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Crowdsourcing as a way to access external knowledge for innovation:

Control, incentive and coordination in hybrid forms of innovation

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Introduction

Recent literature in management has identified a new innovation paradigm based on an open model. “Open innovation” defends the value of knowledge invention by collective creativity undertaken within an open community of peers (“peer production”). Collaborative web tools and infrastructures enable and foster the generalization of this model initially specific to the open-source culture. This new open innovation logic provides novel ways to create value along with alternative paths for value capture (Chesbrough 2006a; Chesbrough & Appleyard 2007).

However, the movement outlined in the literature on open innovation refers to a large range of practices. It covers various initiatives such as innovation communities in open source intelligence (Linux, Wikipedia), social networking web sites such as MySpace or Face Book. It also includes firm’s R&D strategically experimenting the turn to external sources of ideas or scientific knowledge through intermediaries’ infrastructure

(InnoCentive, Yet2com, Youencore, etc). This paper focuses on “crowdsourcing” as a significant trend in this new paradigm. Crowdsourcing conveys the idea of opening the R&D processes to “the crowd” through a web 2.0 infrastructure. Again, the empirical phenomena of crowdsourcing shows different approaches. One refers to openness driven by firms as a means to access external skills. This form, close to the open innovation model, is described in Jeff Howe¹’s primary definition of crowdsourcing: “*Crowdsourcing is the act of [a company or institution]² taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call*”. The second version emphasizes on the communities as the basic organizing force, as in the open source model³. This form is illustrated by other definitions encountered on the websites of crowdsourcing companies like Cambrian House: “*Crowdsourcing is when people gather via the Internet to create something and share in the profit, often without ever meeting each other in person*”. Both types have the principle of opening the innovating process to the crowd in common, however, they are initiated respectively either by the company or the community.

Some authors have pointed out the tensions created by the fact that some business actors (either firms or web intermediaries) seek to appropriate or obtain financial gain from part of the value created within web communities (Bonaccorsi, et al. 2006; Chesbrough & Appleyard 2007). Our research aims to build a framework to characterize and interpret these tensions. This appears particularly relevant in a period where, on one hand, companies are urged to “open” their innovation process, and on the other, a number of types of crowdsourcing initiatives are flourishing on the web. This tension between value creation by a community and value capture by a private economic actor fits into the broader discussions concerning “hybrid organizational forms” in organizational studies. In line with recent discussions (Bruce & Jordan 2007), we suggest that the analysis of hybrid organizational forms not be limited to the idea that they “contain characteristics of both polar-opposite governance mechanisms” (i.e. hierarchy and market or community and market). In accordance with the authors, we

¹ Jeff Howe is considered as the author of the neologism “crowdsourcing”. He wrote one of the first articles documenting the trend in the June 2006 Wired magazine.

² The explicit reference to the principal as a company or an institution isn’t systematically mentioned, notably in Jeff Howe’s blog on crowdsourcing and in the wikipédia definition.

³ As Jeff Howe suggests in his second definition (“the soundbyte version”): “the application of Open Source principles to fields outside of software”.

will consider these emerging organizational forms as « configurations or clusters of arrangements to co-ordinate and control economic transactions ». These can combine various forms of relationships and exchanges (market or non market). In this paper, we propose therefore to analyse them through the specific control, incentives and co-ordination mechanisms they invent and try to stabilize. According to our assumption, crowdsourcing conveys new patterns of arrangements to organize, co-ordinate and control economic activities. We will consider to what extent these emerging configurations confront serious challenges and create controversy in their attempt to capture the values of the innovation communities. In other terms, the objective of our research is to analyse, from a dynamic perspective, the invention of new norms of cooperation and exchange in hybrid organizational forms that combine open innovation, cooperative work in innovation communities and market commercialization.

Our empirical work is predominantly based on two cases studies of crowdsourcing webstartups; Wilogo and CrowdSpirit. Wilogo is a website dedicated to the creation of logos by a community of designers and their commercialization for companies. Created in March 2006 in France (Saint Etienne), Wilogo has experienced significant economic growth, marked by the exportation of the concept to other parts of world (Deutschland, Spain and US), but at the same time has been subject of considerable controversy within the professional world of designers. Based in France (Grenoble), the CrowdSpirit company aims to develop consumer electronic products from the activity of an online designers' community. This start-up is in the early stages of building a platform for “crowdsourced” electronic products - essentially “user generated products”. Having accompanied the company through all the initial development and launch phases of the platform, we have gained a clear view of the considerable challenges CrowdSpirit has faced and how Crowdsprit’s founder has attempted to deal with them and the solutions he has explored.

Both companies are part of the community web platform category which is at the core of our research. With different types of products and unequal stages of development, they go through critical tests in the building of new organizational forms that combine community co-working and commercialization. The study of these ongoing experiments will help us identifying key issues related to the combination of community creation and private interests. This inductive approach based on ethnographic case studies will be completed by the analysis of other crowdsourcing experiments on the web.

The paper is structured as follows:

Firstly, we examine how the literature on open innovation treats the issue of outsourcing innovation and the characterization of the different relations between value creation and value capture in open innovation (I). This will allow us to position both the contributions and limits of existing literature in order to approach these new actors, the crowdsourcing platforms, as hybrid models between open innovation and open source. In section II we present our theoretical framework based on three main mechanisms to qualify hybrid organizational forms: control of economic transactions pull-out from innovation, incentives for the stakeholders and coordination in co-working. After having exposed our methodology (III), we delve into the organization of crowdsourcing platforms by examining two of the most characteristic web-startups we have dealt with – Crowdsprit, Wilogo (IV). From a dynamic perspective, the analysis attempts to interpret tensions, conflicting interests and controversies throughout the creation and setting-up of economic and social rules within the community organization (V).

I. Crowdsourcing as a form of open innovation: literature review

The literature on open innovation, mainly developed by Chesbrough's work (Chesbrough 2006a; Chesbrough 2006b) is based on the distinction between value creation and value capture. For Chesbrough, in the open innovation paradigm, firms should open their innovation processes both upstream; by seeking outside knowledge, and downstream; by capturing value with knowledge that does not directly fit the firm's business model. In this view, however, it is admitted that the firm will be able to capture value (in other terms, « make money ») with knowledge produced outside. When addressing the issue of how to capture knowledge generated by communities, most authors assimilate innovation communities with open source communities (Chesbrough 2006b; Chesbrough & Appleyard 2007; Nambissan & Sawhney 2007; Von Hippel 2005; West & Gallagher 2006). However, Chesbrough (Chesbrough 2006a) considers that open innovation and open source, although similar approaches to innovation, are different in so far as: “: *Open innovation explicitly incorporates the business mode as the source of both value creation and value capture...While open sources shares the focus on value creation throughout an industry value chain, its proponents usually deny or downplay the importance of value capture*”. In a more recent paper, Chesbrough and Appleyard (2007) explicitly introduce the tension

between firms and communities in the open innovation paradigm and propose a framework where value creation can be performed either by firms or by communities, whereas value capture can be realized either by firms or by the ecosystem as in the case of open-source software. This raises the issue of the possibility for a firm to take advantage of knowledge produced outside by communities.

