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Abstract

Integrating social media into the innovation process can open up the potential for organizations to utilize the collective creativity of consumers from all over the world. The research in this paper sets out to identify how social media can facilitate innovation. By taking a Design Science Research approach this research presents the Social Media Innovation Method for matching innovation tasks with social media characteristics. This supports the selection of best suitable social media and can help organizations to achieve their innovation goals. At the core of the method is the honeycomb model which describes seven social media characteristics on three dimensions: audience, content and time. The method has been evaluated by using an approach called scenario walkthrough that is applied in a real-life spatial planning project. This research concludes that there is no one-size-fits-all answer to the question how social media can be of value for the innovation process. However, organizations that want to know how it can benefit their own innovation process can use the Social Media Innovation Method presented in this research as a way to provide an answer to that question, uniquely tailored to each innovation task for which social media is to be used.

Keywords: Social media, Web 2.0, Innovation, user participation

1 Introduction

In the last couple of decades our daily lives have shifted to a 'participatory culture' and 'co-creation', in which consumers are increasingly more often invited by organizations to actively participate in the creation of (new) artifacts (Prahalad & Ramaswamy, 2004; Jenkins et al, 2006). Central to this cultural and societal shift is the term 'prosumers', first introduced in the 1980s by Alvin Toffler (1986), referring to consumers that participate in the production processes of organizations. This new role for consumers, also referred to as (end-)users, has received a lot of attention in innovation management literature, resulting in new models for innovation such as "user innovation" (von Hippel, 1986) and "open innovation" (Chesbrough, 2006). Using end-users into the development process can benefit organizations as it has the potential to reduce their time-to-market of new products and increase the success of the introduction of these products into the marketplace (Kleeman, Voss & Rieder, 2008). The concept of user participation is also at the core of the shift that took place in how the Internet is used: from top-down content consumption to bottom-up participation and user-centered content creation (O'Reilly, 2005). This shift is also known as Web 2.0 and is characterized by 'user-generated content', which can be defined as simply all the media content created and produced by the general public rather than by paid professionals, excluding things as e-mail, instant messages and the republication of existing content (Vickery & Wunsch-Vincent, 2007). This content ranges from text to images, music and video. The platforms that allow users to collaborate and to generate said content are typically referred to as 'social media' (Parent, Plangger & Ball, 2011; Kaplan & Haenlein, 2010). Some well-known examples of user-generated content and their platforms are the articles on Wikipedia, videos on YouTube and posts on Facebook.

As the user is the central focus of both new models of innovation and social media, it seems a logical choice to apply social media to support innovation in reaching out for input from users. One example of the application of social media in innovation is the use of an online community for the development of basketball shoes (Füller, Jawecki & Muhlbacher, 2007). In this online community enthusiasts share ideas for new basketball shoes and comment on new shoe designs of manufacturers which is valuable input to their innovation process. This example is also illustrative for current research in the field, as it typically focuses on a particular form of participation and a particular type of social media platform to support this. Although this is valuable research, we observe a higher level problem: companies struggling to decide where in the innovation process to use social media and which social media platforms to use (Kärkkäinen, Jussila & Väisänen, 2010). This research aims to close this gap by researching how social media can be of value in integrating the users in the innovation process. This resulted in the Social Media Innovation Method (SMIM), a method that helps to identify typical forms of user participation and allows organizations to map that on the features of social media platforms, hence supporting organizations in selecting platforms that best fit their innovation process. The method is developed using a Design Science Research method that uses literature as well as data from a case study as its main inputs. Evaluation of the method is done using a walkthrough scenario in the context of a spatial planning project of a construction company.

The remainder of this paper is structured as follows. Section 2 describes the theoretical background and is followed by section 3 motivating the research approach. Section 4 presents the Social Media Innovation Method, which is evaluated in section 5. Finally, the conclusions and suggestions for further research are presented in section 6.

