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Conceptualising Brand Consumption in Social Media Community

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Abstract: The emergence of social media is challenging the conceptualization of the brand. This paper develops a conceptual model of the consumption of brands in Social Media Community (SMC). The research triangulates a social media focus group and face-to-face interviews. This study identifies five core drivers of brand consumption in a SMC articulated in the Five Sources Model. Managerial implications are discussed.

Keywords: brand, consumption, focus group, interviews, motivation

1. Introduction

The population of social networks users is approximately 1.43 billion and growing (eMarketer, 2012). Social media has had a major impact on business, transforming consumer behaviour, relationships and traditional brand practice (Sands et al., 2011; Corstjens and Umblijis, 2010; Hennig-Thurau et al., 2010). Consumers possess unlimited opportunities to engage with brands. The results of this increased brand access mandate changes in branding strategies towards engagement platforms (Verhoef et al., 2010). Social media demands new best practices, rejecting the brick-and-mortar approach (Naylor et al., 2012). Hence, understanding brand consumption in a SMC demands a shift towards the customers meaning of a brand in a community collective context in which consumption value is stakeholder driven though dynamic social interactions and the co-production of shared meanings. (Vock et al., 2013; Merz and Vargo, 2009). Brand communities in social media have positive effects on the brand such as shared community foundations and value creation processes (Ellahi and Bokhari, 2013). This continuous process of re-productive consumption intensifies the intangibility of the brand and ambiguous positioning (McDonald et al., 2001, p.345). Consumers are transformed from silent individuals to a loud unmanageable community of stakeholders that create and exchange content democratically, in cluttered, excessive spaces (Vanden Bergh et al., 2011; Reyneke et al., 2011; Libai et al., 2010) where real-time accessibility and exchange are a social norm (Hennig-Thurau et al., 2010). Despite the unique challenges, few models exist that explain the role of the brand in SMC. As a result, marketers have had to impose traditional rules in brand communities. Like a large echoing room full or shouting people, this has created a torrent of continuous organized chaos that makes up brand consumption in the SMC.

Therefore, we pose the following research question: How are brands conceptualized in the consumption of SMC? In this study the practice of consumption plays an important role in a consumer’s everyday existence and reality. Hence, our definition of consumption is based on Holt (1995): consuming is comprised of structure and purpose. In this way consumption encapsulates the unique characteristics of the two mediums; brand and social media technology; structure of consumption is both brand and community and purpose of consumption for the individual oneself as well interpersonal interactions with community (Campbell et al., 2011). In the following section we review prior literature on the SMC and brands. Specifically addressing unique aspects of the brand, the next section describes the method. The remainder of the manuscript lays out the resulting framework and model that will inform the discussion and the practitioner implications. The main contribution of this paper is two-fold. This research establishes new empirical evidence and begins the process of conceptual model development grounded in consumer evidence.

2. Defining Brand Community

The conceptualization of community has a long history in sociological, cultural and communication research (Peck, 1992). Often the term is applied to almost any group of people, regardless of online or offline context, where the type of bond between the stakeholders defines the community. The idea of a consumption community arose because consumers have shared feelings and activities in the consumption of common objects (Friedman et al., 1992). For example, Macintosh, Harley Davidson and Star Trek. Muñiz and O’Guinn
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(2001) define communities as a human consumption context: members are non-geographically bonded and their structured social relationships are defined by shared morality, consciousness, rituals and traditions. Schouten and McAlexander (1995) argue that these relationships help to form consumption subcultures to meet specialized needs (Fournier and Lee, 2009): communities as linking places or communal affiliation (Cova, 1997).

Often consumption resolves around the brand: a human affiliation in which a shared passion or interest toward a particular product, service or consumption activity unites the members. Bonded by specific interrelations, brand communities are ‘psychically’ connected (Bagozzi and Dholakia, 2002). Brand communities help members satisfy functional or emotional needs (Murray, 1991). In recent years social media allows for instant personal interaction between the brand and its community (Nambisan and Watt, 2011). The ease of participating in online social communities removes both the physical and temporal barriers, increasing the likelihood of participation from consumers who may not have been able or inclined to do so previously. For product brands, this enhanced interaction capability is an efficient way for users to share their experiences and opinions of the brand. For brands, their inherent intangibility adds to the potential for community members to actually shape the brand offering and impact other users’ interpretation of the brand. Brand consumption in a social media context enhances previous work that defines brands: a promise (Berry, 2000), a process (Merz and Vargo, 2009; De Chernatony and Dall’Olmo Riley, 1999), a relationship partner (Fournier, 1998), a fulcrum of experience (Prahalad and Ramaswamy, 2004; Davis et al, 2000) and a performance (Rahman et al, 2009). The common theme of these descriptions is the concept that the brand is the outcome of the interactions between the brand and the consumers (De Chernatony and Dall’Olmo Riley, 1999 Berry, 2000). Interactions that is interactive and value, co-created. (Merz and Vargo, 2009). Hence, social media may amplify the brand’s role in community consumption.

