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How employees use Twitter to talk about work: A typology of work-related tweets

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ARTICLE INFO	ABSTRACT
	In organizational research employees' use of personal social media for work remains an understudied phenomenon. Yet, it is important to gain understanding of these online behaviors as they might have consequences on the individual and organizational level. We provide a typology for work-related Twitter use based on a large-scale content analysis ($N = 38,124$) of tweets sent by 433 employees across different organizations. We found that work-related topics were prevalent in 36.5% of all tweets. Employees' work-related tweets paint a picture that is consistent with the archetypical social media behaviors — i.e., knowledge sharing and socialization — identified in earlier research. Employees share profession-, organization- and work-related tweets strategically with professional contacts, enhancing horizontal communication among organization members. Furthermore, Twitter enhances the integration of personal and professional life domains, as employees often tweet about their work outside regular work hours but also tweet on a personal title while at work. © 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Social media use in organizations is evolving at an unprecedented pace (Treem & Leonardi, 2012). The large number of work-based friendships (Del Bosque, 2013; Dutton & Ragins, 2007; Ollier-Malaterre, Rothbard, & Berg, 2013) and the notion that work is a pivotal life domain (Dutton, Roberts, & Bednar, 2010) results in the use of personal social media technologies, including Twitter, for work-related purposes (Johnston, 2014). Hence, a significant amount of publicly available tweets is likely to be work or organization related (Ollier-Malaterre et al., 2013; Van Zoonen, van der Meer, & Verhoeven, 2014).

It is important to understand online work-related communication as it is often associated with employee wellbeing (Fonner & Roloff, 2012) and organizational outcomes such as corporate reputation (Helm, 2011; Van Zoonen et al., 2014). Employees' Twitter use might affect employee wellbeing because it enables horizontal communication and stimulates work group support, while it may also make it hard for employees to disengage from work after work hours (Chesley, 2014). Corporate reputations can

be positively affected (Dreher, 2014; Van Zoonen et al., 2014), as employees are authentic and credible communicators of organizational information, in turn they could also sent tweets that are detrimental for evaluations of corporate reputations (Dreher, 2014; Helm, 2011). Hence, employees' social media use can be beneficial or detrimental to both the organization and the employees. Despite its importance for organizations and employees we still lack knowledge of the actual work related content that employees share on their Twitter accounts.

Most studies on social media rely on self-reports or case studies (e.g., Charoensukmongkol, 2014; Marwick & Boyd, 2010). As such, these studies rely on deductive logic to examine social media practices and content. Mostly these studies focus on the antecedents or consequences of social media behaviors. While survey research and self-reports can explain why and with what consequences employees post information online, it cannot reveal *what* employees actually post online.

Research on social media content focused on the content published by journalists (e.g., Lasorsa, Lewis, & Holton, 2012), politicians (e.g., Graham, Jackson, & Broersma, 2014; Small, 2011), news organizations (Greer & Ferguson, 2011), non-profit organizations (e.g., Lovejoy, Waters, & Saxton, 2012; Waters & Jamal, 2011), foreign correspondents (Heinrich, 2012) and even homeless (Koepfler & Fleischmann, 2012), but has not considered employees as distinct group.

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In addition, there is some research adopting an affordance lens to examine the use of enterprise social media (e.g., Gibbs, Rozaidi, & Eisenberg, 2013; Majchrzak, Faraj, Kane, & Azad, 2013). Again others focus on the application of software technologies in the current 'Knowledge Society' (Lytras & Ordóñez de Pablos, 2011; Lytras, Tennyson, & Ordóñez de Pablos, 2008) or understanding the adoption and use of social virtual worlds (Zhang et al., 2014). Astoundingly, this study is the first to map employees' work related social media content, published through personally owned accounts, of employees across a variety of organizations. Scholars have argued that the adoption of social media, such as Twitter, in organizations is outpacing empirical understanding of the use of these technologies (Raeth, Smolnik, Urbach, & Zimmer, 2009; Treem & Leonardi, 2012). In addition, based on a literature review of social technology use by employees, El Ouirdi, El Ouirdi, Segers, and Hendrickx (2015) conclude that there is a pronounced need for quantitative research on employees' use of social media.

