

Crowdsourcing as an Innovation Strategy

A Study on Innovation Platforms in Austria and Switzerland

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Abstract: In this paper we present results from a study on three innovation platforms in Switzerland and Austria. We conducted studies of crowdsourcing platforms run by the Swiss 'Atizo.com', 3M Austria's 'Zukunft-Innovation' and A1 Telekom Austria's 'A1 Innovations' including interviews with the companies and community members. Motives and incentive-systems for crowdsourcing are analysed from the participant's as well as from the company's point of view. Further, the study discusses the risks of crowdsourcing and the importance of intellectual property in an age of rapid idea diffusion and imitation. The examined case studies show overall positive experiences with crowdsourcing and crowd-based idea-contests. However, at the same time the analysed open communities also show a tendency for a closure as we found evidence that over a longer period of time a small group of actors emerges, which provides similar problem solving strategies repeatedly.

Key words: crowdsourcing, innovation platforms, motivation, intellectual property.

Companies in various industries are increasingly seeking for diverse forms of cooperation with research institutions, start-ups, suppliers, competitors and customers. New innovation models that promote a more open and interactive process of innovation (CHESBROUGH, 2003; VON HIPPEL, 2005; HOWE, 2008) have been introduced and are applied as part of the business and innovation strategy. An important motivation for the integration of customers into the innovation process is the relocation of expensive trial-and-error processes to the customers.

(*) The paper presents the views of the authors and does not necessarily reflect positions of A1 Telekom Austria.

"The problem solving during the idea- and concept-phase is usually much faster, more effective and less expensive than the internal stewing in your own juice" (GASSMANN, 2010).

Hence, manufacturers can identify and analyse their customers' needs more precisely, which reduces the estimated time-to-market and cost-to-market, and at the same time increases the acceptance at the market (fit-to-market). The integration of customers and end-users also increases the degree of novelty of a product or service (new-to-market), as is often argued in the literature (REICHWALD & PILLER, 2009).

The active involvement of customers and other partners in the innovation process has apparently been fostered by the internet, which has transformed from its original form as a passive information medium into a platform with an interactive character. Users of the new web – the interactive exchange service platform based on web 2.0 – have emerged from passive consumers to active content providers. Companies increasingly initiate intensive communication processes with their current and future customers and thus involve the crowd into early stages of the innovation process and animate them to participate in the idea-generation and product development process (GASSMANN & ENKEL, 2006), known as crowdsourcing-based idea-contests (BULLINGER & MÖSLEIN, 2010; ADAMCZYK *et al.*, 2011) or idea-tournaments (TERWIESCH & ULRICH, 2009). Various papers studying crowdsourcing as an innovation strategy have been published with examples mainly from North America. This paper focuses on the German speaking countries, where less empirical evidence has been reported so far.

Sharing ideas in terms of granting the intellectual property to the seeking company or getting overrun by plagiarism can turn out to be a participation barrier. Our study analyses how the innovators deal with such opportunities and risks. Incentive-systems seem inevitable when motivating the right crowd to participate in such crowdsourcing-based idea-generation processes. While a few studies have analysed the motivation for participation in idea-contests in the German speaking area (e.g. WALCHER, 2007; ROTH, 2009), the motivation for crowdsourcing projects in particular have not been studied in detail so far. We address these questions and compare the intention and motivation for crowdsourcing from both corporate and the participants' perspective and contribute to the literature by analysing whether diverging motivations and expectations exist.

■ Literature review

Crowdsourcing can be seen as a strategy for partial outsourcing of innovation activities that were formerly done in-house - to a crowd in the internet. It is used in different phases of the innovation process and involves idea generation, product development, design, marketing and problem solving stages. Crowdsourcing platforms usually act as mediators and brokers between the crowdsourcers and crowdsorcees. In literature, crowdsourcing platforms are often classified into problem solving platforms and idea-generation platforms (HOWE, 2008; PAPSDORF, 2009). While problem solving platforms - such as the well-known platforms InnoCentive or Amazon Mechanical Turk - mostly focus on specific questions and tasks, idea-generation platforms focus on the creativeness of the crowd and optionally on their communities.

