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Learning from and with Customers with Social Media: A Model for Social Customer Learning

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Social media can enable and significantly increase the collaboration and learning from customers in various ways, for instance by novel social ways of providing and receiving feedback from new products and concepts. We have created a model that can support managers and researchers to better analyse and understand the possibilities of social media approaches especially from the business-to-business (B2B) customer interface standpoint. We used the model to analyse found various types of business-to-business related social media approaches to create new understanding of the scarcely researched field of social media in the customer learning and the customer interface of B2B innovation.

Keywords: innovation, customer, learning, organizational learning, customer learning, social media, business-to-business

Introduction

Organizations have to learn about market needs and technological solutions increasingly quickly if they want to respond to the quick and often unpredictable changes in their business environment. This learning need is caused and driven by frequent scientific and technological breakthroughs and the quickly changing and unpredictable market and customer needs (Akgün, Lynn, & Byrne, 2003).

Much of the customer information gathered by traditional methods, such as statistical surveys, is not adopted and properly used by organizations (Deshpande & Zaltman, 1987). Some reasons for this are that it is not felt as useful by product development or it is not trusted (Gupta & Wilemon, 1988). Additionally, traditional methods are not very well-suited to uncover latent or future customer needs (Matthing, Sanden, & Edvardsson, 2004). Learning from and with customers is more easily said than done. Some foundational background for this challenge is provided by the knowledge of the limitations of customers to imagine and give feedback about something that they have not experienced (Von Hippel, 2005). This means that organizations find serious difficulties for understanding, learning from and meeting the hidden or latent needs of customers by using traditional methods, such as interviews and surveys (e.g. Matthing et al., 2004).

The recent innovation literature has increasingly emphasized the efficient use of knowledge and information not only inside the company borders, but particularly the knowledge locating outside the company borders, such as the knowledge of customers and users, as well as communities formed by customers or suppliers (Chesbrough, 2003). In addition, the co-creation of new knowledge has gained fast in importance (Rowley, Kupiec-Teahan, & Leeming, 2007; Payne, Storbacka, & Frow, 2008).

Various types of collaborative web tools and approaches, such as social media, can enable and significantly increase the collaboration and learning from customers in various ways (Peppler & Solomou, 2011; Albors, Ramos, & Hervas, 2008). Social media can for instance enable the use of the distributed knowledge and the collaborative knowledge creation not only within but also outside the company borders. Importantly, social media can provide quite novel community-oriented and social ways of providing and receiving feedback from new products and concepts (Peppler & Solomou, 2011; Barker, 2008), as well as providing a useful platform for inter-organizational co-creation (Verona, Prandelli, & Sawhney, 2006). Some forms of social media, such as virtual worlds, can also enable customers and companies to receive a real-world experience from products, as well as experiment with novel concepts (Kohler, Matzler, & Füller, 2009; Messinger et al., 2009). All the above novel possibilities are important enablers for efficient individual and organizational learning (e.g. Easterby-Smith, 1997; Von Hippel, 2005).

If social media provide novel possibilities for learning from customers, why are companies then not taking fully the advantage of social media in this respect? A recent survey of social media use in innovation identifies some important reasons that slow down the current adoption of social media in innovation: the lack of understanding of the possibilities of social media in innovation, the difficulties in assessing its financial gains and the lack of suitable case evidence were among the most important reasons for companies not adopting social media (Kärkkäinen, Jussila, & Väisänen, 2010).

Currently, the social media are so novel an area in innovation that managers have difficulties of understanding the possibilities, and due to the large variety of social media approaches, managers and researchers find it hard to understand the commonalities and differences between existing approaches. It is also difficult to understand how the various existing approaches can support learning from and with customers, and to create a larger picture of the possibilities for learning due to the lack of systematic description of current approaches, the fragmented current research, and the lack of suitable models for understanding the possibilities of social media in the specific contexts of innovation, customer interface and organizational learning.

