TAMPERE UNIVERSITY OF TECHNOLOGY

Social Media Use and Potential in Business-to-Business Companies' Innovation

Hannu Kärkkäinen
Tampere University of Technology
Department of Business Information
and Logistics
P.O. Box 541, FIN-33101 Tampere
+358 40 8490228

hannu.karkkainen@tut.fi

Jari Jussila
Tampere University of Technology
Department of Business Information
and Logistics
P.O. Box 541, FIN-33101 Tampere
+358 40 7178345

jari.j.jussila@tut.fi

Jaani Väisänen
Tampere University of Technology
Department of Business Information
and Logistics
P.O. Box 541, FIN-33101 Tampere
+358 40 8490231

jaani.vaisanen@tut.fi

ABSTRACT

Social media use, potential and challenges in innovation have received little attention in literature, especially from the standpoint of the business-to-business sector. Therefore, this paper focuses on bridging this gap with a survey of social media use, potential and challenges, combined with a social media - focused innovation literature review of state-of-the-art. The study also studies the essential differences between business-to-consumer and business-to-business in the above respects. The paper starts by defining of social media and web 2.0, and then characterizes social media in business, social media in business-to-business sector and social media in business-to-business innovation. Finally we present and analyze the results of our empirical survey of 122 Finnish companies. This paper suggests that there is a significant gap between perceived potential of social media and social media use in innovation activity in business-to-business companies, recognizes potentially effective ways to reduce the gap, and clarifies the found differences between B2B's and B2C's.

Categories and Subject Descriptors

J.4 [**Social and Behavioral Sciences**]: Economics.

General Terms

Management, Performance, Design.

Keywords

Social media, web 2.0, innovation, business-to-business, survey.

1. INTRODUCTION

Recent literature in innovation management has recognized a new increasingly important innovation paradigm, which is based on an open innovation model [7, 13, 41]. This paradigm, "open innovation", emphasizes the importance of the efficient use of knowledge and information besides the knowledge inside the company borders, particularly the knowledge locating outside the company borders, because valuable innovation-related knowledge is being increasingly widely distributed to different actors, organizations (e.g. companies, customers, suppliers, universities etc.) and communities [7]. In this paradigm, also the significance of knowledge creation by e.g. open communities of peers is emphasized. Various types of collaborative web tools and approaches, such as social media, can enable and significantly increase the use of the distributed knowledge both within and outside the company borders [26, 24], as well as support the transition to more open innovation processes.

The significance of innovation -related collaboration is reflected in the many so called "success factor studies" that investigate the factors affecting the success and failure of innovation: according to them, the successful inter-organisational and intra-organisational cooperation is one of the major success factors in innovation [35], some studies even claiming this to be the most important detected success factor [29]. Social media provides quite novel and useful ways of interacting and collaborating in the innovation process, as well as for creating new information and knowledge for innovations [e.g. 3, 2, 5], which have not yet been much investigated because of the novelty of social media concepts and approaches, and the possibilities of social media are not fully understood in the context of innovation.

Social media utilization in enterprises is a current and popular research topic. Although there do exist studies and information about how companies currently use social media, knowledge about social media use in innovation activity is relatively scarce, both the theoretical and empirical research is quite fragmented, and the empirical research is mainly based on individual, often not too systematically and analytically reported fragmented cases. Furthermore, it is not well known how companies see the potential benefits of using social media in enhancing innovation efforts and customer involvement. Third, the use of social media in different specific contexts, such as the business-to-business sector and in different types of industries, is not well understood. The aim of this research is to illustrate both the current state and potential of social media use in innovation as perceived by Finnish business-to-business (B2B) companies.

The purpose of our paper is to study the use and potential of social media in the innovation context, especially from the perspective of the business-to-business companies. We also wanted to find out what kinds of important challenges there are currently in implementing social media in the innovation activities of B2B's. On the basis of available literature, it can be presumed that the challenges, benefits and useful approaches are at least somewhat different from those of business-to-consumer companies. It has been a relatively common assumption [10, 23] that it is much more difficult to utilize social media in business-to-business innovation and customer interface for instance because

of the many significant differences in the business-to-business products, markets and product development. These B2B characteristics and differences are described and analyzed later in this study in more detail.

2. SOCIAL MEDIA IN BUSINESS-TO-BUSINESS

2.1 Definition of Social Media and Web 2.0

Web 2.0 means technologies that enable users to communicate, create content and share it with each other via communities, social networks and virtual worlds, making it easier than before, as well as to have real life experiences in virtual worlds and to organize content on the internet with content aggregators [23]. Such tools and technologies emphasize the power of users to select, filter, publish and edit information, as well as to participate in the creation of content in social media [38]. According to Constantinides and Fountain [9], "Web 2.0 is a collection of open-source, interactive and user-controlled online applications expanding the experiences, knowledge and market power of the users as participants in business and social processes. Web 2.0 applications support the creation of informal users' networks facilitating the flow of ideas and knowledge by allowing the efficient generation, dissemination, sharing and editing / refining of informational content."

According to Kaplan and Haenlein [19], social media is defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content. Furthering this, social media is referred to as applications that are either fully based on user-created content, or in which user-created content or user activity have a significant role in increasing the value of the application or the service [18]. Lietsala and Sirkkunen [25] suggest using social media as an umbrella term, under which various and very different types of cultural practices take place related to the online content and people who are involved with that content. Some of the practices are relatively stable, such as participating in wikis, blogging, and social networking, and some are still developing, such as microblogging, or using add-ons to build new types of hybrid sites, etc.

