How to invent a new business model
based on crowdsourcing: the Crowdspirit ® case

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Abstract

Chesbrough's work on open innovation provides a theoretical framework to understand how firms can access external knowledge in order to support their R&D processes. The author defines open innovation as a paradigm that assumes that firms can and should use both external and internal ideas and internal and external paths to market. He considers that industrial R&D is undergoing a paradigm shift from the closed to the open model. Information and communication technologies and especially web 2.0 technologies accelerate this shift in so far they provide access to collective and distributed intelligence disseminated in the "crowd". This phenomenon named "crowdsourcing" is defined by Jeff Howe 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."

Though this approach may sound appealing to firms and R&D organizations, there is little research available about the strategic use of crowdsourcing for innovation processes. In this paper we develop the argument that crowdsourcing raises a certain number of strategic issues that we discuss on the basis of a real size crowdsourcing experiment.

We were associated in the project from the very outset up to the strategic analysis of a start-up: Crowdspirit. The company's concept is based on the outsourcing of the entire R&D process to a community of designers and users, in the domain of consumer electronics. Our data is made up of the minutes of three strategic workshops with the managers that we completed step by step by additional theoretical study and some benchmarking of crowdsourcing experiments on the web. Although we started this collaboration mainly to help the company design its optimal business model, this action research process has led us to address the following research questions: how can a firm create and capture value by means of a strategy based on crowdsourcing? What are the main strategic issues to be considered when a firm intends to open its innovation process through crowdsourcing?

Due to the action research approach used, we do not dissociate the theoretical part from the empirical data, but rather to present our research process step by step. We therefore successively present four main phases of the strategic analysis carried out with the

Crowdspirit team: (1) The emergence of the Crowdspirit business model; (2) The value creation process related to profiles of crowdspirit community of contributors (3) The challenging of the company's initial business model and (4) The creation of a new business model successively open and closed models. In the discussion we summarize the main strategic issues that emerged during the work on Crowdspirit's strategy with its managers, and interpret them on the basis of existing literature on open innovation. This leads us to complete Chesbrough's open innovation approach and Nambissan and Sawney network-centric innovation model by introducing new options for companies whose strategy is based on crowdsourcing.

Key words: Open innovation, crowdsourcing, business models

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INTRODUCTION

Chesbrough's work on open innovation (Chesbrough, 2006a; 2006b); provides a theoretical framework to understand how firms can access external knowledge in order to support their R&D processes. The author defines open innovation as a paradigm that assumes that firms can and should use both external and internal ideas and internal and external paths to market. He considers that industrial R&D is undergoing a paradigm shift from the closed to the open model. Information and communication technologies and especially web 2.0 technologies accelerate this shift in so far they provide access to collective and distributed intelligence disseminated in the "crowd". This phenomenon emerged recently and has given birth to a new concept: "crowdsourcing". In 2006, Jeff Howe, contributing editor to Wired Magazine introduced this term and defined it as follows: " Crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined - and generally large – network of people in the form of an open call.". This concept of "crowdsourcing" appeared in the media and the web sphere and has not been studied as such in academic litterature. Nevertheless, new R&D practices consisting of seeking innovative ideas or solutions outside via the web, has been described by various authors with other concepts such as "open innovation" (Chesbrough, 2006a; 2006b), "Connect and Develop" (Sakkab, 2002; Huston and Sakkab, 2006) or, more recently, "The Global Brain" (Nambisan and Sawney, 2007). For us, the concept of open innovation is more general and refers to the opening up of the innovation process, both upstream, with the exploration of external sources for innovation opportunities, and downstream, with the use of those opportunities at different stages of the innovation process and through multiple channels. Sakkab (2002) and Huston and Sakkab (2006) describe the new Procter and Gamble innovation model, based on the leveraging of the internal R&D competences by "tapping into the creative thinking of inventors and others on the outside" (Huston and Sakkab, 2006). The authors, who are both VPs in charge of innovation at P&G, argue: "As we studied outside sources of innovation, we estimated that for every P&G researcher, there were 200 scientists or engineers elsewhere in the world who where just as good - a total of perhaps 1.5 million

people whose talents we could potentially use". Building their model on P&G and other similar examples such as IBM, Stapple, Ducati etc., Nambisan and Sawney proposed the concept of "Global Brain", referring to the creative potential or the pool of talent, that lies outside corporate boundaries.

In line with these approaches we will define "crowdsourcing" as: " *the opening of the innovation process of a firm to integrate numerous and disseminated outside competencies through web facilities*". *These competencies can be those of individuals (for example creative people, scientists, engineers) or existing organized communities (for example open source software communities).*

Though this idea of using outside knowledge and competencies may sound appealing to firms and R&D organizations, there is little research available about the strategic use in crowdsourcing for innovation processes. In this paper we develop the argument that crowdsourcing raises a certain number of strategic issues that we discuss on the basis of a real size crowdsourcing experiment. Our research team had the opportunity to support the Crowdspirit start-up from the beginning. The latter expresses its strategic vision as follows: " Bringing the dreams of the Crowdspirit community to life". (see www.crowdspirit.com). The web platform of the company was launched in September 2007 for a beta test. The concept is ambitious: the idea being to create a mini revolution in consumer electronic products by outsourcing the entire R&D process to a community of users and designers. In the initial business model of Crowdspirit, users submit ideas for innovative electronic products that they would like to have, the community votes on the ideas, the best ideas are worked on by a community of designers who develop and draft the specifications, investors provide financing, developing partners make prototypes, the manufacturing is done by ad-hoc sub-contractors and products are then sold via the web. All users involved in the product innovation cycle are to earn a share of the product revenue, according to the level of their contribution. To a certain extent Crowdspirit provides an example of an open innovation model pushed to its limit, where nearly all innovation activities are coordinated and carried out within the market rather than within an existing firm.

We were associated in the project from the very outset up to the strategic analysis of the company. Our data is made up of the minutes of four strategic workshops with the managers (May 2007, July 2007, November 2007, February 2008) that we completed step by step with additional theoretical study and some benchmarking of crowdsourcing experiments on the web. Although we started this collaboration with no other objectives than to help this company design its optimal business model, this action research process has led us to address

the following research questions: how can a firm create and capture value by means of a strategy based on crowdsourcing? What are the main strategic issues to be considered when a firm intends to open its innovation process through crowdsourcing?

As the methodoloy is based on action-science research with a single case study, as described by Baskerville and Wood-Harper (1998), we suggest that the theoretical part not be dissociated from the empirical data, but rather to present our longitudinal research process step by step.

