ACCEPTANCE OF SOCIAL MEDIA BY ORGANIZATIONAL USERS – TESTING THE IMPACT OF SYSTEM DESIGN FEATURES

Stefanie Paluch  
RWTH Aachen University  
Kackertstraße 7, 52072 Aachen  
Germany  
paluch@time.rwth-aachen.de

David Egbert  
RWTH Aachen University  
Kackertstraße 7, 52072 Aachen  
Germany  
egbert@time.rwth-aachen.de

Markus Blut  
Newcastle University Business School  
5 Barrack Road, Newcastle upon Tyne, NE1 4SE  
United Kingdom  
markus.blut@ncl.ac.uk

Abstract

As more business-to-business organizations consider using social media to attract customers, the acceptance of social media technology among employees becomes crucial. We assume particular factors to matter for organizational users as compared to private users. Study 1 which is based on 46 in-depth interviews explores six system design features that are critical for social media usage among organizations. We document the role of (1) information sharing, (2) internal communication, (3) customer feedback and dialogue, (4) content control, (5) internal data security, and (6) system integrity concerns in social media technology assessments. We test the developed conceptual model in study 2 using survey data from 126 organizations. Results indicate that system design features show positive and negative effects on usefulness and ease of use. We find strong negative responses of system design features on anxiety associated with social media usage and perception of emotional conviction.

Keywords: Social media, organizational adoption, mixed methods, qualitative research, organizational perspective, technology acceptance model
Introduction

The rapid development and spread of social media technologies has considerably changed the way how companies communicate and interact with their customers. Social media is “a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allows the creation and exchange of user-generated content” (Kaplan and Haenlein 2010, p. 61). The umbrella term refers to a variety of platforms including wikis (e.g. Wikipedia), blogs, microblogs (e.g. Twitter, Tumblr), and social network sites (e.g. Facebook, LinkedIn) (Cortizo, Carrero, and Gomez 2011). Companies use these platforms to recruit new talents, enhance their customer relationships, and attract new customers. In contrast to existing research which mainly examined private users of social media, our study focuses on organizational users in business-to-business organizations, mostly industrial manufacturers and vendors, which are characterized by interorganizational vendor-client interactions with suppliers, customers, or partners (Gopal and Koka, 2012; Rai and Tang 2014).

For instance, in 2013, Volvo Trucks – a truck manufacturer within the Volvo Group – managed to create a social media buzz when demonstrating the stability and precision of Volvo Dynamic Steering – a patented system to offer directional stability at high and low speeds – in a video clip. Volvo Trucks made a two-minute clip named “The Epic Split” starring Jean-Claude Van Damme as he is doing the split between two Volvo Trucks reversing at high speed. With the words “the Internet is buzzing about a new online commercial” (Chai 2014) the Wall Street Journal addressed the clip in the November of 2013 and indeed, up to today around 80 million viewers watched it on YouTube. However, Volvo Truck’s story of success can be seen as an exceptional case for the effective utilization of social media within manufacturing companies, as previous research found a certain reluctance towards the usage of social media especially in industrial markets (Michaelidou, Siamagka, and Christodoulides 2011; Järvinen et al. 2012).

While the benefits of communication with external customers were obvious and social media systems supporting this communication are very likely to impact adoption among system users, there may be further factors being of relevance which are unique to organizational users. It is regularly argued that the uniqueness of business-to-business markets compared to business-to-consumer markets arises from their derived demand, long purchase cycles, and a varying and fragmented market structure (Lilien 1987). Moreover, the concentration (the number of customers is usually much smaller in comparison to consumer markets) and volume of demand (transactions are of much larger value), determine the fragmentation of the markets (Narayandas 2005). Given these particular characteristics of industrial markets, we investigate the usage of social media technologies from an organizational user’s perspective (Dyer and Singh 1998). It may be that organizational users use social media for different reasons than private users such as managing both internal and external relationships of the organization (Koch, Leidner, and Gonzalez 2013). Also, organizational users’ concerns associated with technology may differ since they may be highly dependent from their customers which is a further factor that may not matter for private users. Given the sparse research in this field, Aral, Dellarocas, and Godes (2013) call for more studies examining the impact of factors influencing adoption of social media by organizational users.

Therefore, the purpose of this study is to contribute to the small body of existing literature by empirically investigating antecedents and barriers of an organizational adoption of social media systems. Therefore, the intention of this study is to identify those factors, which contribute to an organizational user’s acceptance and usage of social media technologies. Against this background, our research questions leading our study are:

1) What are the key factors that contribute to adoption of social media technologies among organizational users?

2) Which particular system design feature influence the organizational acceptance of social media technologies?

3) What are possible negative outcomes of social media usage that restrain organizational social media adoption?

Results of our qualitative study indicate that six design features associated with social media systems impact usage. More specifically, we find evidence for the importance of (1) information sharing, (2) internal communication, (3) customer feedback and dialogue, (4) content control, (5) internal data security, and (6) system integrity concerns in social media technology assessments. We rely on qualitative
evidence gathered through in-depth interviews to develop a conceptual model which includes these features. We then test this model across organizations in a quantitative study and close the study by discussing implications of the findings and directions for future research.

**Literature Review**

The majority of research on social media focuses on private users' behavior and decision-making. Studies cover topics such as usage and adoption motives, conversation patterns between users (Mangold and Faulds 2009), the role of online word-of-mouth (Kozinets et al. 2010; Trusov, Bucklin, and Pauwels 2009), branding and brand communities (Goh, Heng, and Lin 2013), customer equity (Kim and Ko 2012), or the effect of social media on sales (Stephen and Galak 2012).