Existing frameworks are usually populated by either archetypical descriptions of social media use, such as knowledge sharing or identity expression (Ollier-Malaterre et al., 2013) or specifically created for the purpose of the study at hand (e.g., Kruikemeier, 2014). This framework of work-related content is built on the presuppositions derived from previous studies on social media use and is independent of organization and job type. This study fills the void in current literature by content analyzing the work-related tweets that employees publish on personally owned Twitter accounts.

We look at employees' use of personal *Twitter* accounts for work purposes for several reasons. First, research suggests Twitter is the most popular channel to disseminate work-related content (Verhoeven, 2012). Second, Twitter is seen as an effective dialogue tool in organizational communication. This way, organizations and their employees are connected to each other and relevant stakeholders (Schultz, Utz, & Göritz, 2011). Third, information on Twitter is usually public-by-default and private-through-effort (Marwick & Boyd, 2010). In addition, the unidirectional connections are unique to Twitter; these non-reciprocal relations encourage the reading of tweets beyond one's personal network. Thus, making tweets accessible to a wider range of stakeholders that search organization related information. Even more so than information that is shared on other social media channels that generally reciprocal such as Facebook or LinkedIn. Finally, unlike their intra organizational counterparts, often referred to as enterprise social media, their use in organizations is controversial as it is associated with risky behaviour and wasting time (Landers & Callan, 2014). In sum, tweets are particularly interesting as they a) often include references to work; b) are publicly available (e.g., to interested stakeholders) and c) despite their omnipresence in organizational communication little is know about the tweets sent by employees.

This study contributes to theory building in the field of organizational communication by providing insight into Twitter use across employees and organizations. We propose a framework describing what type of content employees share and in what way they do so. Thus, this framework synthesizes earlier findings with respect to social media use by employees. This study adds to the current literature by being the first to conduct a large scale content analysis of work related tweets on personally owned Twitter accounts across employees from different organizations using a framework deduced from earlier that mostly relied on self-report. Most importantly, this study provides organizations with insights into what and how employees discuss their work on personal social media. The empirical focus is on answering the following research question: How do employees use personal Twitter accounts for work?

2. Theoretical framework

We articulate preconceptions about work-related Twitter content in an analytical framework. This framework, deduced from the literature, contains several tweet categories and is adopted to empirical data and grounded in an abductive logic. Notably, social media use in organizations has been extensively addressed from a theoretical perspective, yet content analysis on the specific content that employees share online is lacking. We empirically examine a typology of work-related tweets that is deduced for earlier studies in which these topics have been theorized.

There have been studies that have provided a classification of tweets. However, these studies focus on the application of Twitter in specific contexts such as libraries (Aharony, 2010), political communication (Ceron, Curini, Lacus, & Porro, 2014; Kruikemeier, 2014), journalism (Lariscy, Avery, Sweetser, & Howes, 2009), sports (Hambrick, Simmons, Greenhalgh, & Greenwell, 2010) or health related communication (Chew & Eysenbach, 2010). Other content analysis studies have directed attention to mapping specific issues or events such as elections (Graham et al., 2014) or specific hash tags (Small, 2011), the analysis of personal information shared on Twitter (Humphreys, Gill, Krishnamurthy, & Newbury, 2013; Westman, 2010), specific crisis situations (Takahashi, Tandoc, & Carmichael, 2015) or the use of Twitter during conferences (Reinhardt, Ebner, Beham, & Costa, 2009).

Other studies focus on the antecedents or consequences of Twitter use (e.g., Hughes, Rowe, Batey, & Lee, 2012; Panek, Nardis, & Konrath, 2013; Westerman, Spence, & Van Der Heide, 2012). Studies that have focused on Twitter use in an organizational context are scares and take a motivational approach to theorize content categories based on a deductive logic (Luchman, Bergstrom, & Krulikowski, 2014; Zhao & Rosson, 2009). These studies examine social media use with either qualitative self-reports (DiMicco et al., 2008; Zhao & Rosson, 2009) or quantitative self-report measures (Leftheriotis & Giannakos, 2014). Again others theorize how enterprise social media can afford certain online behaviors (Treem & Leonardi, 2012). However, all these studies focus on the antecedents and consequences of usage rather than the content that is actually shared online. Several scholars note that there is a pronounced need for more quantitative research on the topics related to employees' social media use (El Ouirdi et al., 2015) and that social technology use in organizations is outpacing our empirical understanding (Treem & Leonardi, 2012). Hence, to fill this void in the literature this study aims to examine to what extent these theoretically identified topics are actually present in work related social media content shared through employees' Twitter accounts. We use empirical studies on social technology use in the workplace to derive work-related tweet categories (see Table 1).