We will therefore successively present the four main phases of the strategic analysis carried out with the Crowdspirit team:

1. **The emergence of the original business model**. At this stage we carried out the first formalized analysis of the Crowdspirit business model as thought up initially by the entrepreneurs. It revealed that crowdsourcing introduces specific strategic issues that cannot be addressed by a classical business model design approach.

2. **The network construction**. We contributed to the analysis of the value creation process by characterzing the profiles of the required contributors to the whole system and then defining hypotheses on their motivations for participating. The traditional view of value propositions for the end-customer is no longer relevant in this case, as customers are also contributors. They can pay for the products and also be paid for their talent and contributions. This highlights a new value creation process that is no longer linear but rather network based.

3. **The challenging of the company's initial business model**. The third meeting with the company took place after the manager decided to make his business model evolve following two months beta testing of the web platform. At this stage we provided the company with a theoretical framework on business models based on crowdsourcing, and identified two models considered here to be ideal-types. This framework should now help the company position itself between two models: one community-based and the other intermediary-based.

4. **The invention of a hybrid business model with an open platform and a closed one**. We describe here the repositioning of the company's strategy with an alternative value creation model. The idea is to borrow from both the community-based model with principles close to those of open source platforms, and the intermediary-based model with a value proposition for firms wishing to use Crowdspirit's communities for their own R&D.

In the discussion we summarize the main strategic issues that emerged during this one year project on Crowdspirit's strategy with its managers, and interpret them on the basis of existing literature on open innovation. This leads us to complete Chesbrough's open innovation approach and Nambissan and Sawney network-centric innovation model by introducing new options for companies whose strategy is based on crowdsourcing.

1. THE EMERGENCE OF A NEW BUSINESS MODEL BASED ON CROWDSOURCING

The first strategic workshop we had with the Crowdspirit team took place in May 2007, four months before the official launch of the web platform beta test, which was still under development. At this stage, the team needed help in challenging their business model. In fact, the CEO of Crowdspirit found it difficult to explain his business model to potential investors and to convince them of its value creation potential. However, his vision was quite clear and he had already defined the value-sharing model for the different contributors of the community. The first meeting was therefore dedicated to challenging the Crowdspirit business model. For this we used a methodology, developed by our research team, which is based on developing business model scenarios. We briefly present the methodology in section 1.1 below. In the following section (1.2.) the main strategic points that were discussed during the meeting are summarized.

1.1. A BUSINESS MODEL SCENARIO PERSPECTIVE

The concept of business model (BM), used in professional circles since the development of companies on the Internet, is only beginning to be defined more precisely in management literature. The most cited authors in BM literature in strategy are Timmers (1998), Amit & Zott (2001) and Magretta (2002). Their definitions include the following elements: the architecture of the offer and the resources implemented, the value proposition for the client, the position of the company in the value network and the revenue model. These elements are to be found in the definition of Voelpel et al. (2004) which we have retained for the rest of our work: "*The term business model can be defined as the particular business concept (or way of doing business) as reflected by the business's core value proposition for customers; its configured value network(s) to provide that value, consisting of own strategic capabilities as well as other (e.g. outsourced/allianced) value networks and capabilities to continually*

sustain and reinvent itself to satisfy the multiple objectives of its various stakeholders." In line with the BM concept and in order to take into account the crowdsourcing activity, we identify the specific BM dimension related to the Internet context. The work of Rappa (2006) enables us to identify the community model that could be useful in helping to understand the role of internaut communities and the economic logic of e-business models based on crowdsourcing. At this stage, these different research elements lead us to retain the following elements in order to analyse the Crowdspirit business model:

- The value proposition for the clients;

- The resources and capacities necessary to develop the concept and its solution;

- The structure of the value network;

- The economic model (economic logic for revenue generation).

As the business model of Crowdspirit is not fully stabilized, due both to uncertainties concerning value creation within the community and value capture by the company, we decided to implement a scenario-based approach. Several authors have highlighted the interest of this approach (Chesbrough and Rosenbloom, 2002; Voelpel et al., 2004; Pateli and Giaglis, 2005). Designing scenarios about future BMs implies identifying uncertainty factors in order to build breakthrough scenarios. The factors considered are those that we postulate will have a strong impact (either positive or negative) on the strategy or the project (Strauss and Radnor, 2004). The scenarios aim to modify the view that the actors have of their environment by highlighting the contradictions and anomalies that result in questioning old and existing paradigms.

Based on this perspective, the scenarios are built as being possible futures. They should therefore increase creativity, improve focus and help managers take into account the uncertainty and complexity in their environment more effectively.

1.2. THE FIRST STRATEGIC WORKSHOP: THE FORMALIZATION OF CROWDSPIRIT STRATEGIC ALTERNATIVES AROUND TWO SCENARIOS

This strategic meeting took place in May 2007 and brought together the two co-authors of this paper and the two managers of Crowdspirit (Lionel, CEO, and Jean-François VP R&D and manufacturing). The meeting lasted for approximately 4 hours. We present hereafter our methodology and the main issues that were raised during the workshop.

Our methodology consists of following a systematic step-by-step challenging of the various elements of the BM. The first stage consists of asking and discussing a number of questions,

whilst posting the provisional answers on different coloured sheets on the wall directly in front of the participants in order to enhance the sense-building process. These questions are listed below:

- What is the concept?

- Who are the customers and what is the value proposition that Crowdspirit can provide?

- What resources and capacities are necessary to develop the concept and the technological platform?

- How can the value network be organised?

- What is the economical logic for revenue generation?

The second stage involves scenario building by grouping different answers and hypotheses on the BM dimensions, as they are posted on the wall. This is done to build contrasting but coherent BM scenarios.

We started by trying to determine the concept of the Crowdspirit activity precisely, in other terms, the company's strategic vision. This task was particularly difficult as in May 2007 the crowdsourcing concept was not that well known. Lionel, the CEO, who had already presented his project in a number of professional trade fairs, had formalized the following sentence to explain the concept: *"selling innovative consumer electronics products, under the Crowdspirit brand, which perfectly fit end-user needs, due to their involvement throughout the innovation process"*.

This statement rapidly appeared inadequate: the term "end-user" appeared ambiguous, the crowdsourcing community at the core of the concept, was not referred to, nor the value brought to the contributors through the incentive model. After long discussion, we came up with the following concept statement: *"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"*. This new formulation appeared satisfactory to the Crowdspirit team, as they considered that each key word of their business was present: platform, community, fair payment of the contributors.