2.2 Social Media in Business

Social media is a relatively novel concept, and its fast wider adoption and public interest has its roots at least partly in the originally non-commercial public social media applications such as Facebook and blogs. In the white paper study of Coleman [8], still only 15% of the general population said they used social networks (technologies) at work, while others used them merely outside the work context. The adoption and attitudes towards social media in the business context seem to be affected by the above phenomena: in practice, managers often seem to associate social media strongly to especially Facebook and Twitter, which are only a very minor part of the social media genre in business.

Even if some individual Web 2.0 tools, such as wikis, have been somewhat used in the business and enterprise contexts for almost a decade, the general adoption and understanding of social media in the business context is quite low. In a Finland- based survey [16] targeted mainly for CEO's, CIOs and strategic management, 25.4 % expressed that web 2.0 applications and services were in active use in their organizations, and 16.4% said they would take

them into use somewhere in the near future, while the rest had no plans or no resources to adopt them, or thought it was better to wait before making adoption decisions. The adoption may be very fast in certain business areas, and there are significant differences in the adoption depending on the business or function asked: contrary to the previous research, e.g. in the white paper of Stelzner [37], as many as 88 % of surveyed marketers were using social media in their marketing, but 72 % had been doing so for a few months only or less. These fast changes emphasize the need for monitoring and studying the social media possibilities and adoption rates in various business contexts.

Considering the different business -related areas in companies, the white paper survey of Gordon [14] showed (Figure 1) that social media is used in varied degrees in different business functions:
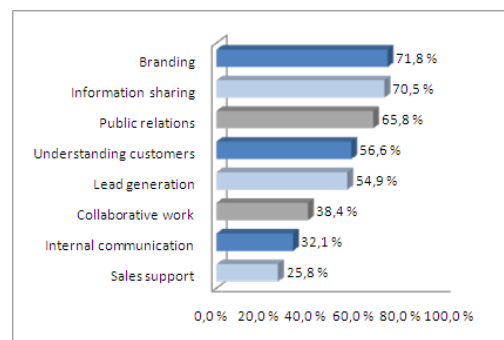

Figure 1. Social media use in different business functions.

Very few recent academic studies were found that studied the adoption of social media in organizations in general, or the adoption in different business functions. The found academic survey-type studies reported practically no recent studied adoption rates especially in innovation context or business-to-business context, not to mention their combination. This emphasizes the relevance of our study aiming precisely to study the above combination empirically.

2.3 Social Media in Business-to-Business Sector

2.3.1 Characteristics of Business-to-Business Sector

The markets, the products and product development have significant differences between the business-to-business and consumer product sectors [e.g. 21, 42, 17, 39, 40, 15, 20]. For instance, generally speaking products produced by business-to-business organizations are more complex, the development of new products takes significantly more time, and the customers are large organizations instead of single persons, which is the case in consumer (business-to-consumer) product sector. In industrial business-to-business markets, there are normally fewer customers compared to consumer markets, and the co-operation with customers is generally more direct and more intense than in the consumer sector. Industrial products are usually purchased by professional buying people who consider a large number of different criteria when making the buying decisions. They tend to acquire plenty of information about the industrial products to be purchased, and they normally evaluate the different alternatives objectively. The demand for industrial products is derived from the demand for the company's industrial customers' products and

finally the end-user demand [21, 42]. In industrial products, more emphasis is on physical performance and personal selling than in consumer products, where psychological attributes and advertizing are critical for success [39].

2.3.2 *Challenges for Social Media Use in Business-to-Business*

Taking the above differences into consideration, it is fair to presume that also the various types of innovation-related managerial approaches, e.g. collaborative approaches and customer needs assessment activities, such as the ones that are carried out by means of social media and web 2.0, should take these differences carefully into account when planning and implementing approaches for the business-to-business sector companies. For instance, the types of at least partially social media –based approaches such as crowdsourcing, which can rather easily be applied in consumer markets where there might be huge numbers of users or customers usable for such approaches, in business-to-business context crowdsourcing seems to be generally a rather distant idea because of the relatively small number of customers. Also the motivators that motivate individual consumers or hobbyists to participate in social media –based user-communities can be very different from those of professional (B2B sector) customers: for instance, while the aspects of recognition and sense of community or self-esteem are undoubtedly important also for employees in business-to-business sector firms, it is to be doubted whether they are important motivators enough to become drivers for them to act as a user-innovator. On the other hand, in the context of such innovation, legal contracts and IPR –issues can become challenges of free revealing of product or business ideas in the inter-organizational innovation collaboration in the business-to-business markets [e.g. 30].

The above factors lead into thinking that the usefulness and potential of social media should be empirically studied especially in the context of business-to-business companies, trying to assess the significance of the expected challenges and benefits of social media in innovation from the specific standpoint of business-to-business companies. Even if clearly most of the available empirical studies are done from the B2C standpoint or a quite generic standpoint, some empirical social media studies have noticed and taken into consideration the specific nature of business-to-business [23, 4, 10, 6, 11]. However, most of the found empirical studies are not academically implemented and reported, and importantly, no empirical survey-based studies with innovation standpoint has been found, despite extensive literature reviews, in the business-to-business context.

2.4 Social Media in Business-to-Business and Innovation

A literature survey on social media in business-to-business and innovation was performed to gain an understanding of the state-of-the-art. Five databases: ABI Inform, ACM Digital Library, Emerald, ISI Web of Knowledge, and ScienceDirect, were included in the survey of articles related to social media, innovation and B2B.