Until now, only a small body of literature investigated the usage of social media technologies from an organizational user's perspective. The focus of most studies lies on the description of usage patterns rather than on the identification of drivers and adoption barriers of social media usage in organizational contexts. Generally, firms use social media for establishing customer relationships, but industrial companies rather rely on personal selling than non-personal communication (Belonax, Newell, and Plank 2007). Non-personal communication such as social media often just plays a supportive role in organizational buying processes in order to keep their relationship working (Ballantyne and Aitken 2007; Long, Tellefsen, and Lichtenthal 2007; Rosenbloom 2007; Singh and Koshy 2011). Besides this issue, it is argued that the user's activities are pivotal to develop the value of social media technologies. However, previous literature did not find any evidence that customers can be motivated to act as content creators in organizational vendor-client relationships (Järvinen et al. 2012). It is argued that organizational buyers are more rational in comparison to consumer, so that the potential of enthusiasts spreading word-of-mouth is much lower, so that the potential of viral marketing – defined as the mutual sharing and spreading of marketing-relevant information by customers – increases simultaneously in organizational settings. General findings point out that firms mainly use email advertising and sales support material like digital product brochure (Järvinen et al. 2012). A lack of time and resources are described as main adoption barriers as well as a lacking understanding of the value of social media (Järvinen et al. 2012; Michaelidou et al. 2011; Kärkkäinen, Jussila, and Väisänen 2010). A study by Michaelidou et al. (2011) investigate the usage of social media networking sites for organizational branding objectives which is particularly important to attract new customers and cultivate relationships. The authors find that social media is not of great relevance for organizations as they plan to increase social media budgets in the future. Most studies examining social media on the firm level focus on the effect of social media on sales personnel (Rodriguez, Peterson, and Krishnan, 2012; Schultz, Schwepker, and Good 2012a; Groza et al. 2012; Schultz, Schwepker, and Good 2012b). In contrast to existing studies, our aim is to examine social media usage at the interface between vendor and client organizations.

In recent IS-studies social media is an emerging topic which receives increasing attention from various researchers. Studies cover topics such as relationship aspects (Rishika et al. 2013), firm equity (Luo, Zhang, and Duan 2013), or adoption probability (Fang et al. 2012). Dou, Niculescu, and Wu (2013) use the network perspective to investigate how companies can improve social media functionality by testing several design features. The authors emphasize explicitly the importance of feature design and call for more research in this field (Aral, Dellarocas, and Godes 2013). The majority of IS-studies investigating social media usage examines private users, e.g. Wu (2013) investigates the potential of social networks on productivity and job security from an employee’s perspective. Results indicate that information-rich networks drive job performance and job security (Wu, 2013). Social Media should encourage the user to create and/or distribute content, as the user’s activities are crucial to develop the value of those applications (Steenkamp and Hyde-Clarke 2014), consequently reward and incentive structure play an important role (Claussen, Kretschmer, and Mayrhofer 2013). The community aspect of social media has also been a topic in several studies. Hildebrand et al. (2013) demonstrate that receiving customer feedback in social media communities negatively influences customer satisfaction with self-designed products and leads to lower products usage and monetary valuation. Further, user engagement in social media is shown to lead to higher purchase expenses (Goh et al. 2013). Additionally, the role of social tiers and similarity and their effects on content generation has been researched recently (Zeng and Wei, 2013).

Godes et al. (2005) were among the first to examine the strategic management of social interactions from a firm’s perspective. The study by Miller and Tucker (2013) empirically investigates social media...
management in the health care setting. Their empirical work shows that organizational employees are more active and create more content than clients. However, untargeted postings rather provoke employees’ reactions, therefore hospitals could engage their clients by posting more client-focused content. Social media is not exclusively a marketing instrument, but also influences employees’ motivation. However, to the best of our knowledge no empirical work has investigated the adoption drivers and barriers to whether an industrial organization decides to actively participate in social media.

**Methodology**

We have chosen a mixed methods approach including both quantitative and qualitative methods. First, a qualitative research uses in-depth interviews to explore individual perception of social media technologies. A subsequent quantitative study was used to validate and generalize the findings of the first study. Thus, qualitative data (study 1) and quantitative data (study 2) were collected and analysed in sequential order (Creswell 2009). Examples of prior IS research which conducted a similar approach are Becerra-Fernandez and Sabherwal (2001), Ho, Ang, and Straub (2003), and Grimsley and Meehan (2007).

**Study 1**

**Data Collection and Analysis**

The qualitative study was conducted in the industrial manufacturing industry in Germany, in which we have examined different sectors such as waste water pumping companies, wire robe producers, steel producer, industrial construction, industrial solution seller, or technological component manufacturers to represent traditional business-to-business organizations in our sample. The interviewees are selected using Patton’s (2015) purposeful sampling, where information rich cases are selected to answer the research question. Our sample consisted of 46 interviewees with diverse functional backgrounds such as general managers, directors, IT-team managers, sales-, marketing- and project managers, support staff and purchasing agents. A semi-structured interview guide was employed which captured the main questions for the interviews and ensured comparability of findings. During a period of six months, 46 interviews were conducted, lasting between 30 and 60 minutes. The interviews took place at the respective companies; hence, the familiar working environment of the interview partners led to an open and relaxed atmosphere where interviewees talked openly about their personal opinions and attitudes.

All interviews were recorded and transcribed. The huge amount of data required a structured and systematic analysis. Therefore, we have chosen the coding software QSR N*Vivo to increase credibility of our findings. The underlying idea of QSR N*Vivo is to gather material under emerging themes within a coding process. This process is not a step-by-step process (first import, then code, then query, then interpret and then write-up), but rather an iterative process as the researcher moves backwards and forwards within the existing data material (Bazeley and Richards 2000). The coding process followed an inductive approach of category development. As Patton (2015, p. 64) explains, “categories or dimensions of analysis emerge from open-ended observations as the inquirer comes to understand patterns that exist in the phenomenon being investigated”. The researchers “seek to understand the multiple interrelationships among dimensions that emerge from the data without making prior assumptions”.