2 Theoretical Background

The involvement of users in the development process is based on the assumption that they possess the knowledge and motivation to innovate in ways that meet their own needs and problems, and that these are thus far unmet by existing producers. This can go so far as actually co-developing products or

concepts with company representatives (von Hippel, 1986; von Hippel, 2005). Organizations can nowadays find many of their users on social media, and their innovations are reflected through the creation and exchange of user-generated content. All of that content can be harnessed for innovation, and this research has identified two broad ways of utilizing social media for innovation in such a way: either through an *active* or through a *passive* approach. An active social media approach differs from a passive approach in that the organization sets up a collaborative / participatory process with the public. Through this external participation the organization aims to harness the wisdom of the crowd, which not only enriches the internal organizational activities, but also allows for the process to be structured in a way that completely replaces some of those internal activities. There are several ways of adopting such an active approach, ranging in different levels of participation. These variations allow for the possibility to make a distinction between several different social media strategies aimed at innovation, such as those put forward in the research by Kleeman, Voss and Rieder (2008), observed in the case studies discussed by Parent, Plangger and Bal (2011), or found in research focused on crowdsourcing and co-creation (e.g., Kozinets, Hemetsberger, & Schau, 2008; Ramaswamy, 2010). This research has extracted five different active social media strategies from that body of literature: (1) general community engagement, (2) ideas competitions, (3) interactive value creation, (4) participatory design, and (5) product design. As Figure 1 illustrates, each of these strategies incrementally increases in their level of user participation.

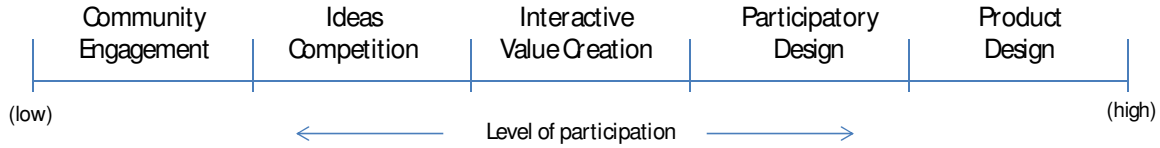

Figure 1. Five active strategies, ordered according to increasing levels of user participation

Community engagement is a strategy in which a multitude of conversations circle around a phenomenon with the goal of actively attempting to solicit feedback from the public. In this way, the organization stimulates its customers to share their experience with like-minded people. The community thereby becomes closely aligned to the company and its products (Kleeman, Voss, & Rieder, 2008). The actual level of active participation in the organization's processes is relatively low, but setting up this kind of feedback mechanism allows customers to give feedback about their experiences and in doing so feel a greater level of engagement with the brand (Parent, Plangger, & Bal, 2011).

Ideas competitions on the other hand specifically seek to harness the creative potential of a pre-defined group of users in order to generate general ideas for innovations within a timeline. An idea-reviewers committee evaluates these contributions and rewards the winner(s). In this case, participants need to be provided with sufficient incentives and motives to support the process of activation and participation throughout the duration of the competition (Leimeister, Huber, Bretschneider, & Kremar, 2009).

Interactive value creation is a more active strategy than ideas competitions, aimed at distributed problem-solving and production. Interactive value creation occurs when an organization broadcasts a problem or task traditionally performed by a designated agent (such as an employee) to an unknown and undefined group of solvers with an open call for solutions (Kleeman, Voss, & Rieder, 2008). This is mostly applied in a way that outsources tasks and activities that would traditionally be performed by the organization itself, such as advertising, quality monitoring or solving specific technical problems. By letting the crowd focus on specific problems or tasks, the process is structured to make optimal use of collective intelligence. Although the term 'crowdsourcing' is often used to describe this kind of social media strategy, definitions of crowdsourcing vary to such an extent that it has become an umbrella term that blurs the distinction between ideas competitions and interactive value creations. The definitions used in this research for these two social media strategies however indicate two clearly distinct innovation tasks: ideas competitions are more general, focused on a specific group of users where the responsibility for its execution lies with the organization, while interactive value creation

depends on a specific task or problem, outsourced to anyone willing to participate (the crowd), who are also for a large part integrated and assigned responsibility in its execution. It is also possible to invite the public to participate more fully in all the stages of the entire development process and value chain, creating an entire innovation process that is more user-led than user-centered, harnessing the power of "engaging individuals" to increase mutual value.