A total of 1357 articles were discovered of which 60 were chosen for further examination based on the title. The selection criteria were that the article must address social media or web 2.0, and relate to innovation in general, or to some or to all innovation

process phases. Individual tool –related studies in the above context (wikis, blogs, etc.) also came up, but these were not included, because we were interested in getting an overall picture of social media use, possibilities and challenges instead of narrow snapshots of individual approaches. 25 of selected articles matched these criteria. In addition, we made a systematic study of both backward and forward references of the selected 25 articles that brought some more articles into our attention, the number of articles totaling 30. The articles were analyzed especially from the standpoint of social media in B2B and innovation contexts, and current empirical knowledge was synthesized.

The empirical studies found included an online survey of consumer empowerment through internet-based co-creation [12], survey of technology start-ups and early adopters to identify rules for creating and capturing value from innovative technologies [32], interview of marketing personnel and web 2.0 experts to compare their views regarding web 2.0 and industrial marketing in the Finnish context [23], a survey of enterprise social collaboration [8], social media business use survey [14], B2B social media benchmarking study [4], a web-questionnaire about Finnish industrial leaders' appraisal and strategy concerning Enterprise Web 2.0-related topics [16], and survey on business use of web 2.0 technologies – including wikis, blogs, social networks, and mash-ups [28].

The multiple-case based studies found were about motivating and supporting collaboration in open innovation [1], a case study of two companies about experience management aimed at enhancing customer involvement [22], a case study of how two innovative firms have gained competitive advantage from using the co-creative business concept to generate sustainable growth [34], six case studies of collaborative customer co-design in online communities [31], two exploratory case studies to illustrate the integrated and systemic usage of internet based collaborative innovation mechanisms [36].

In brief, the literature survey revealed that the knowledge about social media use in innovation activity is currently fragmented into studies of individual tools and technologies with little focus on the big picture, and it is mainly based on individual cases. The very few studies combining social media and B2B standpoint have been mainly studied from a marketing perspective, and little attention is placed on innovation. Moreover, research is virtually nonexistent in the area where social media, B2B and innovation dissect. Empirical academic studies in the intersection, especially survey-based ones, are practically non-existent.

3. RESEARCH DESIGN

We wanted to study how B2B companies perceive the potential, opportunities and challenges in using social media in their innovation process. In addition, we also wanted to gain further understanding from the technological and organizational points of view of how business-to-business organizations currently utilize social media. We utilized the research questions, the generic social media related literature, the survey- type of empirical social media studies, as well as expert interviews in the design of the questionnaire structure and the individual questionnaire questions.

3.1 Questionnaire

First of all, the respondents were given a brief definition of social media utilizing the available common definitions in the found

literature. The definition was a relatively brief one: "By social media we mean applications, which are based either fully to user-created content, or user-created content and user activities have a significant role in increasing the value of the application or service. Social media is built on web 2.0 technologies, content and communities." This definition was complemented in the beginning of the questionnaire by providing the respondent a list of web 2.0 –based application categories.

To receive necessary background information about the respondents which might affect their opinions, the respondents' were first asked about their age, their experience in innovation in years, and the function they belonged to. To receive the necessary background information about the studied companies, the respondents were asked to choose in which class they belong to regarding turnover, number of employees and industry type from the classifications defined by Statistics Finland. We clarified the emphasis of business, the alternatives being business-to-consumer (consumer or end user as customer), business-to-business (company as customer) or other markets, by asking which alternative would best describe their companies' main focus. We also clarified the competitive strategy of companies by presenting four different generic alternatives to choose from (some important literature sources for the task being Porter [33] and McGrath [27]. In order to understand better the innovation activity in the companies we asked to assess how systematic the innovation activity was in terms of identifying the development needs of their innovation activities, as well as and their development stage in innovation on five-point scale (ranging from very poor to very good).

To orient the respondents to think about social media holistically, as well as to give a better picture of social media, we first asked how active their use of social media -related tools in the company related to predefined application categories (instant messaging, blogs, microblogs, wikis, pod/webcasts, content aggregators, mashups, social networking tools, social bookmarks, social office tools, virtual worlds, and social workspaces) on five-point scale ranging from very little to very much. We studied the maturity level of social media adoption in companies by asking the respondents to evaluate statements regarding maturity on five-point scale ranging from completely disagree to completely agree (see the results for more detailed questions). Social media use in innovation was assessed similarly by statements regarding social media use in internal innovation, in collaboration with customers, in collaboration with product development / innovation partners, and in collaboration with other outside organizations on five-point scale ranging from very little to very much.

Social media potential was evaluated in terms of the opportunities it offers for product or service development and involving customers in development, and the potential of social media use in different phases of innovation process. The respondents were asked to evaluate how much potential social media has on the three innovation process phases, that is the front-end phase, product development phase and launch/commercialization phase, on five-point scale ranging from very little to very much. The content of the phases was illustrated with the main subtasks related to them. We studied the potential of social media in customer interaction by asking the respondents to evaluate how much potential does social media have in different types of customer interaction modes (in the order of growing depth of customer involvement in innovation) on five-point scale ranging

from very little to very much (see results for more detailed questions). Social media opportunities for product or service development were evaluated by asking the respondents to rate how much opportunities does social media give in cost cutting, reducing product development time, increasing customer orientation and in improving quality on five-point scale ranging from very little to very much.