**Conceptual Model**

Results of the interviews suggest several design factors to be related to ease of use and usefulness of social media which are key constructs of technology acceptance model (TAM). While TAM suggests that system design features matter for adoption of IS in general (figure 1), it is unclear which design features characterize social media. Hence, based on our findings from study 1, TAM seems to be a suitable conceptual model for presenting the findings of this research. Technology Acceptance Model (TAM) proposes that identified system design features of IS technologies can be incorporated in an extended TAM as external variables (Davis, Bagozzi, and Warshaw 1989). Davis (1993) argues that that system design features are crucial to determine users’ acceptance of IS (see figure 1). Previous research found strong evidence that an incorporation as external variable I suitable to successfully extended the TAM...
(e.g. Igbaria, Guimaraes, and Davis 1995, Venkatesh and Davis 1996, Venkatesh and Davis 2000, Hong et al. 2001, Koenig and Schlaegel 2014).

The developed conceptual model is illustrated in figure 2. The qualitative study 1 is utilized to identify system design features of social media technologies perceived by users in interorganizational collaborations, which – in turn – are incorporated in an extended TAM as external variables to directly influence the TAM’s core constructs. The conceptual model does not incorporates the construct “attitude toward using” as the latest adaptations of TAM, namely TAM 2 (Venkatesh and Davis 2000) and TAM3 (Venkatesh and Bala 2008), suggest that ease of use and usefulness directly influence usage intention.

According to this model, the user’s cognitive response is determined by usefulness and ease of use of social media. With regard to the individual’s affective response, qualitative interviews indicate that system design features are related to an individual’s anxiety and emotional conviction. In the context of this study, emotional conviction refers to an individual’s evaluation that social media technologies are generally perceived as beneficial in interorganizational vendor-client interactions. As one interviewee
indicates, “Social media technologies are the next step of social interaction, therefore we have to use these technologies” (IP 26, l. 43, industrial construction). However, social media usage may also impact perceived anxiety. The interviews highlighted a certain anxiety as dark site of social media technologies, triggered by identified system impediments: “If we use social media technologies as a vendor, there most certainly is the risk that clients chat to each other about negative aspects” (IP 32, l.54, wire robe supplier). Previous IS research already conceptualized an incorporation of anxiety within the TAM. For example, Venkatesh and Bala (2008) conceptualized a relationship between computer anxiety and the TAM’s core construct perceived ease of use. However, study 1 did not provide any evidence for a direct link between the affective and cognitive response. As study 1 indicates, we assume that inherent system design features not solely influence an individual’s cognitive response as it is proposed by Davis et al. (1989), but that they also affect an individual’s beliefs and evaluation as affective response likewise (see figure 2). The hypotheses displayed in figure will be discussed in more detail in the following chapters. In this context it needs to be mentioned that this study focuses on the relationships between the identified system design features and a users’ cognitive and affective response. Therefore, only the potential relationships between system design features and cognitive/affective response are formulated as hypotheses (hypotheses 1-6). The remaining relationships of our model, e.g. between ease of use and usage intention, are well established in IS literature.

Moreover, the conceptual model does not incorporate “attitude toward using IS” as mediator the initial version of TAM suggested. Instead, qualitative interviews indicate direct effects of ease of use and usefulness on usage intention. Additionally, the impact of system usage on important firm outcomes such as customer, market, and financial performance was tested. The theoretical anchorage of this proposed link is the updated DeLone and McLean IS Success Model (DeLone and McLean 2003). IS Success Model proposes a direct association between a system usage and certain net benefits. Net benefits are defined as “extent to which IS are contributing to the success of individuals, groups, organizations, industries, and nations” (Petter, DeLone, and McLean 2013, p. 11). This study focuses on an improvement of an organizational performance, as previous IS research found a significant positive relationship between a successful IS implementation and a firm’s performance (e.g. Devaraj and Kohli 2003). Concretely, organizational success was operationalized by using three performance measures in accordance to Hooley et al. (2005), namely customer performance, market performance, and financial performance.

**Development of Hypotheses**

This chapter summarizes the key findings on system features and their relationship with key constructs and uses these insights to formulate a set of hypotheses. We also compare our findings with IS literature. Generally, the qualitative study explored six inherent system design features that are critical for the users’ perception of a social media usage in interorganizational collaborations. Within these six design features, a perceptual dichotomy emerged referring to three value dimensions and three system impediments. The six categories include (1) information sharing, (2) internal communication, (3) customer feedback and dialogue, (4) content control, (5) internal data security, and (6) system integrity concerns (see Table 1). We will present and discuss each category in the following section and enrich the description with original quotations from the interviews. It was interesting to observe that at the beginning of the interview session interview partners were generally reluctant to the usage of social media technologies and justified it by stating “social media is not appropriate in our industry” (IP 41, l.84, iron and steel industry), however during the session interviewees’ behavior and attitude changed and their reluctance diminished noticeably.

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Definition</th>
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<tbody>
<tr>
<td>1</td>
<td>Information Sharing</td>
<td>The dimension refers to the value of social media in terms of the spread of information between an organization and the public. It emphasizes a unidirectional communication as the communication occurs in a straight line from sender to receiver. Information is transferred with only one preassigned direction and serves to inform customers.</td>
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<tr>
<td>2</td>
<td>Internal</td>
<td>The category refers to the communication among employees within an</td>
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<td>Category</td>
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<tr>
<td>Communication</td>
<td>Organization via social media technologies. Social media channels enable organizational networks by facilitating the internal communication and information flow between various departments and divisions. From a company perspective it can increase innovation potential and internal marketing efforts.</td>
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<tr>
<td>Customer Feedback and Dialogue</td>
<td>The dimension refers to the option of organizational customers’ to provide feedback about products and services by using social media technologies. Organizational stakeholders report via social media about their first-hand experience and derive suggestions for future improvements. Companies can react to this insights and allow a professional dialogue.</td>
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<tr>
<td>Content Control</td>
<td>Content control refers to a system's capability to ensure that improper comments or public exposure are avoided as social media channels invite the public to engage in a dialog. By employing social media technologies, companies decrease their level of control about where information is spread, when it is published, and which person is responsible for the content.</td>
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<tr>
<td>System Integrity Concerns</td>
<td>System integrity concerns refers to the appropriateness and expedience of social media technologies for organizational usage. The relevance of social media in an organizational context is ambiguous and effects firms' reputation and credibility.</td>
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<tr>
<td>Internal Data Security</td>
<td>The category refers to data security concerns that are associated with the use of social media technologies. From an organizational standpoint internal data security is the highest priority and an employment of social media increases the perceived risk level.</td>
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**Information Sharing**

The first category that emerged from the qualitative data is summarized under the term “information sharing”. Information sharing refers to the value of social media in terms of the spread of information between an organization and other organizational users. It emphasizes a one-way communication as the communication occurs in a straight line from sender to receiver and serves to inform customers or clients about new products, trade shows and latest company developments. Interviewees identified the creation of a certain public image as one benefit of social media usage. Due to increased digitalization of society, it is common courtesy for companies to use social media for information sharing purposes in order to emphasize a modern image and keep up with time (Mangold and Faulds 2009). With the help of social media technology information can be spread at any time to anyone with less effort compared to traditional communication tools.