Participatory design integrates users not just during the initial exploration or problem definition, but also during development and in evaluation (Ramaswamy, 2010). In this case, the concept "participation" can be framed as an ongoing engagement that supports learning and the development of knowledge and skills. According to Ramaswamy (2010) the philosophy of participatory design can be characterized as "enabling the public to interact with organizations when they need something, and not just when the organization needs them for something special". Traditional "offline" participatory design includes techniques such as workshops, participation in design teams, creating and evaluating mock-ups, etcetera. Facilitating participatory design through social media therefore requires functionalities similar to computer supported collaborative work applications, allowing all stakeholders to work together despite not being present on the same location at the same time (such as forums and Wikis).

Finally, *product design* is an active strategy that depends in its *entirety* on user-input, involving users to design a product in a way that goes beyond the traditional development, configuration and marketing of products that a firm can already offer on its own (Kleeman, Voss, & Rieder, 2008). This is making use of prosumers in the purest sense of the word: consumers as producers.

Besides these five active strategies, it is also possible to identify three strategies that follow more of a passive approach towards social media. An organization that utilizes a passive approach will not actively pursue a collaborative or participatory process but instead tries to make use of pre-existing communities and content. This has the advantage of allowing internal processes to maintain some form of top-down structure, instead of the bottom-up, emergent structures that are required for maintaining an active social media approach. The passive strategies that will briefly be discussed here are (1) netnography, (2) user profiling, and (3) content analysis.

The most passive of the three is *netnography*, in which researchers try to pick up on the "reflexive conversations" that occur within the community through observation and qualitative analysis, by immersing themselves in the online conversations (Bartl, Hück, & Ruppert, 2009). The second strategy is called *profiling*, which is the process of gathering and constructing demographic profiles of users. This strategy is dependent on social media functionality that allows users to present themselves and their skills, knowledge and work to the community. Organizations can make use of this information by data mining user profiles, but they are also able to gather information that users don't even know is public through little files created by the user's web browser ("cookies"). Finally, *content analysis* refers to gathering and analyzing the actual content users post on social media, e.g. sentiment analysis, opinion mining, discovering intent to purchase, and trends and differences tracing (O'Connor et al, 2010). The insights gathered through these passive strategies can be used to integrate the consumer into the innovation process, among other things to shed light on threats and opportunities, such as competing products or potential new markets.

The focus in this research, however, is on the social media strategies for *actively* involving users in the development process.

3 Research Approach

As was already described in the introduction, based on our literature research and some informal contacts with organizations by the researchers, a high-level problem was observed, namely that organizations struggle to decide where in the innovation process they should use social media and which social media platforms can be considered in their strategy (Kärkkäinen, Jussila & Väisänen, 2010). We decided to apply a Design Science Research (DSR) approach in order to create a solution to

this problem. DSR gained a lot of interest in the Information Systems field after publications by Hevner et al (2004) and Vaishnavi & Kuechler (2004). The philosophy behind DSR is that scientific knowledge can be generated by means of constructing an artifact, but in its core it is a problem solving process (Hevner et al, 2004). The general methodology of DSR, as proposed by Vaishnavi & Kuechler (2004) is depicted in Figure 2. It consists of five steps, providing the opportunity to iterate some of the steps if the process outcomes show areas for improvement. We elaborate this process in greater detail below to give an overview of our research, but further details will also follow in later sections.