Due to the novelty of social media concepts and approaches in business use, the possibilities of social media are not yet very well understood in the broader context of innovation. Still further, the use of social media in different specific contexts, such as the business-to-business (B2B) sector and in different types of industries, is currently poorly understood. First, since the number of customers is generally much smaller in the B2B sector (Gillin & Schwartzman, 2011), the use of crowdsourcing which is quite commonly used in B2C operations, is limited. Second, in the context of innovations and the B2B sector, legal contracts and IPR issues can become challenges in the free disclosure of product or business ideas in inter-organisational innovation collaboration (e.g. Nordlund, Lempiala, & Holopainen, 2011) and may thus seriously limit the usability of social media between B2B companies and their customers. Third, various issues concerning information security have been raised already in individuals' use of social media, but due to the nature of business-to-business communication, the business-to-business context includes severe information security risks, potentially limiting the use of social media in ways that are not necessarily similarly problematic in B2C social media applications. No studies were found to study the potential of social media more comprehensively in the B2B customer interface especially from the innovation viewpoint, or from the more specific standpoint of customer learning and the creation of customer knowledge and understanding in the innovation context.

Due to the above, our purpose is, first, to create a model that can support managers and researchers to better analyse the important characteristics of current social media approaches, especially from the B2B customer interface standpoint. In order to make the model easy to understand and to be utilized, we point out, illustrate and apply in the model the critical few dimensions needed to understand the major options and possibilities of social media in this context. This will also support the planning and roadmap building of social media use in the customer interface, showing the major directions that can be selected. Second, we use the model to analyse found various types of business-to-business related social media approaches, and create new understanding of the scarcely researched field of the possibilities of social media in the customer learning and the customer interface of B2B innovation.

Learning from and with Customers

One rather common perspective in literature is that organizations learn when their knowledge in the form of rules and standard operating procedures is changed (Argyris & Schön, 1996), i.e. their actual behavior changes. From another perspective, an organization or another entity learns 'if, through its processing of information, the range of its potential behav-

iors is changed' (Huber, 1991), or the organizational mental models and schemas change. A further important feature in organizational learning focuses on the distinction of learning between single- and double-loop learning. The basic premise is that organizations learn and make decisions and adjustments often through the mechanism of feedback (Argyris & Schön, 1996). Furthermore, it can be stated that, basically, organizations learn in two ways: through their own experiences or through the experiences of other organizations (Levitt & March, 1988). Learning from one's own experiences includes experimenting and interpreting the earlier outcomes, while learning from the others means the transfer of knowledge embedded for instance in products or processes, or transferring the knowledge in some other form.

Some foundational generic prerequisites for learning to happen in individual and organizations, commonly present in various models of organizational and individual learning, include real-world experience (Kolb, 1984), feedback from decisions (Sterman, 2000; Senge, 1990; Argyris & Schön, 1996), reflection (Kolb, 1984), socialization (Nonaka & Takeuchi, 1995) and iteration (Easterby-Smith, 1997; Kolb, 1984; Nonaka & Takeuchi, 1995).

Literature on organizational learning (e.g. Argyris & Schön, 1996) emphasizes the importance of feedback for effective learning. Sterman (2000) even goes as far as stating that all learning is based on some sort of feedback. Johannessen and Olsen (2010) point out the importance of feedback in enhancing value creation and propose that when firms and customer can both give and receive immediate feedback, the instant connection between the firm and customer's needs will enhance not only value creation but also innovation. According to Lampela and Kärkkäinen (2008), some of the main factors affecting the feedback related to innovation-related decision making deal with long time delays from decisions to feedback, the long physical distance from decisions to their effects and feedback, the difficulty in differentiating which decisions and other factors really caused a failure or a success in the innovation process or contributed to it in the longer term. Also the misperceptions of received feedback or lacking feedback are important factors. The above factors hinder both learning from customers and markets as well as learning from technological solutions.

There are a number of generic barriers to learning from customers in organizations. One foundational problem in learning from customers is that customers' and users' insights into new product needs and potential solutions are usually severely constrained by their real-world experience, meaning that they are unlikely to imagine or generate very novel product concepts that conflict with the familiar (Von Hippel, 1988). According to Adams, Day & Dougherty (1998), further more detailed major barriers for learning from markets and customer needs include compartmentalized thinking, avoiding ambiguity and inertia. The barriers affect the acquiring, disseminating and using of market information. Such barriers limit or bias the flow of market

and customer need information, as well as the feedback from other departments in the case of product innovation. This has a significant impact in the innovation process, limiting for instance the learning from the market and customer information and feedback (see e.g. Adams et al., 1998).