When we asked the question « who are the customers », it appeared that Crowdspirit had different targets in mind which included a number of contradictions. People fond of new technologies, also called « geeks », appear to be the main target of Crowdspirit who need them to make the community function. But are they also potential buyers? Can the platform reach a mass market for the final products, not only composed of « geeks »? In other words, would "ordinary" end-users buy the high tech products designed by the "geeks"? Furthermore, could consumer goods companies also be clients of the web platform, paying for

innovative ideas or design specifications, and importing Crowdspirit products into their own business model as described in Chesbrough's open innovation paradigm? During the first meeting, all these issues remained open, and we decided to focus our analysis on the value proposition for the future community participants, the first target defined by Crowdspirit, for the launching of its beta test.

When we came to the value proposition step, we realized that it would also be necessary to better characterize the value potential for a community of "geeks". For Lionel, there is an intrinsic benefit in participating in a crowdsourcing enterprise: the satisfaction of participating in an economic revolution by rethinking the boundaries of the traditional firm. This could be consistent with previous research results on the motivation of open source contributors (West and Gallagher, 2006; Von Hippel and Von Krogh, 2006). Nevertheless, and although Lionel can be considered a "geek" himself, little was known by the team of the "geeks" motivation: would they have the same motivation as the open source contributors for software development, would they be motivated by significant financial rewards, as is the practice in for example in the Innocentive platform[1]? Another issue, related to the "geeks" motivation is the following: how would the community members react if Crowdspirit captured their contributions to the benefit of private companies (as is done by Innocentive)? Is this compatible with the community spirit that Lionel wants to create? It therefore appeared necessary to undertake a complementary study about contributors' profiles and values to answer these questions and to better define the value creation model. This will be the central focus of the second strategic workshop.

We then turned to the competencies required to develop a BM covering all the R&D processes as well as the manufacturing and the selling of products on the web. The main observation is that Crowdspirit lacks marketing competencies and identified distribution channels for its products. Crowdspirit has not identified the right channel to the end-customers. For the moment they intend to build partnerships with well-referenced web sites and with e-business companies having some supply chain experience. Through this discussion the Crowdspirit managers identified that this would be a key issue, and that building access to the mass market would require huge investments that the start-up was unable to provide at that time. The economic viability of the BM appears therefore uncertain. On one hand, value

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[1] InnoCentive is an open innovation marketplace whose principle is the following: scientific or technical challenges are published on the Innocentive web platform by seekers (corporations, agencies, not-for-profit organizations) who are looking for solutions to help with product development or other science problems. Each challenge has a significant associated cash award. People whose solution is chosen by the seeker win the bonus (www.innocentive.com)

capture must be ensured by the selling of designed products, but the selling model is not yet stabilized. On the other hand, and on the basis of the open innovation paradigm, we identified that the BM could find other paths of value capture, for example through the selling of semi-finished products generated by the work of the community: ideas, testing of concepts, detailed specifications, or even patents. These by-products could generate revenue as long as Crowdspirit can find the right business partners to valorise them on the end-market.

At this stage, we identified that Crowdspirit's initial concept could create and capture value through two types of BM: one is based on the management of the entire innovation process from idea generation to the end market, the second based on the valorisation of intangible assets produced by the community. We then decided to study these two scenarios in more detail and firstly to identify and define the profiles of the different types of contributors and their potential motivation to collaborate to the community. We put this subject on the agenda of the second workshop, which is presented in the next section.

2. THE NETWORK CONSTRUCTION: HOW TO PROVIDE VALUE FOR THE VARIOUS CONTRIBUTORS

Defining a value creation model based on a crowdsourcing strategy requires a good understanding of how to motivate contributors to ensure they actively participate in community work. Section 2.1 provides a review of several theoretical incentives models in open innovation and open source contexts. Section 2.2. describes the second strategic workshop we had with the managers of Crowdspirit during which we discussed the profiles and competencies of potential contributors and then defined the main reward principles.

2.1. INCENTIVES AND MOTIVATION IN OPEN INNOVATION AND OPEN SOURCE COMMUNITIES

Von Hippel and Von Krogh (2003) define two main ways by which innovation efforts can be rewarded both in industry and society in general. The first is the private investment model where contributors are individually rewarded for the knowledge they provide by private investors who expect to make profits. Intellectual propriety is transferred from individual contributors to private investors via patent or copyrights. InnoCentive is an illustration of this model: individual contributors are paid for the ideas, or technical solutions, they provide to the seekers.

The second major model through which innovation efforts can be rewarded is the collective action model. This model is based on the revealing of findings, discoveries and knowledge freely. It characterises open innovation, and above all open source software projects, in so far as it makes collaborative design possible (Raymond, 1999). The collective action model assumes that innovators relinquish control of knowledge, or other assets they have developed during the project, and so create public goods. According to Von Hippel and Von Krogh (2006), one major problem of the collective action model is how to reward real contributors and how to avoid free riding (downloading of open source software without contribution)? The literature on collective action argues that the creation and deployment of selective incentives to reward contributors is essential to the success of collective action projects. The importance of selective incentives suggests that small groups will be most successful at executing collective action projects because selective incentives can be carefully tailored to each group member, and individual contributions can be more effectively monitored (Olson, 1967; Ostrom, 1998).

Research on open source communities reveals that financial rewards are not necessary to recruit and motivate community members. Open source communities are not motivated by profit and don't propose financial compensation to contributors (Roberts et al, 2006). Open source projects are based on "bazaar" governance with open licence contracts where control and incentives are very low (Demil and Lecocq, 2006, Nambissan and Sawney, 2007). Open source community members tend to be more motivated by symbolic rewards such as recognition, knowledge sharing, increasing their own knowledge, the feeling of solidarity, fairness and altruism (Roberts et al, 2006; Von Hippel and Von Krogh, 2006, West and Gallagher, 2006). Von Hippel and Von Krogh (2006) propose a new incentive model that combines elements of the private and collective models: the "Private-collective" model. Here, innovators in projects use their own resources to privately invest in the creation of new knowledge and in product or service innovation. Private investment and collective action can coexist and enable the production of public goods through private funding.

This literature provides us with some guidelines to think about the incentive model Crowdspirit should adopt. On one hand, private investment appears to be relevant, as the final developed product will not be in the public domain. It is therefore legitimate than individual contributors are paid for their activities. On the other hand, we can expect than in this type of community contributors may have other motivations than purely financial ones, such as: participating in an economic revolution, obtaining products they can't find on the market or even creating or enhancing their reputations. In this case, we would have an incentive model

closer to that of the collective action model, rather than the "Private-collective" model of Von Hippel and Von Krogh, as the final products will remain private and will be sold on the market. These questions require that we work on the profiles and motivations of the different types of contributors. Although, as noted by Von Hippel and Von Krogh (2006), it is difficult in an open innovation community to recruit, and then motivate contributors, the open source literature still provides little advice on this issue. It is precisely what we wanted to address in the second meeting with the company.