2.1. Workplace communication on Twitter: A typology

2.1.1. Work-related tweets

Social media afford employees the ability to express identities (Del Bosque, 2013; Ollier-Malaterre et al., 2013), share knowledge about their work or organization (Dreher, 2014) and engage in relationships with other professionals (Peluchette, Karl, & Fertig, 2013). Thus, workplace communication on Twitter involves knowledge sharing about the profession, organization and work behaviors, as these are important cues for employees' professional identities (e.g., Leftheriotis & Giannakos, 2014; Miles & Mangold, 2014; Ollier-Malaterre et al., 2013; Van Zoonen et al., 2014). In addition, workplace communication may involve the representation of the organization in terms of web care activities and persuasive communication (Helm, 2011). Finally, social media

Table 1
Coding categories.

Category	Definition	Example[a]
Profession-related communication	This category includes tweets that refer to the field in which the employee works. Thus information that is not specific to one's job or organization but to the profession at large (Tweets related to the performance or execution of a certain profession). These tweets must include issues that apply to the profession as whole, being it political, societal or economic issues. For instance, "CAO" (collective labor agreements) negotiations, and budget cuts when originating outside the organization (political level). News about the industry/sector is considered profession related as well.	#Police allowed to campaign for #CLA. Success and persevere. #Police fights for #recognition by the Minister #CLAAction

Note: CLA refers to Collective Labor Agreements. |
| Organization-related communication | This includes messages about the organization and the brand, including news about awards, internal affairs, mergers and reorganizations, etc. Organizational milestones, accomplishments, employment communication or the organization featured in news articles are also ways in which employees share organizational news on Twitter. | RT: @*Organization* signs partnership agreement with [*company*], for legal support in case of emergencies
Note: Tweet from organization (law firm) was retweeted by an employee (lawyer at the firm). |
| Employee-public communication | The tweet that refers to information related to web care activities conducted by employees. Communication is directed at individuals outside the organization. | @*user* I will look into it.
@*user* your answer: publicmap or heatmaps are intended to map visualize crowds. Users can see where it is too busy
Note: tweets above are an answer to open inquiry on Twitter. |
| Persuasive communication | Tweets that explicitly aim to induce specific behaviors by the reader. For instance vote on the organization. A call to action is considered persuasive, for instance: requests to participate in a competition, survey or campaign, or calls to buy a product or service are considered persuasive messages. | #*City* #*Street* There has been a burglary. Have you seen something call#09008844
Note: city and street are anonymized |
| Work behaviors | Tweets in this category refer to activities performed by the employee. When the tweet includes information that can be ascribed to work tasks or the actual performance of work the tweets are related to work behaviors. For instance, arrival at work or a meeting, pictures from the workplace, congress attendance, and progress of ongoing projects. | Did a great disaster simulation exercise concerning a huge incident at a shipyard this evening #practicemakesperfect |
| Commentary | Tweets that contain a reference to job changes, promotions, employee of the month, etc. note these tweets refer to professional events on the individual levels. Furthermore, this category includes professional opinions voiced by employees on work-related issues. | After two nightshifts wide awake and have to start an early shift soon. Who comes up with such a planning. #planning #fail. |
| In-group communication | Explicit references to colleagues or others within employees professional network. This can also include other professionals within the same field (but not the same organization). These tweets always include others by means of a @-mention or retweet | Start of a new shift at the tower with @*coworker1* And @*coworker2*. Start with #tweetupdate
Note: Names of co-workers are anonymized. |
| Interactivity | Twitter offers several functionalities for interactivity. We assess @-mentions, RT's and #-tags as proxies for interactivity. | N/A |
| Sentiment | (Dis)likes, (dis)satisfaction. Must include negative words and connotations such as bad, awful, sad, etc. Also emoticons can help determine the tone. Hence negative or positive sentiment should always be made explicit through words and symbols that are used in the tweet. Otherwise the tweet is regarded as neutral. | e.g., *Negative:* Preparing for a next boring meeting at 16.00h |