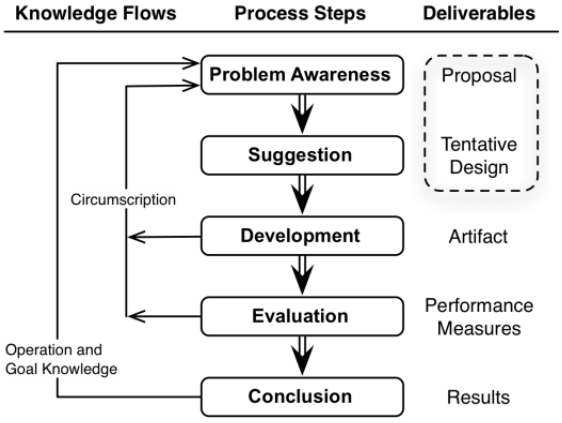

Figure 2. The general methodology of Design Science Research, as proposed by Vaishnavi & Kuechler (2004).

After becoming aware of the aforementioned problem, our suggestion was to close this gap by researching how social media can be of value in the innovation process. We based this on prior research found searching through electronic scientific repositories, such as the *ACM Portal*, *JSTOR*, *ScienceDirect*, *Springerlink* and *Google Scholar*. We also specified that the artifact that would be designed is a proposal for a Social Media Innovation Method (SMIM). Further development was based on the idea that the core of the SMIM would be a model that is able to describe or distinguish between the main features of different social media. Therefore we searched the literature using keywords such as "typology", classification", "strategy" and "approach" combined with "social media", "social web" and "web 2.0". For completeness, the search was extended to also include papers that were referenced in the initial set. After a read-through of several dozen papers, seven papers in total were selected to form the core of that review. The classifications found were reviewed according to at least three basic criteria: how do they distinguish between types of content, the quality of that content, and characteristics of the users? The goal was to improve on these existing classifications, by tailoring them for use in innovation processes and to the need to conduct a thorough analysis of social media platforms. This enables a perspective on social media according to its user-, content- and time-related characteristics. As the following section will show, the result is a model which describes the main features of social media. This is followed by a method consisting of a number of steps that describes how innovation task characteristics can be matched with social media characteristics. To evaluate and demonstrate the draft SMIM it was tested in a case of spatial planning project at the Dutch construction company *Ballast-Nedam N.V.* For testing the method we decided to use a walkthrough scenario approach, which was executed by one of the researchers, and the results were discussed with the project manager of the particular project. This provided insight in the correctness and usefulness of SMIM. Finally, the results of the research have been documented in this paper during the conclusion phase.

The steps of the Design Science Research can also be mapped to the sections in this paper. *Awareness* of the problem is described in the Introduction section. The literature study in section 2 is the basis for the *suggestion* and *development* of SMIM, which is presented in section 4. *Evaluation* of SMIM is then presented in section 5 and finally *conclusions* are presented in section 6.

4 Using social media in the innovation process

Researchers have created a wide variety of typologies to make sense of the social media landscape, but most attempts have focused on dividing the social web into different parts, such as blogs, social networking sites, multimedia sharing sites, collaborative projects, etcetera (e.g., Faase, Helms & Spruit, 2011; Kaplan & Haenlein, 2010). A major downside to those classifications is that social media platforms continue to be extended with new features that overlap with functionalities of other platforms, making it almost impossible to create and maintain an all-inclusive list of types. The solution to this problem is to look at social media in terms of the qualities that cut across classifications, such as the diversity of the stated audience, or the frequency of communication. Kietzmann, Hermkens, McCarthy and Silvestre (2011) also identified this issue, and created a framework consisting of the "functional building blocks" of social media and the implications for developing a social media strategy. Their findings culminated in a honeycomb model which identifies seven functional building blocks: identity, conversations, sharing, presence, relationships, reputation, and groups. However, since this model is primarily aimed at characteristics related to users and their social capital, it fails to consider some important content- and time-related characteristics. After all, user-generated content is of critical importance when looking for innovations on the Internet. This research therefore believes that their honeycomb model can be adapted to facilitate a more "innovation-oriented" perspective using some of the qualities specifically related to the content and time-related dimensions of social media, as found in the literature (Jourin, Roush, & Danter, 2010; Kaplan & Haenlein, 2010; Kietzmann et al, 2011). This has resulted in the selection of the following seven social media characteristics:

Characteristic	**Description**
Audience Focus	Audience focus gives an indication of the size and diversity of the stated audience of a social medium. The more focused and less diverse the user base, the darker the color of the grate.
Identity	An indication of the amount of details users can make public on their personal profiles. The more information that can be shared on a user's profile, the darker the color of the grate.
Groups	The extent to which the medium allows for the formation of groups and sub-communities. The more community building tools and support, the darker the color of the grate.
User exchanges	A combination of the aforementioned characteristics Conversations and Sharing, signifying the extent to which communication and the sharing of content between users is encouraged. The more users communicate and share content with each other, the darker the color of the grate.
Media richness	A combination of the characteristics media richness and social presence, representing the variety of content and media types that a particular medium allows to be shared and communicated. The more variety in types of content and media allowed, the darker the color of the grate.
Frequency of communication	The amount of communication taking place according to the level of tolerance for repetition among the users of a social medium. The higher the frequency, the darker the color of the grate.
Longevity of communication	The span of availability for any one message, indicating approximately how long the message will be available. The longer a message is available, the darker the color of the grate.

Table 1. User, Content and Time characteristics of Social Media

Together these characteristics can be used for a comparative analysis of social media both in terms of users, content and timeliness. The choice to limit the selection to seven characteristics also allows the model to be displayed as a 7-grate honeycomb, similar to the one by Kietzmann et al. Each characteristic in the table is followed by a suggestion of how to visualize its measure of advancement in the final model (Figure 3). In general, the darker the color of the grate, the more advanced that particular characteristic will be. Depending on the levels of importance that an organization assigns to

these characteristics, this model allows for an analysis that highlights the differences among social media.

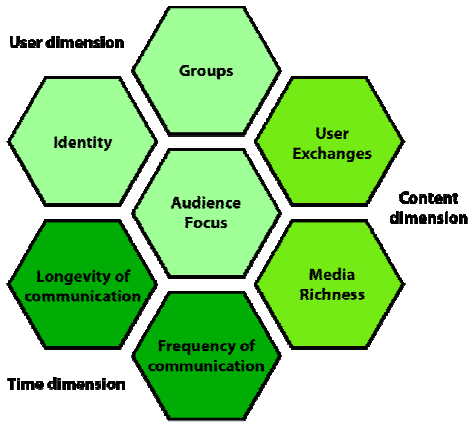

Figure 3. Honeycomb model for social media in innovation (colors accentuate different dimensions in this example)

Despite the increased importance of content, the key in any social media analysis is still to identify the right users (Füller, Bartl, Ernst, & Mühlbacher, 2006), which is why "audience focus" was selected as the center grate. Identity and groups are closely related to this step, so together these three characteristics form the "user" dimension, illustrated as the upper-left part of the model. The next two grates represent the production of user-generated content by these users, in terms of user exchanges and its media richness, forming the "content" dimension in the right part of the model. The last two grates on the lower-left side are taken up by the temporal characteristics of that content which form the "time" dimension, i.e. its frequency and longevity.

In order to provide some sort of context to making practical use of the honeycomb model we also aimed to develop a social media innovation method (SMIM) to provide some structure to further identifying, accessing and interacting with online communities. This is because research has shown that the success of methods that are focused on integrating users into the innovation process depends on a predefined development or innovation task, and a clear definition of the types and segments of customers that should be integrated in the task (Füller et al, 2006). SMIM is based on the work by Füller et al (2006), whose work identified four consecutive steps an organization will need to follow for successful integration of consumers into the innovation process: (1) determination of user indicators, (2) community identification, (3) virtual interaction design and (4) user access and participation. Although the effectiveness of the method has not yet been definitively proven, this method can be seen as a first step in setting up continued interaction between users and the innovating organization (Chu & Chan, 2009). But adopting that method in its unmodified state requires that the organization adheres to several fundamental qualifications. For example, the first step of determining user indicators is dependent on a predefined development or innovation task, and a clear definition of the types and segments of customers that should be integrated in the task. The second step of identifying communities is then dependent on the organization having performed a social media analysis. By leaving out these important steps the method is essentially incomplete. For the social media innovation method we therefore suggest extending it in two major ways: First of all, a preparative step needs to be added prior to the determination of user indicators. This step should require the organization to define their innovation task and its main objectives. Füller and Matzler already advised in 2007 to perform this step prior to the start of the project, but have not given any reason for why it was never included as a formal step in the method. Secondly, the modified honeycomb model proposed in this research can be used as part of the innovation method, as it allows the organization to define which social media characteristics are the most relevant to their particular innovation task and use it to identify what the most appropriate social media platforms and strategy