Customer-related learning can be divided into two major parts: learning from the customers and learning with the customers (e.g. Matthing et al., 2004). The concept 'Learning from and with customers' suggests that customers can become more than just passive informants (Matthing et al., 2004). 'Learning from customers' hints that only the other party, the supplier, learns (receives new information and knowledge about customers' needs and/or changes the mental models), while 'Learning with customers' hints that both the supplier and the customer learn by receiving and adopting novel information and knowledge. For instance Meeus, Oerlemans, and Hage (2001) define a similar concept, interactive learning of a firm as the '(in-)formal exchange and sharing of knowledge resources with suppliers and/or customers that is conducive to the innovation of the firm.' Lubatkin, Florin and Lane (2001) emphasize a strong need for a similar capability using the term 'reciprocal learning,' but they refer to the concept more in the context of alliance partners.

This interactive or both-sided learning can be achieved for instance by means of co-development and co-creation (see e.g. Payne et al., 2008; Prahalad & Ramaswamy, 2004; Rowley et al., 2007), for instance in a common development project. In such a case, the supplier would probably learn from its customer's needs, and correspondingly, the customer would learn about technological ways to solve its own needs. Additionally, both parties might additionally add their absorptive capacity (Cohen & Levinthal, 1990; Lubatkin et al., 2001), which would increase their capability to identify and adopt further need- and solution-related knowledge.

However, an even more interesting case is that, e.g. by means of novel web-based solutions such as social media, the customers may even learn to better understand their own needs and the suppliers learn about novel solutions. Various novel approaches of social media, for instance peer-learning (Rowley et al., 2007), user toolkits combined with user communities (Jeppesen & Frederiksen, 2006) and virtual worlds (Messinger et al., 2009) are able to provide such organizational learning-related benefits. These approaches and their benefits, however, remain so far very little researched and understood, especially in the B2B context (Jussila, Kärkkäinen, & Leino, 2012).

Possibilities of Social Media in Customer Learning

Although the concepts Web 2.0 and social media are often used synonymously, it is useful to differentiate them from each other (Kaplan & Haenlein, 2010). The concept Web 2.0 can be defined as technologies that en-

able users to communicate, create content and share it with each other via communities, social networks and virtual worlds, making it easier than before. They also make it easier to have real life experiences in virtual worlds and to organize content on the internet with content aggregators (Lehtimäki, Salo, Hiltula, & Lankinen, 2009). Social media can be 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' (Kaplan & Haenlein, 2010). Further to this, social media are often referred to as applications that are either fully based on user-created content, or in which user-created content or user activity play a significant role in increasing the value of the application or the service. Lietsala and Sirkkunen (2008) define social media being built on the combination of Web 2.0 technologies, content and communities, this definition emphasizing the social aspects, instead of Web 2.0 technologies that may or may not be used in an interactive and social manner.

A large number of generic types of social media-related applications can be identified (e.g., Warr, 2008; Cooke & Buckley, 2008), such as wikis, blogs, microblogs, social networking sites, social content communities, and virtual worlds. Some of the practices are already relatively well established in private and business use, such as participating in wikis, blogging, and social networking, and some are still developing, such as microblogging, or participating in virtual worlds.

In general, social media and Web 2.0 have been noticed to bring several benefits for organizational learning and knowledge management. These include enhancing networking and the use of weak ties (Levy, 2009; Schneckenberg, 2009), facilitating the mobilization of tacit knowledge (Ribiere & Tuggle, 2010; Schneckenberg, 2009), facilitating knowledge acquisition; (Schneckenberg, 2009; Ribiere & Tuggle, 2010; Levy, 2009), organizing knowledge and information (Ribiere & Tuggle, 2010), and enhancing information and knowledge sharing (Levy, 2009). According to the literature, social media provide quite novel and useful ways of interacting and collaborating with customers in the innovation process, as well as for creating new information and knowledge for innovations (Kohler et al., 2009). In brief, new web-based technologies, such as social media, can enable a shift from a perspective of merely exploiting customer knowledge by the firm to a perspective of knowledge co-creation with the customers (Sawhney & Prandelli, 2000).

One of the key benefits of social media in customer learning is that they enable unfiltered feedback to be received from customers (Singh, Veron-Jackson, & Cullinane, 2008). Furthermore, social media can provide more rich feedback than traditional media. For example compared to e-mail, virtual worlds provide a hugely more representational-rich environment for com-

panies to have direct and rich interactions with their customers (Kohler et al., 2009; Lee, Cheung, Lim, & Sia, 2006).