We can identify then two situations: either the firm uses knowledge from identified and known stakeholders, such as suppliers or customers, or it seeks new knowledge on a broader scale, amongst the “crowd”, as in crowdsourcing.

The first situation has been studied in particular by the lead-users literature (Von Hippel 2005). Von Hippel (2005) defines innovation communities as “*meaning nodes consisting of individuals or firms interconnected by information transfer links which may involve face-to-face, electronic, or other communication* ». He says that innovation communities can have users and/or manufacturers as contributors. They appear when at least some innovate and voluntarily reveal their innovation and when others find the information revealed to be of interest.

In the second case, where a firm wants to involve a larger number of unknown individuals, there must be some kind of set-up where the demand and the offer of knowledge and creativity can meet. In the latter case we observe the appearance of new economic actors of at least two types. There can be « innovation intermediaries », described by Chesbrough (2006b) as marketplaces where knowledge seekers (typically R&D departments of large firms) can make a call for tender towards independent scientists or engineers. Well known intermediaries of this type are InnoCentive, NineSigma, Yet2com. It seems however that these new intermediaries do not meet the expectations in terms of number of transactions (Lichtenthaler & Ernst 2008). Hypotheses that can explain why this is the case are that these intermediaries deal only with technological knowledge and are not sufficiently market oriented. In addition, they function on an individual basis with in the end little collaboration among communities of contributors (Tapscott & Williams 2006).

What we call in this paper “crowdsourcing platforms” are of another type, as they precisely involve communities in the creation of goods (either material or immaterial). Wilogo, Cambrian House, Kluster, Crowdspirit are examples of these platforms. They are dedicated to the collective design of something new (logos, software, high tech products, services) that is not based on being freely revealed, as in the case of open source communities. For this reason we consider these crowdsourcing platforms to be

hybrid forms not studied as such in the open innovation, nor in the open source literature. On one hand, they combine value creation by a community and value capture by both the community and a private firm, which can be either the platform itself, or customer firms, acquiring the created goods. On the other hand they mobilize different types of public: the contributors themselves, and a broader public invited to vote or give an opinion. We therefore have to find new criteria to qualify these new models and to study the tensions that they generate. Our research questions are therefore: what are the main tensions associated with the management of crowdsourcing platforms? How can these tensions be managed so that a business-logic can co-exist along with the innovation community logic ?

II. A theoretical framework: control, incentive and coordination mechanism

As previously mentioned, our interest for these web-collaborative-platforms is driven by the idea that they try to invent new norms of cooperation and exchange which combine cooperative work in innovation communities and market commercialization. A dynamic perspective is necessary as we suggest these organizations try to find their way through new common rules, including property policy, transaction organization, and modes of cooperation, in the form of “social contracts” for co-working.

Bringing together different disciplinary and conceptual frameworks (sociology, economy and management), we nonetheless converge on theorizing modes which do not confine the analysis exclusively to the dichotomous ideal types, either firm and market (in economics) or community and market (in sociology). Recent debates in economy and sociology suggest an alternative third way that surmises that the *interplay* between the different natures of exchange-relationships can take a variety of market and/or relational forms (Bruce & Jordan 2007; Dufy & Weber 2007; Zelizer 2004)⁴. The authors suggest “that theorizing needs to be accompanied by empirical work that takes a more grounded approach, provides a rich picture of the ways which exchange

⁴ The theoretical posture of V. Zelizer opposes a longstanding tradition in sociology which consider the incompatibility between community and market (Zelizer 2004). In the Zelizer approach of “economic circuit”, “both intimate and impersonal transactions work through “Differentiated Ties”. Such differentiated ties compound into distinctive circuits, each incorporating somewhat different understandings, practices, information, obligations, rights, symbols, idioms, and media of exchange”.

relationships are organized...”. This paper is an attempt to advance towards the description of specific incentive, coordination and control configurations in hybrid organizational forms. A brief comeback to the literature on open innovation and open source with a focus on this set of questions can help in the following interpretation of collaborative-platform-crowdsourcing.

- ***Control mechanisms***

The issue of control in crowdsourcing platforms can in our view be addressed in two ways. The first aspect is related to what we can call « network leadership » (Nambissan & Sawhney 2007), the second is related to the proprietary rights of the produced goods (intellectual property). This second question has been largely addressed in the open source literature.

- Network leadership

Nambissan and Sawhney (2007), in their recent book on open innovation (that they call « network-centric innovation) provide a framework of four forms of network-centric innovation, based on two dimensions: the structure of the innovation space (either well defined or emergent) and the network leadership (either centralized by a dominant player or diffused within a community). This dimension captures the governance aspect of the network organization. Again, the authors make the distinction between two situations. The first is similar to the open innovation paradigm, where a dominant firm makes the decisions that affect the innovation process and define the nature and membership of the network. The second is assimilated to the open source paradigm where the leadership tends to be distributed amongst the members of the network. In the case of crowdsourcing, we will have to take into account possible tensions in the network leadership, in other words, who will define the rules of membership and participation and make decisions about the creation process.

- IP control

Chesbrough (2006b) outlines a possible risk in open innovation due to the fact that, in the discussion between a knowledge provider and a customer firm before the transaction is done, strategic information can be provided that can inhibit value capture by the customer. He suggests that innovation intermediaries are a solution to guaranty the confidentiality of knowledge exchanges. This cannot be the case in crowdsourcing-

platforms, which are based on collective and often public exchanges. The issue is here around the ownership of intellectual knowledge (IP). Although open source communities seem to have developed sophisticated answers with numerous different versions of software licences, intellectual property remains a potential source of conflict. For example, Petersen (Petersen 2006) describes a major conflict between an open source community (Open Wrt) and a commercial firm (Sveasoft). He shows that the crisis emerges when the firm does not respect the rules concerning the commercial use of the software.