The ease of participating in an online community may increase the diversity of its community members. Bagozzi and Dholakia (2002) posit that virtual communities lower the importance of members’ social characteristics, physical appearance and nonverbal expressions, but elevate the importance of content and freedom to express. Some consumers may be avid users who would take part in the community even if the barriers to participation were higher, but others may be less interested in the brand and want other benefits from their participation. It could also be so that the moral responsibility and social ties that often characterize face-to-face communities may decrease in an online community (Bagozzi and Dholakia, 2002). It is posited that social media brand consumption is devoted to specific commercial or informational objectives rather than social responsibility and mutual support. Cova and Pace (2006) agreed and concluded that consumption is the personal self-exhibition of brand rituals in front of other consumers.

However, little work has been done to conceptualise the social media brand. Therefore, to address this deficiency, we then progress to describe our methodological approach to explore how brands are conceptualized in the consumption of SMC.

3. Method

The methodology employs two qualitative approaches in triangulation to explore and conceptualize brand consumption in a social media community. The research takes a grounded theory method, triangulating an online Facebook focus group with offline interviews between March and May 2012 (Wunderlich et al, 2013; Corbin and Strauss, 1990). Data collection placed the consumer at the focal point of an emerging conceptual model (Cooke and Buckley, 2008). The focus was on the consumers’ narratives of their brand experience (Thompson et al, 1989). Eight consumers made up a closed Facebook group with the researcher serving as facilitator. The call for research participants was posted in the researcher’s personal public profiles and also advertised through Facebook and Twitter accounts of some New Zealand companies. The group was evenly divided in terms of gender, with ages ranging from 36 to 64. Most participants resided in Auckland. All participants were college or university educated, had part-time or full-time positions as specialists in different industries. All participants followed product and service brands in social media with varying degrees of commitment. The online focus group allows for participation, anonymity and accessibility (Gaiser, 2008). Fifteen face to face interviews were also conducted. The interviews took 1 hour and verbatim transcripts were prepared for analysis. Interview participants of equal gender resided in Auckland and ranged from 25 to 55 years of age. Data analysis followed a process of content analysis (Miles and Huberman, 1994). The process allows a comparative thematic coding structure to emerge. The first set of codes was created using data from
the Facebook focus group. Then, these themes were tested against data derived from face-to-face interviews. At this point, the common categories were identified and coded. The coding continued until the main themes of brand consumption were developed.

4. Findings

4.1 Functional Consumption

Consumers consider social media to be a platform for addressing problems when other communication channels are unavailable or unsatisfying. Consumers value the functional benefits of being able to interact with brands via social media. Consumers consume brands with five primary functional motivations in mind (Aksoy et al., 2011); to solve problems, to send specific inquiries, to search for information, to evaluate the service before purchasing, and to gain access to a brand’s special deals and giveaways. Participants’ stories about their memorable experiences with brands often refer to service functionality, and particularly to problem solving. When participants were asked in what case they would contact a brand using social media, many of them agreed that scheduling an appointment or sending inquiries would be one such case. Some of these consumers would never have contacted a brand via social media unless certain problems had occurred. Consumers often begin engaging with a brand when they experience service failure. Consumers also report an expectation that brands will provide them with regularly updated information such as useful tips, new knowledge and information about the service offering. Consumers often connect the need for information with the possibility of learning something new about the brand. Accordingly, a lack of expected information can negatively influence the consumer’s impression of the brand itself. Some consumers utilize social media to provide brands with feedback regarding their experiences, publically expressing what they think about service quality (Ellahi and Bokhari, 2013), brand initiatives or even advertising campaigns.

Consumers point toward social media as a shortcut for addressing their emerging needs. Some consumers prefer social media interactions with businesses to phone calls or offline meetings. Evidence shows that consumers use brands’ social media channels not only to evaluate, for example, service offers via other consumer’s opinions and interactions but also to gain tacit knowledge through personal experiences before making a purchase decision. Participants consider social media a tool for researching a brand. Asked how she would feel if business pages disappeared from social media, one of the interviewees was emphatic. For some consumers their interest in a brand’s specials, giveaways and gifts is a primary motivator for social media interaction (Parsons et al., 2014). In exchange for giveaways or discounts, these consumers are willing to participate in brand activities such as contests and opinion polls. Other participants report that possible rewards are the only reason they engage with a brand via social media. Engagement with brands in social media enables consumers to stay informed about a company’s deals and giveaways and participate in brand activities as soon as they become available. The findings demonstrate that such reward-focused communications with brands can actually lead to the beginning of a new relationship. These interactions allow the consumer to gather information about the brand and its product offering, gain useful information, and see how the brand treats its customers. In this respect, the consumer’s impression of the brand may often depend on how easily they can access the information they require or reach the company’s experts.

4.2 Emotional Consumption

The emotional connection to the brand reinforces the enjoyment of interactions. The three most common emotional motivations include; alleviating personal problems or situations, feeling privileged, recognized, and valued by a brand, and escapism and satisfaction of curiosity. Participants in the Facebook focus group were asked to choose a few images from some randomly selected images that reflect their experiences with specific brands via social media. The findings illustrate that participants give great weight to pleasant brand experiences. One participant chose a picture of a rock musician performing on stage in front of a large audience. Involvement in the co-creation of service offerings produces feelings of enjoyment for some of the participants. Interaction with other community members is another source of enjoyment for some consumers. Their support provides a form of community value. Consumers also consume brands in a SMC as a form of entertainment. Conversely, the data indicate that lack of enjoyment and entertainment in brand interactions may actually result in on-off consumption encounters with a brand. Because consumers are situated in concrete every day contexts, the way they consume a brand does not just reflect these contexts because it is also formed by those contexts and situations. One consumer who immigrated to the USA several years ago stated that her connections with NZ Herald or Air New Zealand through Facebook help her to feel emotionally...
close to her birth country. In this respect, the brand acts as a proxy to support the consumers’ own gaps and insecurities in her personal life. For others, connections with brands and other people via social media can help to overcome personal obstacles. For instance, one participant emphasizes that going social made him feel more confident and conversational.