2.2. THE SECOND STRATEGIC WORKSHOP: CHARACTERIZING CONTRIBUTORS PROFILES

The objective of the second workshop was to define the value brought by Crowdspirit to the different contributors. This was vital in order to develop appropriate communication to convince them to participate. This had to be ready for the launching of the platform, scheduled at the end of August 2007. Thus, we tried to identify the different profiles of the contributors, and for each of them, to make the hypotheses concerning the following: their expected role in the community, their motivations to participate and the competencies each type of contributor should have. We identified eight contributor profiles: the idea initiator, the design team member, the investor, the tester, the ambassador, the project leader, the reseller, the customer. As an example, we provide a view of the type of description we produced for each of the eight identified profiles:

The idea initiator

Role: He/she submits new ideas, concepts or problems

Motivation: He/she, is motivated by sharing his/her ideas or acting as a lead-user and bringing them to being with the help of the community

Competencies: He/she is interested in high tech products, has imagination, creativity. He/she is also able to describe his/her ideas in a pragmatic way.

We gave particular attention to the criteria of motivation and competencies. This was done in order to provide a better view of the value brought by the system to the contributors in relation to the level and the value of their contribution.

The description of the customer, which appeared to be a key issue in the preceding workshop, also required specific work. We identified a segment of "ordinary customers", those who buy MP3 or mobile phones through traditional distribution channels. Another segment is the "geeks" who can play different roles: they can be initiators, members of the design teams but

also resellers, or customers. The problem is that the initial BM of Crowdspirit is based on a volume strategy: products with a relatively low price (the target is under 150$) but sold to a mass market. With little investment in marketing and advertising, it is particularly crucial to rely on a network of prescriptors and create increasing adoption returns. Then the question appears of how to build the link with "ordinary customers" who do not belong to any geek community. Can the Internet "buzz"[2], that already started around the Crowdspirit project, be sufficient to reach this segment?

Following the identification of the different types of contributors, we worked on the value distribution model amongst the community members. The original model of Lionel consists of allocating points according to the level of contribution. For example an initiator will gain a certain amount of points when submitting an idea. These points can be converted to cash only if and when the product is commercialized and generates revenue. A percentage of the margin (that we cannot publish for confidentiality reasons) is *a priori* devoted to paying the community. This model raises two problems. The first is that it doesn't take into account other types of incentives that have been identified in previous research (Von Hippel and Von Krogh, 2006; West and Gallagher, 2006, Roberts et al, 2006). So far, for example, there is no formal model for the symbolic payment of talented contributors. The second problem that we have not identified as such in the literature is the fact that the incentive model is individually based and can introduce competition within the community and therefore may be counter-productive in terms of motivation. A second incentive model emerged from our analysis: this time it is based on the payment of the community engaged in the design of the product, which Lionel calls "the core-team". At this point we also raised the question of IP management, which is a central issue in open innovation models (Chesbrough, 2006a). At this point in time, the decision of Lionel was to ask the community to transfer all IP generated by the team work, to Crowdspirit. This is particularly important, as some members of the core-team could also be employees of dominant firms in the consumer electronics market[3]. The principle of a relatively closed core-team dedicated to the design of the product, after the idea generation and idea selection phases is therefore adopted. Only people with a sufficient number of points gained in the previous phases can belong to this core-team. The core-team would then be responsible for the innovation process up to commercialization. This of course requires the

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[2] The reader can type « Crowdspirit » on Google to get an idea of the « buzz » around the project.
[3] The identification of the geographical origin of contributors will later confirm this hypothesis, as we will see that the regions of dominant firms in consumer electronics are over-represented.

identification of a system of competencies so that all the needed competencies (design, engineering, marketing, commercial) could be represented in the team.

Finally, this second workshop led us to identify the main elements of the value creation model within the community, and to define the basis for the beta test: an open model for the idea generation and idea selection phases, a more closed system for the following innovation process, with a core-team that could be more interested and motivated by the success of the product on the market. At this stage only a real experiment with a real product can help refine the economic and the incentive models as the financial returns for the contributors will be proportional to the success of the product. If the first products are successful, motivation for further contributions will be re-enforced.

Nevertheless, we still lacked a clear view of the Crowdspirit value capture model required to ensure that the company can be profitable and be able to raise funds for its development. This will be the purpose of the third strategic workshop that we decided should take place after the launching of the platform.

3. THE CHALLENGING OF THE INITIAL BM AND THE IDENTIFICATION OF TWO MODELS: THE COMMUNITY MODEL AND THE INTERMEDIARY MODEL

The third workshop in November 2007 took place after three months of real experimentation of the web platform. This experimentation provided us with real results and raised new strategic issues for the Crowdspirit team. In this section therefore, we will start with the main events of this experiment followed by the new questions posed by the CEO. We then present a theoretical framework that we discussed with the team, in order to help them to refocus their BM and finally change their initial concept.

3.1 THE MAIN MILESTONES OF THE WEB PLATFORM LAUNCH

The first important step in the life of the company was the opening of a beta test of the web platform, at the end of August 2007. This test provided feedback on the functioning of the community and enabled the technical side of the platform to be tested. This launch was done on a limited basis with invited members who had only one day to register before the formed community was closed. This first experimentation phase produced positive results with more than 500 people registered and more than 50 ideas generated.

The second major event was the official launch of the web platform during the TechCrunch 40 conference (a major Web 2.0 conference) in San Francisco on the 17th and 18th September 2007. Crowdspirit was selected among 700 applications worldwide to present the web site to potential investors.

In October, Lionel was quite disappointed by the number of visits to the website, which had not increased since the beta test. On the whole, the site has had 6000 visitors but only a core group of people is ensuring the life of the community. The number of ideas produced is still quite low (around 100 in November). Different reasons can explain these results: difficulty in understanding what steps to carry out following the idea generation phase and the lack of tool-kits to support the design activity. Nevertheless, one product idea stands out and obtained a large number of positive votes (70%): the digital wall calendar. The concept involves centralising and co-ordinating, on a wall-mounted electronic device all the activities of family members. A closed core group of around 20 people has been formed to define the detailed product specifications. In December 2007, the Crowdspirit team decided to proceed to the industrialization and commercialization phases of this promising product.

As we stated, despite the emergence of a real innovative product after a few months of functioning, the Crowdspirit team remains disappointed by the results. Therefore, back from the TechCrunch Conference, Lionel thought it was time to make his business model evolve. The first months of experimentation, from September to November 2007 confirmed the difficulty in recruiting enough participants into the community. Furthermore it appeared, as we previously identified, that it would be very difficult to address a mass market for the first product developed by the Crowdspirit community (the digital wall calendar). Lionel then decided to study the opportunity of finding additional partners to address the final market, such as established firms in the consumer electronics industry. The objective of November's workshop was to discuss this issue on the basis of some preliminary theoretical work that we prepared before the meeting, and that we present hereafter.