- ***Incentives***

The literature on the incentives for innovation activities, and especially the work of Von Hippel and Von Krogh (Von Hippel & Von Krogh 2003) suggests three models to reward innovation efforts. In the private investment model, contributors are individually rewarded by private investors⁵ for the knowledge they provide. Innovation intermediaries, such as Innocentive or Yourencore, are an illustration of this model: The second major model, called the “collective action model”, is based on the revealing of findings, discoveries and knowledge freely for the provision of public goods⁶. The intermediate “private-collective” model combine “the best of both worlds” as it assumes that private innovators relinquish control of knowledge, or other assets they have developed during the project, and so create public goods. Open source software development is emblematic of this middle ground where “new knowledge is created by private funding and the offered freely to all” (Von Hippel and Von Krogh, 2006). This model suggests that it would be useful to consider the conditions in which incentives for private investment and collective action can coexist, notably to avoid the risk of free riding⁷

Considerable research on motivating contributions to on-line communities provides a number of proposals to think about this combination: direct user motives (user needs for tailored solutions (Lakhani & Von Hippel 2003), long-term professional benefits -

⁵ Intellectual propriety is transferred from individual contributors to private investors via patent or copyrights.

⁶ Public goods are defined by their non excludability and non rivalry. Epistemic communities in the science world are the ideal type of the collective action model.

⁷ One major problem of the collective action model is how to reward real contributors and how to avoid free riders obtaining benefits from the completed public goods that are equal to those that true contributor can obtain.

learning, reputation - (Lerner & Tirole 2002; Raymond 1999), recognition from peers or from company (Jeppesen & Frederiksen 2006)⁸. The principal line of argument underlines such intrinsic motivation factors as enjoyment of creativity and improvement of abilities (Hars & Ou 2001; Lakhani & Wolf 2005), in relation to community identification⁹. Following those perspectives, some authors identify the existence of alternative political ideas claimed by the members of on-line communities: the « hacker ethic » (Himanen 2001). This refers to a specific attitude towards work – strictly the opposite of the protestant ethic – and to general values on information sharing and circulation.

This literature provides us with some frameworks as a basis to explore the incentive model conveyed by crowdsourcing platforms. On one hand, we can expect to find common motivation factors with those of on-line communities; but on the other hand, private investment appears to be relevant, as the final product/cultural offer is intended to be commercialized and some of the “happy contributors” can expect to be paid. These questions require that we work on the conditions in which these two types of motive can fit together and provide a win-win combination.

- **Coordination**

The rise of computer-supported cooperative work has generated research interest in the way in which the “bazaar” governance (Raymond 1999)¹⁰ was structured and opened to specific coordination mechanisms and rules of co-working. On-line community work organization, especially in open-source configurations, presents similarities elements to the “collegial form” of organisation(Lazega 2005)¹¹ based on self-government. A common argument for all these studies refers to the horizontal dynamics, the blurring of

⁸ According to the authors, in the case of innovative users (lead users) in company hosted online communities, firm recognition superseded peer recognition (Jeppesen & Frederiksen 2006).

⁹ From this assumption of a community motive – alternately qualified as epistemic communities, communities of practices or innovation communities -, theoretical debates concern the conceptualization of knowledge exchanges: either “gift economy” (Coris 2007; Zeitlyn 2003), or sharing culture (Petersen 2006), or also asynchronous exchanges (Gensollen 2004), etc.

¹⁰ E. Raymond (1999) and P. Himanen (2001) characterize the singular functioning of these social organizations in comparison to their opposite bureaucratic organization (“model of the cathedral”). According to the authors, the founded framework is: the absence of prescriptive rules, an equalitarian network of contributors, the posting of hierarchical authority and centralized control, the direct coordination by mutual adjustment.

¹¹ E Lazega defines the “collegial form” in opposition to the bureaucratic organization. Formed of formally equal and autonomous members, it’s based on collective performance in carrying out weakly routine and standardized tasks. Cooperation and mutual adjustment within the community are founded on personalized relationships within “social niches” as pool of favourite partners in the exchange of multiple resources.

the boundary between designers and users and users acceding to the rank of innovators or co-developers (Von Hippel 2007). Empirical studies on the functioning of collaborative projects—have shown the progressive emergence of a set of coordination mechanisms in this apparent bazaar: upstream selection of contributors, division of work, qualitative selection of contributions, recruitment driving forces, delegation of responsibility, etc. (Cardon 2006; Conein 2003; Demazière, et al. 2007; Levrel 2006).

Some authors have pointed to tensions due to the presence of unequal levels of contribution (continuous work of hard core/proliferation of intermittent participation of users) or heterogeneous cognitive resources (Conein 2003). Intermediaries roles or intermediaries circles are consequently charged with managing these tensions, as much as with the continuous monitoring of all contributions (Levrel 2006). This point is particularly interesting to examine in the context of networks associating experts (designers as experienced users) and “laymen” (simple users/end users). In the case of crowdsourcing, the structuring of heterogeneous resources is increased by the “crowd”, “where a huge amount of individual contributions build solid and structured sources of data” (Prieur, et al. 2008). According to the founders of the crowdsourcing movement, openness to the crowd has potentially essential properties: it’s a means to “force serendipity” by the integration of *heterogeneous* resources (laymen as experts, users as producers, etc.) as a way to filter many types of invention to identify opportunities for innovation (Ebner, et al. 2008)¹². Openness and information and data circulation have to allow for, not only a profusion of propositions, but also a fast and massive concept test. Consequently, this question will be of particular interest to examine.

III. Method

Our research is based on empirical work on web-startups developed on the crowdsourcing platforms model. The collection of data was mainly concentrated over two case studies – Wilogo and CrowdSpirit – with a combination of both on-line and off-line observation. Our qualitative approach is mainly based on ethnographic internet research. Virtual ethnography (Hine 2000) takes into account new areas of exchanges,

¹² “The biggest strengths of crowdsourcing is actually in filtering as opposed to creating content — like Digg or Cambrian House. 90% of everything is crap (...) If you want something that’s current and what’s hot, they’re good for that” (Interview of J. Howe - <http://www.deepjiveinterests.com/category/jeff-howe/>)

new temporalities (online/offline), new references (languages), new codes, routines (posts, comments, votes) brought by the Internet world and web technologies. To set about analysing these new objects, it is essential to consider and delimit the multitude of interaction spaces (forums, blogs, chat, mail...) where people exchange and act. Monographs of sites allow us to break down all these spaces and the different processes which occur in them. On the other hand, another peculiarity is the effect of temporality and the traceability of these exchanges. The archiving of web pages allows us to fix this temporality and to perform an analysis on the history of these exchanges.

We present hereafter our data and followed by a brief presentation of the two cases.