A consumer’s consumption of a brand can evolve out of a variety of emotional experiences within a SMC, and some of these experiences are deeply rooted in personality traits or motivated by personal circumstances. Consumers tend to believe that brand consumption can create some sort of personal advantage and feeling of privilege or recognition by a brand. These emotional benefits enhance the brand experience for the consumer (Padgett and Allen, 1997). This finding highlights the importance of two-way communication. Some consumers report that a sense of escapism accompanies their social media interaction with brands. These consumers often want to find experiences that on the one hand serve as the opposite of reality and on the other hand reflect a desired reality. Some forms of escapism can create emotional experiences for consumers by reflecting their aspirations. The consumers’ involvement with a brand often begins with curiosity and is fuelled by the experiences and knowledge that they develop through subsequent interactivity with the brand. The proximity of brands and consumers within social media has turned online communities into interactive showrooms freely available without time and location constraints. As a result, consumers are motivated to research and explore brands, often out of mere curiosity. On the other hand, if a brand arouses curiosity, there is an opportunity for creating repeat consumption, as the consumer wants to maintain a connection and learn from personal experiences about the brand evolution. In the context of social media, curiosity is a challenge for brands and a driver of consumption, as there is always something consumers want to find out. The findings suggest that emotions created by engaging and entertaining social media events may enhance consumers’ hedonic experience and bring about a positive reaction to the brand. At the same time, a lack of enjoyable or entertaining experiences may result in weak or even negative consumer-brand consumption.

4.3 Self-Oriented Consumption

The theme of self-oriented brand consumption replicates some of the functional and emotional elements, but it varies because of the emphasis on the consumer’s lifestyle and the goals that facilitate that lifestyle. Three primary motivators contained in this core value include; self-actualization, self-perception enhancement, and self-branding. Consumers often seek self-actualization in their experiences with brands and other consumers in a SMC. For some participants social media present new opportunities to consumers to realize their personal potential through brand-related activities. In this regard, consumers take a very active role, encouraged by a network-oriented medium. Consumers value the ability to express themselves and share their endeavours or ideas through brand interactions. This enhances feelings of self-worth and makes the experiences valuable. Stressing the importance of authenticity, consumers tend to engage with a brand if the brand’s symbolic meanings are congruent with their sense of self (Schouten, 1991). If consumers perceive a brand’s symbolic meanings, as enacted in a SMC, to be relevant to their personal values, interests and beliefs, then they are more likely to consume the brand’s social media. A sense of self-relevance creates a strong affiliation with a brand.

Professional responsibility represents a motivation for some consumers, who feel their career goals are enhanced through their interaction. Consumers may negotiate the brand’s relevance to themselves. One informant reports the personal relevance of the service portion of a product-related business. The consumer’s brand preferences in social media are convertible, dynamic and unstable. The brand may fail in the self-relevancy dimension, but it still creates a connection with consumers through interactivity and co-creation. However, consumers search for brand experiences that resonate with their interests and values. Self-branding in this context is characterized by the consumers’ actions that are undertaken to build their social self-identities through different brand activities, including brand endorsement and brand affiliation. By publicly showing their affiliation with certain brands, consumers differentiate themselves while indirectly giving their followers an idea about the knowledge, expertise, skills and interests they want to be known for. Such consumer interactions contribute to the construction of a consumer’s social self. Additionally when brands assign the role of product tester or a reviewer to a consumer, other community members may perceive this person as an expert in the field. Participants also demonstrate a need for brand experiences that help to facilitate, optimize and manage different daily tasks. In this regard there is an overlap with the functional and emotional aspects of brand consumption, as consumers use a brand’s social media applications as tools that facilitate their daily activities. Obviously, the integration of social media in consumers’ lives signifies a general
shift in their consumption activities. Consumers need experiences that help to manage the daily tasks that are related to their personal or professional life. In this respect, the need to simplify or facilitate day-to-day activities serves as a driver of consumption in social media and adds overall value to the consumption process.