Problem solving platforms are often further divided into intermediary open innovation R&D platforms and mediation platforms. InnoCentive, for instance, is often called an 'open innovation R&D intermediary' (BAKICI *et al.*, 2010) as it brings together problem seekers and potential solvers, the latter are usually highly educated scientists and academic researchers. Mediator platforms for micro-jobs, such as Amazon Mechanical Turk (ALONSO *et al.*, 2008; BLOODGOOD & CALLISON-BURCH, 2010) are based on reoccurring calls for solving small problems and tasks which are often labelled as 'micro tasks' (IPEIROTIS *et al.*, 2010), the created market is labelled 'micro-task market' (HEER & BOSTOCK, 2010). These two types of crowdsourcing platforms refer to a concrete problem solution, either addressing a general crowd or an individual crowdsorcee.

Unlike the complex research and scientific questions which can be seen on InnoCentive (ANTIKAINEN & VAATAJA, 2010), idea-generation platforms target draft concepts in simple formulation and wording. When speaking of idea-generation platforms, we can further classify two categories. Open competition platforms for (new) product ideas, such as Dell Idea Storm - are using the crowd to brainstorm new innovations (HOWE, 2008), and are often referred to as 'open idea-contest' (PAPSDORF, 2009) as well. Finally, we can distinguish co-creation platforms that include 'user design-based mass production' (PAPSDORF, 2009) with Threadless as a famous example (BRABHAM, 2010). Both idea-generation and co-creation platforms use 'collective customer commitment' (OGAWA & PILLER, 2006) - either to search for new abstract ideas or tangible prototypes and products. The use of a large pool of potential problem solvers also opens up more

possibilities for applying existing knowledge, as well as scientific and technological best-practise from one field to provide a solution to a problem of another field: "outsiders can see problems with fresh eyes" (LAKHANI *et al.*, 2006).

Studying the motivation and incentivation of crowdsources is an important research question which is addressed in the literature. Empirical studies show various results, pointing out the importance of both intrinsic and extrinsic motives. Jeff HOWE (2008), for instance, highlights that the motivation for career advancement is closely followed by non-financial motives. It turns out that the majority of participants of idea-contests is not motivated primarily by the monetary income, but by the execution of a job they 'like' in their spare time. In some cases, monetary incentives were shown to have a negative impact on the performance, e.g. extrinsic motivation can negatively affect creativity, while intrinsic motivation can promote this (BAKICI *et al.*, 2010; AMABILE, 1996). However, offering financial incentives is an important issue. HSIEH *et al.*, (2010), for instance, reveal that financially rewarded questions on the crowdsourcing platform Mahalo were answered likelier than unrewarded questions. However, notable improvement in the quality of the financially rewarded questions in comparison to unrewarded questions could not be determined. In literature it is often argued, that the motivation for crowdsourcing projects is similar to the motivation in open source software development (HARS & OU, 2001; LAKHANI & WOLF, 2005; KLEEMANN *et al.*, 2007). While traditional innovation is processed in teams coordinated by a team-leader following a defined set of rules, an open innovation community i.e. open source community is formed by individuals who are working in a self-organized manner. Most of them are young, ambitious people who are not enticed by monetary motivation structures, they are motivated by self-affirmation and the joy of creative work, or seeking for confirmation from others (LERNER & TIROLE, 2002; DAVIS & DAVIS, 2007).