would be for them. Based on these observations Table 2 displays SMIM as a more complete method than what has previously been developed, but which still remains easy to comprehend and execute.

Activity	Description
1. Define innovation task	The organization should a priori state their innovation task, such as "using online user feedback to improve our products" or "outsourcing new product development to the crowd". Furthermore, the organization should formally define its main objectives and goals, which can be fuzzy (such as "deliver information about customer preferences and upcoming trends") or can be based on concrete measures (like "generate 5 new business cases per year").
2. Specify relevant social media characteristics	In this step, the organization should specify which characteristics of social media are needed to support the innovation company in their innovation task. This requires determining the exact values of all relevant characteristics of the honeycomb model for each of its dimensions (user, content, and time), being as specific as possible.
3. Identify most suitable social media strategy	Step 2 made it clear what characteristics are required in an ideal situation, making it possible to make a comparison with the social media strategies defined by this research (due to space limitations these strategies are not elaborated in this paper). Select the strategy or strategies that seem to fit best to those predefined characteristics.
4. Analyze social media	Once the characteristics of an ideal social media model have been specified, the next step is to analyse the current online social media landscape using the honeycomb model. Because the most suitable strategies have already been defined in the previous step it is also possible to let that information guide the selection of individual social media platforms chosen for this analysis (for example, if ideas competitions are the most suitable strategy to the task, the organization can exclude platforms beforehand that would never be able to properly support organizing an ideas competition).
5. Identify most suitable social media platforms	Step 2 made it clear what characteristics are required in an ideal situation, and allows for a comparison to the previously analysed social media from step 4. Simply select those platforms that seem to fit best to the innovation task.
6. Design the interaction task	Based on all gathered information in the previous, the organization can proceed to designing the intended interaction task in more detail. By keeping in mind the social media platforms and strategies that are the most suitable to the task, define how community members can be contacted and encouraged to participate in the innovation task.

Table 2. Activities in the Social Media Innovation Method (SMIM).

5 Evaluation

The evaluation method employed in this section is based on the cognitive walkthrough method from the research area of usability engineering, which is a method intended to be used early in the design process and therefore does not require a fully functioning prototype or the involvement of actual end-users (John & Packer, 1995). In the next paragraph we specify the context and describe the tasks that will be subjected to analysis. This is followed by the actual analysis in section 5.1 and 5.2, in which the main analytical work and the walking through of the design take place.

This walkthrough concerns the construction of an innovative new neighborhood in Vleuten, a small city located in the province of Utrecht, the Netherlands. The actual innovation task is for buyers to have an active participatory role in designing and construction of their new home. People will be completely free to design their floorplans, from the size of the kitchen to the amount of bedrooms. The only restriction is that the contractor has predetermined what the dimensions of the houses will be. People should be able to share these floorplans through social media, allowing them to gather feedback or act as a source of inspiration for other users. Social media will also be used as a means keep in touch with the people that have already moved in by making it possible to see who is living in this neighborhood, what their interests are, what they are currently doing and then easily get in touch with one another (for example to organize neighborhood events). As such, social media will play an

ongoing role long after the houses have been built. All of the information necessary for this walkthrough was provided by one of the managers of the Vleuten project. He is currently employed as a property developer at *Ballast-Nedam Building & Development*, which implements and manages real estate projects in the Netherlands.