4.4 Social Consumption

The literature highlights the social aspect of consumers’ participation in a SMC, but the data suggest specific functions that compose social value for consumers. These include; experience exchange, community attachment, building links, and social interaction. Consumers use social media to share their personal brand experiences with others, and they are willing to broadcast their consumption activities and experiences not only for their own benefit, but also for the benefit of others. We anticipated that consumers would pay attention to which businesses their friends like or follow in social media, but they don’t. Whereas some participants follow their friends’ recommendations even if the brand is outside their personal or professional interests, others are sceptical about the influence of social media word-of-mouth. Consumers tend to rely on certain people’s opinions, indicating the sense of community attachment that can evolve. And some informants specifically report that consumption maintenance is a determinant of how they choose to interact. Despite the varying opinions regarding the value of friends’ recommendations, almost all participants agree that public opinion plays an important role in the evaluation of a brand. Some participants articulate the social importance of being able to engage with a brand community. They are often motivated by the notion that social media give them a chance to be heard. Link building and networking for professional or personal purposes have also evolved as an important part of brand consumption in social media. Consumers appreciate the opportunities for developing new consumption experiences through brand affiliations in social media, while others are likely to limit their communal ties to the social media context. Consumers generally recognize the networking benefits of being engaged in a brand community. The consumption of brands through the connection with others may also foster and support other activities. Consumers sometimes use brand communities in social media to experience social interaction with other consumers. The findings suggest that consumers’ communal experiences do not necessarily imply an attachment to the brand community. Nevertheless, being involved with a brand in social media means that consumers read and post comments, repost and retweet the brand’s links and photos, ask questions, address personal problems, provide feedback, share experiences and build networks. Often these consumption practices are motivated by the consumers’ need for socializing with other members of the SMC, which makes them feel as if they are a part of something tangible. Can a brand bring consumers a sense of community and add value to consumption via social media interaction? The way consumers bond with brands in social media is in many ways shaped by their communal experiences. Through participation in brand communities and networking, social connections between consumers and brands add value not only to brand experiences, but to the consumers’ lives as well.

4.5 Relational Consumption

The relational core value describes the consumers’ desire for interaction with the brand on a human level. The value is characterized by three motivations; co-creation of the service offering, the desire for personalized brand interaction, and the desire to know the real people behind the brand. The “human” touch is an especially important dimension of the relational aspect of brand consumption. Personalized interactions may lead to greater expectations of the brand experience. Social media enable a shorter distance between consumers and brands, creating the notion that there is always someone who listens and can fix a problem. Brand experiences in social media hold the promise of a personalized conversation with the brand. From a consumer’s perspective, brands become close and real in social media. Consumers expect brands to be present in a SMC so that they can continue offline conversations with them online. Personalized communications from a brand and the possibility of being engaged in the brand’s daily activities are two important elements of the relational aspect of consumption. Co-creation gives consumers relevant brand experiences and potentially adds value to consumption. The relational motivation for brand consumption is unique in that this particular motivation seems to define the overall consumption relationships that the consumer has with the brand. Several types emerged from the data that are consistent with Fournier (1998).

Fickle Relations describes rather unstable, demanding and volatile consumption relationships that vary, based on the consumer’s most recent interaction with the brand. It is not surprising that consumption is often influenced by the quality of their current brand experiences and also by the degree of brand relevance. Relational bonds between consumers and brands could also be derived from statutory obligations, not because they are planned or wanted. Obliged Relational Bonds describes the consumption type of some
participants who feel that they are forced to keep in touch with brands, such as banks and telecommunication services. While these respondents do choose to interact with services in social media, they tend to resent being forced to utilize the social media channels in order to receive the service they require. Statutory obligations seem to have a particular effect on some consumers' attitudes toward brands in a SMC. Even though consumers might have long-term relationships with the brand, they prefer to have brand communications offline. Despite the lack of emotional or self-brand ties, obliged consumption can still bring about value associated with service functionality by providing consumers with convenient and accessible experiences. Pre-Existing Relations describes consumption by consumers who choose to engage in SMC with brands because they are already quite happy with the brand and its offerings. This often evolves into online advocacy while the social media interaction enhances the existing relationship and brand experience. Social media community participation can enhance pre-existing relationships through visualization and reinforcement of the consumer’s previous brand experiences. But social media may also allow consumers to form new brand relationships, often in response to their friends’ recommendations or a direct invitation from a brand to join its brand community.

Relational bonds that arise in social media without the support of previous offline experiences are identified as Emerged Relational Bonds. Consumption relationships that have emerged for the first time in social media may be characterized by a low degree of self-relevance, so the mode of brand interactions is fleeting and somewhat insignificant compared to pre-existing relational bonds. Data also illustrate that if a new brand is congruent with the consumer’s interests, the newly emerging relationships may be developed further and lead to liking, interactivity and co-creation. The intensity of brand-related communications in social media to a large degree is dictated by the nature of the service and is often oriented toward the consumer’s utilitarian needs. In this respect, consumer relationships with a brand are shaped by the frequency of service usage, regardless of offline or online context. Casual Relational Bonds are defined by irregular interaction with the brand. Even though the nature of some brands implies casual relationships, social media may shift the focus from the functional aspect of consumption and direct it toward the satisfaction of the consumers’ utilitarian, social and emotional needs, thus creating stronger relational bonds.

Regardless of the consumption type, consumers do not want to interact with a faceless organization, preferring instead to know the real people behind the brand. Moreover, consumers want to establish a close contact with brand representatives or experts in social media even if that contact is utilitarian and brief. The consumers’ discourse with the brand and the co-creation activities form a bridge that builds relational bonds.

5. Conceptual Model

The study develops a conceptual model of brand consumption in a SMC. This is called the Five Sources Model. Each of these core drivers represents unique opportunities for brands to enhance the relationships. Based on the importance that consumers place on the meeting of their functional needs, managers should constantly monitor their social media communities for inaccurate information placed by both well-meaning and ill-intentioned posters. If consumers are seeking information and answers to their service-related questions, bad information could easily taint the relationship between consumer and brand. Few respondents indicated that they distinguish between marketer-provided information and that provided by other consumers. In fact, a large number of participants indicated that they place a great deal of value on the opinions of virtual strangers. Considering the relevance of emotional needs for many of the brand consumers, managers also need to focus on the way their social media communities make the consumers feel when they are participating. While few marketers would leave the appearance of their brand’s website to outsiders, it is exactly these outsiders who often determine the feel of a brand’s social media sites. If consumers come to these sites not just for information but also for escapism, then a sense of play should be built into the sites when it is appropriate to the brand’s intended image. Well-monitored social media provide marketers with amazing opportunities to quickly respond to individual consumers’ posts and comments with highly personalized content. To write off this capability as too time-intensive is to ignore a core reason that consumers choose to relate with a brand. It also risks losing that consumer to a more responsive brand.