3.2. A FRAMEWORK TO CHARACTERIZE DIFFERENT TYPES OF CROWDSOURCING-BASED STRATEGIES

Chesbrough's recent work on open innovation (Chesbrough, 2006a, 2006b) describes two modes of managing innovation and R&D processes: the so-called closed model and the open model. The closed innovation system is called closed in so far the firm is seen as being a closed pipe where projects enter one way, at the beginning, and can only exit one way, by

going into the market. This model describes a traditional vertical integration model where internal R&D activities lead to internally developed products that are then distributed by the firm. In the view of Chesbrough and colleagues, the open innovation model involves the use of deliberate inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for the external use of innovation. Chesbrough (2006a, 2006b) considers that the business model of the firm acts as a filter to select the projects that fit the business model. Other projects can be valorised through other paths such as licensing or patent selling. In his book on open innovation business models, Chesbrough (2006a) also underlines that the open innovation paradigm has given birth to a new type of company called "innovation intermediaries". These companies act as market places whose function is either to help innovators use external ideas more rapidly, or help inventors find more markets where others can use their own ideas to mutual benefit. InnoCentive, which we mentioned previously is one example of this type of innovation intermediary.

Nambissan and Sawhney (2007) recently completed the open innovation perspective. They take it further by identifying four types of what they call network-centric innovation:

1. The "orchestra" model is controlled by a set of partners and addresses a defined innovation space. This can be a R&D consortium with different partners being responsible for different aspects of the innovation.

2. The "creative bazaar" model is controlled by one dominant firm who sources emergent innovative ideas from a diverse network of inventors. This form appears to us to be typical of the open innovation model as defined by Chesbrough and colleagues, and also typical of what has been defined as crowdsourcing.

3. The "MOD station" model (MOD standing for "modifications") is one form where innovation is based on an existing well-defined architecture (incremental innovation) and a community of users and experts carries out the innovation. An example of this model can be found in the video game industry where, by offering the source of the software to the community, a company can facilitate the creation of variations of the game.

4. The "Jam Central" model is when members of an innovation network get together to innovate, the structure of the innovation evolves through the continuous interactions of the members, and the leadership of the network is diffused amongst a group of members. We think that this model is typical of some open source communities.

Together, Chesbrough's work on open innovation and Nambissan and Sawhney's approach on network-centric innovation, provide us with a framework to position Crowdspirit's
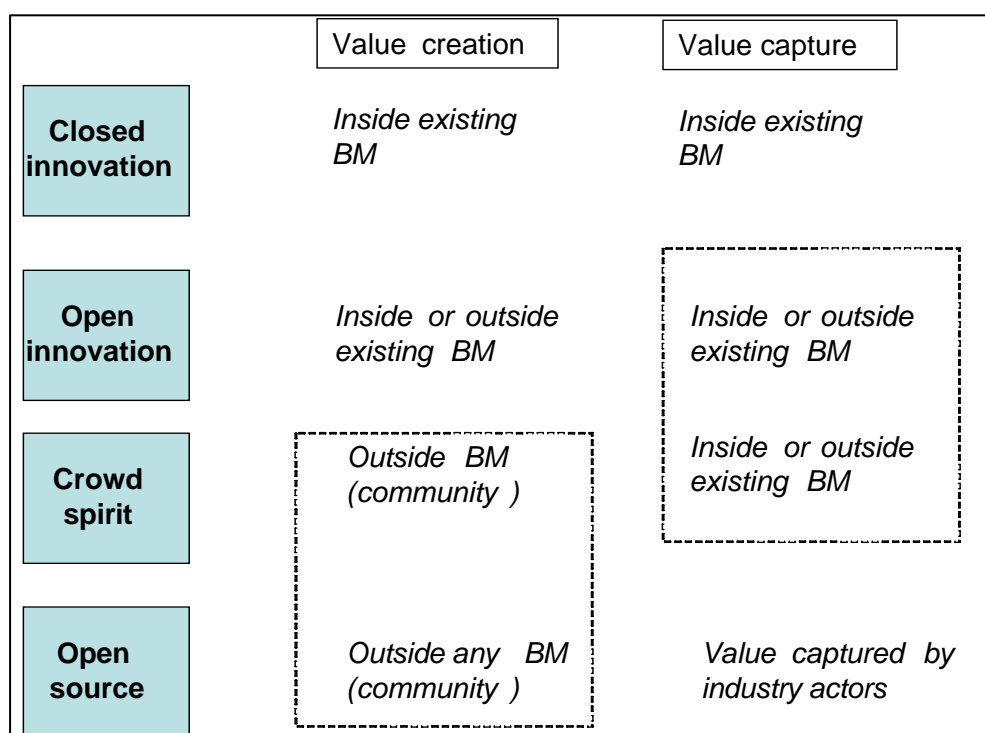
business model. Here below are our conclusions. They must be currently considered to be provisional as the Crowdspirit business model is still evolving.

3.3. WHAT ARE THE STRATEGIC ALTERNATIVES FOR CROWDSPIRIT?

We first tried to characterize strategic alternatives for Crowdspirit inside the open innovation paradigm. According to Chesbrough (2006b), two dimensions of the business model have to be taken into account: the value creation process and the value capture process. What in our opinion, distinguishes the closed innovation model from the open innovation model, is that, for the latter, the business model utilises both external and internal ideas to create value. In the open innovation paradigm, the business model acts as a filter to select the innovations that will be carried out within the firm, so that the firm can capture value from the innovation inside its BM. Open source software models (OSS) can somehow be assimilated to the open innovation model, but one major difference is that open innovation explicitly incorporates the business model as the source of both value creation and value capture, while open source focus on value creation throughout an industry value chain, its proponents usually downplay the importance of value capture. These distinctions allow us to define the Crowdspirit business model as being somewhere in between open innovation and open source models, as shown in figure 1.

FIGURE 1

Crowdspirit BM: between the open innovation and open source model

	Value creation	Value capture
Closed innovation	Inside existing BM	Inside existing BM
Open innovation	Inside or outside existing BM	Inside or outside existing BM
Crowd spirit	Outside BM (community)	Inside or outside existing BM
Open source	Outside any BM (community)	Value captured by industry actors

Currently we suggest that the Crowdspirit business model shares the fact that value creation is outsourced to the community with the open source models and shares the fact that some value capture should occur inside Crowdspirit's BM with the open innovation models. This confirms the importance of the issue raised in the previous workshops, namely the capability of Crowdspirit to capture enough value from the whole process to be profitable.