*“If you want to be seen as modern company, you just cannot avoid social media”* IP 7, l. 10f.

*“You can easily release news about products and services and give out information to a huge audience.”* IP 3, l. 43f.

Interviewees see the advantages of social media technologies such as reaching a huge audience in a timely manner and in a relatively inexpensive way and assume that these benefits can also be transferred to the organizational context.

*“It’s worth a try. There are platforms where you can address many potential customers and stakeholders with comparatively little effort.”* IP 9, l. 37-39

Purposed contents are general information about new products or developments within the organization because social media is regarded to as part of the new marketing mix (Mangold and Faulds 2009).

*“To use a blog to advertise and inform about our software products is kind of a good thing. And I really do think that our customers would read it.”* IP 9, l. 86-88
“Basically, we use it as some sort of marketing platform where we inform about the next trade fair we will attend.” IP 7, l. 23f.

Further, a utilization of social media to spread information was emphasized when the interviewees were asked, what contents are expected to be provided by companies.

“I expect up-to-date information. You take one look at it and you get the relevant information. For example an opening of a production area or something like that.” IP 6, l. 112f.

Therefore, based on these empirical findings, it is proposed that information sharing between an organization and the public indirectly affects usage of social media in interorganizational relationships through an individual’s beliefs (perceived usefulness and perceived ease of use) and feelings of superiority of used social media system compared to alternatives (emotional conviction). Therefore, it is hypothesized that an individual’s evaluation of the appropriateness of social media technologies will enhance usefulness, ease of use and emotional conviction.

Hence,

**H1**: Information sharing has a **positive** effect on (a) usefulness, (b) ease of use, and (c) emotional conviction.

**Internal Communication**

Internal communication refers to the communication among employees within an organization via social media technologies. Interviewees mentioned that social media can facilitate the effectiveness of communication among employees and can make internal work more efficient. Organizations generally implement social media technologies to manage external (i.e., customer, supplier and partner) and internal (i.e., employee, department and division) relations (McAfee 2009; Deans 2011). The usage of social media enables the spread of information between various divisions and departments which can lead to higher interconnectedness and faster communication. Furthermore, social media tools can be implemented into the internal infrastructure to facilitate networking activities among employees (Subramaniam, Nandhakumar, and Baptista 2013). Social media networks help to find and form groups of people from different parts of the organization sharing the same interests or engaging in interdisciplinary projects. Ideas for new products or design improvements can be shared with other members of the group so that innovations can easily be promoted within the company and every employee can contribute to the innovation potential.

“Generally, the internal flow of information is very important and my next project is to develop an internal blog. (...) We want to spread information about project progression, product upgrades, or status information.” IP 9, l. 60–78

“You could use social media internally. If there is a status update ‘I'll be right back in my office’, nobody beyond the corporate boundaries has to know this. But within our workplace, this is a valuable information, because you know where somebody is. Just to mention a simple example.” IP 10, l. 102ff.

Transferred to our theoretical framework, the utilization of social media for the purpose of an internal communication will positively affect an individual’s beliefs in terms of usefulness, ease of use, and an emotional conviction towards the job-related usage of social media in business-to-business settings.

Thus,

**H2**: Internal communication has a **positive** effect on (a) usefulness, (b) ease of use, and (c) emotional conviction.

**Customer Feedback and Dialogue**

The central idea of social media technologies is the orientation towards user-generated content, as the user’s activities are key to develop the value of those applications. The category “customer feedback and dialogue” comprises the opportunity to virtually engage the customer in a professional dialogue by encouraging the user to create and/or distribute content (Steenkamp and Hyde-Clarke 2014). The main
focus is to develop customer relationships by stimulating interactive discussions (Hennig-Thurau et al. 2010). Social media is seen as a way to generate feedback and utilize this feedback to attract new customers or enhance customer relationships (Koch et al. 2013). Interviewees mentioned the value of a user’s feedback as follows:

“Social media can be used to spread more detailed, up-to-date and faster information and can cause a reaction, because the others are capable to respond to what you shared. A website on the other hand is very rigid. Developed in a central office it can be seen as some kind of promotional brochure.” IP 21, l. 174-177

“You could document success stories, so that people get curious and ask ‘What has he done with his product?’. And if there are any software updates it would be very exciting if we could establish some kind of feedback-culture so that our customers could respond what is good at what is bad.” IP 20, l. 135ff.

The value of social media technologies is generally seen in providing a platform for customer feedback. Thus, it is hypothesized that customer feedback and dialogue is positively related to usefulness, ease of use, and emotional conviction.

Hence,  
H3: Customer feedback and dialogue has a **positive** effect on (a) usefulness, (b) ease of use, and (c) emotional conviction.

**Content Control**

Aside from these mentioned value dimensions, a valuable contribution of our exploratory study 1 is the identification of certain system impediments. As it is our research objective to identify drivers and barriers of the adoption by organizational users, it is key to determine why the organizational utilization of social media is primarily associated with private users rather than organizational users. In this context, content control refers to the perceived control over the provided content. As social media channels invite the public to engage in a dialog and provide feedback, companies often fear improper comments or public exposure. Previous research found that companies experience a certain lack of control when using social media technologies (Koch et al. 2013; Mangold and Fauld 2009; Godes et al. 2005). Several interviewees mentioned that users are not eligible to leave any kind of feedback or have the possibility to create content, as they fear the user’s reaction (see also Xia 2013).