- **Data**

Data on the Wilogo platform

The empirical investigations on the Wilogo website cover three principal means of collecting data. The first consists of the ethnography online, which was carried out over two months of in depth observation involving the integration of a member of our research team in the graphic community. These two phases of observation (March & April 2008) gave us access to around 60 projects (corresponding to 30 months) of logo creation. 10 of these projects were observed in more detail taking into account all the sequences of interactions within the project from the first invitation to bid up to the final selection of the winner. Simple on-line observation allowed us to get a better understanding of the nature of interactions between the members and gave a glimpse of the active roles played by the more influential members who are almost systematically present in each project. However, the limit of this minimal ethnography is clearly the absence of a systematic overview of the interaction modes (map of networks or favourite relationship, contributions counting, etc.).

Having detected the serious controversy Wilogo was encountering, this case study suggested to us a second investigation approach that involved the analysis of the web-controversy (or buzz on the Internet). Observing webstart-up experimenting new models, we guessed that this conflict was bringing us to the epicenter of the tensions discussed in this paper. The study of the controversy compiles the on-line observations of collective discussion within website forums and blogs (both within and without the crowdsourcing platform): from 20 sources, we amassed 331 pages of blogs. A primary qualitative analysis of the discussion enabled us to identify three major controversial

themes categorized as: transaction rules (client selection, fees charged, property transfer), professional norms (service relation management, quality control) as well as work incentives and benefits through being involved in the community (learning, recognition, financial payment). The analysis of the conflict raises central issues on these new forms of work organization with debates on free work (“exploitation of workers”) and crowdsourcing benefits for the graphic designer’s community. However, a more in depth analysis would require analytical tools to map those web discussions, tensions and conflicts.

Finally, we also carried out interviews with the three founders of the platform and five interviews with selected community members. Interviews with a number of external actors (graphic off Wilogo, blogger) are underway.

Data on Crowdspirit

As previously exposed, the CrowdSpirit study is partly based on action-research in helping the web start-up to find its business model. Six successive strategic workshops were carried out with the managers to help them define their business model; the incentive model. The coordination rules within the community and between the community and the platform were also defined. This group work produced food for thought on the management and organization of this community and provided a much clearer understanding of the major organizational and strategic stakes and issues involved.

The launch of CrowdSpirit with the first version was studied using on-line ethnography from september to december 2007. We got an overview of the 107 projects generated by the members through a longitudinal analysis of the most popular project which reached the development phase.

Data on other crowdsourcing platforms

In parallel with the work on the two case studies, empirical work carried out included an overview of several of the most relevant crowdsourcing websites - including platforms (Kluster, Cambrian House) or other forms (La Fraise, SellaBand, FellowForce, Innocentive). The aim was to compare models and to characterize common and specific rules as well as organizational forms. The preliminary analytical framework used for this overview focused on :

- the overall economic model (nature of the interfaces with clients and consumers, mechanisms of economic coordination)

- the nature of contributions and interactions (individual/ collective, creation/evaluation)
- the community space (existence of spaces devoted to resource exchanges, co-working, mutual recognition and policy building as blogs, forums, mails, network maps, etc.)
- the system of financial rewards / incentives
- the type of product (semi finish/final product, material/immaterial)

From the examination of these criteria, two models emerge, distinguishing the “innovation intermediaries” (already described by Chesbrough (2006b) as marketplaces and crowdsourcing platforms (including online innovation communities with collaborative spaces).

Lastly, new tools, provided by the web2 measuring traffic on the web, complement this exploratory study which mainly involved on-line observations. For example, Google analytics allows for the evaluation of the frequency with which members connect in days, hours, months, their geographical location, the duration of connections, the average time spent on the site (ex. 3: 31 minutes on average for CrowdSpirit), the most and least read pages¹³, etc. All those tools are commonly used in the “blogosphere” by Internet users themselves: they represent reference websites which lead to the "buzz", i.e. intense on-line activity and discussion (see appendix).

In order to make sense of this data collecting, the authors, through the collective work and discussion, built an analytical framework based on the three investigation approaches proposed in this paper, in other words: control; incentives and coordination mechanisms. We used this framework to treat our empirical material used to identify the practices and the tension/conflicts associated with them.

- ***Presentation of the two cases***

Wilogo

Wilogo is a crowdsourcing webstart-up created in March 2006 by three young entrepreneurs in Saint-Etienne (France). Wilogo’s concept is to put graphic designers (amateurs or professionals) into competition for the design of company logos (the main

¹³ Other web 2.0. tools, such as Technorati or Delicio.us, help assess the popularity of the website through trademarks web pages.

target being SMEs). This platform drew its inspiration from the model of the La Fraise¹⁴ site but its customers are firms. Wilogo is a market place which puts SMEs that often have insufficient means to invest in more traditional types of logo research, in contact, with a community of graphic designers (professionals, amateurs, beginners, etc.).

The Wilogo platform functions as follows: Wilogo organizes a competition, based on a company order and brief, leading to at least fifty proposals amongst which the best one can be chosen. The competition takes place over a short period (about one week). It includes a first private phase of creativity (72 hours) during which the graphic designers submit their logos. In a second public phase, everyone can comment on the work of other members and vote by a system of personal preferences to bring to light the most appropriate logos. The client can then make a selection of 3 logos (shortlist) before asking for final changes. Finally, one logo wins the competition. There is a financial reward for the winning graphic design (60% of the final price) and a premium for the two other finalists. Wilogo charges 40 to 45 % of the sale price. With the payment, the graphic designer is asked to forgo author rights.

Any form of contribution from graphic designers is counted by a system of points, called “Karma”. Karma is an index of the activity of the graphic designers. It allows each contributor to capitalize its involvement in the web site activity (logo), through its creativity and success but also through the simplicity of participation (vote, comments) and its social network (sponsored members, friends)

CrowdSpirit

Crowdsprit is a start-up launched in September 2007 in France (Grenoble). It appears to represent a very original case of Crowdsourcing, whose concept involves outsourcing, to a community of “geeks”, all the R&D processes from idea generation to the design of new products, in the field of consumer electronics. The case of CrowdSpirit is particularly interesting in that it aims to apply crowdsourcing for high tech product development, where most crowdsourcing experience involves non tangible products i.e. software applications, R&D challenges, cultural products.

The concept of CrowdSpirit is based on the incubation of concepts related to electronic products. People can submit ideas of new products that they would like to be developed. The website opens an exhibition fair of concepts or proposals which can be browsed, selected for contribution and sorted. During the first version phase, CrowdSpirit proposed that concepts be sorted using criteria based on risk and opportunity analysis.

¹⁴ La Fraise website is a place of market where the community edits and sells Tee-shirts

The process of incubation is sequential with successive phases or sub-projects, either to reduce the complexity and rationalize the process, or to distinguish between public spaces where crowd work is useful, from private phases where contributors work independently or in a core-team managed by a project leader (with a selection of favourite partnerships). The setting up of private spaces also highlights the problem of confidentiality and IP protection for individual contributors as well as for companies.