Novel modes of interaction that support for instance community-based peer-learning have emerged with internet-based collaboration and social media (Sawhney et al., 2005; Bullinger, Neyer, Rass, & Moeslein, 2010). Importantly, social media can provide quite novel community-oriented and social ways of providing and receiving feedback from new products and concepts (Peppler & Solomou, 2011; Barker, 2008), as well as providing a useful platform for inter-organizational co-creation (Verona et al., 2006). Additionally, even without direct interaction with customers in social media, various analysis tools such as data mining and social network analysis can be utilised for creating customer information and knowledge from social media supported communities.

Introducing Social Customer Learning Model

The four-dimensional Social Customer Learning Model was created in our research group to better understand in which different ways social media have been and can be utilized to learn from customer needs in the B2B-environment. In creating this model the aim was to consider some major characteristics of B2B's related to this respect. We also utilized the empirical study of Kärkkäinen, Piippo, Puumalainen and Tuominen (2001) to check that the most common challenges of B2B's to assess their customers' needs and to get useful understanding about them were taken into consideration in the dimensions. The model was tested and preliminarily validated with 14 B2B-cases to see how the model brings out important differences in social media utilization.

The introduced Social Customer Learning Model includes four dimensions which describe the different major factors affecting the learning from customers. The dimensions are 1) level of information richness, 2) immediacy of feedback, 3) level of interaction, and 4) number of actors. We have selected the critical few dimensions that explain the major possibilities of social media to support learning from and with customers especially in B2B's. They enable affecting the major learning challenges described in the second section. Information richness and immediacy of feedback are related partly to the ability of approaches, e.g. virtual worlds, to provide immediate visual feedback for customers and suppliers, helping them to also reflect on their decisions and iterate the solutions based on the feedback. Partly they are related to the quality and amount of feedback that can be delivered through the social media approaches used. Level of interaction is related mostly to the earlier mentioned one important prerequisite of organizational learning, socialization, as well as to the ways the approaches are used, since social media can be used in various ways from

Table 1 Table Of SCL-Model Dimension Descriptions

Information richness definitions	
Very low: Numerical feedback (data)	1
Low: Textual and numerical feedback	2
Moderate: Textual and visual 2D feedback and/or audio	3
High: Visual 3D and/or video feedback	4
Very high: Face-to-face or virtual face-to-face	5
Immediacy of feedback definitions	
Very slow: History, trends	1
Slow: Asynchronous	2
Moderate: Periodical and consequent	3
Fast: Realtime and consequent	4
Immediate: Realtime and simultaneous	5
Interaction levels	
No direct interaction	1
One-way interaction (broadcasting)	2
Commenting between two parties	3
Deep dialogue between two parties	4
Community interaction	5
Number of actors	
Number of stakeholder groups	1 . . . 5

no direct interaction to intense social community interaction, which is the characteristic feature of social media. Often companies start the use from less interactive, and develop gradually the culture and skills towards more intense interaction. The number of actors refers to how many different actors interact through the communities, which affects the type and depth of customer-related learning that can be achieved. Based on the literature review, the dimensions thus are essential and affect both the type and depth of learning that can be achieved. Next the dimensions are presented and explained (see Table 1).

Daft and Lengel (1984) introduced media richness theory to explain information processing behaviour in organizations. The media richness concept consisted of feedback immediacy, number of cues available, variety of language and personal focus. According to Dennis and Kinney (1998), immediacy of feedback and multiplicity of cues are arguably the most important factors (c. f. Kraut, Galegher, Fish, & Chalfonte, 1992). Kaplan and Haenlein (2010) utilized the media richness theory to classify social media tools. Nöteberg et al. (2003) separated the concept of feedback immediacy from media richness to better explain the use of new technology-based media, as Daft and Lengel's (1984) media richness model did not consider the features of new web-based technologies, such as social media. There-

Table 2 Table of Researched 14 Social Media Tools with SCL Model

Case	(1)	(2)	(3)	(4)
Angel IVR wiki	2	2	5	3
BASF social media newsroom	4	2	2	3
Boeing blogs	2 (2–4)	2 (1–2)	2	3
Bombardier innovation contest	3 (1–3)	2 (1–4)	3	2 (2–5)
Caterpillar on-line community	2 (2–4)	2	5	2
Crescendo virtual 3D design tool	5 (4–5)	5 (2–5)	4	2 (1–3)
Intuit SME blogs and forums	2	2	5	4
Lilly innovation platforms	2	2	5	5
Mydeco social user toolkit for innovation	4 (2–4)	4 (1–4)	4	5 (1–5)
National Instruments Developer Zone	3 (2–3)	2	5	2
SAPiens innovation community	2	2	5	2
Steelcase virtual world design contest	5 (4–5)	4 (4–5)	3	1
Tecnisa innovation community	4 (2–4)	2	5	3 (1–5)
Wells Fargo virtual world	5	5 (4–5)	3	1

Notes Column headings are as follows: (1) Information richness, (2) Immediacy of feedback, (3) Level of interaction, (4) Number of actors.

fore, we divided the larger concept of media richness into two dimensions in our model: information richness (multiplicity of cues) and immediacy of feedback.