We then tried to position Crowdspirit within the framework of network-centric innovation developed by Nambisan and Sawhney (2007). Again, it appears that the Crowdspirit model doesn't fit into one of the four types and could in fact borrow from two types namely the "Creative bazaar" and the "Jam Central". It could be a "creative bazaar" model on the condition that the company could act as a dominant firm sourcing ideas from inventors. This supposes that Crowdspirit have full control over the innovation processes. It could also be a "jam central" model if Crowdspirit gave up the leadership of the innovation strategy to the community, thus coming closer to an open source model.

Finally, from this analysis, two major types of business model emerged that Crowdspirit could adopt to ensure its future development: one that we call the community model and the other the intermediary model. We summarize hereafter these two types and define for each of them the main strategic issues as they appeared in the workshops with Crowdspirit.

3.3.1 The community model

The community model is the one initially adopted by Crowdspirit. It is close to the open source model where nearly all the value creation process is outsourced to a community in which inventors submit ideas for innovative products. In this model, members of the community send ideas or describe a problem, contribute to the product specifications, vote and test the concept. They can also promote the product and invest money to finance its development. Once the product development stage has been completed, as with the digital wall calendar product, customers can purchase the product by means of the Crowdspirit supply chain and network of potential manufacturers. Community members can also purchase the product thank to a "pre-sales" system.

The reward system is based on the selling price as shown on the figure n°2. Community members are remunerated according to their contribution by receiving a percentage of the final revenue.

This model is close to the "Jam central" model of Nambisan and Sawhney where the community owns the leadership of the innovation network, and the innovation goals evolve from the continuous interactions between community members

The main strategic issues related to this model that emerged during our strategic analysis with Crowdspirit are as follows:

- How to motivate members in order to ensure their contribution and to provide value. What is the right incentive model?

- How to ensure value capture by Crowdspirit if the community controls the entire innovation process (which is not the case in the present business model).

- How to develop the path to market with a sufficient volume of sales to finance both the community work and the Crowdspirit activity.

FIGURE 2

VALUE SHARING HYPOTHESES WITHIN THE NETWORK
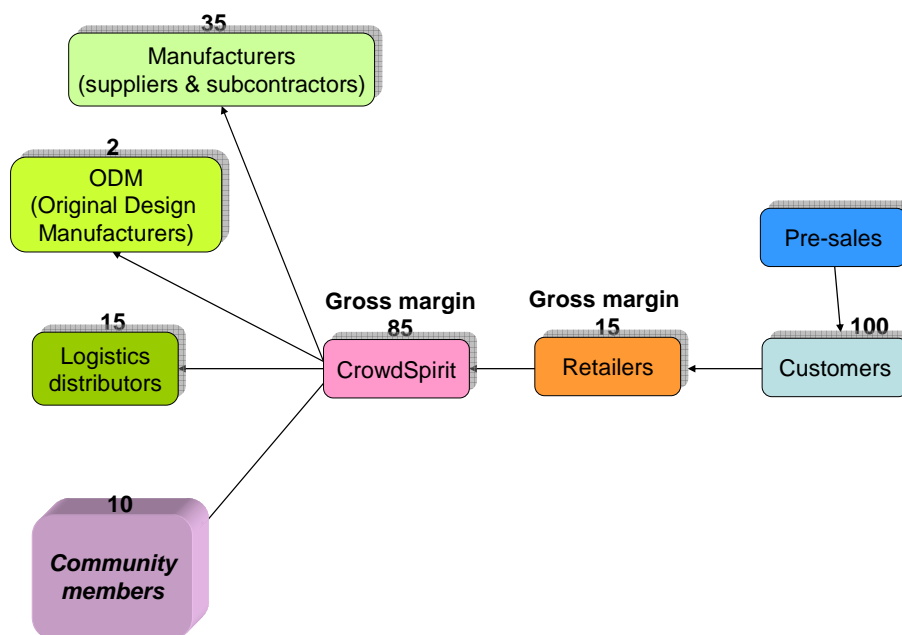
3.3.2. The intermediary model

The intermediary model can be considered as a strategic alternative for Crowdspirit. This would be a model closer to the open innovation model, where value creation would still rely upon the work of a community, but value capture would be ensured by the valorisation of the community developments towards established firms. In this model, the clients of Crowdspirit would not be the end-users but rather companies willing to access crowdsourcing facilities. In his book on Open Business Models published in 2006, Chesbrough (2006a) dedicated a

chapter to innovation intermediaries (Chap 6). He identified two main models of intermediaries: the agent, representing one side of a transaction, and the broker or market place, bringing parties together to achieve a transaction. He argued that an innovation intermediary should be able to help its clients define the problem that needs to be solved, and manage the problem of identifying both parties (companies and inventors). However, a recent study about innovation intermediaries and marketplaces (Lichtenthaler and Ernst, 2008) concludes that Internet marketplaces for technology transactions (such as Innocentive, NineSigma or Yet2.com) have not yet met the expectations of both technology suppliers and seekers and still generate a relatively small flow of transactions. The authors observe that those marketplaces have recently made their business model evolve by offering additional services to facilitate technology exchanges. In addition, they note that there is a challenge involved in identifying high potential applications before actively commercializing technology that is not yet present in existing marketplaces. Crowdspirit could thus act as an intermediary between innovation communities and firms, but not especially for technology or patent transfer, but rather to help firms invent new concepts, test them, or identify application domains for a given technology they have in portfolio. In other terms the company could become a "market oriented" rather than a "technology oriented" innovation intermediary.

Adopting this type of model would be a major strategic shift for Crowdspirit, which would then need to resolve the following:

1. Define the scope of its activity as intermediary (only broker, or broker with added-value services)
2. Define the target customers among all the actors of the consumer electronics industrial value chain (cf. Christensen et al. 2005)
3. Define the value proposition for these customers
4. Invent a new incentive model for the community
5. Check that the existing community would remain involved even if they loose control of the innovation network.
6. Managing the IP issues with the contributors and the customers, according to the nature of the knowledge transferred.

