

1-22-2013

The Impact of Social Media Enterprise Crowdsourcing on Company Innovation Culture: The Case of an Engineering Consultancy

Ada Scupola

Roskilde University, ada@ruc.dk

Hanne Westh Nicolajsen

Aalborg University Copenhagen, westh@hum.aau.dk

Follow this and additional works at: http://aisel.aisnet.org/sprouts_all

Recommended Citation

Scupola, Ada and Nicolajsen, Hanne Westh, "The Impact of Social Media Enterprise Crowdsourcing on Company Innovation Culture: The Case of an Engineering Consultancy" (2013). *All Sprouts Content*. 514.

http://aisel.aisnet.org/sprouts_all/514

This material is brought to you by the Sprouts at AIS Electronic Library (AISeL). It has been accepted for inclusion in All Sprouts Content by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

The Impact of Social Media Enterprise Crowdsourcing on Company Innovation Culture: The Case of an Engineering Consultancy

Ada Scupola

Roskilde University, Denmark

Hanne Westh Nicolajsen

Aalborg University Copenhagen, Denmark

Abstract

In this article we investigate how social media-based crowdsourcing systems can be used to reengineer the innovation culture in an organization. Based on a case study of a large engineering consultancy's use of a social media crowdsourcing system we investigate the impact on the organizations innovation culture using theory on organizational culture and crowdsourcing. The analysis shows that the organizational crowdsourcing event has supported an innovation culture change in the case company towards a more open approach to innovation; creating a new and different awareness of innovation, allowing for internal process innovations, empowering the employees, supporting knowledge work and collaboration across the organization to a new extent and overcoming the traditional hierarchy in the organization.

Keywords: crowdsourcing, social media-based crowdsourcing system, organizational culture, innovation awareness, case study

Permanent URL: <http://sprouts.aisnet.org/12-27>

Copyright: [Creative Commons Attribution-Noncommercial-No Derivative Works License](https://creativecommons.org/licenses/by-nc-nd/4.0/)

Reference: Scupola, A., Nicolajsen, H. W. (2012). "The Impact of Social Media Enterprise Crowdsourcing on Company Innovation Culture: The Case of an Engineering Consultancy," . *Sprouts: Working Papers on Information Systems*, 12(27). <http://sprouts.aisnet.org/12-27>

The Impact of Social Media Enterprise Crowdsourcing on Company Innovation Culture: The case of an engineering consultancy

Ada Scupola & Hanne Westh Nicolajsen

Abstract: In this article we investigate how social media-based crowdsourcing systems can be used to reengineer the innovation culture in an organization. Based on a case study of a large engineering consultancy's use of a social media crowdsourcing system we investigate the impact on the organizations innovation culture using theory on organizational culture and crowdsourcing. The analysis shows that the organizational crowdsourcing event has supported an innovation culture change in the case company towards a more open approach to innovation; creating a new and different awareness of innovation, allowing for internal process innovations, empowering the employees, supporting knowledge work and collaboration across the organization to a new extent and overcoming the traditional hierarchy in the organization.

Introduction

The term “social media” includes a number of tools and services with the main characteristic of enabling direct user interaction on computer mediated environments (Lampe et al., 2011). Examples of such tools include Wikis, Blogs, Crowdsourcing systems and Social Networks systems such as facebook and twitter (Andriole, 2010). Social media are used by organizations for a number of purposes, including knowledge management, customer relationship management and innovation (Andriole, 2010; Boudreau et al. 2011). One type of social media that is increasingly gaining attention in the academic literature is systems used for crowdsourcing. Such systems draw on the collective intelligence of the crowd to collect new ideas for innovation purposes (e.g. Malone et al., 2010; Brabham, 2010). Most of the literature investigating crowdsourcing of innovative ideas focus mainly on the external crowd and take often a business to consumer approach (e.g. Lakhani and Kanji, 2008; Huston and Sakkab, 2006; Lakhani, 2008). For example, Andriole (2010) in a comprehensive study of the business impact of Web 2.0 technologies found that Web 2.0 technologies for internal applications “have little impact on the innovation process. There are spotty innovation applications of crowdsourcing for R&D and selected applications of folksonomies, RSS filters, and mashups, but the area is generally not affected (p. 69)”. One of the few studies focusing on internal crowdsourcing is the one conducted by Bjelland and Wood (2008) showing how IBM leverages its firm-wide intelligence located at geographically dispersed sites through a process called “innovation jams”. For external applications, Andriole (2010) found instead that “Web 2.0 tools, techniques, and especially attitudes will alter the innovation process in many industries by facilitating direct communication and collaboration among creators and buyers of new products and services, thus shortening the innovation life cycle (p.69)”.

Previous literature has addressed how IT can trigger major organizational changes (e.g. Markus, 2004). A number of studies have also investigated the relationship between culture and information and communication technology in different contexts (e.g. Leidner and Kayworth, 2006; Doherty and Doig, 2003; Doherty and Perry, 2001; Pliskin et al., 1992). However, only a few studies have dealt with the impact of IT on culture in an organizational context (Leidner and Kayworth, 2006). A closer look to the literature reveals that no studies have dealt specifically with the impact of social media on the innovation culture of an organization. This is the motivation to investigate the following research question: How can social media-based crowdsourcing systems be used to reengineer the innovation culture in an organization?

In order to answer the research question we conduct a case study of how a consulting company purposefully makes use of social media to change the organizational innovation culture in a desired direction. We illustrate how a social medium called “Idébørsen” was used to crowdsource innovation ideas from employees and a selected group of customers and partners, thus affecting the innovation culture of the organization in several ways.

The paper is structured as follows. This section presents the background and the research question. Next section presents the theoretical background, while the following section provides the research method and the case description. The last three sections present the analysis, discussion and conclusions.