5.1 Specifying the honeycomb for the case

In the second step of the SMIM we use the social media honeycomb to characterize the project, allowing the organization to explicitly state what they are looking for. As the honeycomb can be divided into an audience, content and time dimension, we are looking at the characteristics in that order. The starting characteristic is then that of Audience Focus, which for this project is on relatively young people from the Netherlands, age 30-35 and academic education. The economic crisis is the most important reason for focusing on this group, because it has become harder for starters to get the necessary financing for purchasing a house. As was previously stated, the project managers would like to provide an overview of current residents of the neighborhood in terms of age, interests, etc. Thus, another requirement is having access to basic information concerning the characteristic of Identity. The characteristic of Groups is less important since the audience focus is already quite narrow, but having some basic community support is a nice-to-have feature that could enable residents to organize collective activities with each other. Moving on to the content dimension, although it is not the main focus, it is still important that users can share their content, for example to show off potential designs of their houses. In other words, User Exchanges is quite an important characteristic for this project. This has the consequence of making Multimedia Richness the most important characteristic within the content dimension, because sharing the layout and design of a house means that there should be sufficient support for "rich" media like pictures, photographs and possibly even video. Finally, because the project is intended to remain ongoing after the houses have been built, there is a need for the Longevity of Communication to extend to years rather than days, weeks or months. In terms of Frequency of Communication there shouldn't be so much as to create an information overload, which could scare people away: there should be meaningful communication focused on collaboration and participation of every involved party. The filled-in honeycomb model itself is presented in Figure 4 and highlights the particular focus in this case study.

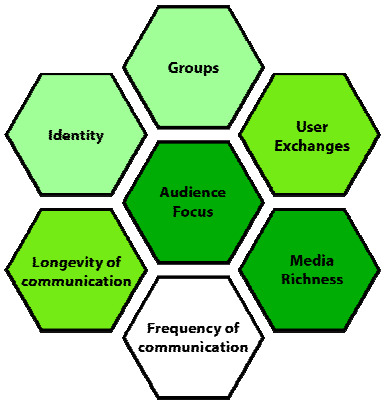

Figure 4. Social media characteristics important to the Vleuten project(darker colors indicate importance of that particular characteristic)

5.2 Comparing the case to social media strategies and platforms

By comparing the above social media honeycomb model to the characteristics of social media strategies (due to space limitations these strategies are not elaborated in this paper, but are available upon request), it is possible to identify which of those strategies will likely be the best fit for the

project. To this end we created separate honeycomb models for each strategy and compared those to Figure 4, although these detailed analyses could not be included in this paper for reasons of length. What is clear to see however, is that Audience Focus and Media Richness are the most important characteristics of this project, followed by User Exchanges and Longevity of Communication. With the exception of "Identity", these characteristics were the most obviously reflected in Participatory Design and Product Design, which also fits with the nature of this project. Additionally, after comparing the other less relevant grates it turned out that the passive strategies of Profiling or Netnography could be used to supplement Participatory or Product Design, since they are the only two strategies that assign similar levels of importance to the characteristic of Identity due to their focus on monitoring user activity. Another analysis was then performed that concerned six popular social media platforms in the Netherlands: *Facebook*, *Hyves*, *Twitter*, *YouTube*, *LinkedIn* and *Foursquare*. Just like with the social media strategies, identifying the most suitable social media platform was accomplished by doing a comparison of honeycomb models (due to space limitations these the honeycomb models for the different platforms are not included in this paper, but are available upon request). After comparing the overall characteristics, *Twitter*, *Facebook* and *YouTube* took the lead as having the most "direct matches" and thus having the most potential as a suitable platform for execution.