[a] All example tweets are from employees working in law enforcement, expect in the organizational news category. Organizations and users are made anonymous.

enable in-group communication with co-workers (Denyer, Parry, & Flowers, 2011; Dimicco & Millen, 2007; Dimicco et al., 2008). In the following section we develop a typology of work-related information domains to guide the content analysis. Work-related tweets thus refer to work broadest sense and can be constituted of any or more of the following seven categories.

2.1.2. Profession-related communication

Social media use have often been linked to identification processes (e.g., Ollier-Malaterre et al., 2013). Identification occurs at different levels: employees may identify with their workgroup, organization or profession (Bartels, Pruyn, Jong, & Joustra, 2007; Hekman, Steensma, Bigley, & Hereford, 2009). These identification processes can simultaneously coexist (Hekman, Bigley, Steensma, & Hereford, 2009). When employees feel that their profession is a salient part of their self-concept they can promote their identities through profession-related knowledge sharing. Moreover, employees are likely to customize the content they share to their imagined audience (Marwick & Boyd, 2010). Since employees' professional networks include co-workers from within and outside the organization (Del Bosque, 2013) they are likely to share

information that is relevant their field, as this appeals the broader audience (Marwick & Boyd, 2010), consisting of friends, co-workers and professional contacts (Del Bosque, 2013).

2.1.3. Organization-related communication

Employees may also identify with their organization, and therefore, relate communicative content to their organization e.g., voice behaviors and ambassadorship (Fuller et al., 2006; Van Zoonen et al., 2014). The extent to which this happens is contingent upon perceptions of how the outside world views the organization, referred to as perceived external prestige (Bartels et al., 2007; Dutton & Dukerich, 1991). When employees think their organization is held in high regard by the outside world, they are likely to associate themselves with it (Bartels et al., 2007). For instance by sharing important organizational milestones on Twitter. The positive associations the public has about these organizational achievements extrapolate to the employee, and thereby confirm employees' self-views, leading to positive assessments by others in their network (Ollier-Malaterre et al., 2013). In addition, employees use social media to represent their organization online and contribute to brand communication (Helm, 2011; Miles &

Mangold, 2014; Van Zoonen et al., 2014).

2.1.4. Employee-public communication

Related to the rationale discussed above, online organization representation might become apparent through specific employee–public interactions. For instance, representing the organization may involve the endorsement of products and services or the voluntary engagement in web care activities (Helm, 2011). Employees know their organization well, which gives them a credibility and authenticity advantage (Dreher, 2014) as representatives of their organization (Agresta & Bonin, 2011). Twitter amplifies employees' reach as external communicators enabling them to form relationships with customers, business partners and other stakeholders (Dreher, 2014). Employees can foster valuable relationships with key audiences and communicate transparently, and authentically about the organization's products and services, and adequately respond to stakeholders' concerns or questions (Dreher, 2014).

2.1.5. Persuasive communication

Employees maintain a broad network with other professional from within and beyond their own organization. Employees use their network to obtain information or request a specific action from their contacts. To induce such behaviors employees must be persuasive. Persuasive communication is defined as communicative acts that request a specific action from the reader. For instance, social media enables employees to request information and feedback from their network (Back & Koch, 2011). From a brand ambassador's perspective employees might utilize personal social media accounts to share employment related information or urge their network to engage in a campaign or event (Van Zoonen et al., 2014; Verhoeven, 2012). For instance, employees' could share vacancy information and tweet statement share as, "apply for [job title]."