Participants provided self-oriented reasons for interacting with brands online, but the depth of their sentiments in this regard was a novel finding. Managers should be aware that consumers often display their brand affiliations as a signal of their identities. The proactive marketer will make this easier for the consumer by providing ample opportunities for the consumer to identify with other respected brand users. Having
carefully selected celebrity brand ambassadors make occasional posts and interact with the SMC would be an excellent way to enhance consumers’ impressions of the typical user. Enabling effective self-branding via the online community would also be as easy as inviting especially prolific posters to contribute to the brand’s actual website or e-newsletter, or inviting them to participate in new product launches. Socially motivated interaction should also not be a surprise, given the nature of social media. Effective targeting of this core value could include creating online brandfests that occur in synchronous real-time, bringing all SMC members together with the promise of prizes and opportunities to meet and interact with like-minded others. Forums that encourage usage stories and service feedback could serve the dual purpose of providing the brand with valuable insights into the parts of the service experience that resonate with their customers as well as giving consumers the opportunity to bond with each other. As with any social media forum, it would also be beneficial to have a strong brand presence in the forum as a moderator to ensure that the interaction is positive and the participants feel safe and know they have been heard. The relational motivation for brand consumption in a SMC presents marketers with some unique challenges. As this need tends to define the relationship that the consumer has with the brand, it is important for the brand to allow the consumer to feel like a vital part of creating the brand while still maintaining control over the integrity of the brand. Effective management of this core value should involve more than just the brand’s communications team, who should bring in the voices of employees from all levels of the organization. Too often, brands only include the voice of the CEO or other highly visible employees in their social media interactions. The participants make it clear that they want to know the real people who make the brand what it is.

6. Conclusion

The study indentified five aspects of brand consumption, which overall represent the strategic directions for branding in social media. The findings speak that the opportunities provided by social media are focused on consumer engagement in terms of four characteristics: synchronicity, two-way dialogue, contingency and user control (Davis and Sajtos, 2008). In this respect, marketing practitioners should seriously consider the role of social media in creating a meaningful set of references for consumers. For instance, it may be important to couple social media channels together, so that consumers can fully experience that meaningful connection to the brand and community. In conclusion, the research has developed a conceptual model of social media branding that may have significant practical implications for business.

Reference


How to Develop Social Media Skills in Vocational Education

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Abstract: The appropriate use of social media is an important multiplier for transporting information efficiently; either for education as for communication purposes. Hence, particularly the e-learning community would benefit from tools that assist media usage, both from a teacher and a student perspective. Information sharing and co-creation changed the shape of collaboration in the web. All these influences make the right use of social media a complex topic (e.g. usage rights, finding the right media for the appropriate channels or target groups, etc.). Simple media search is not enough, as competence-related knowledge is crucial to use social media in the most effective way. This paper analyzes this problem field from a design science perspective and derives requirements for an appropriate recommender system which fosters the social media skills of all stakeholders in vocational education such as trainees, teachers, trainers and personnel developers. It presents the design of an IT-based tool that supports users through the integration of media education into vocational education and professional qualification. The tool provides users recommendations about appropriate media contents under consideration of each individual’s social media skills. The main goal is to improve the competencies of trainees and trainers in dealing with social and digital media. The tool makes an important contribution to strengthening the learning capacities of each individual and involved training company in vocational education and training through context-sensitive and individually tailored recommendations (e.g. training programs, tools, concepts / methods of education or teaching scenarios). In a first step, the knowledge space is being explored for the resulting concept. Potential use case scenarios show how the recommender system can foster the social media skills of all involved stakeholders of vocational education and training.

Keywords: Personalized learning, recommender system, social media skills, decision support.

1. Introduction

The last decade has been characterized by a strong establishment of digital and social media in many settings of private and professional life. The educational sector has become aware of these developments and the potential that comes along with collaborative creation and sharing of innovative teaching practices (Larosiliere et al. 2013). These potentials are also identified as key challenges for innovations in the educational sector these days (Koper & Tattersall 2005; Carroll et al. 2002; Agostinho 2008). Students’ use of social and digital media has been continuously increasing in the last years (McHaney 2011). However, in the educational context, teachers still remain the main adopters (Pelgrum 2001; Kebritchi 2010). Even though most students are familiar with the use of social and digital media, they often show a lack of competencies when it comes to integrate them in the professional context (e.g. competently commenting on a blog entry or on other information in the web). The main reason therefore is that the training of social media skills is not yet sufficiently integrated into the processes of vocational education.