“We restricted it in that way that only we are able to contribute something and users do not have the possibility to generate content. Due to safety issues. We just want to handle this whole social media thing with care.” IP 7, l. 21-23

“You just don’t have the control over the information which are basically presented.” IP 18, l. 157-159

Such fear is specified as anxiety to not be able to respond to a user’s reaction in a proper way and therefore systematically block or disallow user’s feedback (Koch et al. 2013).

“Certainly, there are risks. At the end of the day you are entering unknown territory. You present yourself to the public and of course there will be some sort of reaction, which you cannot foresee. I want to respond to every reaction with a professional response but we are a highly diversified company. It can easily happen that you get confronted with a question to which – in a face-to-face conversation – you would respond in a way like ‘Excuse me, that’s none of my business and I cannot respond to this’. Now, if I get a user’s response on a social media platform, there is the expectation to officially talk to a company and the user expects a professional response.” IP 16, l. 236ff.

Interviewees admit that they are relatively inexperienced regarding the implementation of social media in their company strategy. It is often unclear where social media activities are positioned within the company structure and which department is responsible for communication (Koch et al. 2013). Interviewees state that they are hesitant about their authority concerning the generation of comments and postings in social media channels.
“Normally I send my information to the PR department and they carefully review every piece of information that goes public. With social media, almost every employee can spread company-related content and even confidential information” IP 37, l. 61-63

As social media technologies constitute a relatively new communication channel for companies, employees express their uncertainty about releasing company- or product-specific information. By employing social media technologies companies decrease their level of control about where information is spread, when it is published, and which person in the organization is responsible for the content. This might lead to greater reluctance to adopt the technology (Koch et al. 2013).

Vice versa, it is hypothesized that content control will have positive effects on usefulness, ease of use, and emotional conviction. A feeling of control implies that the provided content – either by the company itself or external users – can be monitored sufficiently, resulting in a perception that the system is easy to use, useful in terms of your profession, and increasing an inner conviction that the system is beneficial. Contrary, lack of content control is discussed to be positively related to user’s anxiety, as the feeling of being affected by the arbitrariness of external users may cause insecurities and reluctance.

Thus,

**H4:** Content control has a **positive** effect on (a) usefulness, (b) ease of use, and (c) emotional conviction, and a **negative** effect on (d) anxiety.

**System Integrity Concerns**

A further system design feature can be described as system integrity concerns. This category refers to the appropriateness and expedience of social media technologies for organizational usage, especially when directed to other organizational users. Some interviewees mentioned concerns regarding the integrity of social media platforms in general and social network sites in particular. Some particularly expressed the fear to be seen as dubious if they apply social media technologies, causing a reputational damage (Tang, Gu, and Whinston 2012; Wasko and Faraj 2005). As the application of social media is predominantly used in private or consumer settings, interview partners are concerned about the consequences for company reputation and public image:

“If I would see suppliers or employees representing themselves on social media platforms, I would generally evaluate it negatively. Social media is rather a risk, because it suffers from a bad image.” I 1, l. 64f.

“Our industry does not perceive social networks as a platform for marketing or customer retention.” I 4, l. 42f.

“Especially our industry is very conservative and reluctant concerning the publishing of information. I would not really expect that we use social media in a way that exceeds a marketing purpose.” I 9, l. 51-53.

The higher the concern in terms of a system’s integrity, the more negatively is an individual perception, increasing a certain fear towards the technology in general. A perceived reputational damage in the course of social media usage is therefore proposed to be negatively related to an individual’s evaluation of technology. It may negatively affect perception of the system’s usefulness, ease of use, and superiority in comparison to other alternatives. However, it is expected to be positively related to a user’s concerns associated with technology.

Hence,

**H5:** System integrity concerns has a **negative** effect on (a) usefulness, (b) ease of use, and (c) emotional conviction, and a **positive** effect on (d) anxiety.

**Internal Data Security**

As a second impediment, interviewees repeatedly mentioned concerns regarding data security and privacy. Particularly industrial organization are concerned about data security as the companies save vast quantities of confidential material such as personal data of their employees, financial data, product-
related information, patents, statistics about suppliers and competitors. Keeping internal data secure is a number one priority for organization. Social media technology is often associated with leaking data and information, so that interviewees are alarmed:

“Social media is critical because of a missing data security.” IP 4, l. 8

Other interview partners aim at the confusing regulatory framework concerning certain social media platforms and the general handling of personal data:

“I am quite skeptical about the data security and you have to clearly point out that most social media platforms are very, very far away from laws governing data protection and data security.” IP 7, l. 11

Interviewees express their concern about their information and the uncertainty what will happen to the data (Rosenbloom 2007). Social media can be compared to black holes: nobody knows what will happen and who receives the information. Consequently, several interview partners associate the missing data security as a major drawback of social media.

“Apart from that, I do not have any control over the information I provide. I am not willing to give away any information about myself to an unknown entity, where I do not get to know what will happen to this data.” IP 22, l. 26

“Of course, there is always a risk. The more you are open to provide information, the higher is the risk that these information get into the wrong hands.” IP 17, l. 250

Taking this skepticism into account, it is proposed that information security risks have a negative direct effect on an individual’s beliefs while simultaneously stimulating anxiety. Table 1 highlights that this dimension primarily refers to data security concerns which are associated with the usage of social media technologies. Therefore, a higher perceived risk is proposed to be negatively related with the perceived performance of social media (usefulness), the perception that the technology is easy to use (ease of use), and the inner feeling that the usage of social media is beneficial in comparison to alternatives (emotional conviction). On the other hand, a distinct tendency to understand other’s awareness of date security risks is found to be positively related to anxiety, highlighting the so called dark site of social media.

Thus,

**H6:** Internal data security has a **negative** effect on (a) usefulness, (b) ease of use, and (c) emotional conviction, and a **positive** effect on (d) anxiety.