Current research on open innovation particularly refers to the literature on open source motivation or on such cases of crowdsourcing where financial incentives and/or rewards for solution providers exist. However, one of the criticisms of crowdsourcing in general is that it may lead to exploitative or controversial labour market practices (HOWE, 2008). A clear definition of terms and conditions of engagement and financial compensation mechanisms as a prospect can mitigate such risks of un(der)payment. Publications by WALCHER (2009) or HARS & OU (2001) include case studies on idea-contest motivation and compare the results with the motivation for open source software development. HARS & OU (2001), for

instance, highlight the following results for open source motivation: around 16.5 percent of the 79 respondents named altruism as the main motivator, 30 percent named identification with the open source community (referring to social recognition), and even 51 respondents (70.9%) pointed out the opportunity to improve their programming skills (ref. self-pride). Many of the interviewed participants take part in open source development in order to express their knowledge and gain positive feedback and references. More than half of the respondents (51.9%) participate in open source software development 'to build-up a network'. A particular motivator is eventually the 'expression of personal freedom', which is fostered by open source.

At the heart of open source innovation is a philosophy of peer production, involving cooperative activity enabled by a web-based innovation platform, generally without attribution of traditional ownership and intellectual property to a specific body. In contrast to open source software development, on crowdsourcing platforms, ownership rights exist and are usually defined by terms and conditions of engagement - and mostly belong to the idea-seeking company. However, best practise for regulations of intellectual property is hardly defined by literature. In general, the seeker defines the problem, reward(s), conditions and most importantly receives the intellectual property of the ideas and solutions.

■ The study

Our study is based on qualitative research methods (FLICK, 2000; YIN, 1999). While single case studies that deal with crowdsourcing cases are already existent, multiple case studies, such as (OGAWA & PILLER, 2006) with a direct comparison of crowdsourcing platforms Threadless and Muji were conducted only sporadically. We analyse both corporate and consumers' perspective of three crowdsourcing platforms and compare the intention and motivation for crowdsourcing by analysing whether diverging expectations exist.

Within this study we have analysed three innovation platforms located in the German speaking area. The study involves the innovation project "Zukunft-Innovation" by 3M Austria, the innovation platform "Atizo" by the same-named Swiss company and the innovation contest "A1 Innovation Days 2010" by A1 Telekom Austria. The chosen companies apply crowdsourcing either in projects or as their business strategy and were

chosen for the study in order to analyse different types of innovation platforms. We analyse both corporate and participants' perspective and compare the intention and motivation for crowdsourcing by analysing whether diverging expectations exist.

Atizo is a well-known innovation platform by the same-named Swiss company. In 2008 Atizo launched a web 2.0 based innovation platform, including user profiles, messaging, as well as networking possibilities for community users. After only a few months of trial, more than 300 ideas and 2.800 discussion comments were posted, and about 90 innovators were rewarded. Two years after the launch around 30,000 ideas were submitted. 3M is known for innovations in both consumer and office divisions - e.g. display enhancements, electro, safety, security and protection, industrial or transportation services. The innovation web-platform was launched to support the innovation culture and network in Austria and had strong links to Atizo. Eventually, A1 Innovation is part of our study in order to compare crowdsourcing platforms to open source innovation platforms. A1 Innovation contests were organised in cooperation with software development partners, in search for the best mobile applications developed by amateurs and semi-professionals. The submitted applications and source code had to fit to the open access approach and to be free of charge. Ever since, the A1 crowdsourcing community has grown - in comparison to 2009, participation in A1 Innovation has increased tenfold, and currently, in 2012, A1 has established a professional crowdsourcing community with more than 160.000 members.

All three studied examples can be described as open idea-contests that address a large number of potential participants and not primarily a specific target group or their own corporate community.

Interviews were conducted with responsible managers of the three selected companies. The following topics were included in the interviews: (1) Applying Crowdsourcing in the Innovation Process, (2) Motivation and Incentivation, (3) Regulation of Intellectual Property, and (4) Chances and Risks of Crowdsourcing.

Crowdsourcers were chosen by a two stage process. First, users from the best-of lists, such as Hall of Fame (3M) or Award Listing (A1), were selected, then users with different demographical and geographical attributes were chosen, in order to achieve a wide range of samples. The selected participants of the idea-contests were identified and also considered themselves as permanently active members of the innovation

communities. In total, 21 interviews were conducted during May and November 2010 based on two structured interview guidelines for crowdsourcers and crowdsorcees.