Theoretical Grounding

There is a growing debate in the organizational culture literature as to whether culture can be consciously and objectively managed. Pliskin et al. (1994) states that the organizational culture literature can be divided into two streams. The first one is descriptive and has the purpose of understanding and describing organizational culture. The second one, which has a normative approach, assumes that organizational culture can be managed and controlled. Within this stream of literature a few studies have focused on the role of new technologies in managing organizational culture (e.g. Doherty and Doig, 2003; Doherty and Perry, 2001). In this section we first present and discuss the concept of corporate culture and present a number of dimensions that characterize it and then we present the few studies that specifically have

Table 1: Dimensions of Organizational Culture

Dimension	Explanation	Literature
Customer Service	The degree to which an organization collectively adopts an external customer orientation, as opposed to an internal process orientation.	(Cooper, 1994; Hofstede, 1997:191)
Flexibility	The extent to which an organization is predisposed to adaptation in the response to changing circumstances in preference to favoring stability and settled order, whenever possible.	(Cooper, 1994; Major, 2002)
Empowerment	The degree to which decision-making is delegated to individual employees, in preference to centralizing it within a group of key managers.	(Pliskin et al, 1993; Morgan, 1998: 144)
Innovation and Action Orientation	The urgency of taking actions and the importance of encouraging innovation and rapid response to changes in the environment.	(Pliskin et al, 1993)
Risk taking	The importance of taking risky decisions as e.g. investment in new ventures or purchase of manufacturing equipment	(Pliskin et al, 1993)
Integration and Lateral Interdependence	The importance of cooperation (instead of competition) and communication among organizational subunits in order to achieve overall organizational goals. This is reflected in the amount of encouragement given to sharing information and to mutual understanding of difficulties.	(Pliskin et al, 1993)
Autonomy in Decision making	The importance of delegating responsibility for important decisions.	(Pliskin et al, 1993)
Performance Orientation	The nature of demands that are placed upon organization members in relation to their expected performance and its accountability and appraisal.	(Pliskin et al, 1993)
Top Management Contact	The nature of manager-subordinate relations.	(Pliskin et al, 1993)
Reward Orientation	The nature of the reward structure e.g. if compensation should be related to performance	(Pliskin et al, 1993)
Team-working	Encouragement of team spirit	(Doherty and Perry, 2001)

looked at the role of IT in influencing corporate culture.

Organizational culture

Many studies have investigated different aspects of culture at national (e.g. Hofstede, 1997), organizational (e.g. Schein, 1985) and subunit level (e.g. Wilkins and Ouchi, 1983). Culture is often described in terms of the assumptions, values and artifacts or practices that exist within an organization (e.g. Schein, 1985). Following prior research, we examine innovation culture in terms of the core set of attitudes and practices shared by members of the firm in relation to the innovation task (Tellis et al., 2010). According to Tellis et al. (2010), “scholars of corporate culture have called for middle-range descriptions of corporate culture – descriptions that preserve the holistic aspects of the construct while acknowledging the particulars of the tasks or outcomes being studied”. This has, for example, been the approach used in the study of market-oriented culture by Homburg and Pflesser (2000) or the examination of the role of corporate culture in employee promotion and dismissal outcomes by Hofstede et al. (1999). Based on prior research (Tellis et al., 2010; Pliskin et al., 1992; Doherty and Doig, 2003; Doherty and Perry, 2001) we identify a number of dimensions of organizational culture such as empowerment, customer service, team working etc. that are summarized in Table 1 and that are used here as the starting point to investigate and operationalize innovation culture in this paper.

IT and culture

A number of studies (e.g. Walton, 1989; Pliskin, et al, 1993) suggest that there is a potential to use IT for managing and stimulating cultural change and some authors have developed strategies or guidelines on how to conduct such a process (e.g. Sathe and Davidson, 2000; Leavy, 2005). On the other hand as pointed out by Doherty and Doig (2003) there is also a body of studies that believe that organizational culture is difficult to change even over relatively long periods (e.g. Pettigrew, 1979). This is the case especially when the assumptions about the organizational culture of an IT system are in contrast with the actual culture of the organization deploying it (Markus, 2004).

Leidner and Kayworth (2006) in an extensive literature review of the relationship between culture and information technology identified six main themes under which this literature can be grouped. Their analysis included three levels of organizational culture: national, organizational and subunit. However, given our research interest, we only focus here on the organizational culture level. The first theme “Culture and Information Systems Development (ISD)” includes only three studies at the organizational level of analysis and they are all concerned with the question of how culture influences information systems design. The second theme “Culture and Information Technology Adoption and Diffusion” identifies studies dealing with culture’s influence on IT adoption and diffusion at the organizational level. Leidner and Kayworth (2006) conclude that value orientations (national, organizational, or subculture) may predispose certain social groups toward either favorable or unfavorable IT adoption and diffusion behaviors. The third theme “Culture, Information Technology Use and Outcomes” includes studies dealing with the particular cultural values related to user satisfaction and successful implementation of IS at the organizational level. The main conclusion that Leidner and Kayworth (2006) draw from these studies is that the notion of fit figures prominently in this stream of research. The fourth theme “Culture, IT Management, and Strategy” addresses the relationship between cultural values and IT strategies. Leidner and Kayworth (2006) conclude that “there is very little research devoted to examining the role of national or organizational culture in the process of IT planning, in achieving IT alignment, or in the result of IT planning (the actual IT strategy)” (p. 370). Finally, the sixth theme “IT Culture” focuses on the very notion of an IT culture defined by Leidner and Kayworth (2006) as the values attributed to IT by a group and is based on the assumption that organizational stakeholders attribute certain values to information technology.

The fifth theme deals with “The Impact of IT on Culture” and is therefore the most relevant to our study. Only two studies were identified under this theme within the organizational context. The study by Doherty and Doig (2003) examined the influence of improved data warehousing capabilities on the organizational culture. They found that as a result of such influence, changes had taken place in respect to the cultural dimensions of customer service, flexibility, empowerment, and integration values. In another study, Doherty and Perry (2001) examined the influence of a new workflow management system (WMS)

on organizational culture. Their results show that the implementation of the WMS strengthened organizational culture values related to customer orientation, flexibility, quality focus, and performance orientation. A few other studies have addressed this subject, even though not explicitly talking about organizational culture such as the studies conducted by Markus (2004). Markus argues that for radical organizational changes to take place there is a need for what she defines as techno-change, which is change processes where IT solutions and organizational elements are mutually aligned to create sustaining change. During this process Markus argues that the organization culture may be affected however it is not IT per se but rather the organizational setup which creates these changes.

Social media and Crowdsourcing

The term crowdsourcing describes a web-based business model that harnesses the creative solutions of a distributed network of individuals through what amounts to an open call for proposals (Brabham, 2010). The term was coined by Howe (2006) as follows:

“Simply defined, 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 can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential laborers (Howe, 2006, p. 5 in Braham, 2010.)”