**Study 2**

**Method**

In study 2 we use structural equation modeling (SEM) to test the developed conceptual model. Structural equation modeling (SEM) is applied very frequently in IS research (Gefen, Rigdon, and Straub 2011) as it enables the researcher to test and estimate causal relations between complex constructs. We used PLS-SEM since it is said to be the robustness to small and moderate sample sizes. Goodhue, Lewis, and Thompson (2012) found that at least 35% of the identified articles using PLS-SEM in IS research emphasize the advantage of PLS-SEM regarding sample size.

**Data Collection**

An online survey was conducted to collect data for this study. Data was gathered directly from industrial manufacturers and vendors in different industries such as construction and engineering, business services, information and communication, electrical or automotive industry. Contact information were acquired by a firm’s homepage or social media appearance and a link to the survey was sent via e-mail. Respondents had to assess their usage patterns of different social media tools in business practice. It occurred that no company had to be marked as non-user, but the companies were found to differ in the extent of usage. This is in accordance with previous research which found that the question of organizational adoption of internet-based innovation cannot be solely answered with yes or no. It is rather key to take the substantial variation in the degree of organizational usage into account, because internet-
based innovations are amorphous and vary in the extent of technology adoption (Srinivasan, Lilien, and Rangaswamy 2002). Examination of current users of IS is a common practice in IS adoption research (e.g. Venkatesh, Thong, and Xu 2012). To gain valuable background information about the respondents, they were asked about their age, work experience, and function within the company. In addition, characteristics of the company were also requested. Key characteristics were turnover, number of employees, and type of industry. 211 respondents accessed the survey from which 134 completed the questionnaire, resulting in an incidence rate of 63.5%. Of those 134 completed questionnaires a total number of 126 respondents reassured that the companies’ main focus lies in business-to-business transactions and therefore were eligible to enter the process of data analysis. Within these 126 useable data sets, most respondents are active in the field of construction and engineering (29.4%) or engaged in service activities (26.2%).

**Measurement Model**

We adapted established measurement scales for measuring latent constructs. Measurement of system design features are summarized in Table 2. Ease of use and usefulness are commonly measured by adapting measure of Davis et al. (1989), while behavioral intention and anxiety are adapted from Venkatesh et al. (2003). System usage was adapted from Srinivasan et al. (2002), as the measure examined an organizational adoption of IS (e-business). Finally, all three firm's performance measures are adapted from Hooley et al. (2005).

<table>
<thead>
<tr>
<th>Table 2. Measures of System Design Features</th>
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</thead>
<tbody>
<tr>
<td><strong>Construct</strong></td>
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<tr>
<td>------------------------</td>
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<tr>
<td>Information Sharing</td>
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<tr>
<td>Internal Communication</td>
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<tr>
<td>Customer Feedback and</td>
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<td>Dialogue</td>
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<td>Content Control</td>
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<tr>
<td>System Integrity</td>
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<tr>
<td>Concerns</td>
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</tbody>
</table>
Overall, I am aware of the potential security threats concerning data security. I have sufficient knowledge about the risks of potential security problems. I understand the concerns regarding data security while using social media.

Bulgurcu, Cavusoglu, Benbasat (2010)

We assessed internal consistency, convergent validity, and discriminant validity of our measures. The most common measure for an internal consistency are Cronbach’s alpha and composite reliability. As a rule of thumb, values above .7 are seen as satisfactory for both measures. (Nunnally and Bernstein 1994) Table 3 outlines that all values are above the suggested threshold, indicating an appropriate level of internal consistency.

### Table 3. Reliability and Validity of the Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>MSV</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anxiety (A)</td>
<td>.97</td>
<td>.98</td>
<td>.72</td>
<td>.93</td>
</tr>
<tr>
<td>2. Behavioral intention (BI)</td>
<td>.97</td>
<td>.98</td>
<td>.75</td>
<td>.94</td>
</tr>
<tr>
<td>3. Content control (CC)</td>
<td>.93</td>
<td>.95</td>
<td>.69</td>
<td>.84</td>
</tr>
<tr>
<td>4. Customer feedback and dialogue (CFD)</td>
<td>.95</td>
<td>.97</td>
<td>.69</td>
<td>.88</td>
</tr>
<tr>
<td>5. Customer performance (CP)</td>
<td>.90</td>
<td>.94</td>
<td>.57</td>
<td>.83</td>
</tr>
<tr>
<td>6. Ease of use (EoU)</td>
<td>.97</td>
<td>.98</td>
<td>.72</td>
<td>.89</td>
</tr>
<tr>
<td>7. Information sharing (IS)</td>
<td>.97</td>
<td>.98</td>
<td>.73</td>
<td>.91</td>
</tr>
<tr>
<td>8. Financial performance (FP)</td>
<td>.90</td>
<td>.94</td>
<td>.60</td>
<td>.83</td>
</tr>
<tr>
<td>9. Internal communication (IC)</td>
<td>.96</td>
<td>.97</td>
<td>.64</td>
<td>.90</td>
</tr>
<tr>
<td>10. Internal data security (IDS)</td>
<td>.95</td>
<td>.97</td>
<td>.54</td>
<td>.91</td>
</tr>
<tr>
<td>11. Market performance (MP)</td>
<td>.89</td>
<td>.95</td>
<td>.55</td>
<td>.90</td>
</tr>
<tr>
<td>12. Emotional conviction (EC)</td>
<td>.97</td>
<td>.98</td>
<td>.72</td>
<td>.93</td>
</tr>
<tr>
<td>13. System integrity concerns (SIC)</td>
<td>.96</td>
<td>.97</td>
<td>.73</td>
<td>.92</td>
</tr>
<tr>
<td>14. System usage (SU)</td>
<td>.93</td>
<td>.95</td>
<td>.75</td>
<td>.83</td>
</tr>
<tr>
<td>15. Usefulness (U)</td>
<td>.98</td>
<td>.98</td>
<td>.75</td>
<td>.90</td>
</tr>
</tbody>
</table>

Notes: Maximum Shared Variance (MSV), Average Variance Extracted (AVE).