The first business model was based on the principle that Crowdsprite could industrialize the designed products (with Chinese subcontractors) and then sell them through the website. It came out, however, that this model would not be viable and Crowdsprite then turned to a more classical model of innovation intermediary. The concept is now the following : the IP on collective created goods can be negotiated directly by the community leader, with Crowdsprite earning revenue on the transactions.

IV. Results

This section is devoted to the examination of the principal mechanisms and tensions created due to the way in which crowdsourcing platform organizations function. This comparative case study is interesting in so far as we have a case of a – relative – success story (Wilogo) and on the other of a – relative – stoppage, as Crowdsprite is still considered to be in the setting-up phase and explore a new business model based on the services supply to companies. This comparison allows us to come back our research questions: what are the main tensions associated with the management of crowdsourcing platforms ? How can these tensions be managed so that a business logic can co-exist with the innovation community logic ? These questions will be addressed according to the framework presented in section II.

- ***Control mechanisms***

In this subsection, we consider the modes of control distribution on the economic activity between all the stakeholders of the crowdsourcing platforms (community members – platform administrators – client/ company). The analysis follows the main steps of the innovation or creation process: generation of concepts (ideas, logos, etc.), qualification of ideas or products, valorisation of the creation (pricing, IP distribution). This requires a brief incursion into the way websites function.

- *Generation of concept* : In Wilogo, as in CrowdSpirit, the activity around concepts (logos, projects, etc.) is organized and temporally structured through projects or idea competition (Ebner, et al. 2008). In Wilogo, a (client)company orders the creation (the logo) whereas in CrowdSpirit it is an individual, or a member of a community, who is supposed to initiate the design process for his own idea. Note that the second Crowdsprit business model provides for the fact that private companies will be able to request that a community generate ideas, test concepts, or even draw-up design specifications.

- *Qualification of products* : The community is asked to generate ideas but also to add comments, share knowledge, refine the initial formulation of requirements etc. The potential value of proposals is evaluated by the community itself through a vote and notation system (stars, personal preference [“favourite] and notation). However, in the case of Wilogo, the client is the one that makes the final decision. It was different in the first version of Crowdsprit where votes were used to choose the product to be developed. For example, during the first beta testing phase of CrowdSpirit, one product idea stood out and obtained a large number of positive votes (70%): the digital wall calendar¹⁵. Following this score, a closed core-team of around 20 people was formed to define the detailed product specifications. In December 2007, the Crowdsprit team decided to proceed to the industrialization of the resulting product.

- *Economic transactions* : In both websites, the admission to the on-line community requires a pre-agreement on the mandate (Wilogo is given a mandate to represent the community in the promotion and the sales of graphic creations with total cession of its author rights). In the same way, CrowdSpirit requires the integral transfer of the IP generated by the team work to the Crowdsprit company. Sales agreements and % fees charged on transactions are fixed by the website administrators. Only products that are sold result in the creators obtaining financial rewards with transfer of their IP. In the case of Wilogo, fixed selling prices in a narrow range of offers are proposed, including a fixed part for creators (60%). The first CrowdSpirit model was close to this option, with financial rewards being based on a fee related to the total sales for each product, whose sales price was fixed by CrowdSpirit. In its new version, CrowdSpirit projects to exclusively charge companies for services providing while the community benefits of éa free use of the platform.

¹⁵ The concept involves centralising and co-ordinating, on a wall-mounted electronic device, all the activities of family members.

The questions of IP transfer and pricing are central issues in crowdsourcing platforms and in both cases discussed, rules are not completely stabilized. Various *modus operandi* can coexist or be substituted from one to another; for example the strict control on the sales price of products/services offered by the administrators, or a fixed fee charged on transactions. The observation of the two websites however (one operating and one being set-up) highlighted the different control mechanisms being used. Wilogo tends to exercise power over all economic transactions with no autonomy at all given to the community. On the contrary, in the second version of the CrowdSpirit platform, another model based on the autonomy of the community to fix prices and negotiate IP rights has been foreseen. This, however, may generate risks for the platform as far as the definition of its business model is concerned.

This acknowledgment draws attention to central issues on control mechanisms in crowdsourcing, with a permanent tension in the control relationship with the community between authority and delegation. For instance, our observation of Wilogo website shows an intensive deliberation on policies : discussion and claims addressed to the administrators are permanent.

Post message from a graphic designer

The trick necessary to advance Wilogo, is,

- 1) Not to see the graphic's identity before he has been selected by the client in the logo's shortlist
- 2) Specifications must be invisible before the shortlist was established.. I think that it should be better that specifications wouldn't be visible before having shortlisted the graphics.
- 3) ... A little revise the price of packs
- 4) ... Well... I try to find...

Message (post) of a director's Wilogo

We just have set up a new "code of conduct" to be respected on Wilogo and those who will not follow it will be warned. Many types of infraction exist and warning won't have the same strength.

Some tensions became a very controversial issue on the website forum, after the exclusion of a number of protesters from the platform. The main origin of the conflict was the open attitude of Wilogo to big companies as clients with the same contractual arrangements as the SMEs which were the initial target of the startup. For part of the community members, this commercial strategy conveys an important shift from the initial project, as an indistinct economic and politic project. Wilogo initially set-up as an innovating webstartup, supporting graphics promotion (for amateurs, beginners as well as professionals), providing the opportunity for SMEs, which can't afford logo

development costs, to take advantage of this collective potential. The success of Wilogo motivated its founders to look for new strategic orientations. Contracting with big companies meant a shift in fundamental orientation, resulting in the fact that a large number of conventions set-up initially became illegitimate: for example, using a community on-line to commercialize low-price products raises for companies who have limited means raises the question of moral equity when big companies can also take advantage of it.

The conflict has grown in the platform's forum. Activist members that tried to organize an anti-establishment force against this orientation were excluded from the platform by the administrators. They followed-up their protest through their own blogs creating a real buzz in opposition to Wilogo. This open war provided a real threat for the platform. The website's reply consisted in stricter selection of participants and in the implementation of top-level control over the forum activity (moderation of messages posted). The extent of the conflict underlines the importance of the community approval on the political strategy, as a fundamental part of its involvement in collaborative work, over and above the socio-economic incentives.

- ***Incentive mechanisms***

Lionel David, the founder of Crowdsprit, initially described the concept of his company as follows: *"To be the first platform and worldwide community allowing the design, industrialization and selling of consumer electronic products, and ensuring a fair payment of all contributors.* Crowdsourcing platforms claim for the fair payment of the creators including financial reward. The following thoughts focus on the system of incentives as a complex combination of commercial and social rewards.