We describe the ability of professionally integrating social and digital media in vocational education according to four facets: the ability to understand and rate information, the ability to select and manage information, the ability to communicate and comment information as well as the ability to create and edit information (Oloff et al. 2013). Hence, an efficient adoption of social and digital media in the educational sector can e.g. be characterized by being able to use social and digital media to search for the right information to solve a task in the learning context. Once having found the right information, it would be helpful to use social media tools like bookmarking services to manage the relevant information. Another application potential that comes along with the professional integration of social media in teaching and learning scenarios is the possibility to get in contact with the right contact person that is helpful in the current step of the teaching or learning process (e.g. in terms of a preparation of a lesson or a presentation).

Current studies show that research in the educational sector focuses on more effective and systematic ways to represent teaching guidance and practices in terms of sharing and reuse of media contents (Marjanovic 2013; Agostinho 2008). The main challenge remains the efficient integration of social and digital media technologies in the professional setting of vocational education. Particularly learning scenarios would benefit from a professional integration of media technologies such as references to social web tools or further information in the web that may be helpful to carry out a specific task (Bandura 1977; Laufgraben & Shapiro 2004). Educational qualification in most cases is characterized by conservative educational methods which are very
formal and presence-based. The right use of social and digital media is hardly taught in the educational context as many curricula assume that students are familiar with the right use of social and digital media.

This paper presents exemplary use cases for a professional application of social and digital media in teaching and learning scenarios of vocational education and training. These use case scenarios serve as a starting point for the implementation of a recommender system for vocational education that supports teachers, trainers and trainees to professionally integrate social and digital media in their teaching and learning processes. The main goal of the recommender system is to individually foster the social media skills of all stakeholders in vocational education. The research questions are:

- How can social and digital media be efficiently integrated in vocational education and training on the job?
- How can the social media skills of all stakeholders of vocational education and training be fostered?

To answer these research questions we develop a recommender system that automatically adapts to each individual’s social media skills in the teaching and learning context.

In a first step, the research method is explained, followed by an analysis of already existing recommender systems in the learning and organizational context in Chapter 3. Chapter 4 presents the domain ontology which forms the basis for the derived use cases. It depicts all relevant relationships in terms of content, users, social media skills and educational contents that are taught in IT based professions in Germany. Chapter 5 presents two use case scenarios that are going to be supported by the recommender system. The paper closes with a summary of the main results and an outlook on future research.

2. Methodology

The research work conducted in this manuscript follows a design-oriented methodology which focuses on the artificial creation of innovative artefacts (Hevner et al. 2004). These artefacts can be classified into constructs, models, methods and instantiations. IT trends such as social and digital media have an impact on already existing artefacts. Hence, these new trends facilitate the design of new artefacts. This paper presents a collection of ideas for new artefacts and explains considering Hevner’s (2004) guideline “Design as a Search Process”, according to which different alternatives for artefacts or artefact designs are being analysed in their problem environment (Hevner et al. 2004). In order to enhance the rigor of the use case approach, the case studies by Dubé and Paré (2003) have also been considered. The case study research strategy represents a qualitative research method (Benbasat & Goldstein 1987). The information needed for the derivation of the use cases has been collected according to (Benbasat & Goldstein 1987; Bouchard, T. J. 1976; Cook & Campbell 1979) by carrying out several interviews with stakeholders from vocational education and training.

This paper serves as a starting point for constructing new IS artefacts based on social and digital media principles. The presented use cases have already been evaluated in practical context to proof their practical relevance. According to the carried out evaluation of the derived artefacts, irrelevant artefacts have been segregated. The remaining constructs are going to be transferred into methods and implementations to be applied practical context.

3. Recommender Systems in Vocational Education and Training

Several tools and research projects about recommender systems in learning and working scenarios have been analysed according to the criteria of social and digital media as well as fostering social interactions and collaboration.

A holistic model for continuous learning by reflection and an “AppSphere” are developed within the research project MIRROR. The AppSphere enables employees to continuously access real-time learning applications which are helpful to carry out current tasks (Balzert et al. 2011). The goal is to motivate employees to reflect their operations to foster learning from experiences. In doing so the development of creative solutions for current problems that occur in day-to-day work is fostered. Hence, employees benefit from their own experiences as well as from the experience of their colleagues (Balzert et al. 2011). Martin, Boticki and Jacobs (2010) present a framework for a mobile application enabling collaborative learning. One of the features of the framework is the integration of external communication platforms like blogs or wikis. The purpose of this platform is to foster the communication of users in learning scenarios. Within the project GRAPPLE a learning environment has been developed which supports “lifelong learning” by a technology-based environment which is capable of adapting to the user’s personal preferences (Loos et al. 2010). Lee, Kim and Lee (2010) propose an architecture for a social learning platform which is based on collective intelligence models. It
consists of four modules, gathering metadata for contents and users, structuring metadata and relationships between contents and users, visualizing the results and mining knowledge from the users’ learning activities. The platform tries to promote the collaborative process by summarizing the knowledge of the different users in a map and visualizing it. The platform APOSDLE supports learning in the context of the current work environment by providing users learning contents, guidance and expert advice (Lindstaedt et al. 2005). Wang and Ng (2012) propose a mobile cloud learning system which promotes collaborative learning and communication of learners in different ways. It provides a question and answer system, which enables users to ask or answer questions of other users. It also provides recommendations for learning groups. Similar users are grouped based on their learning behaviour and have the possibility to collaborate. Users can also upload content to the system and share it with other users. The system automatically builds learning plans for a user based on his learning history. Du et al. (2013) propose an interactive and collaborative learning platform which integrates social software. Users interact and collaborate in course groups and also have a personal network of friends. When a user collaborates with other users in a course s/he can connect with those. User can receive various kinds of information about members of his/her groups and friends. Users can upload, comment, tag or share content. The system also recommends users and contents to users that may possibly be interesting to them. TEDEd (2014) supports teachers creating their lessons by the help of videos on Youtube. In doing so, teachers can enhance relevant videos (e.g. by adding information or questions) and share them with students. 