Information richness is defined as the ability of information to change understanding within a time interval (Choo, 1991). According to him, communication transactions that can overcome different frames of reference or clarify ambiguous issues to change understanding in a timely manner are considered rich, and communications that require a long time to enable understanding or that cannot overcome different perspectives are considered low in richness. Thus, information richness can be seen to include the number and quality of cues. Face-to-face communication allows the simultaneous observation of multiple cues, including body language, facial expression and tone of voice, which convey more information than only the spoken message (Daft & Lengel, 1984). Virtual worlds, such as Second Life, make it possible to replicate the information richness of face-to-face interactions in a virtual environment (Kaplan & Haenlein, 2010). Thus, interaction in virtual worlds can be considered to convey a very high level of information richness. Less rich than virtual worlds, feedback in the form of 3D images or video in social media can provide a high level of information richness. Text combined with visual feedback, e.g. 2D static images, represents a moderate level of information richness, whereas solely textual feedback can be considered as low level, and finally, only numerical feedback or data is considered a very low level in information richness.

Immediacy of feedback describes how quickly a medium allows users to respond to the communications they receive (Daft & Lengel, 1984), or the user to receive, e.g. visual feedback from his or her decisions. Immediacy of feedback has an impact on the speed of feedback acquired and the speed of learning. Face-to-face is the most immediate form of feedback (Daft & Lengel, 1984), as happens in realtime and simultaneously. Virtual worlds can mimic face-to-face feedback in terms of realtime and simultaneous communication (Kaplan & Haenlein, 2010). It can take longer and be more difficult to understand a message when communication is consequent instead of simultaneous. This can be the case, for example with Skype video, where typically communication takes place consequently. Moderate feedback in social media refers to periodical and consequent feedback, where feedback is not immediate but happens at fixed time intervals, for example a daily notification of new messages in Yammer microblog. Slow feedback in social media either lacks the above types of possibilities of immediate, fast or moderate interaction between the parties, or else such functionality is not utilized in practice. Slow feedback is for example blog or microblog posting between the company and the customer, or between customers, that takes place asynchronously, without notifications from the service. The final level, the very slow type of feedback is the history or trend information that is generated by monitoring or analyzing the social media user data. Such user data can be, for example, how many times a certain content has been liked, viewed, shared, etc.

Multiple studies indicate the importance of customer interaction in understanding customer needs better and support new product development (e.g. Bonner, 2010; Johannessen & Olsen, 2010). The model dimension 'interaction level' describes how a company or customers learn from customer needs by interaction. Rafaeli (1988) categorized interactions to three levels: non-interactive communication, reactive communication and fully interactive communication. Since the new social technologies offer more interactive ways to connect, our interaction dimension consists of five levels, which correspond to the novel interaction possibilities of social media. The interaction levels in this model are: no direct interaction, one-way interaction (broadcasting), commenting between two parties, deep dialogue and community interaction. 'No direct interaction' is possible for example when the company is only monitoring customer behavior and use of social tools. 'One-way interaction' includes broadcasting information from company to customers without any feedback possibilities. 'Commenting' refers to superficial, occasional comments in which the nature of information is not very in-depth. 'Deep dialogue' means two-way interaction including more commenting and exchange of ideas and viewpoints, usually between two parties. Two-way interaction represents an interactive exchange, while ideas

and viewpoints are communicated and analyzed, and feedback is provided (Bonner, 2010). Community interaction refers to conversation between multiple parties, where the exchange of opinions, knowledge and ideas is possible. Community interaction is one way for firms to enable knowledge sharing and co-creation among their business customers (Erat, Desouza, Schäfer-Jugel, & Kurzawa, 2006).