The questionnaire was also designed to study customer knowledge -related challenges in the innovation activity, and the possibilities of social media supporting the acquisition of customer knowledge, but these being not in the main focus of this study and its research questions, their results will be reported separately. Prior to formulating the questionnaire, a few forerunners of social media adoption and social media experts in Finland were interviewed to receive background information of social media use in enterprises in general, as well as the challenges and possibilities of social media in business and innovation contexts. This information was utilized in the development of the preliminary questionnaire, together with found literature. The preliminary questionnaire was pre-tested in several business-to-business companies by persons with varied levels of expertise and knowledge in social media and innovation concerning the content, ease of understanding the questions, as well as the length of answering the questionnaire.

3.2 Sample

A sample of 1984 Finnish decision makers from companies with more than 50 employees were surveyed (the contact info to studied product development and innovation experts was obtained from a commercial company JM Tieto). The contact information was selected based on persons working in companies employing more than 50 employees in either research and development or product design role. The respondents were selected on the basis of their position towards product development and innovation. Smaller companies with generally a lesser interest, perceived benefits as well as resources for social media specifically in the innovation context (marketing context would probably be somewhat differently viewed in the smaller companies, though) were excluded from the study scope. Invitation to participate to the survey including covering letter explaining the focus of the survey was sent to the contact information obtained and given two weeks time period to complete the survey. After two weeks an email reminder was sent with one week more time to complete the survey. To improve the response rate telephone calls were made to contacts that had product and manager, developer or designer in title, a total of 262 were contacted of which (50 %) 132 were reached in two weeks time period.

A total of 122 responses were received to the Internet-based survey. The effective response rate was thus 6 % (122/1984). Of the responding firms, 78 % were manufacturing, 8 % construction, information and communication and wholesale and retail trade both 2 %, 1 % were mining and quarrying, professional, scientific and technical activities, and human health and social work activities, 7 % were industries classified as "other". The majority (76 %) of the respondents were oriented towards business to business markets and minority (26 %) towards business to consumer markets. The responses concerning the respondents position held within the firm were product development (67 %), management (16 %), IT (5 %), HR and sales (2 %), marketing (1 %), 8 % were in position classified "other".

To ensure the representativeness of the sample, the authors acquired general statistics of Finnish companies employing more than 50 persons. These statistics were obtained through Statistics Finland (www.stat.fi), the only established authority for producing statistics in Finland. The authors compared the number of personnel and annual revenue between the sample and the figures provided by Statistics Finland. (Figures 2 and 3)
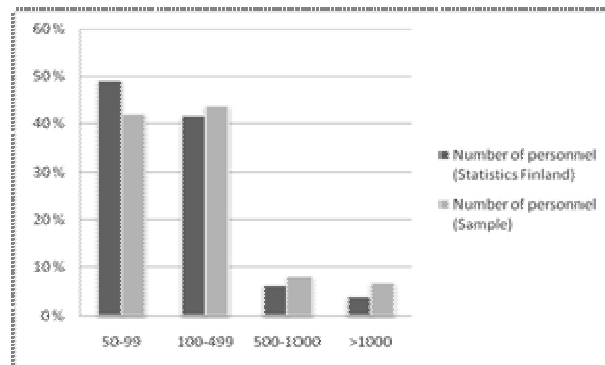

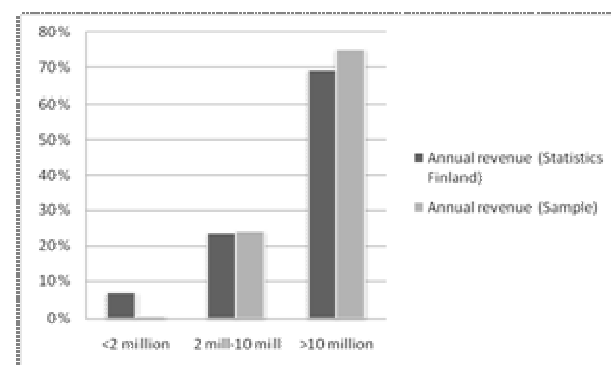**Figure 2. Comparison of number of personnel.**

Figure 3. Comparison of revenue.

As can be seen from Figures 2 and 3 above, the annual revenue and number of personnel from the sample seem to represent closely the general figures from the Finnish companies. Pearson's Chi-Square testing was performed on the data, which rejected the null hypothesis of independence on both occasions at $\alpha<0.001$, giving further evidence that the results from the sample could be generalized to Finnish companies.

4. RESULTS

4.1 Social Media Use

As for social media use in the studied B2B companies, 11.0 % of B2B companies agreed (either completely agreed or agreed) that social media was used in their companies, while 74.8 % disagreed (completely disagreed or disagreed) that it was used. There were descriptive level differences on how social media was used in B2B and B2C companies. The respective percentages of B2C companies agreeing on the use were 20 % agreeing on the use (4.0 % completely agreed, 16.0 agreed) against 64.0 % (32.0 % completely disagreed and 32.0 % disagreed). So, on the descriptive level, B2C companies used social media slightly more. These results have also implications on how social media was or was not used in innovation activity.
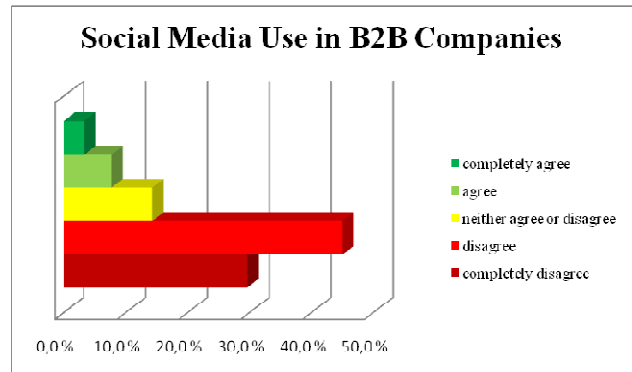

Figure 4. Social media use in B2B companies.