2.1.6. Communication about work behaviors

Work is a pivotal life domain, and social media and especially Twitter are commonly used to give updates throughout the day (Agrifoglio, Black, Metallo, & Ferrara, 2012; Luchman et al., 2014). Hence, employees are likely to include daily work activities and other more emergent work-related activities in their status updates (Java, Song, Finin, & Tseng, 2007). Work-related content mostly relates to daily activities such as interactions with supervisors or co-workers, and activities occurring at or related to work such as reports on work processes (Humphreys, Gill, & Krishnamurthy, 2013; Ma & Chan, 2014). Employees share work activities and output as co-workers or supervisors might use this to extrapolate expertise and work performance (Fuller et al., 2006; Moqbel, Nevo, & Kock, 2013). Disclosing work activities enables employees to promote an appearance of competence (Ollier-Malaterre et al., 2013; Yun, Takeuchi, & Liu, 2007).

2.1.7. Commentary

On Twitter employees can share professional opinions or comment on professional issues (Honeycutt & Herring, 2009; Zhao & Rosson, 2009). Several studies have concluded that social media enable people to share personal opinions about issues and events they encounter in daily life (e.g., Ehrlich & Shami, 2010; Humphreys et al., 2013; Java et al., 2007; Zhao & Rosson, 2009). Furthermore, Miles and Mangold (2014) argue that social technologies enable the internal channelling of employees' opinions. Employees can use Twitter to comment on events in their professional lives from an eyewitness point of view. Twitter is mainly used for updating daily activities, and sharing information and opinions with friends, family and co-workers (Agrifoglio et al., 2012). Sharing opinions

about issues or events that employees encounter in daily work situations is referred to as commentary. This communicates an appearance of engagement and shows they are connected to and knowledgeable about the issue. Hence, Twitter enables communication about daily work and opinions about work-related events and issues that employees encounter in their daily work. This is different from work behaviors in the sense that it does not involve the performance of a specific work task such as arrival at a meeting or work. For instance, comments about work schedules are considered commentary whereas, saying that you are actually at work doing something is a work behavior.

2.1.8. In-group communication

Social technologies contribute to horizontal and vertical communication in organizations (Davison et al., 2014; Tormo-Carbo, Segui-Mas, & Oltra, 2014) and serve as collaborative tools to accelerate group formation and escalate group scope and influence (Leftheriotis & Giannakos, 2014; Lin & Lu, 2011; Zhao & Rosson, 2009). Extent research refers to social media's role as vehicle for informal communication in the workplace, representing 'an online water-cooler' (Cao, Vogel, Guo, Liu, & Gu, 2012; Dimicco et al., 2008; Skeels & Grudin, 2009). Thus, social media serve as platforms to exchange work-related information, (e.g., Del Bosque, 2013; Dimicco et al., 2008; Leftheriotis & Giannakos, 2014; Miles & Mangold, 2014; Ollier-Malaterre et al., 2013; Zhao & Rosson, 2009) and sustain social ties with co-workers (Ellison, Steinfield, & Lampe, 2011; Ollier-Malaterre et al., 2013). Managers and employees acknowledge the benefits of social media use (Trimi & Galanxhi, 2014) as it enhances internal communication in a cost and time efficient manner (Denyer et al., 2011).

Hence, Twitter affords different types of content sharing namely: profession-related, organization-related content or communication about work behaviors. We assume that content is also related to organization-public interactions, in-group communication, commentary and persuasive communication. Therefore, our first research question is:

RQ1: To what extent are tweets on personal Twitter accounts work-related and how do these tweets relate to the proposed typology?

2.2. Tweet characteristics

In the typology above we identified several work-related topics that employees might discuss on personal Twitter accounts. To better understand work-related Twitter use, we examine two tweet characteristics – i.e., interactivity and sentiment, that are repeatedly claimed as being important (e.g., Kruikemeier, 2014; Sundar, Kalyanaraman, & Brown, 2003). For instance Sundar et al. (2003) note that "several researchers have claimed that interactivity is a key variable for studying the uses and effects of new media technologies" (p. 13). Accordingly, Kietzmann, Silvestre, McCarthy, and Pitt (2012) describe interactivity as one of the building blocks of social media. Hence, it order to advance our understanding of the way in which these media are used for work we examine interactivity and sentiment.