As suggested by Fang et al. (2012) and Hair et al. (2014), the indicators’ outer loadings and average variance extracted (AVE) are used to assess convergent validity. The indicators’ outer loadings should be equal to or exceed the value .708 as it indicates that the latent variable explains at least 50% of the indicator’s variance (Hair et al. 2014). In our study, all outer loadings of the used indicators exceeded this threshold. Besides this, a commonly used measure for convergent validity is the AVE. According to Bagozzi and Fornell (1982), the AVE is recommended to be .7 or higher (although Hair et al. 2014 rather suggest a threshold of .5). As all indicators exceeded this threshold (see figure 2), convergent validity can be assumed. In this study, the Fornell-Larcker criterion and the maximum shared variance (MSV) were utilized to assess discriminant validity of employed constructs. Both criteria indicate that discriminant validity is given in our study.

### Structural Model

PLS-SEM was used to estimate the relationships within the proposed research model. Results of the structural equation model are provided in Table 4. Results indicate that two of six system design features impact usefulness of social media. Information sharing was found to positively impact usefulness (β=.28, p<.01) and internal data security showed a negative effect (β=-.20, p<.01). Hence, hypotheses H1a and H6a are supported by our findings while hypotheses H2a-5a were rejected. With respect to ease of use, we find five of six features to show a significant impact. More specifically, we find effects for information sharing (β=.18, p<.10), internal communication (β=-.11, p<.10), customer feedback and dialogue (β=.41, p<.01), content control (β=.19, p<.01), and system integrity concerns (β=-.24, p<.01).
Notes: *p < .10 (one-tailed test); **p < .05 (one-tailed test); ***p < .01 (one-tailed test).

Hence, all hypotheses are supported except H2b which indicated a negative effect and H6b which was insignificant. Regarding anxiety, we find two of three features to be significant. Since content control (β=.22, p<.01) and system integrity concerns (β=.25, p<.01) impact anxiety as expected, hypotheses H4c and H5c are supported by these findings. Finally, we find system design features to impact emotional conviction including information sharing (β=.33, p<.01), customer feedback and dialogue (β=.23, p<.01), and content control (β=.32, p<.01) giving support for hypotheses H1c, H3c, and H4d. Regarding the indirect effects of system design features on system usage, we find usefulness (β=.28, p<.01), ease of use (β=.42, p<.01), and anxiety (β=.17, p<.01) to impact usage intention of social media. Also, emotional conviction (β=.31, p<.01) was found to impact actual system usage besides behavioral intention (β=.54, p<.01). To assess the stability of our findings, we also tested numerous moderators in our model. We tested whether the impact of design features is affected by institutional pressure to use social media and organizational facilitators. In particular, we used measures from Srinivasan et al. (2002) and Venkatesh et al. (2003) for these constructs. Moreover, we tested usage experience as another potential moderator as previous IS research gives support that some variable such as usefulness interact with users’ level of

<table>
<thead>
<tr>
<th>Table 4. Results of Structural Model</th>
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<tbody>
<tr>
<td><strong>Main Effects</strong></td>
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<tr>
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<tr>
<td>H1a Information Sharing -&gt; Usefulness</td>
</tr>
<tr>
<td>H2a Internal communication -&gt; Usefulness</td>
</tr>
<tr>
<td>H3a Customer feedback and dialogue -&gt; Usefulness</td>
</tr>
<tr>
<td>H4a Content control -&gt; Usefulness</td>
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<tr>
<td>H5a System integrity concerns -&gt; Usefulness</td>
</tr>
<tr>
<td>H6a Internal data security -&gt; Usefulness</td>
</tr>
<tr>
<td>Ease of use -&gt; Usefulness</td>
</tr>
<tr>
<td>H1b Information Sharing -&gt; Ease of use</td>
</tr>
<tr>
<td>H2b Internal communication -&gt; Ease of use</td>
</tr>
<tr>
<td>H3b Customer feedback and dialogue -&gt; Ease of use</td>
</tr>
<tr>
<td>H4b Content control -&gt; Ease of use</td>
</tr>
<tr>
<td>H5b System integrity concerns -&gt; Ease of use</td>
</tr>
<tr>
<td>H6b Internal data security -&gt; Ease of use</td>
</tr>
<tr>
<td>Information Sharing -&gt; Anxiety</td>
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<td>Customer feedback and dialogue -&gt; Anxiety</td>
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<td>H4d Content control -&gt; Anxiety</td>
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<tr>
<td>H5d System integrity concerns -&gt; Anxiety</td>
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<tr>
<td>H6d Internal data security -&gt; Anxiety</td>
</tr>
<tr>
<td>Information Sharing -&gt; Emotional conviction</td>
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<tr>
<td>Internal communication -&gt; Emotional conviction</td>
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<tr>
<td>Customer feedback and dialogue -&gt; Emotional conviction</td>
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<td>H4c Content control -&gt; Emotional conviction</td>
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<tr>
<td>H5c System integrity concerns -&gt; Emotional conviction</td>
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<tr>
<td>H6c Internal data security -&gt; Emotional conviction</td>
</tr>
<tr>
<td>Usefulness -&gt; Behavioral intention</td>
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<tr>
<td>Ease of use -&gt; Behavioral intention</td>
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<tr>
<td>Anxiety -&gt; Behavioral intention</td>
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<tr>
<td>Emotional conviction -&gt; Behavioral intention</td>
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<td>Behavioral intention -&gt; System usage</td>
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<td>Anxiety -&gt; System usage</td>
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<td>Emotional conviction -&gt; System usage</td>
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<tr>
<td>System usage -&gt; Customer performance</td>
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<tr>
<td>System usage -&gt; Financial performance</td>
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<tr>
<td>System usage -&gt; Market performance</td>
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</table>

Table 4. Results of Structural Model
experience with the technology (e.g. Venkatesh and Bala 2008; Venkatesh et al. 2003). Therefore, respondents had to assess their experience regarding different social media tools. Results of moderator analysis indicate that only 9 of seventy-two tested interaction effects were significant, indicating high stability of the model. Additionally, several user and firm characteristics such as customer contact, age, years in position, type of industry, and usage experience were tested without significant findings.