However, as in most crowdsourcing websites, a large part of the work is not paid. It is the case for Wilogo, where, for each competition, a minimum of 50 proposals, are required, whereas only the winner will be paid (with a little bonus for the other two in the short-list). In the same way, only the most popular ideas will be considered as potential market opportunities in the CrowdSpirit website.

Extract of Wilogo web controversy¹⁶

Friday June 2th 2006, 17:43 from Olivier Bravo for the initiative and the entrepreneurship spirit of Wilogo founders !

¹⁶ <http://www.presse-citron.net/?2006/06/02/977-wilogo-met-de-la-fraise-dans-vos-logos>

(...) Yes, the idea is excellent because offering the possibility for a craftsman or a SME to take a logo for 200 euros is a splendid idea. Concerning graphics, who will accept to bone up for 200 euros ? The answer is : young graphics, with brimful of creativity, young, full of new ideas and with some guts to dare new tricks.

Consequently, the well-identified motives for free work and active involvement in crowdsourcing platforms appear to be similar to what has been described for open source communities (see II.). However, one of the major differences in the crowdsourcing incentive model resides in the permanent use of algorithms, automatic devices and informative tools to build a meritocracy system. For each contributor, continuous tracking and archiving of contributions is translated into various indicators, measures, “weighting”, systematically indexed to the contributor. This informative meritocracy infrastructure within the platform allows each contributor to capitalize his/her commitments and to display his/her “career” on the platform. Within Wilogo, the Karma classification is obviously an important way to become visible in the graphic community and in the market. In the same way, participants can also index them with tags and portfolios, put themselves on stage (funny photos), comment on their own tastes or hobbies, etc. The display of profiles and network helps the members to interconnect and enlarge their relationship network, or even to provide mutual recognition for members within the community.

Simultaneously, Wilogo as well as Crowdspirit founders insist on a “fair payment” of the contributors, which appears to be a new phenomenon in innovation communities (see I.2.). How can financial payment cohabit with a social and symbolic incentive system? Our observations lead us to the assumption that, even if payment of creators is set up as one of the incentives, it tends to be embedded in differentiated ties from the collective work. Meritocracy and social rewards (some time translated in an amount of local currencies¹⁷) are not linked to the level of monetary gain, for example through a convertibility system. Financial payment is more directly related to market relations. It seems more understandable as a counterpart for the transfer of intellectual property than as a wage for individual or collective work. In other terms, the notion of “fair payment” is not linked to a financial amount that is commensurate to the participants’ contributions but to the right part or counterpart of the value capture by external actors (companies, ecosystem). As an echo to this assumption, a common thought in the

¹⁷ Local currencies can be combined with indicator measure of contribution as a capital which allows to vote or set stakes on a concept. This type of selective incentive has been observed on Kluster and Cambrian House. Crowdspirit foresees this possibility for its next version of the website.

crowdsourcing world considers financial payment as a simple bonus or an additional revenue which acts as a complement to a contributors salary.

This contribution/retribution system is nevertheless subject to tension and controversy, as we have observed in Wilogo.

Crowdsourcing platforms appear to be a good place to display young professional or amateur productions. The community itself and co-working is obviously the major stimulus for contributions. Learning, resource exchanges, comparison, recognition by peers or by companies, capitalization of proposals and successes, remain the main stimulation for creation, even if participants have a low chance of earning financial rewards (no more than 1/50 at Wilogo). But on a platform over time these incentives become less relevant (expertise, know-how, reputation), the relationship between work/time spent and desire for gain become more rationalized:

Monday March 3th 2008 – Discussion « Beginner, fonctionning question, rate and tim spent » (Topic : Wilogo fonctionning »)

« Concerning the time spent on logo creation, it depends... for myself, a minimum of four hours for an order, the max being limited by the creative sequence (24h, 36h, or 48h). At the end, as you suggest, the main benefit of Wilogo is that it helps you a log to progress and you learn a lot from the seniors, the “pro” and even from the clients”

In the same way, since active contributions become a significant part of the value creation, the question of the profit sharing is raised by contributors. The solution adopted by CrowdSpirit consists in giving the project leader of a given community the responsibility of sharing value among the members of his team. Reciprocally, team members are supposed to give a note to their manager. In doing this, the founder of Crowdspirit is assuming that reputation effects will regulate economic transactions. This will have to be validated by observations of the functioning of the new version of the platform.

- ***Coordination mechanisms***

The collaborative work is as much a process of co-creation (knowledge sharing and production) as a process of co-evaluation (classification, filter). Initial sequences of election aimed to test the credibility of an idea, explore its capacity both to attract co-creators as to conquer end users. In this “qualifying process” (Callon, et al. 2002), qualitative elements (comments, information, knowledge) are permanently combined with quantitative size (vote, election or visible phenomenon of aggregation around

value projects). Consequently, the crowdsourcing platforms need just as much the intensive contribution of permanent and active contributors than the flow of the crowd based on a more dilettante and intermittent presence.

How do crowdsourcing platforms deal with this necessity of aggregate and combine heterogeneous resources? On one hand (see III.2.), the driving force of these platforms is the innovation community itself which supposes “a minimal base of social similarity with partnership following common goals“ (Conein 2003). On the other hand, the platforms seek to convene laymen, end-users, “ordinary” participants. The need to have traffic on the network leads to valuing “weak cooperation”: relational marketing allows points to be gained (eg Karma), as well as votes¹⁸, considering that the aggregation of this type of low add-value contribution are however essential to foster flow.

In practice, the cohabitation of both dynamics – hard-core and flow, expert and laymen, strong and weak cooperation - seems not patent. Our empirical inquiry shows a number of pitfalls which suggest the following interpretative line:

- Openness and brainstorming, organized through means of campaign and competition, provoke an intensive flow of creativity. The crowd is stimulated both for creativity (or serendipity) and for filtering action. But this intense activity has two limits. First, the ideas generated are the result of aggregated, but not co-ordinated contributions. Second, this leads to massive loss and discouragement, as the major part of proposals remain to the initial phase of simple idea and short comments and people never gain feedback on their contributions.

- crossing from this mass of weak contributions to an achievement towards qualitative production relies on active and permanent contributors which foster the design activity with helpful interactions, resources exchanges, cooperation. Wilogo and CrowdSpirit platforms have been invested by this type of group of stable community members. As previously seen, capitalisation devices and career displays indexed to each contributor promote recognition and favourite relationships between peers. With growing influence power and a regular presence, the hard-core tends to progressively exclude beginners or laymen from active contributions.

¹⁸ In Cambrian House website, the reward for having vote suppose that the participant have systematically attributed a note to each project during the initial phase of competition on idea.