This means that a company posts a problem online, a vast number of individuals offer solutions to the problem, the winning ideas are awarded some form of a prize, and the company produces the idea for its own gain. Usually the term “crowdsourcing” refers to the use of the collective intelligence of the crowd located outside the organizational boundaries, often represented by customers and users (e.g. Hutter et al., 2011; Andriole, 2010; Boudreau et al. 2011; Brabham, 2010).

A number of studies have pointed out the benefits and limitations of crowdsourcing to external individuals and partners including intellectual property management, issues related to the transfer of tacit knowledge as well as challenges for user involvement (e.g. Pisano, 2006; von Hippel, 1994; Nambisan et al., 2008). In addition, theories of the organizations as knowledge creating entities (e.g. Nonaka, 1994) or learning organizations (Senge, 1992) have emphasized the potential knowledge that circulates within a company and embedded in each company employee. As a consequence, a number of social media aiming at harnessing the collective intelligence internal to the corporation have been lately appearing on the market. This has been referred to as enterprise or internal crowdsourcing and is characterized by the fact that the crowd is well defined and limited to the organizational boundaries. Advantages of this approach include relieving concerns with appropriability of the ideas generated (Pisano, 2006). Some social media systems target both the internal and external collective intelligence of the firm, a process called mixed crowdsourcing. Examples of these systems include InnovationJam and InnoCentive@Work.

Based on the above literature review we propose that internal crowdsourcing defined as the use of social media for organizational collective intelligence can be purposefully used to change the innovation culture of an organization.

Research Method

A case study of an engineering consultancy in Denmark (from now on The Company) was conducted in order to understand how social media-based crowdsourcing can be used to reengineer the innovation culture of an organization. Case study is considered an appropriate empirical research method to investigate real-life contexts, such as crowdsourcing processes to change the innovation culture, where control over the context is not possible (Yin, 1997). Using a case study method we adopted the approach “scientific realism”. This approach allowed us to conduct the data analysis with certain expectations based on prior theory on innovation culture and crowdsourcing, while also allowing some unexpected findings and explanations to emerge from the data, as is more typical of interpretivist approaches. The core case study questions were based on the theory related to the use of IT to impact the innovation culture. Other relevant questions included those about innovation practices and context, interviewee background, and the crowdsourcing process. Inspired by Yin (1997) and its application in the context of a knowledge

management case by Ravishankar et al. (2011), we summarize in Table 2 the steps taken to ensure reliability and validity during the study.

Table 2: Reliability and Validity of data		
Reliability Through		Validity Through
<p>1. Case study protocol</p> <p>Informant profiles and contact information</p> <p>Representative list of interview questions</p> <p>List of other potential themes to be explored in the interview</p>	<p>2. Case study database</p> <p>Recorded audiotapes</p> <p>Interview transcripts of each unit</p> <p>Transcripts of e-mail and telephonic discussions with informants</p> <p>Company documents relating to the mixed crowdsourcing process, websites, access to Idebørsen</p>	<p>3. Multiple sources of evidence</p> <p>Interview transcripts; telephone and e-mail discussions;</p> <p>Idebørsen software platform access; information available on the web sites of The Company and the social media service provider; documents provided by The Company</p> <p>2. Establishing chain of evidence</p> <p>In the case description, we have cited extensively from the contents of the case study database. "The circumstances of each data collection activity" was carefully recorded, and the data collection closely followed the case study protocol (Kirsch 2004). Thus the chain of evidence presented helps link the empirical material with the findings</p> <p>3. Review of case drafts and article</p> <p>The initial draft of the case was reviewed by The Company</p>

The main data collection method was semi-structured interviews with open-ended questions. The interviewees included key relevant employees, project managers and directors dealing with innovation and crowdsourcing at The Company. Some of the respondents were interviewed twice. The social media software provider was also interviewed to better understand the functionalities and the set up of the IT platform and how it was used in The Company.

In all we have conducted 24 interviews. The respondents were selected on the base of their involvement with the crowdsourcing process as well as innovation activities in the company. At the beginning the informants were selected by the competence manager and the director of innovation. Later snowball sampling (Goodman, 1961) was used. Most of the interviews lasted about 1-1½ hours each. All interviews were tape recorded and transcribed. Moreover, an ongoing dialogue with the company has taken place in order to identify any misunderstandings and to obtain additional insights both by telephone and per e-mail.

Documentation review and field notes were complementary data collection methods. Sources include corporate websites and brochures about the crowdsourcing process, and other internal documents such as

schemes to submit an idea, samples of submitted ideas, the winning ideas, criteria for idea selection and news media. The researchers also gained access to the crowdsourcing platform for a period of time. The latter gave us a feeling of how the social medium was functioning. In addition, the researchers attended seminars organized by the software provider illustrating both their use of software for crowdsourcing purposes and lessons learned in the different companies they had been working with including The Companyl.

In the table below an overview of the informants is provided.

Table 3: Data on interviews

Number of interviews	24
From HQ	14
From Regional offices	8 (4 regional Offices)
Other	1 customer 1 supplier
Duration of interviews	Normal 1-1,5 h (15) Short ca. 30 min (9)
Positions of informants	Competence Manager Innovation Director Innovation Champion Project Manager Project Member Idebørs team members Marketing Director

In our case study we use so-called rich descriptions (Walsham, 1995) by combining interviews with other secondary material. The interviews and the secondary material was analyzed pinpointing utterances concerning the influence of the Idébørsen on the culture of the organization, from these utterances themes/codes were extracted which was then used to group the utterances. Codes such as; new recognition structures or new ways of collaborating for knowledge exchange grew out of the material originating from the respondents (Miles and Hubemrman, 1994).

At the end of the data collection, we examined the data closely to look for possible cultural dimensions that were affected by the introduction of Idébørsen in The Companyl. To do this, we read through the interview transcripts and came up with themes in the informants' comments and feelings about how Idébørsen was impacting the innovation culture. Five themes, summarized in Table 4, emerged: the feeling that Idébørsen contributed to increase innovation awareness and attention across different layers and departments in the organization; the feelings that Idébørsen increased the internal process orientation towards innovation and innovation practices and behaviors; the feeling that Idébørsen and its organizational set up contributed to empowerment and autonomy in decision-making; indications that Idébørsen contributed to team working and knowledge sharing and finally the feeling that Idébørsen contributes to integration and lateral interdependence among different departments. When coding for these themes, we grouped similar ideas together. One challenge has been that sometimes the respondent statements could fit under several themes. As a consequence we have collapsed some of the dimensions into one theme eg. "empowerment" and "autonomy in decision-making". However the problem still persist especially in the case for the two dimensions "innovation awareness" and "internal process

orientation”. This challenge has been addressed by using all the statements to understand the cultural dimensions, but finally use and allocate the most appropriate statements to each respective theme.