To analyse the results, the interviews were recorded and transcribed, assigned to individual statements of the four major issues and analyzed comparative. In the following chapter we will present and discuss the results.

■ Results and discussions

Applying crowdsourcing in the innovation process

The three platforms that we specifically analysed in this study use crowdsourcing in similar matters. Atizo and Zukunft-Innovation can be characterised as idea-generation platforms: during periodic and time-limited idea-contests creative and innovative ideas for product enhancements or new products are collected, commented, debated and rated by the community. The ideas are created in an interactive communication process, and only a few of the best ideas are then concretized. In contrast to these two platforms, the idea-contest A1 Innovations required creative and innovative ideas in the terms of executable software applications and prototypes, which corresponds to a combination of problem-solving and idea-generation platform as depicted in the Literature Review section. At this stage, the crowd and participants were integrated into product development. All submitted applications were designed and implemented by the crowd and the best of these were awarded monetarily. Although A1 Innovations bear characteristics of a problem-solving platform, the open scope and loose pre-settings correspond rather to idea-generation.

For all three investigated platforms, the advantages and motivation for applying crowdsourcing within the innovation process was primarily the communication and interaction with the customers and therefore the ability to find out your customers' needs: "improved fit-to-market", "obtaining external opinions in dialogue with the customers", "open and 'blunt' feedback from the market", "profound suggestions and meeting the customers' needs" were the leading reasons expressed by crowdsourcers' point of view. Moreover, the interviewed companies perceive a reduction in time-to-market, as well as an increase in the novelty (new-to-market) level. In addition, the

integration of customers into the innovation process leads to changes inside the company: "overcoming internal barriers" becomes possible, as well as expanding the customer base: "integrating a large number of innovators leads to an increase of good ideas" (Interview with A1 Telekom Austria). Zukunft-Innovation enables an open innovation approach and supports companies during the idea-generation and innovation process: "especially for small and medium sized enterprises, our platform is a convenient alternative to expensive R&D departments" (Interview with a 3M Manager). Thereby, customers of 3M's innovation platform are community members or the crowd, as well as idea-seeking companies. Similar to Atizo the submitted ideas are resulting from a co-creation process - they are rated and commented by community members. Further details on potential benefits of crowdsourcing can be found in table 1.

Table 1 - Perceived opportunities and benefits when applying crowdsourcing

	<i>Atizo (*)</i>	<i>Zukunft-Innovation (3M)</i>	<i>A1 Innovations</i>
Potential/ direct benefit	<ul style="list-style-type: none"> - Improved fit-to-market: knowledge exchange with customers may leverage and maintain market leadership - Overcome internal barriers - Obtain external opinions and dialogue with customers 	<ul style="list-style-type: none"> - Open, "blunt" feedback from the market - Profound suggestions for improvement - Constructive criticism - Fast and inexpensive idea generation 	<ul style="list-style-type: none"> - Identify and apply customers' needs - Develop ideas, products or services that could not be obtained in a closed innovation process

(*) ... Atizo is still open unlike Zukunft-Innovation and A1 Innovations.

Source: own depiction

Motivation and incentivitation

The studied companies offer monetary or non-monetary compensations and thus address social, intrinsic and extrinsic motives for the participants. In general, monetary rewards are emphasised, although the remuneration is set low. This is in line with literature (WALCHER, 2007). The commitment of the participants is valued by establishing ranking lists, e.g. Atizo 'Top Innovators' or Zukunft-Innovation's 'Hall of Fame'. "Rating lists facilitate intrinsic motivation of the crowd", so the arguments of the interviewed Atizo Manager. Relating to the social motives of the participants, e.g. the Atizo platform offers communication tools such as messaging and forum, hence an opportunity to network with other community members and innovators is

existent. Furthermore, each Zukunft-Innovation community member could collect bonus points and can use them to honour ideas from other members. However, the participants are mostly motivated by extrinsic incentives, such as monetary compensation. The awards on Atizo and Zukunft-Innovation in 2010 were in the range of up to 5.000CHF or 1.000€. Ideas rated best are implemented continuously, their authors receive bonus points and moreover they are mentioned on the platform and in newsletters. Compared to these two platforms with recurring idea-contest, the A1 Innovations idea-contest took place one time per year, and the awards were significantly higher, in the range of 5,000€ to 50,000€ in 2010. The top positions of the A1 Innovations were announced on the platform, but compared to the dynamic ranking lists of the other two platforms considering this as an intrinsic incentive is cautious.