The state of the art analysis on recommender systems in the educational and organizational context has shown that so far there is a lack in recommending contents to users under consideration of the current situation in the teaching or learning process. Furthermore, none of the analysed tools supports recommendations under consideration of each individual’s social media skills. None of the analysed tools and projects considers the field of vocational education and training.

4. Knowledge Base

To be able to derive recommendations about appropriate social and digital media contents that foster the social media skills of all stakeholders in vocational education and training, we need a knowledge base that depicts all relations of the underlying domain.

The following figure depicts the knowledge base that has been derived for the recommender system. It is modeled as an OWL ontology, which is in line with previous approaches, where ontologies have been proposed for representing learning object content (Verbert et al. 2006) and context information supporting adaption and personalization (Jovanović et al. 2007; Martín et al. 2006; Siadaty et al. 2008). It represents all relevant information about the integrated content, learning fields of vocational education, social media skills (Oloff et al. 2013), users’ interactions, learning processes and social media channels in their semantic relations.

The ontology is embedded in the recommender system. Hence, it evolves over time based on the usage behavior, such that search and recommendation results will continuously adapt to user preferences.

The ontology is grounded on several already existing ontologies such as ALOCoM (Abstract Learning Object Content Model) (Verbert et al. 2006) and FOAF (Friend-of-a-Friend) (Graves et al. 2007). The ALOCoM Ontology is a formal representation for learning objects and their related components (Verbert et al. 2004). It describes how learning objects can be reused (Verbert et al. 2006). Concepts that have been taken from ALOCoM are ContentFragment and ContentObject (see Figure 1). FOAF provides a machine readable model of Social Networks. If several FOAF documents are published in the web, these documents can refer to each other, thus creating a network of people. Hence, relationships between persons can be analyzed and visualized (Sleeman & T 2010). Concepts that have been adapted from FOAF are foaf:Person.

In parts, we built an upper-level ontology to integrate the description of learning objects and their contents as specified in ALOCoM to associate them with the person-specific information from FOAF. The novel concepts for tasks, skills, interactions and media containers support the specification of new custom concepts. The concept of content objects is composed of single content fragments (media objects such as video, text file, image, etc. as well as the content object category which supports to classify content objects according to specific criteria (training material, field reports, Web resources, etc.). Based on the ontology, users can actively search for content objects, and content that matches their current situation in the working process and their personal profile is proactively recommended. The content objects are organized in media containers which consist of the components My Media, Catalogue and Learning Area. A task is related to a specific topic in the curriculum of vocational education and training (e.g. “requirements analysis” within the apprenticeship of “Qualified IT specialists”), which requires specific skills. The chosen approach enables the seamless integration
of content from repositories supporting ALOCoM or FOAF. A task is related to a specific topic in the teaching and learning and teaching process which can be subject-related or non-subject-related. If a topic is subject-related it is classified to a learning field of vocational education for “Qualified IT specialists”. In total, there exist eleven learning fields. A “Contentobject” describes the different types of digital media and social media channels.

Figure 1: Domain ontology of the recommender system

The ontology evolves over time and reflects the dynamics in the user’s individual learning process as well as the continuously changing amount of relevant information. A dedicated knowledge adaptation component uses techniques of ontology learning and ontology evolution to adapt the ontology over time (Di Valentin, Emrich, et al. 2013). This could either be triggered by the indexing of new or updated content or the analysis of usage data.

5. Derivation of the Use Case Scenarios

This chapter presents exemplarily use cases scenarios that are going to be supported by the recommender system. First the task to be carried out by the teacher/trainer or trainee is explained followed by a sequence of actions. For each use case, several success criteria as well as exemplarily recommendations for professionally using social and digital media is given. The use cases have been derived in a workshop with teachers, trainers and trainees from vocational education in the IT sector.

5.1 Integrating Social Media in the Preparation and Execution of Lessons

A teacher prepares a lesson within the learning field “Basic IT Systems”. S/he plans to integrate social and digital media in his/her lesson but has no experiences in doing so. S/he first wants to find out which application potential exists.

The teacher logs in to recommender system. The system recognizes whether the user is a teacher/trainer or a student which is considered for the generation of search and recommendation results. Based on previously carried out interactions within the recommender system such as search requests, upload of contents or clicks on certain items, the system recognizes current topics in specific classes at the vocational school. The recommender system provides the teacher information through a recommendation widget that matches to his/her individual interests and the context in the process of lesson preparation. In addition to the
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recommendation widget, teachers can also submit search requests (see Figure 2 and Figure 3). Search requests as well as recommendation results take into consideration the user’s personal profile which can be explicitly indicated by the user during his/her registration. The profile enriches implicitly based on the usage behavior (see the concept “interactions” in Figure 1). Hence, the more user interactions are carried out within the recommender system, the more information can be gained to enrich the user profile and adapt recommendations to each individual’s social media skills (Schmidt et al. 2014; Di Valentin et al. 2013).