Company Background

The Company is part of a group leading in engineering, design and consultancy company headquartered and founded in Denmark with about 10,000 experts worldwide and a strong presence in Northern Europe, Russia, India and the Middle East. The Company is part of the Group. The Company is in itself a large consulting company with 1600 employees specializing in different fields including construction and design, infrastructure and transport, energy and climate, environment and water and IT and telecommunications.

In The Company, innovation has traditionally occurred and developed in the context of consulting projects. However, over the last few years The Company has been having a focus on innovation that is not only linked to specific consulting projects, but might be of more general character and interest to the company. Innovation can for example be a source of improved company efficiency or provide a competitive advantage for the company as a whole. Therefore, over the past few years The Company management has been establishing a number of initiatives to increase innovation awareness among the company employees and to change the innovation culture and make their employees “think out of the box”. They know that the company’s employees possess a lot of knowledge and ideas and they want to make the most promising potential ideas “a reality”. Since 2007 two main initiatives aiming at strengthening innovation and the innovation culture outside the scope of specific projects have been undertaken in The Company. The first initiative, called the “Innovation bank”, was a paper-based competition internal to the company supporting interesting and high revenue potential ideas from any of the company’s employees. The second, which is a further development of the Innovation Bank is Idébørsen, a social media used for crowdsourcing of ideas from both employees and company partners. It is the Idébørsen, which is the focus of this paper.

Idébørsen-A Stock market for innovation ideas

To implement a mixed crowdsourcing process, The Company utilized a social medium called “Idébørsen”. “Idébørsen” is an online social media platform for idea collection, which replicates some features of a financial stock market. The target group was all The Company DKs employees as well as a selected group of external partners and customers. “Idébørsen” provides several functionalities for interaction and collaboration. For example, the invitees can each post their own ideas or comment on ideas posted by others to suggest improvements or to further develop the idea itself. Each employee and external partner/customer is given an amount of virtual money at the beginning of the crowdsourcing experiment, which they can invest into the ideas contributed by others. At any point in time, the spot value of an idea – together with the comments that support it– is proxied by the aggregate investment positions held on it relative to all other ideas. The ideas get ranked automatically according to their spot value. The higher the spot value at any given point in time, the higher the ranking of the idea. Anybody can comment and develop the ideas posted on Idébørsen.

The crowdsourcing process

At the beginning of the crowdsourcing process, a few strategic themes had been formulated by top management as a frame for the call for ideas. This crowdsourcing process has been run twice over two years at The Company. Both times the idea collection process lasted six weeks. After the idea posting and trading period expired, prizes were given to the ideas with the highest spot value in each theme, a prize to the best trader and a prize to the best commentator. These prizes were symbolic such as an Ipad. The highest ranked idea within each different theme got directly into a pool of ideas considered for further development and implementation. In addition, the rest of the ideas (approx. 100) were screened by the innovation team to select 20 ideas for further consideration. This screening process was based on a number of criteria developed by the innovation team in charge of Idébørsen. The criteria were clear and transparent to all participants. The 20 selected ideas were then presented to the management group and 5 of these ideas were selected for further development together with the 5 highest ranked ideas in the

Idébørs. A number of work hours were then allocated to the idea owner and a number of experts (1-2) to further develop the idea and define the implementation needs. The crowdsourcing project culminated with an innovation day, where the three winning ideas for final implementation were selected. This day was full with speeches from external innovation experts and a session with short presentations of the 10 finalist ideas.

In the first crowdsourcing round, the participation of the invited external partners was low, while the employees participation (in one way or another) was about 50 per cent, considered by The Company itself a big success. The “Idébørs” at The Company was thus not just a tool, but rather a whole concept with strategically defined areas for contributions, criteria for evaluation, a formula for presentation, roll out plan including deadlines, log ins, articles in the internal newsletter, info at the intranet, info-screens running commercials on the Idébørs, ect.

Analysis and results

In this section we show how Idébørsen is changing the innovation culture at Rambøll along a number of specific dimensions summarized in table 4.

Dimension	New content
Innovation Awareness	Atypical types of innovation Welcoming anybody as potential contributors More ways of contributing to innovations A more easy, noncommittal, open and informal way to contribute combined with a transparent and strategically based innovation process
Increased internal process orientation	Moving from innovation anchored in consulting projects to employees driven innovation, thus emphasising the internal process orientation and not only customer process orientation
Empowerment and autonomy in decision-making	Balancing broader employees’s involvement and strategic focus. Opening up for empowerment (eg. ratings by employees) however keeping final decision making with management to ensure implementation.
Extrinsic and Intrinsic Reward orientation	The extrinsic rewards (the prizes given) are symbolic in nature and create visibility among peers. Intrinsic rewards are increased visibility and exposure within the company as well the potential of winning the contest and having the winning idea implemented.
Team working and Knowledge Sharing	Collaboration in Idébørsen – developing on others ideas Insight into the knowledge of others – using ideas of others or locate knowledgeable colleagues to collaborate
Integration and lateral interdependence and Top management contact	Shortcutting the usual hierarchy in the innovation process (new roles of employees) Friendly competition

	Collaborating across departments Extended network
--	--

Innovation awareness

The implementation of "Idébørsen" directly contributes to create an innovation culture within The Company, which is not directly related to consulting projects and invites to "think out of the box". The initiative is thus seen as a complementary element allowing for new types of innovation to emerge as clearly illustrated by one respondent:

"The Idébørs can never substitute general internal development but it can support an innovation culture. (...) It is just the top of the iceberg. Other types of development weights much more and is more focused. "Idébørsen" is not the solution to innovation in the organization as such, but it is a way to lift it [innovation] and make it more visible, which it is very strong at." Project manager (no.18)

The crowdsourcing process emphasizes new roles and tasks as well as a more open and informal approach to innovation thus breaking with the company's hierarchies and project-based innovation processes and encouraging innovative behaviour in the organization as many of the employees interviewed pointed out:

"Well it is putting innovation on the agenda in The Company and changing the innovation culture in The Company through a more innovative behaviour" Idébørs team (no.10)

"It motivates people to think about ideas" Project member (no.15)

Employees were rewarded for different roles: the owner of the best idea, the best commentator and the best stock exchange dealer. This can be seen as a way to engage more people in the process and creating awareness about different tasks and elements in innovation.