Concerning the important prerequisities affecting the adoption of social media in companies, in the order of growing "adoption maturity" and challenge, in the studied B2B companies almost half, 44.0 % expressed that the use of social media was allowed in their companies, while around one third (30.8 %) stated that the use was not allowed. Only 2.2 % of the respondents agreed that training was provided for social media use, and 5.6% agreed that guidelines for the use was provided. 16.5 % stated that the company had skilled staff to support social media use. 3.3 % claimed that the use of social media was encouraged in company. Compared to B2C companies, all the above aspects of social media prerequisities were rated descriptively lower (there were no statistically significant differences), except that social media use was allowed more often in B2B companies than B2C companies, where 40.0 % of the studied companies allowed the use of social media.
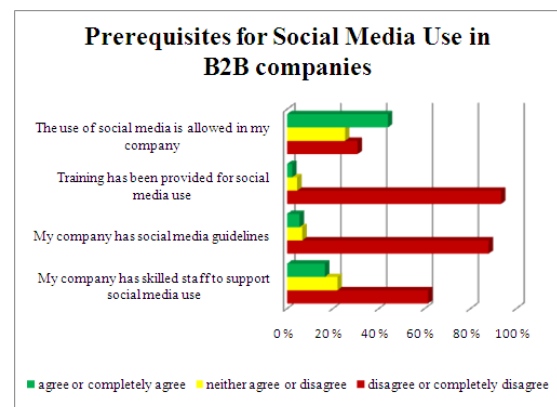

Figure 5. Prerequisite of Social Media Use in B2B companies.

The most used (rather much or very much used) social media - related application categories in B2B's were wikis (7.8 %), instant messaging (7.7 %), social workspaces (6.5%) and social office tools (6.5 %). None of the B2B companies reported using microblogs or social bookmarking rather much or very much. Concerning the application categories most often associated with social media, rather surprisingly, on the descriptive level, social media tools were used more actively in B2B companies than B2C companies in almost all the studied application categories. Only blogs, microblogs and virtual worlds were used more actively in studied B2C companies. Social workspaces were used statistically significantly (sig. 0.012) more in B2B companies (6.7 % rather

much or very much) than in B2C companies, where 0 % used social workspaces rather much or very much and only 4.0 % used somewhat.

In studied B2B companies, social media use in innovation was most active in collaboration with customers (5.6%) and with innovation partners (5.6%). In internal innovation the use was least active (2.2%). We found no statistical differences in the use between studied B2B's and B2C's, but at the descriptive level, there were slight differences: 5.6 % used social media rather much or very much in B2B companies compared to 8.0 % in B2C companies. Social media was used actively in collaboration with product development or innovation partners in 5.6 % of B2B companies compared to 4.0 % of B2C companies. It is peculiar, however, that social media was less actively used in B2B companies' internal innovation (2.2 %) than in the collaboration with other outside organizations (4.5 %), as well as customers and partners, when literature mainly suggests that organizations should first adopt social media in the internal use, e.g. due to risks with opening up innovation processes and not being able to control the innovation activities and knowledge sharing in the open innovation environments.

4.2 Social Media Potential

The greatest potential (the respondents selecting rather much or very much) for social media use in B2B companies' innovation process was seen in the front-end phase (17.6 %) and closely following this in the importance, the launch/commercialization phase (16.5 %). Smaller part of B2B companies recognized the potential of social media in the actual product development phase (11.0 %). There were statistically significant differences in how well B2B and B2C companies perceived the potential of social media in the innovation process, in frond-end of innovation process (sig. 0.015) 33.3 % of B2C companies recognized rather much or very much potential, and in product development (sig. 0.009) also 33.3 % of B2C recognized rather much or very much potential, whereas in launch/commercialization phase there was no statistically significant difference (sig. 0.091, below sig. 0.05 being statistically different). However, at descriptive level clearly differences were found, as 29.1 % of B2C companies perceived a clear potential (rather much or very much) in the use of social media in the launch/commercialization phase.
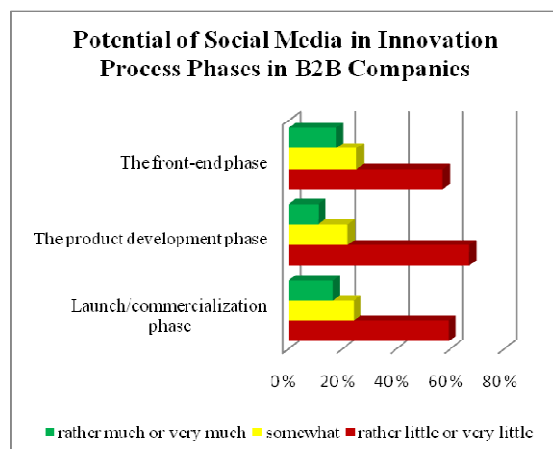

Figure 6. Potential of Social Media in Innovation Process Phases in B2B Companies.