In the competitive business environment the role of networking with supply chain partners has increased in recent years (Cao & Zhang, 2011). Since great diversity of knowledge is distributed across the supply chain, collaboration provides an ideal platform for learning (Verwaal & Hesselmans, 2004). The model dimension 'number of actors' describes how many active stakeholder groups a company interacts with by social media, in order to learn about and to understand the customers' needs. Company's own employees are not included in the number of stakeholder groups since we are considering only external actors in learning from and with the customers. The importance of the number of actors derives from the need to understand widely a company's market and customer needs. B2B companies should take into consideration various parties in the customer chain towards the end user to be able to better understand and also to predict customers' explicit and latent needs (Kärkkäinen et al. 2001). Stakeholder groups considered in our model include direct and indirect customers, partners, research organizations, competitors, intermediaries, end users and external experts.

Case Studies

This section includes more detailed case descriptions of the four case companies' social media utilization. It also provides the case analysis and comparison using the Social Customer Learning Model presented in the earlier section. The four cases were selected by using the maximum variation case selection strategy (Flyvbjerg, 2006). The purpose was thus, first, to test and preliminarily validate the model concerning its ability to point out important differences in various social media approaches, as well as obtain more in-depth understanding about the various ways for utilizing social media in B2B customer interface. The chosen cases were preliminarily deemed to be different from each other on at least one of the model dimensions. In Figure 1 the cases are presented with the developed Social Customer Learning Model. Next, the cases are briefly described and analysed.

Case 1: Bombardier Innovation Contest

Bombardier is a global transportation company operating in two industry-leading businesses, aerospace and rail transportation. Bombardier utilized social media to create a YouRail-competition for creating new innovative

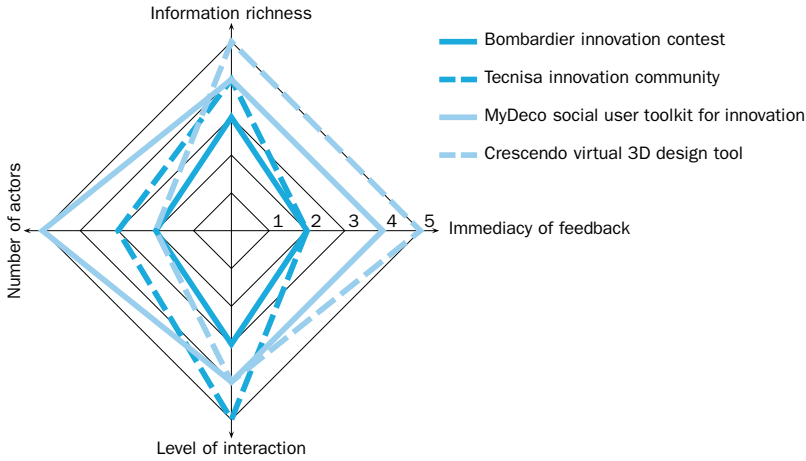

Figure 1 Different Social Media Tools Described with Social Customer Learning Model

interior designs for trains. Bombardier took advantage of the innovative potential not of their direct B2B-customers but of the end-users, for instance train enthusiasts, by calling for submissions world widely to gather first-hand end-user insights by the creation of novel designs, reviewing others designs for ideas, giving the designs ratings, and providing comments (Haller, Bullinger, & Möslein, 2011). The YouRail-website enabled users to create their designs by using a configuration tool as well as to freely create them in a design tool. In addition, the website also contained a user community where registered users could explore all uploaded designs, comment on other users' designs and give them ratings. During a ten-week period, 2232 persons participated in the innovation contest by submitting 4298 designs, as many as 26 617 ratings, and 8582 comments on competing designs (Haller et al., 2011).

Information richness in the YouRail-web site was evaluated by direct and participant observations to be moderate level, since the acquired feedback included photos of designs usually with textual descriptions. The immediacy of feedback for the company was deemed generally to be slow, since the community contributes designs asynchronously to the service. The YouRail user community enabled commenting others' designs, although the level of interaction was mainly limited to single textual comments. With the innovation contest Bombardier could get into touch with and utilize the creative resources of two major stakeholder groups that the company had relatively little earlier understanding about: the end users and other outside experts, such as designers. Both groups provided important novel viewpoints to enable the company to learn from the current customer needs from the user perspective.

Case 2: Tecnisa Innovation Community

Tecnisa is one of Brazil's most profitable constructors, and the company is operating in all areas of the real estate development sector. The company invests significantly in understanding and meeting its clients' needs, while Tecnisa's Ideas-community is one interesting approach in gaining new customer understanding. 'Tecnisa Ideas' is an online innovation community that is open for everyone interested. In the community the users can generate new ideas from small enhancement requests to developing whole new concepts. The ideas can deal with Tecnisa's construction projects, building sites, individual apartments or for instance with just one single feature in a garage. Via Tecnisa Ideas-community, users can create and develop ideas, vote for ideas, leave questions, and participate in idea challenges created by Tecnisa. They can also contact with other users and follow the ongoing discussions about ideas and inspirations.