Furthermore, the teacher can create private learning areas and share them with their classes. Hence, teachers are enabled to upload and manage information online and share specific contents with their students/trainees. These learning areas can also be shared with trainers in the companies to enable a continuous coordination between vocational school and training companies.

Exemplarly recommendations could be links to web resources such as websites, web portals or social web channels, field reports (created by other teachers and trainers that already gained experience in integrating social media in lessons) and expert information. Expert information is categorized into training concepts, lesson plans, reports, scientific publications and concepts (see Figure 1). Users can upload contents according to these criteria to the recommender system.

5.2 Supporting the right Social Media Usage to Search and Select Information

Within the learning field “Organizational Business Processes” trainees have to prepare a specific exercise in a group consisting of several trainees. For carrying out this task, the trainees have to search and select the right information to be able to carry out the exercise. However, they are not experienced in searching and selecting the right information. For this reason, they first want to be informed about how to efficiently search the information required to carry out the task.

Students log in to the recommender system. On the welcome page, users can select between several tabs. One tab contains as entry point the social media skill model consisting of the four skills understand and rate information, select and manage information, communicate and comment information as well as create and edit information (see also Figure 1). Here, users select the facet Search and Select Information as entry point. Media types that are classified to this facet are search engines, social networks and Q&A forums (Oloff et al. 2013). Based on the Competence Filter, irrelevant media types that are classified to the other facets of the skill model are separated out within the process of information retrieval.

Exemplary recommendations within this selected facet could be links to web portals, websites, social web channels as well as training material like learning documents, exercises, learning games and courses. The training material is not retrievable in the web but in the recommender system to ensure a psychologically and didactically evaluation of the provided training material. In addition to recommendations about appropriate media types trainees can be also recommended other users that are already experienced in searching and selecting information. This information can be explicitly gained by the users’ declaration in the system and it can be also gained by implicit usage behavior which can be analyzed through system logs. An example for implicit user behavior is a click on a recommended item which the recommender system interprets as positive feedback. This positive feedback can be used to enrich the user’s personal profile. The concept of user interactions is also depicted in the domain ontology.

The use case has been carried out successfully when trainees received helpful recommendations to prepare their group work and teachers received helpful recommendation to prepare their lesson. From system perspective, the use cases have been accomplished successfully when we could gain as much implicit information as possible. This can e.g. be in form of interactions like reading / click on a search and recommendation result, sharing learning areas with other users, commenting on contents, getting in contact with other users and uploading contact. All these implicit information can be used to enhance the knowledge base and continuously adapt to the user and his/her preferences.

The following figure shows an exemplarily result list of a search query. It depicts two different ways of how search and recommendation results can be displayed. The recommender systems contains two different views to display search and recommendation results. Figure 2 shows the “tweak-results” view.
Figure 2: Tweak results view

In this view users are able to optimize the recommended search results by scroll bars. The weighting is determined by pre-defined rankers, which bring search results in a specific order. Rankers in this example are the Learning Field Ranker and the Competence Model Filter. Within each tab of the recommender system, different rankers are used (e.g. Competence Ranker, Time Ranker etc.). The following figure shows the “browse-view” of search and recommendation results.

Figure 3: Browse results view

This view refers to the same content as the tweak result view. But here, users see on the first sight the relevance of the depicted search results. The size of the bubbles represents the relevance of the search and recommendation result according to the individual user profile.

6. Conclusions and Outlook

This paper presented two potential use cases about how the social media skills of involved stakeholders in vocational education and training can be fostered. The use cases have been derived according to Hevner’s (2004) design science guideline “Design as a Search Process”. The required information for developing the use case scenarios have been derived on the basis of qualitative research. Teachers, trainers and trainees have been interviewed about the current situation and weaknesses in vocational education and training, like e.g. the poor integration of social and digital media in vocational schools and training companies. Based on the interviews as well as a carried out study on already existing recommender systems in the organizational and educational context, shortcomings have been derived as requirements for the development of a recommender system for vocational education. The use cases presented in this paper form the basis for the implementation of the recommender system. Based on the use cases, requirements such as required filters and rankers could be determined which are going to be developed in a next step. Filters carry out a pre-selection of search and recommendation results that are not considered within search requests, whereas ranker bring selected search and recommendation results in a specific order that matches to the individual user.

Filters that are going to be implemented in a next step are the Competence Filter, Trainer Filter and Document Filter. The competence model filter refers to a selected facet of the competence model (see ontology). Media types that do not match to the selected facet are going to be rejected within a search request. If a user e.g. selects as entry point “create information”, matching media types such as social networks, forums or media
sharing sites that are classified to this facet are shown to the user. Search results are going to be ranked according to the learning fields (Learning Field Ranker), social media skills (Competence Ranker), content object category (Document Ranker), rated content (Rating Ranker) as well as time (Time Ranker).

Once implemented, the recommender system is going to be analysed according to information retrieval metrics such as fall-out, precision and recall. Furthermore, it is planned to carry out lab tests with users to gain feedback about the proposed user interface as well as to derive feedback for the prioritization of features and the design of the recommender system. In a final phase the application will be tested in a real-life environment of vocational education with a sufficient sample size of users to ensure a qualitative evaluation of the research hypotheses.

References


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