Social media potential in customer interaction in B2B companies followed a marketing oriented pattern: the most frequently the studied companies saw potential (rather much or very much) in merely passing product or service marketing -related information to customers (one-way interaction). Concerning the other studied modes of customer interaction, the frequency the studied companies perceiving (rather much or very much) potential from social media decreased somewhat in every further interaction mode that required more intense customer involvement in product or service development. The pattern was similar in this respect for B2C companies, although B2C companies recognized more potential in every mode of customer interaction. Social media was considered offering rather much or very much potential in passing product or service marketing related information to customers in 31.0 % of studied B2B companies and 54.2 % in B2C companies, while about 23.9 % of B2B companies and 33.3 % of B2C companies perceived that social media provided rather much or very much potential in offering products and services (e.g. toolkits) for customers to develop products.

Concerning the perceived rather generic opportunities of social media, the majority of B2B companies regarded that social media provided important opportunities (rather much or very much) in discovering customer demands (46.2 %), which was descriptively slightly less than considered in B2C companies (54.1 %). Opportunities in development of innovation activity were found much or very much by 28.6 % of B2B companies and 29.1 % of B2C companies. Furthermore, opportunities to develop organizations in general were recognized much or very much by 17.8 % of studied B2B companies and 16.6 % of B2C companies.

Regarding the perceived impact of social media on innovation activity, about half (48.9 %) of B2B companies claimed social media can rather much or very much increase customer orientation. 24.1 % of B2B companies regarded that social media provided important opportunities (rather much or very much) in shortening product development time and 23.9 % in saving costs. Social media opportunities in improving quality were rated rather much or very much by 20.5 % of B2B companies. In B2C companies significantly (sig. 0.009) more opportunities were perceived in increasing customer orientation (clear majority, 64.0 % of B2C companies perceived rather much or very much opportunities). At descriptive level B2C companies perceived more opportunities in other categories as well (33.3 % regarded that social media can save costs rather much or very much, and 28.0% considered that social media can shorten product development time and improve quality rather much or very much).

4.3 Social Media Challenges

The four major challenges in adopting social media in innovation, which were seen as important or very important by more than 40 % of the studied B2B companies (see Figure 7), were the lack of understanding the possibilities of social media in innovation (77.2%), difficulties of assessing the financial gains from social media (59.8%), the difficulties in adopting new mental models and practices needed for the adoption (47.8%), and the lack of evidence of similar cases using social media in innovation (45.7 %). Also the security issues in social media use and inadequate personnel resources were considered as tough challenges by little over 40 % of B2B companies.
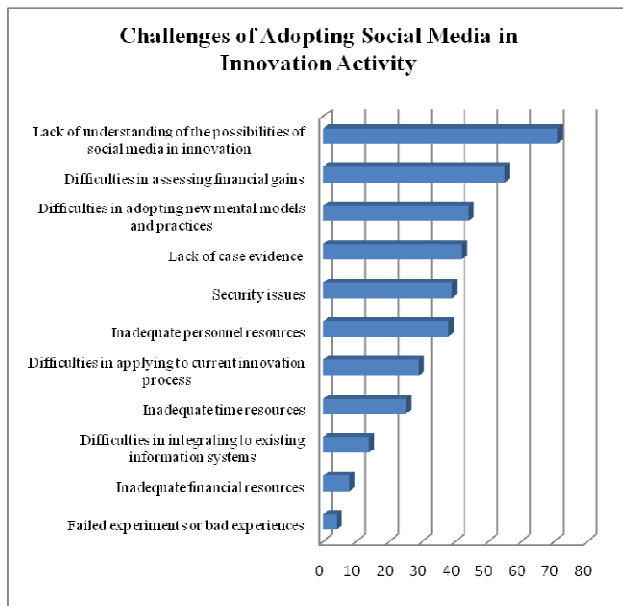
Figure 7. Challenges of Adopting Social Media in Innovation Activity.

5. DISCUSSION AND CONCLUSIONS

In general, on the basis of the results, the studied B2B's seemed to see a perhaps even surprisingly large potential with the use of social media in innovation and in clarifying the customer needs in particular, especially with the regard to the doubts often presented in literature towards utilizing social media in B2B's, as well as the B2B's characteristics, e.g. the relatively small number of customers compared to B2C markets: about half of the studied B2B companies saw important new possibilities for clarifying customer needs. Concerning the various types of results of improving the innovation, increasing customer orientation was by large marginal the most commonly (by about 50 % of companies) seen important innovation- related benefit, shortening the product development time being the next. However, when comparing the above potential to actual use, there seems to be a significant gap there, because only 11 % of B2B's saw that social media was used in general in their companies, and in the context of innovation, as little as 5.6 % of B2B's, according to respondents, used social media significantly with their customers or innovation partners, and even less in other innovation collaboration types.

Our study discovered several potential factors at least partly explaining the low use, which were experienced very commonly, by about half or more of the respondents as important reasons for not utilizing social media in innovation: the lack of understanding the possibilities of social media in innovation, difficulties of assessing the financial gains from social media, the difficulties in adopting new mental models and practices needed for the adoption, as well as the lack of evidence of similar cases using social media in innovation. In general, it seemed that the lack of knowledge was the most important factor in slowing the adoption of social media in innovation, whereas inadequate resources (personnel, time, or financial) were not so important neither the integration of social media in current innovation

process and information systems. Failed experiments or bad experiences were not deemed important challenges impeding the adoption of social media. To increase social media use, at least the above mentioned most important social media adoption barriers should be worked on in companies, and academic research should be carried out to produce a more systematically organized, more holistic and less fragmented picture of the above issues.