Platforms that address general target groups (e.g. Threadless, Atizo or Zukunft-Innovation) raise their customers through social appreciation, such as ranking lists, bonus systems, or virtual cash prizes. After applying this approach to our study, we can consider that during the idea-contest of A1 Innovations, expert audience is addressed and extrinsic incentives are offered, which is similar to the InnoCentive platform and a particular strategy concerning awards found in literature. ANTIKAINEN & VAATAJA (2010) discuss the distinction between compensation systems based on the targeted customers of the innovation platforms. For example, questions on the innovation platform InnoCentive are addressing experts and are only compensated monetarily, while innovation platforms addressing target groups foster non-monetary incentivitation.

The fact that open source motivation factors can be applied to the crowdsourcers was clarified in our study. We have identified the following motivating factors for participation in idea-contests: (the sequence corresponds to the number of answers): financial incentives [closely followed by] fun-factor, contact and networking, appreciation by others, interesting scope, idea-development, being creative, proudness to personal contribution, expanding horizons, learn something new, new perspectives, inspiration and brain jogging. Hence, non-financial incentives and intrinsic motivation play an almost equally important part and may also explain the fact that such crowdsourcing value-added activities are performed eagerly even though they are often un(der)paid.

Regulation of intellectual property

All of the interviewed study participants clearly signified that a transparent regulation of intellectual property is important. Both Atizo and Zukunft-Innovation are mainly focused in the appropriation of the generated ideas and solutions and are setting risk-mitigating counteractions by means of a transparent, open and honest information exchange with their customers and community members.

All three initiatives are mainly threatened by the uncertainty of the submitted ideas and risk that ideas cannot be appropriated. In Atizo and Zukunft-Innovation ideas are treated as "public domain" or "published thoughts" and hence all of the input and to some extent also the intellectual property is transferred to the idea-seekers. In contrast, ideas submitted at A1 Innovations remain author's right and are explicitly shared as such through A1's communication channels.

Crowdsourcing is based on the crowd's willingness to participate. However, the transfer of the intellectual property to the idea-seekers can negatively affect the participation of the crowd as a company manager of A1 argued: "if the participants had to assign IP to us, they probably wouldn't participate" (Interview with A1 Telekom Austria). From the crowdsourcers point of view, the regulation of intellectual property (IP) rights is hence very important.

Chances and risks of crowdsourcing

As a result of the collected data, we can identify potentials and risks for three design elements of crowdsourcing-based contests, which are target group, incentives and motives, as well as evaluation of the submitted ideas (see e.g. also BULLINGER *et al.*, 2009; BULLINGER & MÖSLEIN, 2010).

Atizo and Zukunft-Innovation do not focus towards a specific target group. This was also confirmed by their participants - they perceived the platforms as neutrally decorated, addressing people that are affine to challenging topics and creative/innovative activities, without a specific target. Restrictions of target groups in innovation platforms could mean that unknown or unproven solutions as well as new perspectives are excluded. On the other hand, proven ideas could get lost in a large mass of information. One of the options used by Atizo is a distinction between public, private or restricted idea-generation cycles. A crucial potential of

crowdsourcing-based idea-generation - compared to an in-house innovation process - is therefore the identification of new potential target groups: "By mixing the crowd, new target groups are discovered that were not previously known or identified for a specific product" (Interview with a member of Zukunft-Innovation).