2.2.1. Interaction

Twitter enables direct communication between users such as organizations and stakeholders (Waters & Jamal, 2011), and co-workers (Dimicco et al., 2008). Employees can respond to each other's ideas, questions, opinions and accomplishments (Small, 2011). Interactivity in employees' Tweets can be studied by examining interactive features i.e., @-mentions, hash tags and retweets (Kruikemeier, 2014; Lewis, Zamith, & Hermida, 2013; Small, 2011). Twitter conversations are usually indicated by '@replies' (Small,

2011). Using the @symbol resembles a reply to another user or the active inclusion of another user in an on-going conversation (Lovejoy et al., 2012). Research found that around 30% of all tweets were @replies (Honeycutt & Herring, 2009). Another commonly used feature is the retweet (RT) this is the reposting of tweets from other users (Boyd, Golder, & Lotan, 2010), quite similar to e-mail forwarding. Retweets are often used as a means to passing on information from other users (Boyd et al., 2010). Finally, Twitter users commonly organize their online conversations around a specific topic by using 'hash tags' (#) (Chew & Eysenbach, 2010; Small, 2011).

2.2.2. Sentiment

Various studies have considered sentiments in online communication (e.g., ; Walton & Rice, 2013). Sentiment is used in online communication when people are enabled to express their opinions, appraisals, attitudes and emotions (Dang-Xuan, Stieglitz, Wladarsch, & Neuberger, 2013). Earlier studies on Twitter use linked sentiment to communication outcomes, for instance in the context of electronic word of mouth (Jansen, Zhang, Sobel, & Chowdury, 2009), political communication (Dang-Xuan et al., 2013) and public relations (Brummette & Sisco, 2015).

Sentiment polarity refers to personal positive, negative or neutral feelings or opinions (Ortigosa, Martin, & Carro, 2014). In order to understand how issues and events are debated on Twitter several studies addressed sentiment polarity (e.g., Agarwal, Xie, Vovsha, Rambow, & Passonneau, 2011; Thelwall, Buckley, & Paltoglou, 2010). An example of a positive sentiment is "had a great meeting", whereas "preparing for the next boring meeting" is a negative one. A neutral statement does not explicitly express positive or negative feelings as reflected in a statement such as "I am commuting to work."

Employees voice their satisfaction or dissatisfaction as well as their experiences and frustrations with their work on Twitter. As such their tweets might be framed positive, negative or neutral. Earlier research concluded that social media utterances are more likely to be positive or neutral rather than negative (Van Zoonen et al., 2014). Gibbs et al. (2013) argue that employees use social media strategically. Employees consider the appropriateness of information in relation to their audiences and share information that is congruent with their self-views. This results in self-censorship of negative online utterances, as these are deemed inappropriate and incongruent with self-views (Marwick & Boyd, 2010). Moreover, employees in general desire to appear professional, thus avoiding workplace communication (e.g., negativity or criticism) that can be viewed as inappropriate (Cheney & Lee Ashcraft, 2007).

However, it has also been argued that social media use present risks for employees' careers (Dreher, 2014) as it has been associated with risky behaviors such as creating offensive content (Landers & Callan, 2014). Moreover, social media can function as a coping mechanism for work-related stress and frustration, resulting in public complaints about work situations or office developments thereby releasing emotional stress (Zhao & Rosson, 2009). Stress and frustration often induce negative emotions that can be channelled through social media (Zhao & Rosson, 2009). Hence, the second research question refers to the way in which content is shared in terms of interactive features and sentiment.

RQ2: In what way (i.e., interactivity and sentiment of the tweets) are work-related topics discussed on Twitter?

3. Method

3.1. Procedure

Through email invitations employees were asked to provide

their Twitter names. Respondents were required to be employed in a part time or full time job within an organization of at least 20 employees and have an active Twitter account. They were recruited between December 14, 2014 and January 12, 2015. Tweets were obtained directly from employees' timelines, since this is the most accurate way of collecting tweets (Lewis et al., 2013). We used a Python script, designed for this study, to mine up to 3200 tweets per user.

3.2. Sample

The tweets of 452 employees were collected. Eight employees were excluded as they used an organizational Twitter account. Another eleven participants were excluded because they a) were unemployed at the time of this study or b) provided an invalid Twitter account name.