The observation of interactions sequences following idea-submission on the CrowdSpirit platform during the first beta-testing phase lead to this statement. Progressively, the contributors circle narrows down to “geeks” with a concentration on technical options or solutions. End-user proposals become more and more rare, even if they should be an important part of the qualification process. Lionel, CrowdSpirit CEO, noticed a raising appropriation by the geek community, for better and worse. On one hand, this first circle represents the central force of collective work to produce results through the design activity. On the other side, favourite relationships, common language and mutual recognition within this privileged group tends to exclude unusual competencies and heterogeneous resources as the crowd treasure.

In its second version, CrowdSpirit has therefore separated the “incubator phase” (dedicated to a private phase of co-developing by a hard core) from the “elevator phase” (allowing the crowd to influence the decision of commercialization by a “market beta-test”). This segmentation should offer an alternative mode of cohabitation for heterogeneous participants, without mutual inconvenience. Two entries in the platform are thus possible. There will be a space for light contributors, enabling short discussions and another space of heavy contributors with tools enabling more intense collaboration, such as looking for competencies, project management, task evaluation etc

V. Discussion

Crowdsourcing platforms attempt to conjugate both private investment (and profit) and collective action models. Crowdsourcing websites use the “private” resources of participants to be invested in the creation of novel products/concepts. At the same time (and in deviation with other crowdsourcing places), they invest the community, through public exchanges and interactions, to support the qualifying process that in turn ensures the shift from idea to market opportunities. Through this process, individuals and groups both contribute to a part of the added value in the design process. The intermediary role of the website relates to that of “agent”, representative, promoter and developer of the innovation community towards companies. In the end, it results in a net gain in private profit for both the platform and the innovator. Accordingly, we identify here an alternative form of the “private-collective” model referring to the open source software development Von Hippel & Von Krogh (2006) with a complex puzzle in the combination of private investment and profit and collective action.

The analysis of this collective-private model reveals an interesting compound of a control relationship on a community and a delegation relationship (essential to generate a collective dynamic). On one hand, the platform that supplies “community generated products” to external companies ought to guaranty a significant flow of proposals and interactions without control of the involvement of its members. The platform relies on a resource that it doesn’t have full control. On the other hand, the community’s willingness to participate depends on the policies of the platform; its political strategy as well as its economic rules or even the social principles of the collective action. Policy sharing by the platform administrators and the community appear to be a way to support involvement and sustainable performance. But simultaneously, it exposes the website administrator to conflicts on authority regarding central issues such as the level of financial reward, PI transfer, selection of clients, etc..

On looking on this interdependency, the community and the platform waver between centralization and distribution of power in the control of the economic activity. Our observations show that this middle ground of private-collective investment and its mode of governance are still being felt for. The significant characteristic of the mode of governance is therefore its instability. The system of transactions, the working processes and the “rules of the game” are continuously transformed. Over and above the content of rules on how the organization functions, the very way in which rules are defined is at stake. Critical phases, conflicts or controversies have to do with the renewal of rules in building new modes of organization for innovation.

Conclusion: Ways Forward ?

Crowdsourcing is currently one of the most important ways to activate and leverage the integration of heterogeneous resources in a structured flow of work (Thrift 2006). This paper has provided an initial approach involving new roles within the open innovation community, identified as crowdsourcing intermediaries. Within this wave of new web actors, crowdsourcing platforms have been recognized as an interesting object for scholars in organisation science not previously studied as such. From the open source and the open innovation literature, we have suggested that crowdsourcing platforms be considered as “hybrid forms” which borrow both from the collective model of online

communities and the private models of market commercialization (including profit returns for the innovator and value capture by firms). Accordingly, the paper leads to a new set of research questions that this model is raising, notably with the building of new exchange and cooperation norms within online communities. Our study actually leads to a pilot framework allowing us to foresee major challenges – both for firms and research – in building new rules and organizational forms, related to: economic transactions (control) ; work involvement (incentives) ; and the way of setting-up and organising the “collective brain” (coordination). From this perspective, crowdsourcing platforms appear to be original organisational forms which convene community dynamics and market relationships, homogeneous (community of practice/interest) and heterogeneous (laymen, end-user) resources, non financial (recognition, learning, belonging) and financial benefits. But this challenging arrangement leads to major tensions - and policy instability – leading to fundamental issues, that are:

- the distribution of power between authority and control by the platform and self-government by the community ;
- the differentiation among different kinds of relations, such as professional or community of practice relationships (resources exchanges, mutual appreciation, prestige hierarchy) and market relationships (PI transfer, financial returns, competition) ;
- the way to best support both collaborative work within the community and harvest the wisdom of the crowd in selecting the best ideas.

The limitations of action research stated on section III restricts our results to the identification of relevant puzzles and tracks of research which must be examined through further exploration. Much of the research has to be done with the support of virtual ethnography with systematic analysis of interactions corpus and network map. However, we hope that this paper conveys progress in the characterization of those new actors through various “typical configurations” in the field of open innovation. We also expect that the analytical framework will allow us to concentrate on a more fully specified description of control, incentives and coordination mechanisms, which open the way to improve empirical investigations.

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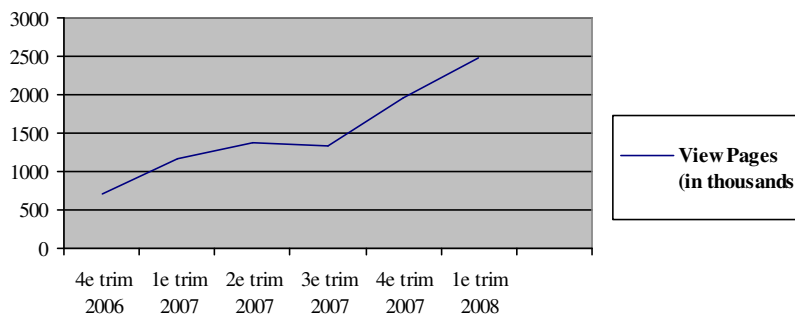
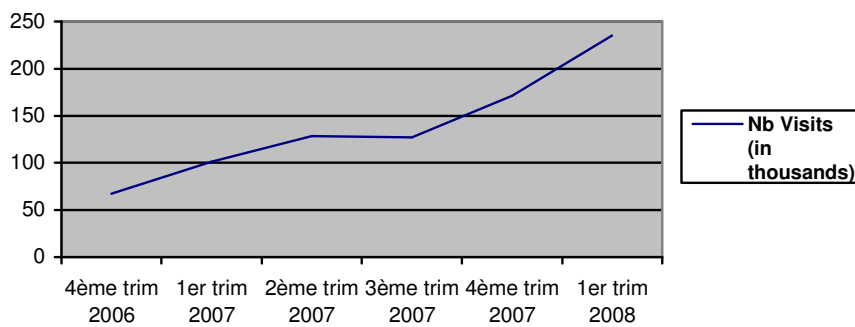
WILOGO – Overview from March 2006 to May 2008

38 045 logos sent by 4300 graphics¹⁹, giving rise to 107060 comments and 282072 votes (Source : Wilogo website)

The logo sold count for March et April correspond to 25 to 30 logos each month (from our observation).