Both extrinsic and intrinsic motivation and incentive-systems play an essential role in shaping the open innovation process and should be planned and applied with awareness. With the adequate incentives, the right crowd can be motivated and involved in the community. During the study, we have noted the following behaviour of the crowd: the interviewed crowdsourcees were continuously participating in idea contests and constantly submitting ideas and comments. Many of the interviewed members were participants for around two years - among them also some of the top users. Hence, the notable reusage, adaptations and repetitions of existing solutions to new problems can be foreseen as a closure of open innovation platforms and therefore, constantly addressing a large number of new participants is crucial. Further risks and risk-mitigating counteractions when applying crowdsourcing are listed in table 2.

Table 2 - Risks and risk-mitigating counteractions when applying crowdsourcing

	<i>Atizo</i> (*)	<i>Zukunft-Innovation (3M)</i>	<i>A1 Innovations</i>
Risks	Uncertainty about the quality of the submitted ideas		
	- Intellectual property appropriation - (known risk)	- Intellectual property appropriation - (potential risk)	- Crowdsourcing is cost- and resource-intensive (direct or non-monetary benefits could not be measured)
Counter-actions to minimize risks	- Expectation management: inform the participating companies about possible results	- Openness and honesty in communication with customers: win your customers' trust - Have a positive attitude towards the exchange with your customers ('willingness to learn')	- Address as many innovators as possible (the more ideas are submitted, the more likely it is to find good ideas)

(*) ... Atizo is still open unlike Zukunft-Innovation and A1 Innovations.

Source: own depiction

As a crowdsourcer, a positive and open attitude towards your customers and innovators is a must. At the same time, building up an innovation community and setting up an interaction platform can be quite costly. A

verifiable analysis of the costs and benefits has not yet been conducted by any of the interviewed companies so far, therefore it remains unanswered, whether open idea-contests are cost-effective alternatives to internal innovation departments - especially when we consider a (small) group of innovators which is participating in idea-generation processes repeatedly and thus similar proposals and solutions can be triggered over and over. Observed in long term, such loyal community members can lead to an externalisation of innovation departments - they can get involved through companies (only) when external innovation activities are required. Eventually, the possibility to rate and vote for submitted ideas during the idea-generation cycle - the so called "pre-selection" – allows reducing costs according to the interviewed managers.

Increasing the circle of potential participants seems to be crucial for companies, especially in the German speaking countries, in terms of targeting a larger crowd and thus avoiding a narrowing or closure of the community. One good example is to translate the crowdsourcing initiatives into English or other languages, as seen at Atizo, where idea-contests are supported in up to three languages (German, English and French). Alternatively, companies could also cooperate in order to reach a wider audience. As a matter of fact, since the beginning of 2012 Zukunft-Innovation has been forwarding their customers to other platforms (e.g. Atizo).

Compared to traditional closed innovation methods, where ideas were developed in closed R&D departments and kept secret, patents and similar forms of ownership appropriation are losing importance and not applicable in an open innovation process. Since competitors can learn about your intentions and anticipate, it remains to examine, how far companies are willing to open up and on the other hand - how the willingness of the crowd will develop in the future.

In addition to the top stated risk of insufficient rewards or "intellectual property theft" due to the public availability of the ideas, the analysed studies also show entry barriers set up for new members (not in terms of access to the innovation platform, but in terms of active participation in the innovation process). One of the interviewees expressed this fact as follows: "Politics is a risk, it's often not about the idea itself, but I have to promote the idea on the platform, e.g. posting the idea linked to other innovators. Many ideas get lost this way." Other interviewees have expressed similar statements, e.g. when arguing "definitely, some ideas are plagiarized and re-entered later".

■ Summary and conclusions

In this paper we have analysed both corporate and consumers' perspective on crowdsourcing and compared the intention and motivation for participating actors. The results of the study have shown that crowdsourcing has many opportunities to establish as an innovation strategy and furthermore as a business model. Crowdsourcing is an interactive process, involving different stakeholders in work that can be done online, time- and location-independent. Mainly because of the rising need for working flexibility and the increasing of computerisation and online work, crowdsourcing is extremely versatile, as illuminated by the study participants. From simple idea-generation - up to complex problem-solving, participants of innovation-/idea-contests develop simple but creative ideas, concepts, and even innovative solutions to complex research and development issues. The crowd provides knowledge and ideas and can provide a convenient alternative to expensive innovation research and product development.