"Innovation may happen on many plans and in many ways. It is not necessarily the one who nerds and gets this idea who is most innovative. It may also be the one besides saying hey what if you do this, or it could be the set-up. Well there are many drivers in innovation. So it was really to go out broadly to get people involved." Idébørs team member (no.10)

In addition, Idébørsen shows that small and twisted ideas may be of big value and not only experts, but everybody, may bid in with some good thoughts. Idébørsen emphasizes that innovation is for everybody and recognizes that innovation is not only about coming up with good ideas but also helping to develop the ideas, judging the right timing and the potential. In addition, it is a way to put innovation on the agenda encouraging the employees to think in new ways, and inspire each other. This seems to bear fruit, as there is broad agreement that Idébørsen encourages the employees to come up with types of ideas that are not otherwise easy to air as illustrated by the following:

"It is some awkward ideas many of them" Project member (no.17)

"The advantage is the new ideas that might not come otherwise, they are placed in the Idébørs. I think there are many who have been thinking about different ideas, but they don't come and tell, but here it is easy, you just write it." Project member (no.15)

The idea format of Idébørsen provides an informal and non-demanding structure which is making it easy for everybody to participate.

The big advantage is that you have a forum, where you may throw in rather general ideas. You may say without censorship (...) it is like a loophole, where you can shortcut everything. (...) In a big organization as ours, it is cumbersome to get an idea through, you really need to burn for it." Project manager (no.18)

"Well, this is really very noncommittal - entering and setting up an idea. There is no application writing; it is really easy ..." Project manager (no. 23)

However, the most important aspects are probably the transparency and the strategic anchoring of the process, which really communicate openness and sincerity about seeing all employees as potential innovation contributors.

Increased internal process orientation

Traditionally, innovation in The Company was developed and anchored in consulting projects. This implies that innovation was linked to requested consulting services and financed by the customer, thus characterizing The Company as mainly having a customer orientation approach to innovation. To take advantage of new and expensive technologies adopted by the company over the last few years (e.g. 3D) more strategic projects have been undertaken to develop new expertise and increase company competitiveness. However, consulting projects are still the main financial and structural frame of innovation as the quote below indicates.

“It is through the customers and the projects that we develop. A proportion of the development projects are innovative. Usually we initiate them as real projects. Afterwards the learned lessons are made available for all.” Competence Manager, 2007 (no.1)

Disseminating the innovations developed in the context of specific projects to the rest of the organization has always been difficult and primarily done by the employees applying their new, changed knowledge to their next projects.

“It [knowledge] is not on paper, but in the heads, (...). We are trying with some best practices, but we are not very far. It is through your colleagues that you get access, it is in their heads, we can not get it out.” Department leader (no.2)

The customer orientation is still very important for innovation in The Company. However Idébørsen opens up and allows for an internal process orientation not seen earlier in the company by providing a platform for submissions of ideas located in the mind of employees, especially ideas which have had no place to get aired. Many of these ideas address the every day practices. We can conclude that Idébørsen has made the organization move towards a new balance, which values and requests not only customer orientation but also internal process orientation to innovation.

Empowerment and autonomy in decision-making

The Company is a fairly big company with many hierarchical layers and hierarchical decision making structures. Idébørsen, however, provides new elements for employees' empowerment and autonomy in decision making in relation to innovation both from the way the crowdsourcing process is organized and the way it functions.

From an organizational point of view, the employees got a high level of autonomy in the decision concerning Idébørsen. The innovation manager established a team in charge of the social media-based crowdsourcing process comprising 8 employees from non-managerial positions. These employees represent different areas of expertise and different company locations to grant for crowdsourcing process ownership across the organization. This team, with direct reference to the innovation director, developed and planned the crowdsourcing concept.

One of the decisions in the team was to involve people in the company at all levels of the hierarchy. Top management was involved by making them responsible to select the best ideas as well as ensuring that these ideas would inform the upcoming company strategy. This was because the team wanted the crowdsourcing process and its output to be taken seriously by all company employees as showed below:

“The most difficult part is to make the ideas part of the business. We made the directors take responsibility” Team member (no.11)

“The idea was that the best ideas would be taken into the strategy process.” Team member (no.10)

The time schedule of the crowdsourcing process was planned to fit with the yearly strategic planning seminar. Top management was also involved in formulating a number of themes that was the base for the call for ideas.

The employees got the opportunity to involve themselves in several new ways in the innovation process. First they had the possibility to insert ideas in Ideabørsen in a new and easy way. Secondly they could comment and further develop the ideas inserted in the system by their colleagues. Thirdly they could

contribute to ranking the ideas by buying and selling fictive shares, thus having the power of influencing the winning ideas. This empowerment is clearly illustrated below:

"It is the employees, who enter and adjust it - why they believe some ideas are good or bad. It's been a game and they have had fun. Everybody can read about the ideas and comment whether they find it good or bad. It has made a difference - it has been different - playing with idea development." Idébørs team member (no.11)

The employees were thus given quite an amount of power as the highest ranked idea in Idébørsen were automatically selected for further development, while other 5 ideas were chosen by top management based on a pool of ideas preselected by the Idébørs team as ideas with a high innovation potential.

