	Content	U by Kotex	Kimberly Clark
unilever Reimaging Cleaning	Product Innovation	Unilever	Unilever
Unilever the Power of Algae	Product Innovation	Unilever	Unilever

unilever Reimaging Cleaning	Product Innovation	Unilever	Unilever
Unilever the Power of Algae	Product Innovation	Unilever	Unilever
Unilever: Get the tea rocking	Activation	Unilever	Unilever
Unilever: Ice Cream all year round	Activation	Algida	Unilever
Universal Free Transportation	Service & Experience Design	Confidential Brand	Confidential Brand
Unstoppable Energy	Communication	Duracell	Duracell
Valentine's Day	Insights	eYeka	eYeka
Vidal - Sassoon Tattoo Design	Content	Vidal - Sassoon	P&G
Vidal Sassoon - Pack	Packaging	Vidal - Sassoon	P&G
Welcome to the "Victoria" club!	Content	Victoria	P&G
Wellness Ice Cream contests	Product Innovation	Unilever	Unilever
What's in a Glass	Communication	Dutch Lady	FrieslandCampina
Womens in mens undersware	Communication	Confidential Brand	Confidential Brand
ZoOSh - Dare to be different	Communication	ZoOSh	Mondelez
ZoOSh - Pitch the next videos	Content	ZoOSh	Mondelez

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