Summary

Our study aimed to contribute to a better understanding of factors impacting acceptance of social media by organizational users. Given the limited research on these factors, we responded to a call for research from Aral, Dellarocas, and Godes (2013). We conducted two studies to explore these factors in a comprehensive qualitative study and test them in a quantitative study examining acceptance of social media by organizational users.

Result of the qualitative study indicate that six system design features matter for acceptance of social media. In particular, the in-depth interviews identified (1) information sharing, (2) internal communication, (3) customer feedback and dialogue, (4) content control, (5) system integrity concerns, and (6) internal data security. While information sharing refers to the value of social media in terms of the spread of information between an organization and the public, internal communication refers to the communication among employees within an organization via social media technologies. Customer feedback and dialogue describes that organizational customers can provide feedback about products and services by using social media technologies. Content control refers to the lack of control which occurs when companies use social media technologies and internal data security refers to data security concerns that are associated with the use of social media technologies. Finally, system integrity concerns describes the appropriateness and expedience of social media technologies for organizational usage. While the first three system design features describe benefits associated with social media (information sharing, internal communication, and customer feedback and dialogue), the latter three were referred to as system impediments (behavioral control, system integrity concerns, and internal data security awareness) being of negative nature and trying to highlight a dark site of social media technology.

The quantitative study finds that particularly information sharing is appreciated by organizational users and internal data security negatively impacts usefulness perception. While users of social media do not realize the potential benefits associated with improved internal communication and customer feedback and dialogue using social at least information sharing is appreciated. Especially the missing link between customer feedback and usefulness is exceptional and – to a certain extent – counterintuitive as previous literature found social media to be a novel way to interact and collaborate with the user in the innovation process (Barker 2008; Bernoff and Li 2008; Cachia, Compañó, and da Costa 2007).

Implications

Our empirical findings propose that users within organizational collaborations rather associate the value of social media with a strict one-way-communication than with the possibility to actively engage external users in a dialogue. Especially with regards to customer feedback, firms should emphasize the value of social media especially in terms of user-generated content. Since firms employ social media mainly to get in touch with customers and to improve sales, this findings is not surprising. Also, the associated risk was highlighted as a major concern in past descriptive research. Therefore, it seems that other features provide fewer benefits to customers. Furthermore, we find 5 of 6 design features to impact ease of use. When social media is characterized by these features, users are more likely to realize how easy the system can be used. They learn by communicating externally about the system. Since internal communication showed a negative effect, one can conclude that use of social media for internal communication in addition to information sharing may make social media too complex for many users; hence, a negative effect was found in our study. Regarding the insignificant effect of data security on ease of use, it may be that users does not feel responsible for managing security issues (although it matters to them when deciding to use social media) but instead IS department is responsible for ensuring this. Therefore, security concerns do not affect ease of use of the system. Regarding potential concerns and anxieties associated with social media, we found that limited content control and system integrity concerns were perceived as most negative. Well-designed social media systems should particularly ensure that
organizational users have the feeling of sufficient control over their social media activities, giving them the opportunity to respond to feedback properly. The lower the perceived controllability, the higher is the reluctance towards using social media. Again, data security was insignificant presumably since the user can blame IS department in case that security is not ensured. Regarding emotional conviction, information sharing, customer feedback and dialogue, and content control matter for organizational users. Social media systems should address these features when intending to improve the system. Again, we mainly find those features to matter for users which directly refer to the exchange with customers and those risks for which the user is responsible. Internal aspects such as internal communication do not directly help the users to perform better in their jobs and those processes which are not part of the users’ responsibility such as internal data security were found to be insignificant.

Directions for Future Research

As is true of any research, our study’s contributions must be evaluated in light of its limitations. First, our study identified several system design features to matter for acceptance of social media by organizational users. While our hypotheses assumed more significant effects of design features on usefulness and our qualitative study gives initial evidence for these effects, in the quantitative study several design features did not impact usefulness as expected. We have two potential explanations for this observation. We assume that either existing social media systems were not that excellent with respect to some features or alternatively some organizational users differ from each other leading to differing importance of some design features. With respect to the first issue, future research should use experimental research designs to re-examine the impact of all design features controlling for the performance of examined social media systems. Regarding the latter issue, future research should explore and test further characteristics of organizational users. While we tested in our study whether it makes a difference when users were in direct contact with customers or whether they were working in the back-office, we did not find any effect. Future research may define more nuanced roles of users in upcoming studies. Second, our study examined the general attitude towards social media in an organizational setting but we did not differentiate between different purposes of using social media. Literature differentiates between using social media for enhancing existing customer relationship management and attracting new customers as two exemplary purposes. In our study we did not differentiate between different systems since our qualitative interviews did not indicate potential differences but it may also be true that existing systems mainly serve one purpose at the moment and users were not aware about the potential additional opportunities of social media systems when being asked. Third, we have chosen a heterogeneous sample of business-to-business companies within the industrial manufacturing industry, in which we included organizational consultants, producer, vendors and supplier without differentiating amongst them. Future research should explore social media usage within more homogenous organizations. Fourth, we examined the indirect effects of social media on social media usage and performance outcomes. Given that we used survey technique to assess all constructs in our model, performance outcomes were based on self-reports. Ideally, future research examines the impact of social media usage on performance data from a secondary source. In our study the focus was on exploring and testing potential system design feature and not on performance outcomes. Nonetheless, future research could replicate our study with more objective performance data to assess whether investments in better social media systems pays off. Finally, we examined usefulness, ease of use, anxiety, and emotional conviction as mediators between system design features and outcomes. Future research should examine which factors moderate the effects of these mediators on outcome variables to better understand under which conditions particularly negative emotional responses occur. For instance, it may be that anxieties of users were more relevant in industries with clear policies how to deal with customer data due to more severe consequences when not following these policies whereas in other industries with ambiguous policies, anxious users do not have to expect any negative consequences from policy makers. These potential industry and country differences with respect to legal system should be considered in future research.
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