Concerning the usage of social media in B2B's, it was surprising, for instance, that social media was less actively used inB2B companies' internal innovation (2.2 %) than in the collaboration with other outside organizations (4.5 %), as well as customers and partners, when literature mainly suggests that organizations should first adopt social media in the internal use, e.g. due to risks with opening up innovation processes and not being able to control the innovation activities and knowledge sharing in the open innovation environments.

As presumed, we found clear differences between the studied B2B's and B2C's on the basis of our results. Some of the differences were found merely on the descriptive level, but there were also differences that were statistically significant. In general, on the descriptive level, B2C companies used social media slightly more. However, social media use was allowed more often in B2B companies than B2C companies, which contrasts interestingly with the above, as well as the general expectations about social media use.

We found no statistical differences in the actual usage patterns of social media between studied B2B's and B2C's, except that concerning social media -related tools, social workspaces were used statistically significantly more in B2B companies than in B2C companies. This does not, however, mean that no differences would exist, but with the studied sample and studied questions and measures, no statistically significant differences were found. However, descriptively, many differences did come out, e.g. that B2B's used social media more often with innovation partners than B2C's. Also, rather surprisingly, on the descriptive level, social media tools were used more actively in B2B companies than B2C companies in almost all the studied application categories, except for blogs, microblogs and virtual worlds. However, the usage was generally so low that the results do not provide very conclusive evidence about the differences, and this area should be further investigated.

There were statistically significant differences in how well B2B and B2C companies perceived the potential of social media in the innovation process, in frond-end of innovation process and in product development phases B2C's recognized significant potential significantly more often, whereas in launch/ commercialization phase there was no significant difference. Concerning the challenges of social media adoption, no clear differences were discovered.

Academically, we have produced new understanding about the usage, perceived potential and challenges of social media in innovation especially in B2B's, which has not been studied academically with survey approaches earlier to our knowledge. We have discovered that there is a significant gap between the perceived social media potential and actual use in B2B's. We have also created new understanding about the differences between B2B's and B2C's.

Managerially, the results can be used for instance to better understand the special challenges and features of B2B- related

social media, and especially the various types of possibilities of social media to support and facilitate innovation in B2B's. However, the main focus of this study was not on the managerial implications, but in the facilitation of social media research. Also, due to the low current usage of social media implied by the results, the companies that first experiment with and develop social media -based ways to support B2B innovation might benefit strongly from these investments. In addition, consultants might benefit from these results by developing ways to avoid the important social media adoption challenges and facilitate the adoption.

This study opens up several areas for further research. First of all, in order to facilitate the adoption of social media and to fill the gap between perceived social media potential and actual use in B2B's discovered in this study, it seems apparent that academic as well as pragmatic research should be carried out. Having discovered B2B companies' emphases, special characteristics and patterns of social media use, this research provides important starting points for such further research. Most importantly, the academic research should focus on gathering and organizing the fragmented empirical research to provide a systematic and holistic picture of the possibilities of social media in B2B innovation, developing ways for giving a more analyzed picture of the financial gains of social media, as well as to gather more organized and varied types of case studies, examples and case evidence into a good overall picture of how social media may facilitate B2B innovation.

6. ACKNOWLEDGMENTS

7. REFERENCES

[1] Antikainen, M., Mäkipää, M., Ahonen, M. 2010. Motivating and supporting collaboration in open innovation. European Journal of Innovation Management. 13, 1, 100-119.

[2] Barker, 2008. How Social Media Is Transforming Employee Communications at Sun Microsystems. Global Business and Organizational Excellence, 27, 4, 6-14.

[3] Bernoff, J., Li, C. 2008. Harnessing the Power of the Oh-So-Social Web. Sloan Management Review. Vol. 49 No 3.

[4] Business.com. 2009. B2B Social Benchmarking Study. http://www.business.com/info/b2b-social-media-benchmark-study.

[5] Cachia, R., Compañó, R., Da Costa, O. 2007. Technological Forecasting & Social Change, 74, 1179–1203.

[6] Carabiner. 2009. Social Media: How B2B Companies Can Connect. A marketing guide for fast-growth businesses and startups. http://www.carabinerpr.com/docs/pdf/Carabiner_White_Paper-Social_Media.pdf.

[7] Chesbrough, H.W. 2003. Open Innovation - The New Imperative for Creating and Profiting from Technology. Harvard Business School Press, Boston MA.

[8] Coleman, D. 2009. Enterprise Social Collaboration Research Study. http://www.finnode.com/themes/finnode/files/finnode_soccollab_aug09.pdf

[9] Constantinides E., Fountain S., 2008, Web 2.0: Conceptual foundations and Marketing Issues. Journal of Direct, Data and Digital Marketing Practice. 9, 3, 231–244.

[10] Eskelinen, M. 2009. Sosiaalinen media business to business -markkinoinnissa. Metropolia Ammattikorkeakoulu. http://urn.fi/URN:NBN:fi:amk-200906123924

[11] Forrester Research. 2008. IT Can Help Accelerate Business Innovation. Making Product, Business Model, And Process Change Sustainable. http://www.simnet.org/Portals/0/Content/Library/Forrester_ITCanHelpAccelerateBusinessInnovation.pdf

[12] Füller, J., Mühlbacher, H.,Matzler, K., Jawecki, G. 2009. Consumer Empowerment Through Internet-Based Co-creation. Journal of Management Information Systems. 26, 3, 71–102.