### 3.4. THE EMERGENCE OF A HYBRID MODEL

Between December 2007 and February 2008 Lionel David started to redefine the CrowdSpirit's web platform to fit the newly defined strategic model. His reflection led him to

present us his new business model in a fourth workshop in Febrary 2008. He decided to borrow from the two models that we presented in November and design a hybrid model, combining the community model and the intermediary model. The main reason for this is that the CS community is considered as a strategic asset for the company for value creation, but cannot ensure value capture to the benefit of the company. In Lionel's view, the community model is based on two categories of contributors. The first one is made up of anonymous individuals from the "crowd" providing ideas, problems or solutions and testing innovative ideas. The other category includes members of "core-teams" acting as a project team to define user requirements and prepare the product for industrialization. The services offered by Crowdspirit as an intermediary are therefore based on both types of contribution. A client firm could use the open web platform of Crowdspirit to test concepts, find applications for his technology, or look for innovative solutions. It could also negotiate with a core-team to obtain the rights for the ideas, concepts, scenarios, design or detailed product specifications produced by the team. As shown in figure 3, CrowdSpirit will manage communities of contributors and play an intermediary role by offering firms an access to the community members. This hybrid model again raises some key issues: (1) the role of CrowdSpirit as intermediary: either a broker (able to advise the client on how best to approach the market) or an agent (able to bring parties together to achieve a transaction); (2) the value proposition for community members. On the latter topic, research on open source communities provides useful insights. According to Shah (2006), the open source community is made up of two types of members: the need driven participants and the "hobbyist" participants. The first ones interact with the community in order to satisfy their needs, whereas the second ones participate to the community for fun and enjoyment. Roberts and al (2006) research suggests that motivation, participation and performance of open source communities requires the implementation of a feedback system and a status motivation system. Further study on the

motivation of Crowdspirit's community members should help us define a relevant incentive system for both of the categories presented previously. So far, we can assume that we will find need-driven participants and "hobbyist" participants in both categories.

Others issues should be studied: How to demonstrate the value of the service to the clients (measure the contribution of the intermediary), how to access a two-sided market and how to establish a strong positive reputation.

FIGURE 3

REPRESENTATION OF CROWDSPIRIT'S HYBRID MODEL

SOURCE: CROWDSPIRIT ®

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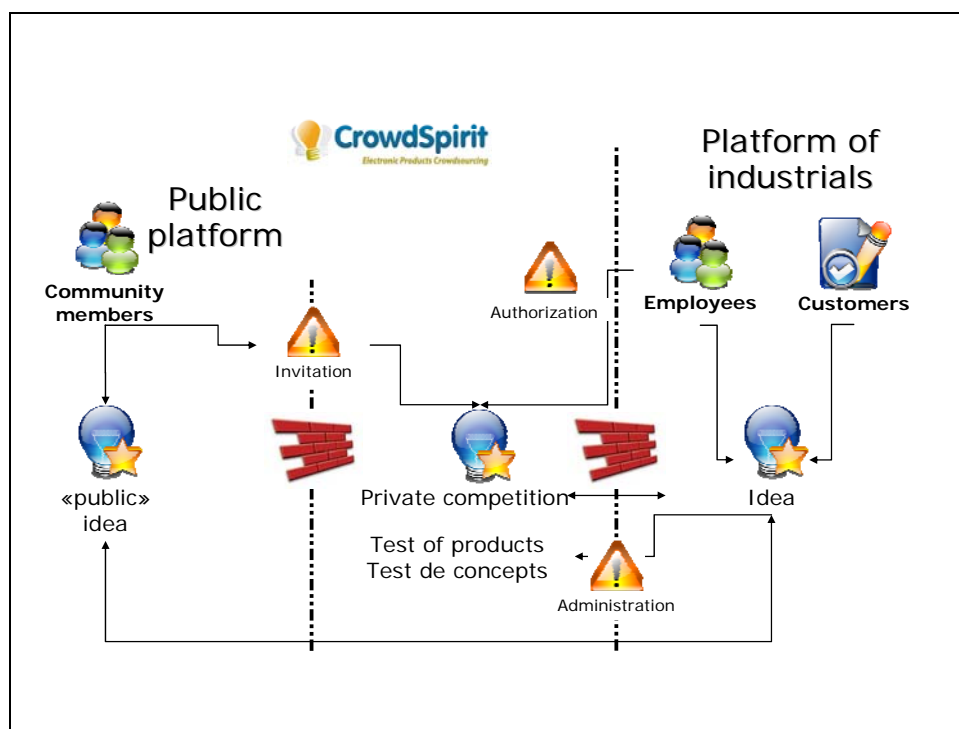
DISCUSSION AND CONCLUSION

Firms' crowdsourcing practices consisting of outsourcing innovative activities, once performed internally, to the "crowd", raises some new strategic issues that we wanted to highlight in this paper. As there is little literature on the crowdsourcing phenomenon as such, we built our analysis on open innovation and open source research as open innovation and open source practices rely to a certain extent on crowdsourcing. We had the opportunity to

follow the launching of the Crowdspirit start-up from the outset. Through a step-by-step action research process, we discovered a number of strategic key-issues, not addressed in literature to date. These will provide a first base on which to carry out future research on crowdsourcing. The limits of this study remain those inherent to exploratory research, and especially in this business case, which is continuously evolving, with no obvious development paths for the future.

Our main results can be summarized as follows:

1. Crowdsourcing practices can lead to a renewed vision of the function of a business model.

Traditionally the business model perspective deals with the value creation model of a firm. The scenario-based approach, used to challenge the Crowdspirit business model, revealed that in a context of crowdsourcing it is necessary to clearly distinguish between value creation and value capture. Indeed, for a company like Crowdspirit, whose entire innovation activity is based on crowdsourcing, value creation is performed by the community (as in the case of open source software), whereas value capture should be made within the business model (as in many open innovation experiments). The first business model as designed by Crowdspirit appears problematic, as the competencies owned by the firm do not guarantee a clear path to the mass market. It then appears than the company has to manage the right balance between an open source business model and an open innovation business model. Adopting a strategy to develop their products, like those adopted by software firms relying upon established open source communities, would be one option. The other option would involve playing the role of innovation intermediary to the benefit of established firms in the domain of consumer electronics products.

2. Crowdsourcing practices question the incentive model to enhance community members participation

The literature on the incentives for innovation activities, and especially the recent work of Von Hippel and Von Krogh (2006) suggests three models to reward innovation efforts: the private investment model (where the knowledge produced is paid by private investors), the collective action model (where the knowledge produced is revealed freely to the benefit of all) and the intermediate "private-collective" model, which theoretically takes the best of the former two models, and especially avoids free-riding behaviour. Crowdspirit is trying to invent a fourth form that we could call "collective-private". Interestingly enough, Crowdspirit

is managing this issue by separating the different phases of value creation. The first phase, idea generation and idea selection, could function as a collective action model, with quite low financial rewards, if other forms of reward are developed, as discussed in the literature (such as reputation),. The second phase, product specifications and industrialization, will be carried out by a closed "core-team" with a more private investment model. We can make the hypothesis that experts (engineers, designers, marketing people etc.) would expect returns on their investment of time, proportional to the success of the product. As there has been no product commercialized so far, this remains to be checked with future empirical data on the case. Another point is the recruitment of team members, according to their profile and competencies. As Von Hippel and Von Krogh (2006) suggested, this requires focusing on relatively small teams that the company can control and motivate. Thus, with crowdsourcing practices we see new business relations emerge, namely in this case between the market and hierarchy. Pure market coordination would appear to be unviable because the firm has to be able to control the innovation activities for its own benefit. This raises very interesting question on new hybrid organizational forms that should be addressed by further research.