In the community of Tecnisa Ideas the information richness level was evaluated by direct and participant observations to vary from very low level to high level, since the feedback acquired by users can vary from the number of 'likes' for a certain submission to textual, visual, and even video-based feedback, which is encouraged because it can provide the most informative feedback. However, the feedback immediacy was deemed mainly as slow, since the community parties are mainly interacting with each other by asynchronous means. Via Tecnisa Ideas, users can generate ideas together with other users by asking questions and discussing them with the community users or by proposing enhancement requests for others' ideas. These all enable community interaction. The community connects mainly two groups of stakeholders, end users and designers, with each other and with Tecnisa.

Case 3: Mydeco User Toolkit

Mydeco is the UK's largest homeware and interior design web portal for shopping furniture, planning home decorations and design. Mydeco web portal is linking many consumer and B2B parties within a single community: the web site brings together more than 2000 high street stores, designers and boutiques, while Mydeco also works as a link between home decorators and the furniture manufacturer. Mydeco provides value to home decorators with the Mydeco 3D online designer tool, which both consumers and other designers can use to plan their room decoration. 3D room designer is a user toolkit by which users can design rooms with realistic 3D. It is possible to see other users' 3D designs, as well as review and grade them. Users can also join to community subgroups based on their specific interests, and they can create, comment on and subscribe to user blogs of home decorators or professional designers. It is also possible to use designs that others have

created as a basis of own design, thus enabling learning from peers in many different ways. As a further result, the users also get a cost estimate of the whole design.

By direct and participant observations it was evaluated that Mydeco provides high information richness while the designs can be seen in 3D. The feedback immediacy with Mydeco was deemed to be between very slow and fast. This means that the home decorator can receive visual feedback from his or her experiments relatively fast by viewing them in 3D. However, peer-feedback for designs via e.g. Facebook or feedback to designer companies from their own designs can be moderate, slow or even very slow. Very slow for instance when the number of 'likes' or views of designs is monitored, slow when feedback in the form of comments is received asynchronously and moderate when comments are received periodically.

Mydeco portal provides not only deep dialogue but also community interaction possibilities since users can contact each other by forums and comment on each other's designs. 3D plans can also be shared with others when users are willing to design a room collaboratively. Mydeco makes it easy to involve many stakeholders. Main stakeholder groups involved in the portal are home decorators, professional designers and furniture manufacturers, but also e.g. design magazines and constructors can be easily involved, for instance by the creation of their own room decoration competitions.

Case 4: Crescendo Virtual Design Tool

Crescendo Design is an architecture and design firm which plans houses and some urban planning. They have been utilizing the virtual reality platform Second Life in communicating and interacting with their B2B and consumer clients. Second Life enables meetings with clients virtually, and clients may review the designs from their working place or home. In virtual meetings the company or its clients can test different design ideas in real-time, and customers can see the changes instantly while both receiving and giving instant feedback as they experience the design in an almost real environment. Virtual worlds enable designers and architects to gain valuable insight into the development of new products, when analyzing users' reactions towards virtual prototypes.

By direct and participant observations with the virtual design tool the information richness was evaluated very high and feedback acquisition from fast to immediate, since the interactions in the virtual world are very close to real life face-to-face interactions. Customers can receive and give instant feedback from changes to designs as they can experience the design in virtual reality. The interaction is usually deep dialogue between two parties, where the designer and client or client groups meet virtually and dis-

cuss about the design. As clients can also meet virtually with other experts whose opinion they want, there are mainly two stakeholder groups involved: customers and outside experts.

Discussion and Conclusions

In this study, we have created and proposed a model, the Social Customer Learning (SCL) model to analyse the potential of social media approaches in the customer interface of especially B2B innovation process. We also analysed, iterated and preliminarily validated the model by analysing various different types of B2B approaches.

On the basis of the preliminary testing and validation, the model seemed to be able to support recognizing and bringing forth important customer learning-related differentiating characteristics of the studied social media approaches. Many social media approaches that on the surface level seemed relatively similar were found, through SCL model analyses, to include important differences, for instance concerning the quality and type of feedback concerning customer needs received from the use, as well as the type of interaction supported.