The community is today composed of 81% of male for 19% female, in the majority from France (80 % for around 4% for each others country like USA, Spain, Deutschland).

Website traffic

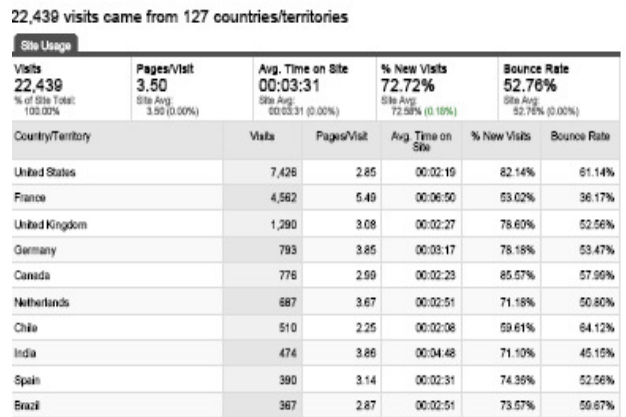
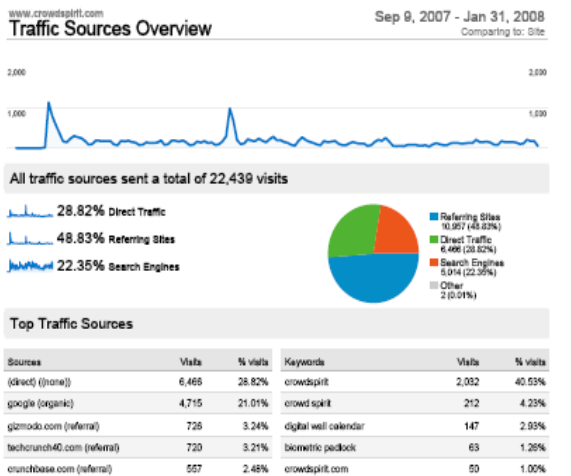
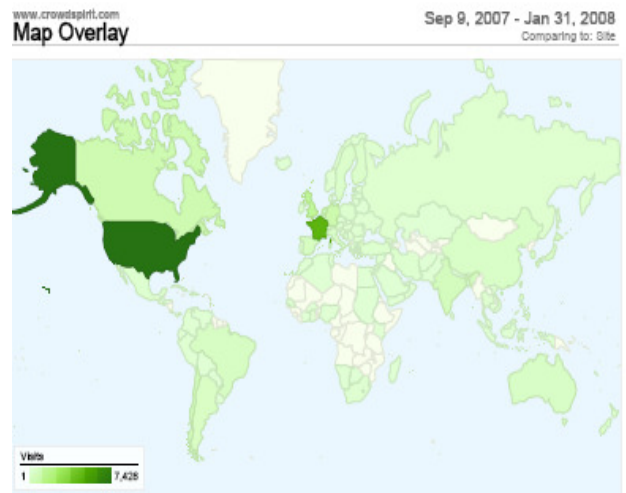
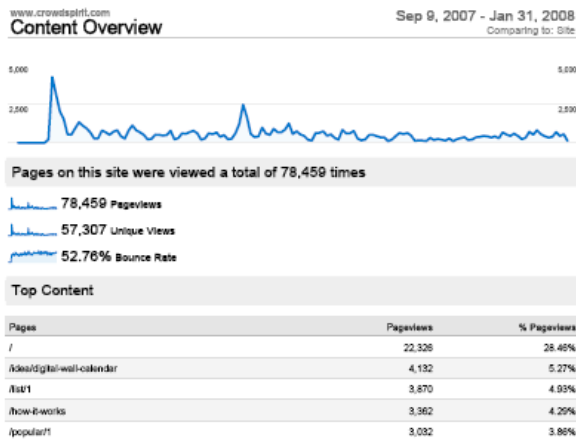
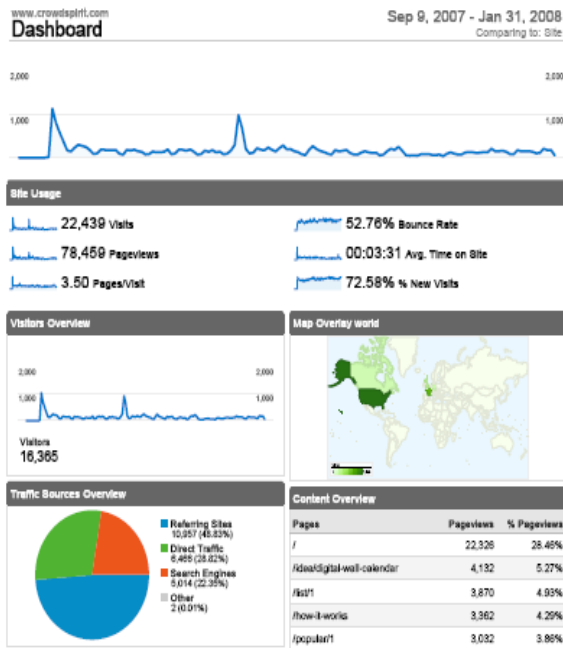


The forum is an open space - but reserved to the participants – where all the contributors are invited to discuss the “rules of game”. The forum propose 9 topics (i.e. “Wilogo functioning”, “tutorial and help for graphics”, “debate”, etc. Those 9 topics open to 2197 discussions and 47153 comments.

The blog is dedicated to free and “fun” interactions within the community (information, graphics buzz, jokes). Comments count in the website blog is estimated to 7951 comments.

¹⁹ 4333 graphics « active » for around 6000 participants registered in the website.

CROWDSPIRIT - Overview from September 2007 to January 2008 (first version)



107 proposals, 277 members registered and 16000 unique visits.

View of the 10 most popular project

Project	Nb comments	Nb contributors	Nb votes
Digital Wall Calendar	33	16	128
Increased revenue for covered parking structures	11	9	68
OpenMoko Touchscreen Linux Cellphone	7	6	57
Power Cord Inline Transformer	2	2	45
Real Life Bookmark	5	4	44
Biometric Padlocks	16	10	35
Kid Friendly DVD Player	3	3	33
Home services monitor	2	1	33
Make-your-own GPS	1	1	30
Facebook Phone.dub	10	5	28