3. The emergence of two models for innovation activities relying heavily on crowdsourcing

A question not addressed in literature on open innovation is the proportion of innovation activities of a given firm outsourced via crowdsourcing. If this proportion is high, as it is the case for Crowdspirit, we see only two possible viable business models. The first is the community model, similar to the "jam central" model of Nambisan and Sawney. In this configuration, the community should gain the leadership and the control on the innovation network, which is not completely the case in Crowdspirit at the current time. This would also mean that Crowdspirit would have to focus its business model on industrialization and marketing activities. It may sound paradoxical however that the company controls lower added value activities and outsources the higher added value ones. An alternative for Crowdspirit would therefore be to develop an innovation intermediary business model, close to the "creative bazaar" of Nambisan and Sawhney. In this case, Crowdspirit would maintain its leadership in the value added innovation activities. Innovation intermediaries are companies whose activity is specialized in crowdsourcing for the benefit of their clients. This would suppose that Crowdspirit develop additional competencies such as the capacity to understand the innovation problem of the client and to develop the right crowdsourcing strategy for the client. In addition, Crowdspirit could reinforce its capacity to manage a

community of experts in the domain of consumer electronics and invent a relevant incentive model that we think should be close to the private investment model. Crowdspirit has found a strategic position between the community model and the intermediary model. Although we cannot currently assess the relevance of this choice, it suggests that practices of innovative companies in the realm of web 2.0 can renew the theoretical models of open innovation and open source by introducing new approaches. Future research will be necessary to consolidate our understanding of these emergent business models.

REFERENCES

Amit, R. and Zott, C. 2001. Value Creation in E-Business. **Strategic Management Journal**, 22, 6/7: 493-520.

Baskerville R. and Wood-Harper A.T. 1998. Diversity in information systems action research methods, **European Journal of Information System**, 7: 90-107

Chesbrough, H. 2006. Open Innovation: A New Paradigm for Understanding Industrial Innovation, In H. Chesbrough, W. Vanhaverbeke, and J. West, (Eds), **Open Innovation: Researching a New Paradigm:** 1-12. Oxford: Oxford University Press.

Chesbrough, H. 2006a. **Open Business Model: How to thrive in the new innovation landscape.** Harvard Business School Press. 256 pages

Chesbrough, H. 2006b. New Puzzles and New Findings," In H. Chesbrough, W. Vanhaverbeke, and J. West, (Eds), **Open Innovation: Researching a New Paradigm**. 15-34, Oxford: Oxford University Press.

Chesbrough, H. and Rosenbloom, R. 2002. The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies, **Industrial and Corporate Change**, 11, 3: 529-555.

Christensen, J. F., Olesen M.H. and Kjær J.S. 2005. The Industrial Dynamics of Open Innovation — Evidence from the transformation of consumer electronics. **Research Policy**, December: 34-10.

Demil, B. and Lecocq, X. 2006. Neither Market nor Hierarchy nor Network: The Emergence of Bazaar Governance, **Organisation Studies**, 27,10: 1447-1466

Huston, L. and Sakkab, N. 2006. Connect and Develop. Inside Procter &Gamble's New Model for Innovation, **Harvard Business Review,** March.

Lichtenthaler U. and Ernst H. 2008. Innovation Intermediaries: Why Internet Marketplaces for Technology Have Not Yet Met the Expectations, **Creativity and Innovation Management,** 17,1: 14-25

Magretta, J. 2002. Why Business Models matter, **Harvard Business Review**, May:86-92.

Nambissan, S. and Sawhney, 2007. The Global Brain. Wharton School Publishing

Olson, M. 1967. **The Logic of Collective Action,** M.A.: Harvard University Press

Ostrom, E. 1998. A behavioral approach to the rational choice theory of collective action. **American Political Science Review**, 91,1: 1-22

Pateli, A. and Giaglis, G. 2005. Technology innovation-induced business model change: a contingency approach. **Journal of Organizational Change Management**, 18, 2: 167-183.

Rappa, M. 2006. Business Models on the Web, http://digitalenterprise.org/models/models.html, accessed February 2006.

Raymond, E. 1999. **The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary**. Sebastopol, CA: O'Reilly

Roberts, J.A., Hann, I.H. and Slaughter S.A. 2006. Understanding the Motivations, Participation and Performance of Open Source Software Developer: A Longitudinal Study of The Apache Projects. **Management Science**, 52,7: 984-899

Sakkab, N. 2002. Connect and Develop complement Research and Develop at P&G. **Research Technology Management**, march-april: 38-46

Shah, S.K. 2006. Motivation, governance and the viability of hibrid formes in open source software development. **Management Science**, 52,7: 1000-1014

Strauus, J.D. and Radnor, M. 2004. Roadmapping for dynamic and uncertain environments, **Research Technology Management**, march-april: 51-57

Timmers, P. 1998. Business Models for Electronic Commerce. **Electronic Markets**, 8, 2: 3-8.

van der Heijden, H. 1996. *Scenarios: The Art of Strategic Conversation*. Chichester, John Wiley and Son

Voelpel, S.C., Leibold, M. and Tekie, E.B. 2004. The Wheel of Business Model Reinvention: How to Reshape your Business Model to leapfrog Competitors. **Journal of Change Management**, 4, 3: 259-276.

von Hippel, E. and Von Krogh G. 2003. Open Source Software and the "Private-collective" model: Issues for Organization Science. **Organization Science**, 14, 2: 209-223.

von Hippel, E. and Von Krogh G. 2006. Free revealing and the private-collective model for innovation incentives. **R&D Management**, 36, 3: 295-306.

West, J. 2006. Does Appropriability Enable or Retard Open Innovation?. In Henry Chesbrough, Wim Vanhaverbeke, and Joel West, (Eds.), **Open Innovation: Researching a New Paradigm**.: 109-133. Oxford: Oxford University Press.

West, J. and Gallagher S. 2006. Challenges of open innovation: the paradox of firm investment in open-source software. **R&D Management**, 36, 3: 319-331.

West, J. and Gallagher S. 2006. Patterns of Open Innovation in Open Source Software. In Henry Chesbrough, Wim Vanhaverbeke, and Joel West, (Eds.), **Open Innovation: Researching a New Paradigm**.: 82-106. Oxford: Oxford University Press.