5.3 Operational evaluation

The above operationalization made it possible to conduct a critical evaluation of the usefulness of the honeycomb model and the social media innovation method. The results were discussed during a post-analysis interview with the project manager, making it possible to identify some of the strong and weak points of this model. First and foremost, the project manager was satisfied with the formulation and the specified values for each of the seven social media characteristics in Figure 4. The model was found to work exceptionally well in identifying which social media strategy would be best suited for the innovation project. The vision for the Vleuten project was indeed based on giving people the feeling that they are collaboratively designing their new home: a process for which participatory and product design are very well suited. As it turned out, the project managers themselves were also considering the use of product design techniques and practices in setting up the platform. Augmenting this strategy with elements of community engagement, profiling or netnography was something that positively surprised them because it was still an issue they were struggling with themselves. They felt there has to be some direct interaction from the organization's end with the participants of such a platform, for example, to be sure that everyone is satisfied and that all functionality works as it should, and to be prepared for situations in which there are not enough participants to allow the platform to be self-sustaining (i.e., prepare content that can act as a conversation starter when needed). Unfortunately, identifying the 'right' social media platforms was perceived as a little awkward. Platforms that assigned higher levels of importance to certain characteristics (such as Groups) than the intended project were identified as being just an inappropriate match as platforms that assigned lower levels of importance to those characteristics. This was due to the fact that the analysis of the social media platforms did not take into account the criteria for success of the social media strategy (for example, the importance of media richness should have been based on whether or not it supports product design, and not just rich media content like photos and video). This would have allowed a more appropriate matching of social media platforms to the envisioned project, since social media platforms that by definition do not fit to a particular strategy can be excluded beforehand.

6 Conclusion

Although social media have been around for quite some time, many companies still struggle with when to apply which social media platform (e.g., Facebook, Twitter or YouTube). In this research we specifically focused on the innovation process, which has already seen a lot of attention to user innovation and open innovation lately in recent years. The focus of these latter approaches is to integrate knowledge of the customer into the innovation process and social media seem to have the

potential to achieve this. The contribution of this research is the development of a Social Media Innovation Method (SMIM) to help companies in determining which social media platforms can be used in certain innovation tasks. This method starts by defining the innovation task that the organization wants to support with social media. Based on this description, the social media characteristics of the task are described in terms of an *audience*, *content* and *time* dimension. The characteristics can be used to select one of the five identified social media strategies for innovation: community engagement, ideas competition, interactive value creation, participatory design, and product design. Once the social media strategy is known the last step concerns the matching of particular social media platforms with this social media strategy.

Besides the practical contribution of this research there is also a more theoretical contribution. First of all, we introduce the idea of *passive* and *active* approaches towards the use of social media in innovation. In the passive approach one 'silently' roams social media to collect data that users post, while in the active approach there is an active engagement with customers to collect input for the innovation process. Secondly, we identified five social media strategies for innovation processes based on different literatures. The social media strategies concern *community engagement*, *ideas competition*, *interactive value creation*, *participatory design*, and *product design*. Finally, we adapted the model by Kietzman et al. (2011) to be able to describe social media characteristics relevant in the context of innovation and possibly that of other domains.

There are also some limitations that can be pointed out. The research that has been conducted is preliminary in nature and resulted in a first draft of the Social Media Innovation Method based on literature review and evaluation using a walkthrough scenario in one particular case. Although the application in the case demonstrated the usefulness of the method for the case company, more evaluation is required for the model as a whole but also for two of its main components namely the five social media strategies as well as the honeycomb model that identifies seven social media characteristics on three dimensions. This evaluation is one of the goals for further research and a multiple case study design is deemed appropriate here. Comparing the honeycomb models of different cases will provide a deeper understanding of the presented method.

Besides evaluation of the method, further research also aims at further developing the method into a tool so that companies can do a self-assessment. Based on a questionnaire the tool should identify the main social media strategies for the company and then automatically suggest the social media platforms that can be used to support this strategy. Another interesting and more theoretical question is which social media strategy is most effective when it comes to contributing to the innovation performance of a company. And what type of companies benefit the most from using social media in their innovation process. But for now we made a first step in bridging the gap between the potential of social media platforms and the need for user input in the innovation process.

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