The analysed companies report a positive résumé from applying crowdsourcing. However, the longer-term effectiveness of crowdsourcing is worth considering. In particular, if companies start using the wisdom of the crowd or the crowd's innovation work intensively, the crowd as an exclusive innovation resource may diminish.

Active community members, which intensively contribute to the idea-contests are listed in ranking lists, thus their profiles and nicknames are common and frequently visible on the platform and thus a kind of hierarchical order emerges. These users also seem to be opinion leaders, which corresponds with the indication of some kind of hierarchical structures even within communities. Our study hence provides evidence that (1) active self-marketing (LEIMEISTER *et al.*, 2009) of the ideas within the community is of great importance, (2) closed communities or sub-communities are emerging over time revealing some hierarchy, and (3) repeated participation in the idea-generation process through permanent members of the innovation community possibly reduces the diversity of the ideas. These findings were hardly addressed in previously published studies. One explanation of our finding might be that potential audience of the analysed innovation platforms is relatively small in the German speaking countries, in comparison with the frequently mentioned example InnoCentive with global access to the crowd. Therefore, from a business perspective it is crucial to address a large target group and as many and different participants over a

longer period to maintain the dynamics and diversity in the communities and increase the number of good ideas.

Concerning the appropriation of the intellectual assets, a clear definition of terms and conditions of engagement and financial compensation mechanisms as a prospect can mitigate risks of dissatisfaction and un(der)payment as well as the fear of intellectual property theft and idea-mobbing, which cause hierarchies and virtual closure. Having an open and transparent attitude towards community members and crowdsourcers can help to define clear expectations between the two crowdsourcing parties, as well as among crowdsourcers themselves. Opening out towards the customers and (partially) transferring the responsibility onto the crowd can indirectly influence and change decisions inside a company and its business.

Finally, crowdsourcing is not only supported by the active participation of the crowd, but also by the technical progress and progressive development of the Internet. The increasing access and speed, web 2.0, 'prosumeration' and interactive toolkits for user innovations further improve the crowdsourcing process and enhance open innovation.

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Appendix

The appendix includes the structured questionnaire that was used during the study.

Table 3 - Structured questionnaire

	<i>Questions for crowdsourcer</i>	<i>Questions for crowdsourcees</i>
<i>Applying crowdsourcing in the innovation process</i>	<ul style="list-style-type: none"> - How is crowdsourcing implemented in the company? - Are any other innovation methods applied, such as the Lead User approach, Toolkits for User Innovation, etc. - Which groups are targeted? 	<ul style="list-style-type: none"> - Personal interest: - How would you describe your interest in crowdsourcing? - Would you describe yourself as an innovative person, e.g. an innovation-pioneer?
<i>Motivation and incentivization</i>	<ul style="list-style-type: none"> - Motivation for crowdsourcing: - What are the notable benefits? - Are the ideas of the crowd beneficial, how many of these are implemented? - Which incentives are offered to the crowd? - How do you motivate the crowd to participate? 	<ul style="list-style-type: none"> - How were your curiosity/your attention drawn? - What are your expectations towards the innovation platform: what motivates you to participate in the idea-contest(s)? - Which incentives are offered and do these satisfy your expectations?
<i>Chances and risks of crowdsourcing</i>	Where do you see risks/barriers and chances/potentials of crowdsourcing?	
<i>Regulation of Intellectual property</i>	<ul style="list-style-type: none"> - How is the intellectual property right treated? - Is there a clear definition of terms and conditions of engagement and financial compensation mechanisms? 	<ul style="list-style-type: none"> - How would you describe intellectual property on the innovation platform? - Have you been informed about the terms and conditions? - Do you consider this situation as critical?

Source: own depiction