[13] Gassmann, O. 2006. Opening up the Innovation Process: Towards an Agenda. R&D Management. 36, 3, 223-228.

[14] Gordon, J. 2009. The Coming Change in Social Media Business Applications: Separating the Biz from the Buzz. http://socialmediatoday.com/ClientFiles/adcb5c24-341d-4387-b3e9-9ff0972653f2/SMT_whitepaper_biz.pdf

[15] Hanna, N., Ayers, D., Ridnour, R. and Gordon, G. (1995) New product development practices in consumer versus business products organizations. Journal of Product and Brand Management, 4, 1, 33-55.

[16] Helfenstein, S., Penttilä, J. 2008. 'Enterprise 2.0-Survey FIN'08-kysely. In T. Paloheimo (Eds.), Yritys 2.0 Luku 6. https://www.jyu.fi/erillis/agoracenter/tutkimus/acprojektit/katsy/sotech/publications/surveytiivistelma

[17] Holt, K., Geschka. H., Peterlongo, G. 1984. Need Assessment: a Key to User-oriented Product Innovation. Chichester, John Wiley & Sons Ltd.

[18] Kangas P., Toivonen S., Back A. (Eds.). 2007. "Googlen mainokset ja muita sosiaalisen median liiketoimintamalleja".VTT, Helsinki.

[19] Kaplan, A. M., Haenlein, M. 2010. Users of the world, unite! The challenges and opportunities of social media. Business horizons. 53, 1, 59-68.

[20] Kärkkäinen, H. 2002. Customer need assessment: challenges and tools for product innovation in business-to-business organizations. Doctoral thesis. Acta Universitatis Lappeenrantaensis 126, Lappeenranta.

[21] Kotler, P. 1997. Marketing Management: Analysis, Planning, Implementation and Control. 9th edition. London, Prentice-Hall.

[22] Lamberti, L., Noci, G. 2009. Online experience as a lever of customer involvement in NPD: An exploratory analysis and a research agenda. EuroMed Journal of Business. 4, 1, 69-87.

[23] Lehtimäki, T., Salo, J., Hiltula, H., Lankinen, M. 2009. Harnessing web 2.0 for business to business marketing - Literature review and an empirical perspective from Finland. Oulu University Press. http://www.digibusiness.fi/uploads/reports/1265364241_harnessing%20web%202.0.PDF

[24] Levy, M. 2007. WEB 2.0 implications on knowledge management. Journal of Knowledge Management. 13, 1, 120-134.

[25] Lietsala, K. and Sirkkunen, E. 2008. Social media - Introduction to the tools and processes of participatory economy. Tampere University Press. Tampere, Finland

[26] McAfee, A. 2006. Enterprise 2.0: The dawn of emergent collaboration. MIT Sloan Management Review, 47, 3, 21-28.

[27] McGrath, M. 1995. Product Strategy for High-Technology Companies. New York, McGraw-Hill.

[28] McKinsey. 2008. Building the Web 2.0 Enterprise. http://www.openinnovation.eu/download/Mckinsey%20July%202008.pdf

[29] Muffatto, M., Panizzolo, R. 1996, Innovation and Product Development Strategies in the Italian Motorcycle Industry. Journal of Product Innovation Management. 13, 1, 348-61.

[30] Nordlund. H. 2008. Proceedings of the 1st Ispim Innovation Symposium, International Society for Professional Innovation Management (ISPIM). Singapore.

[31] Piller, F., Schubert, P., Koch, M., Möslein, K. 2009. Overcoming Mass Confusion: Collaborative Customer Co-Design in Online Communities. Journal of Computer-Mediated Communication. 10, 4, 8. http://jcmc.indiana.edu/vol10/issue4/piller.html

[32] Porta, M., House, B., Buckley, L., Blitz, A. 2009. Value 2.0: eight new rules for creating and capturing value from innovative technologies. Strategy & Leadership. 36, 4, 10-18.

[33] Porter, M. 1985. Competitive Advantage: Creating and Sustaining Superior Performance. New York, The Free Press.

[34] Ramaswamy, V. 2009. Competing through co-creation: innovation at two companies. Strategy & Leadership. 38, 2, 22-29.

[35] Read, A. 2000. Determinants of successful organizational innovation, Journal of Management Practice. 3, 1, 95–119.

[36] Sawhney, M., Verona, G., Prandelli, E. 2009. Collaborating to create: the internet as platform for customer engagement in product innovation. Journal of Interactive Marketing, 19, 4, 4-17.

[37] Stelzner, M. 2009. Social media marketing industry report - How Marketers Are Using Social Media to Grow Their Businesses. http://marketingwhitepapers.s3.amazonaws.com/smss09/SocialMediaMarketingIndustryReport.pdf

[38] Tredinnick, L. 2006. Web 2.0 and Business. Business Information Review. 23, 4, (Dec. 2006), 228-234.

[39] Urban, G. and Hauser, J. 1993. Design and Marketing of New Products. New Jersey, Prentice Hall, Inc.

[40] von Hippel, E. 1988. The Sources of Innovation. New York, Oxford University Press.

[41] von Hippel, E. 2005. Democratizing Innovation. Cambridge, The MIT Press.

[42] Webster, F. 1991. Industrial Marketing Strategy. 3rd Edition. New York, Wiley.