We analyzed the tweets of 433 employees of which the average age was 42.05 (SD = 11.33). The majority of our respondents were male (64.3%), and 28.1% had an academic degree. On average these employees had 20.24 years of work experience (SD = 11.26) while working for their current employer for 11.78 years (SD = 9.76). The respondents reported they worked 39.62 h (SD = 10.07) per week. These employees worked for different organizations in the following sectors: government/public administration (16.6%), education/science (12.1%), health care (11.7%), business services (11.2%), trade/commercial services (7.4%), industry (6.5%), and financial services (5.1%).

From the accounts of these employees a total of 1,541,855 tweets were sent. By scraping up to 3200 tweets per user we were able to acquire 578,803 tweets. We took a stratified sample of the 100 most recent tweets per user. If the employee had not yet sent 100 tweets we included all their tweets in the content analysis. As such we manually analysed 38,124 tweets.

Together these employees have 186,139 followers and followed 162,410 other Twitter users. Thus, on average they had 495.20 (SD = 1225.32) followers, while they followed 426.23 (SD = 771.65) other Twitter users and had sent 4125.09 tweets (SD = 9807.68).

3.3. Analysis

Work-related categories were coded manually, and message characteristics (e.g., time and interactive features) were identified by computational methods.

3.3.1. Manual content analysis[1]

The individual tweets are the units of analysis and the user's profile information was used as contextual unit of analysis. The context played an integral part in the coding process because it was often necessary to know the organization and contextual information to understand the tweets. Consequently, coders were trained to take the context into account when coding the tweets. Account information was cross-referenced with other social media accounts (i.e., LinkedIn and Facebook). This was done to more accurately determine the participants' job and organization. The codebook was finalized after several meetings with coders. Each of the coders received 6 h of training. Coders were then assigned specific users and coded their tweets chronologically. First, tweets were divided into work and non-work tweets. Second, all work-related tweets were coded for seven categories (for a complete list with operationalizations, see Table 1). Coding decisions were based on all information provided in the tweets. Links were

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[1] Additional information on the coding procedure or the codebook is available upon request from the first author.

Table 2
Reliability assessment.

Variable name	Type of variable	Kappa	Percent agreement (%)
Organization[a]	Manifest	n/a	n/a
Number of followers[a]	Manifest	n/a	n/a
Number of following[a]	Manifest	n/a	n/a
Work-related	Latent	.93	.97
Profession related	Latent	.67	.90
Work behaviors	Latent	.68	.98
Organizational news	Latent	.52	.95
External communication	Latent	.50	.97
In-group communication	Latent	.68	.94
Professional opinions	Latent	.55	.97
Persuasive communication	Latent	.62	.98
Positive	Latent	.80	.94
Negative	Latent	.62	.97
Neutral	Latent	.72	.89

[a] Automated coding of manifest variables, as such no reliability coefficients were calculated.

followed and other users mentioned in the tweets were identified to determine their relationship to the employee. To assess the reliability of the coding, we followed the guideline proposed by Lacy and Riffe (1996) and Lombard, Snyder-Duch, and Brackenm (2002). Four trained coders, including the lead researcher, coded all the tweets in order to analyze the contents relevant to this study. A randomly selected subsample of 11.3% (n = 4309) of the Tweets was double-coded to allow reliability assessments. The reliability coding was done, independently, without consultation or guidance, by three coders (Lombard, Snyder-Duch, & Bracken, 2002). We used two indices to calculate reliability scores Kappa (which accounts for agreement by chance) and per cent agreement (see Table 2).

3.3.2. Computer-assisted content analysis

A dictionary based-approach was used to identify interactive feature and message characteristics (e.g., links and temporal information). IBM SPSS 20 was used to extract specific interactive features. Such a dictionary-based was successfully adopted in earlier research (e.g. Kruikemeier, 2014). *Interactivity* was identified by incorporating different message characteristics (i.e., @, RT, #) to the dictionary approach (Kruikemeier, 2014; Parmelee & Bichard, 2011; Small, 2011). '@-Mentions' reflect dialogic communication and '#' (hashtags) relate to issue specific tweets. RT refers to retweets of messages by other users.

Table 3
Breakdown of percentages for Twitter variables.