The model can be applied to analyse quite various types of social media applications. The model was designed to be rather generic, and thus, it could be criticized for being too general to be pragmatically useful. However, our aim was to describe and analyse very different types of social media approaches available, from more simplistic and less information rich microblogging and blogging solutions to highly information rich virtual world communities. Thus, such a model had to be designed at a relatively high level of generality. We tested mainly B2B company-oriented customer communities, excluding in this study for instance intermediary organization-types of closed communities such as InnoCentive, which have rather little value in the in-depth customer learning.

On the basis of our analysis of 14 B2B social media cases altogether, and 4 more in-depth analyses, we found interesting rather novel opportunities for customer learning from the use. A large variety of levels of use was discovered in all the four dimensions of the SCL model. No two similar profiles were found in analysing the 4 more in-depth or even the 14 cases of more superficial analysis. This indicates, first, that the model was able to uncover differences quite well, revealing the existing differences. This supports the functionality of the model dimensions and level descriptions. Second, the results reveal that there is a large variety of different forms of existing solutions that can be used in the B2B sector to support learning from and with customers. Thus, we have demonstrated that not only B2C's but also B2B's can really make use of and benefit from social media in their innovation process and customer knowledge creation. Furthermore,

on the general level, our study has demonstrated that various social media approaches can promote the change from merely exploiting customer information and knowledge by companies to actually engaging customers to be involved in knowledge co-creation with their suppliers and peers.

Some of the learning-related benefits were related to learning from customers, and some, on the other hand, to learning with customers. In earlier studies, even if user-toolkits combined with communities and peer-learning have been identified as a novel and very useful social media approach in customer-oriented learning and innovation, the existing examples identified in current studies (e.g. Jeppesen & Frederiksen, 2006; Piller & Walcher, 2006; Franke, Keinz, & Schreier, 2008) have been almost solely intended for consumers and usable as models for the consumer-sector only. Such examples include the cases of Lego and Threadless user communities. In our study, three very different types of possibilities for using user-toolkits (c.f. Von Hippel, 2005) in B2B customer learning were recognized in this study, namely Bombardier innovation contests, Crescendo 3D design tool in Second Life, and Mydeco's 3D social user toolkit for interior design. The analysed profiles of all these three differed from each other very distinctly in all four model dimensions. The ways for peer-related learning and experimentation-related learning through various types of feedback were also quite different from each other, providing interesting models for B2B's that can be applied in different situations and industries. In addition, the number and type of stakeholders of the respective communities and the ways that they interacted with each other, enabling peer-learning differed clearly.

There are various possibilities for benefiting from using the SCL model both managerially and academically. The model can be used, first, for evaluating the major characteristics of existing B2B-related social media approaches in the customer interface of innovation. It can be applied to support the identification of novel social media approaches that might serve as examples and models for creating or facilitating companies' own social media approaches. The model serves also as a basis for building a roadmap for social media adoption: all four dimensions serve as potential directions for extending current approaches and for planning the adoption in reasonably small, manageable steps using also the level descriptions as a guideline. Thus the model may help in avoiding too large or unplanned steps, because the adoption of more complex approaches may take a long time and requires the simultaneous development of new open culture, incentives, processes, skills and information security management. We notice also that the model may help to identify novel possibilities of social media implementation, helping for instance to identify novel combinations of different dimensions and their respective levels.

While ideally, model dimensions should be fully independent, we found that few correlations exist between some model dimensions. These are concerned mostly between the very high level of information richness and the other dimensions, especially the immediacy of feedback. However, the proposed model in our opinion addresses the paper goal better from the specific standpoint of customer-related learning by B2B social media applications than found earlier information richness models, and provides a more descriptive way to analyse and distinguish between different social media approaches, especially in their capability to support customer-related learning, as intended. Still, this matter should be taken into consideration when interpreting the results, and the results should be interpreted more as a means of better understanding, characterizing and distinguishing the major characteristics of B2B social media applications that affect the ability of the applications to support customer-related learning.

Further research includes the more detailed validation of the model with more in-depth analyses of B2B cases, as well as the identification and analyses of further novel B2B approaches. We also consider it interesting in our further research to analyse which kinds of customer learning-related synergies might be approachable by combining for instance user toolkits with various types of community approaches, while the benefits are derived from the combination of for instance experimenting with novel concepts, getting both sensory feedback from 2D or 3D pictures and feedback from peers and respective communities.

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