"People need to understand what happens otherwise we loose credibility. ...some of the ideas got through because they were traded at a high price, for some of them it became quite a show trial, because we did not have ownership - well full control." Innovation director (no.9)

".It is an amusing competition - the one called Idébørsen - makes a lot of things happen. When it comes to allocation of funds then it becomes serious and here it is some directors who do it. They do it based on something qualified and professional saying, this is what we may earn money on." Project manager (no.18)

Extrinsic and Intrinsic Reward Orientation

The set up and the reward structure of Idébørsen creates a way for not only rewarding the innovation champions, but also rewarding employees taking on different roles in the innovation process as already mentioned. The rewards in relation to the crowdsourcing process can be seen as both extrinsic and intrinsic. The extrinsic reward included the Ipad given to the winner of the best idea. Most respondents, however, mentioned that what was important to them were the intrinsic rewards such as gaining visibility in the organization, getting feedback on their ideas as well as the possibility of getting the winner idea on the strategic plan as the following statement show:

"The best ideas would be taken into the strategy process, this was the real carrot you could say, that the ones who really came up as good ones, well they would be taken further" Idébørs team member (no.10)

"It has definitely given me another surface of contact (...) In a big organization like we have here it is important to know the right people, that you have, maybe respect is not the right word, but that they know what you stand for. When I come with the next thing then my options getting it through is bigger" Project manager (no.18)

Idébørsen makes therefore the reward structure in relation to innovation more simple, transparent and functions as an equalizer for all levels of the hierarchy by providing both explicit and intrinsic rewards. Despite the broadened reward program focusing on many contributions, the employees were primarily interested in being idea winner and having their idea implemented.

Team working and Knowledge Sharing

Idébørsen supports team working in multiple ways. First the technology functionalities support team-work in an informal way as everybody is given the opportunity to comment on and rate others' ideas. Secondly, the crowdsourcing organizational set-up of allocating a small group of experts to the 10 pre-selected ideas for further developing them together with the idea contributor creates an opportunity of formal team working.

"I got someone to help me with my idea. I think this is a really good thing. Some of them tried to do something afterwards." Project member (no.14).

In addition, there have been a number of side effects related to team working and knowledge sharing in relation to the Idébørs concept. For example, an employee argues that "Idébørs" helps creating a common place where people look for and discuss ideas. "Idébørsen" becomes a knowledge-sharing tool to find inspiration for new ideas, to get input for doing things differently and to find peers who might be able to help you out, thus stimulating interaction and team-work outside of the platform within and across the departments of The Company.

"It really is [a tool for knowledge sharing]. There is one who has found out an effective way to control drawings. We have talked about it, it is one from the user department and in the next project, then we'll read about it and, talk to him about how can I use his idea." Project manager, (No.18)

"They say the idea] stay in a glory hole, so they may take them up I can see that many of the ideas from this year build on some of the thoughts I had last year." Project member (no.14)

Integration and lateral interdependence and top management contact

In The Company, the departments are the primary organizational units. However due to the cross disciplinary nature of many projects, a lot of work is conducted in teams crossing the departmental structure, thus supporting collaboration across the organization but also with customers and external partners. However, as noted earlier, a big challenge in The Company is the dissemination of project-based innovations to the rest of the organization. One advantage of Idébørsen is therefore the possibility to make ideas developed locally in an organizational unit visible to the rest of the organization. The whole concept of Idébørsen thus supports integration and lateral interdependence by still keeping the competitive spirit of the employees and departments.

"The use of the Idébørs encourages the competitive spirits of both individuals and departments. Our department would like to win (..) it should win!" Project member (no.14)

Idébørsen also establishes some kind of "friendly competition", new types of social relations between departments and individuals within the same department as part of the game.

"If my department had been the only one winning, then we would probably tease the other departments not winning - the good way. This is how it should be. This is why it works. This is where you tease each other a little and have some fun - some other form of social relation" Project manager (no.18)

At a local level, the following quote describes how the Idébørs encourages dialogue and collaboration between co-located employees and most often also with close peers to develop and discuss ideas to be entered or found in Idébørsen:

"..One of the ideas I developed, I consulted a colleague. (..) I went up and asked one of the very experienced project managers: 'what do you do'." Project manager (no.18)

The Idébørs favors integration and lateral communication through new possibilities to collaborate across the organization by supporting knowledge and ideas flow in the organization encouraging dialogue among the employees as is showed by the following:

"Well regarding this one [a useful idea] a colleague told me about it. Try to look here, it is really good, just something for you." Project manager, (no. 18)

A very important argument for using Idébørsen is the fact that it creates a platform for employees at all levels in The Company to communicate their ideas, thus functioning as an equalizer. In Idébørsen all contact formalities like status, function, areas, are not needed. People only use their name, signaling therefore that all ideas are equally important. Idébørsen provides a new channel and method to make ideas flow and grow functioning as a shortcut across the hierarchy in the organization. In a way Idébørsen breaks the formal hierarchical structures characterizing The Company and makes everybody's ideas exposed to everybody independently of the position in the company. This implies that it is easier for employees at lower levels to make their ideas visible at all levels of the organization and especially to top management:

"I think that creating an open forum where you can get all your ideas out, it gives much more than what was possible before. Then it was only innovation champions with knowledge of the system, knowing where to apply for money. Now every one can throw in an idea" Project member (no. 19)

"The advantage in this [Idébørsen] is the short between high and low in the system, so that ideas that may not get to the managers corridors they might get up there." Project member (no.14)

During the crowdsourcing process there is no direct contact with top management as such. The ideas may develop through other paths of gaining attention and support. These paths are based on making the ideas simple and understandable and inviting others to get involved and buying their shares, thus emphasizing

the quality of the idea and the social network of the employee. Later on, only when an idea has become well developed and convincing regarding its business potential, the top management contact is established.

Finally, Idébørsen creates a transparent platform with links to knowledge of others, which complements and combines the traditional personal knowledge through personal relations, or rather relations of relations also known in The Company as the "three calls".

Discussion

Using crowdsourcing systems to support innovation in organizations may be unfolded in many different ways and the answer to the research question (How can social-media-based crowdsourcing systems be used to reengineer the innovation culture in an organization?) depends both on the innovation culture in place before the implementation as well as how the system is designed.

Nonetheless it can be argued that inherent in the concept of crowdsourcing there are values of innovation processes as open and democratic. The rationale of crowdsourcing is to open up innovation processes to involve more people. This should change the type of input as well as the control of the process as it becomes transparent with following changes in the distribution of power... The change in power is seen for example in a reduced control of what is discussed and what is valued by putting other themes on the agenda. This is both the strength of crowdsourcing (as it may question traditional thinking of the few) and the challenge (as it provides more diverse and less clear possibilities).

Looking at the implementation of Idébørsen in The Company what we see is a change process where the tool is only part of a much larger change effort of a strategic innovation initiative including strategic focus, rounds of selection, selection criteria, planning group, communication and marketing around the system, setting up reward systems and processes to communicate as well as acknowledge many different roles and involvement of employees to develop innovations.

The main results can be seen in terms of the implementation and organizational value of the three winning innovation ideas. However, there have been a number of side effects of the internal crowdsourcing process, such as growing awareness of innovation in the company as well as the opportunity for everybody to be potential innovators. Looking at the cultural dimensions, the implementation of the crowdsourcing tool has helped to bring about changes in the innovation culture. Some of the results are directly linked to the innovation process; others are related to a more general agenda of knowledge management thus allowing to build new relations and access to the knowledge of others.

One of the most important issues seems to be the limited time event of crowdsourcing, giving the employees a possibility to raise their voice and listen to other colleague's voice through a common platform and later on, on the innovation day. The acknowledgement of all employees as potential innovators and all employees having access to the platform is a really strong statement changing the innovation culture in the organization into a common effort. It is strong in the sense that it is breaking with the more traditional, blackboxed and closed processes of innovation thus breaking down some of the hierarchy by making it easy to participate and making the process transparent.

The idea of coming up with valuable ideas that can easily be implemented is close to the type of employees in the company since they are mainly engineers. The crowdsourcing tool is seen as a forum, which supplements other fora of innovation in the organization such as the consulting projects. This type of forum allows visibility of ideas that otherwise could be hard to see or hear about. This is in line with the findings from the Innovation Jams in IBM (Bjelland and Wood, 2008).

The Company has made other types of innovation competitions without the social media crowdsourcing tool. The social media element seems to be strong for a number of reasons. Value is created in a number of ways: it is fun, it creates a sense of community, it provides access to valuable knowledge, it provides visibility and status in the organization, idea owners and commentators get direct feedback in the system. Likewise the employees trust the system as they can see what is there, the rules are clear and equal for everybody and the outcome is taken seriously. This is why the managerial support is extremely important combined with the new possibilities of engaging masses of employees rather than a few innovation

champions. Involving the majority of the employees making the innovation process transparent is creating a whole new approach to innovation. It may be argued that the concept of organizational innovation crowdsourcing built up around the tool Idébørsen is actually becoming a driver for a different innovation culture where it becomes easier, more legal and more fun to engage in innovation. We thus conquer with the argument of Doherty and Perry (2001) arguing that a particular system may help reinforce particular values or like Walton (2003) that a given system may facilitate a move in the organizational culture, which in our case is in the innovation culture. We do not argue that technology may control the innovation culture, but that it is a part of a techno-change (Markus, 2004) system that can facilitate change. In the case of Idébørsen what we see is that the current culture of innovation is challenged as more employees are invited to participate and new methods and new roles are established thus building up other relations. Markus (2004) and Pliskin et al (1993) argue that new systems fail when there are contrasts between the organizational culture and the IT systems implemented. Our study shows that rather big changes in the innovation culture may emerge when the social media system is complementing the initial culture.

Conclusion and future research

Our work provides evidence that an organization may use social media based crowdsourcing systems to reengineer the innovation culture in the organization. The analysis shows that the organizational crowdsourcing event has supported a change in the innovation culture towards a more open and common approach to innovation.

The Company has succeeded in creating a new and different *awareness of innovation* putting innovation on the agenda as a common effort in which every employee might contribute in a number of different ways; as idea generator, idea developer, idea commentator thus creating roles for everybody. In addition, the initiative complements the current customer orientation by inviting for *internal process orientation*. The employees have been *empowered* due to their higher involvement and the impact of their ratings as a tool for *decision making*. Finally, it turns out that the initiative supports *knowledge exchange* and collaboration *across the organization* to a new extent by creating an opportunity to discuss ideas both in the system as well as in other social networks supporting transparency of the process. It may thus be argued that the traditional hierarchy and the internal borders are reduced both in terms of knowledge exchange as well as in terms of a less formal and restricted method for dealing with innovations and knowledge in the organization.

At the same time, as changes in the innovation culture are argued to be the output of the crowdsourcing initiative, it is important to stress that the initiative has been designed to both to support and challenge the organizational culture. This is especially seen in the balance of empowerment versus management control and customer versus internal process orientation.

As our study is based on one case it is dubious whether our findings will fit other organizations however it may be concluded that social media crowdsourcing may at least be used by some organizations to reengineer the innovation culture. Future research could look at other organizations and their experiences with social media-based crowdsourcing systems. Such research could help broaden the understanding and getting a more nuanced picture of the possibilities and limitations of organizational crowdsourcing to reengineer the innovation culture.

References

- Andriole, S.J. 2010. "Business Impact of Web 2.0 Technologies," *Communications of the ACM*, (53:12), pp.68-79
- Bjelland, O. M. and Wood, R. C. 2008. "An Inside View of IBM's Innovation Jam," *MIT Sloan Management Review*, Fall (50:1), pp.32-40
- Boudreau, K., Lacetera N. and Lakhani, N. 2011. "The Effects of Increasing Competition and Uncertainty on Incentives and Extreme-Value Outcomes in Innovation Contests," *Management Science* (forthcoming).
- Brabham, D. 2010. "Moving the crowd at Threadless. Information," *Communication, and Society* (13:8), pp. 1122-1145.

- Doherty, N. F., and Doig, G. 2003. "An Analysis of the Anticipated Cultural Impacts of the Implementation of Data Warehouses," *IEEE Transactions on Engineering Management* (50:1), pp. 78-88.
- Doherty, N. F., and Perry, I. 2001. "The Cultural Impact of Workflow Management Systems in the Financial Services Sector," *The Services Industry Journal* (21:4), pp. 147-166.
- Howe, J. (2006) 'The Rise of Crowdsourcing,' *Wired* (14:6), 4 pages
<http://www.wired.com/wired/archive/14.06/crowds.html> (retrived 9/8 2011)
- Huston, L. and Sakkab, N. 2006. "Connect and Develop. Inside Procter & Gamble's new model for innovation," *Harvard Business Review* (march), pp. 1-7
- Hutter, K., Hautz, J., Füller, J., Mueller, J. and Matzler, K. 2011. "Communitation: The Tension between Competition and Collaboration in Community-Based Design Contests," *Creativity and Management* (20:1), pp. 3-21
- Lakhani, K. R., and Kanji, Z. 2008. "Threadless: The Business of Community," *Harvard Business School Multimedia/Video Case*, pp. 608-707.
- Lakhani, K.R. 2008. "InnoCentive.com," *Harvard Business School case study* 9-608-170. Revised October 28, 2009.
- Leavy, B. 2005. "A leader's guide to creating an innovation culture," *Strategy & Leadership* (33:4), pp. 38-45. Retrieved September 12, 2011, from ABI/INFORM Global. (Document ID: 883304211).
- Malone, T.W., Laubacher, R. and Dellarocas, C. 2010. "The Collective Intelligence Genome," *MIT Sloan Management Review* (51:3), pp. 21-31
- Markus M.L. 2004. "Technochange management: using IT to drive organizational change," *Journal of Information Technology* (19:1), pp. 4-20
- Nonaka, I. 1994. "A dynamic theory of the organizational knowledge creation," *Organization Science* (5:1), pp. 14-37
- Piller, F.T. and Walcher, D. 2006. "Toolkits for idea competitions: A novel method to integrate users in new product development," *R&D Management* (36:3), 307-318
- Pisano, G. 2006. "Profiting from innovation and the intellectual property revolution," *Research Policy* (35:8), pp. 1122-1130
- Ravishankar, M. N., Shan L. Pan, S. L., and Leidner, D. E. 2011. "Examining the Strategic Alignment and Implementation Success of a KMS: A Subculture-Based Multilevel Analysis," *Information Systems Research* (22:1), pp. 39-59
- Senge, P. M. 1992. *The Fifth Discipline: The Art and Practice of the Learning Organization*. Doubleday
- Tellis, J., Prabhu, C. and Chandy, R.K. 2010. "Radical Innovation Across Nations: The Preeminence of Corporate Culture," *Journal of Marketing* (73:1), pp. 3-23
- von Hippel, E. 1994. "Sticky Information and the Locus of Problem Solving: Implications for Innovation," *Management Science* (40:4), pp. 429-439
- Wilkins, A. L. and Ouchi, W.G. 1983) "Efficient Cultures: Exploring the Relationship Between Culture and Organizational Performance," *Administrative Science Quarterly* (28:3)
- Walsham, G. 1995. "Interpretive case studies in IS research: nature and method," *European journal of Information Systems* (4), pp. 74-81.
- Yin, R.K. 1997. *Case Study Research Design and Methods* Thousand Oaks: Sage Publications.
- Nambisan, S. and Nambisan, P. 2008. "How to profit from a better virtual customer environment," *MIT Sloan Management Review* (49:3), pp. 53-63
- Goodman, L. A. 1961. "Snowball sampling," *Annals of Mathematical Statistics* (32:1), pp. 148-170.
- Miles, M.B. and Huberman, A. M. 1994. *Qualitative Data Analysis*, Thousand Oaks, California: Sage Publications, Second Edition
- Hofstede, G. 1997. *Cultures and Organizations: Software of the Mind*, New York:McGraw-Hill
- Schein, E.H. 1985. *Organizational culture and leadership* Jossey-Bass, San Francisco, 1985.
- Pliskin, N., Romm, T., Lee, A. S. and Weber, Y. 1993. "Presumed Versus Actual Organizational Culture: Managerial Implications for Implementation of Information Systems," *The Computer Journal* (36:2), pp. 143-152
- Morgan et al 1998
 Major 2002
 Sathé and Davidson 2000
 Cooper 1994

Lampe et al 2011

| Leidner and Kayworht (2006) det har du

Forfatter

Slettet: -

.

Editors:

Michel Avital, University of Amsterdam
Kevin Crowston, Syracuse University

Advisory Board:

Kalle Lyytinen, Case Western Reserve University
Roger Clarke, Australian National University
Sue Conger, University of Dallas
Marco De Marco, Università Cattolica di Milano
Guy Fitzgerald, Brunel University
Rudy Hirschheim, Louisiana State University
Blake Ives, University of Houston
Sirkka Jarvenpaa, University of Texas at Austin
John King, University of Michigan
Rik Maes, University of Amsterdam
Dan Robey, Georgia State University
Frantz Rowe, University of Nantes
Detmar Straub, Georgia State University
Richard T. Watson, University of Georgia
Ron Weber, Monash University
Kwok Kee Wei, City University of Hong Kong

Sponsors:

Association for Information Systems (AIS)
AIM
itAIS
Addis Ababa University, Ethiopia
American University, USA
Case Western Reserve University, USA
City University of Hong Kong, China
Copenhagen Business School, Denmark
Hanken School of Economics, Finland
Helsinki School of Economics, Finland
Indiana University, USA
Katholieke Universiteit Leuven, Belgium
Lancaster University, UK
Leeds Metropolitan University, UK
National University of Ireland Galway, Ireland
New York University, USA
Pennsylvania State University, USA
Pepperdine University, USA
Syracuse University, USA
University of Amsterdam, Netherlands
University of Dallas, USA
University of Georgia, USA
University of Groningen, Netherlands
University of Limerick, Ireland
University of Oslo, Norway
University of San Francisco, USA
University of Washington, USA
Victoria University of Wellington, New Zealand
Viktoria Institute, Sweden

Editorial Board:

Margunn Aanestad, University of Oslo
Steven Alter, University of San Francisco
Egon Berghout, University of Groningen
Bo-Christer Bjork, Hanken School of Economics
Tony Bryant, Leeds Metropolitan University
Erran Carmel, American University
Kieran Conboy, National U. of Ireland Galway
Jan Damsgaard, Copenhagen Business School
Robert Davison, City University of Hong Kong
Guido Dedene, Katholieke Universiteit Leuven
Alan Dennis, Indiana University
Brian Fitzgerald, University of Limerick
Ole Hanseth, University of Oslo
Ola Henfridsson, Viktoria Institute
Sid Huff, Victoria University of Wellington
Ard Huizing, University of Amsterdam
Lucas Introna, Lancaster University
Panos Ipeirotis, New York University
Robert Mason, University of Washington
John Mooney, Pepperdine University
Steve Sawyer, Pennsylvania State University
Virpi Tuunainen, Helsinki School of Economics
Francesco Virili, Università degli Studi di Cassino

Managing Editor:

Bas Smit, University of Amsterdam

Office:

Sprouts
University of Amsterdam
Roetersstraat 11, Room E 2.74
1018 WB Amsterdam, Netherlands
Email: admin@sprouts.aisnet.org