Variable	%	Variable	%
Tweet times		**Tweet category**	
12−7.59 a.m.	8.3%	Work-related	36.2%[a]
8 a.m.−6 p.m.	52.1%		
6.01−11.59 p.m.	40.4%	Profession related	41.0%[b]
Weekday		Organization related	24.7%[b]
Monday	13.6%	Work behaviors	24.6%[b]
Tuesday	14.7%	In-group communication	22.3%[b]
Wednesday	15.9%	Commentary	12.6%[b]
Thursday	15.8%	Persuasive communication	9.4%[b]
Friday	15.0%	Employee-public comm.	8.5%[b]
Saturday	13.0%		
Sunday	12.0%	**Interactivity**	
Sentiment		@-mentions	69.9%
Positive	21%	Hash tags	35.5%
Negative	3.6%	Retweets	33.0%
Neutral	75%	Tweets w/links	48.5%

Note: categories are not mutually exclusive, as such the sum category percentages exceeds 100.

[a] as a percentage of all coded tweets (n = 38,124).
[b] as a percentage of work-related tweets (n = 13,783).

4. Results[2]

4.1. Descriptive statistics

Table 3 breaks down the hourly Twitter activity of employees. Employees' Twitter activity peaks around 8:00 p.m. However, still more than half (52.1%) of the tweets are sent between 8:00 a.m. and 6:00 p.m., which can be considered regular office hours. Most of the Tweets were published on workdays (75.1%) reaching a peak on Wednesdays 15.9% (n = 6059). On Sundays employees are least active on Twitter (n = 4560). We found that 33% of the tweets were retweets (n = 12,597), and in 35.5% of the tweets a hash tag was used (n = 13,528). In addition almost half (48.5%) of all tweets included a link to other online information, and 69.9% of all tweets included other Twitter users through @-mentions. We will now turn to a more in depth analysis of work-related tweets.

4.2. Work related content

The main objective of this paper is to identify and categorize work related information shared by employees, specifically focussing on tweet content. Hence, our first research question taps into the categorization of tweets asking what type of work-related information is shared on Twitter.

Notably, only 60 of the 433 employees did not use their Twitter account to share work-related information. This means that almost 8 in every 10 employees used his or her personal Twitter account at least once for work-related purposes. In all, a bit more than one in every three (36.2%) tweets sent by employees is work-related (n = 13,783). Of all work-related tweets 81.9% was sent on weekdays, of which 56% was sent between 8 a.m. and 6 p.m. on weekdays. These tweets refer to work in the broadest sense of the word, these tweets most often refer to I) the profession II) the organization, III) work behaviors or IV) in-group communication. Table 3 breaks down the frequencies of each tweet category.

Work-related tweets often referred to employees' profession (n = 5647). These tweets are work-related but do not necessarily relate to the organization or work behaviors. For instance, a police officer tweeted about collective labour agreements: "#CLApolice five #Sundays extra work on a yearly basis, paid #breaks are cancelled. So #drawbacks." This information exceeds the organizational boundaries and applies to all within the profession or industry. Likewise, provided that the employee did not take part in negotiations about these agreements, the tweet does not involve his or her personal work behaviors. Tweets that described organizational news accounted for 24.7% of the work-related information. For example, an employee of a bottled water vendor tweeted "*[organization]* sponsors at the HorecaEvent TT the http://t.co/[…]." And: "Today our new website www.[…].nl was launched. We will have updates daily." Additionally, 24.6% of the work-related tweets involved work behaviors (n = 3397). These tweets always referred to an activity performed by the employee. This could be in the near past or future, or a work activity that is performed by the employee at the time of the tweet. For instance, a police officer tweeted: "Unfortunately I failed the #Caco Exam. Know what went wrong, so next time it should work out. #sad". Whilst another employee tweeted: "What I'm doing today, I'm presenting at the WiCaNeM congress: http://t.co/[…]."

Notably, an important part of work-related information contained in-group communication (22.3%). Hence, in almost 1 in

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[2] Throughout the chapter, @mentions, links, organization names, street names and other information that could be traced back to individual users has been made anonymous.

every 4 work-related tweets sent by employees they actively include coworkers in the conversation. These tweets always included an @-mention: "@*coworker* could you tell me if I'm correct in assuming that the #staffmeeting #DTC is rescheduled to Wednesday?" In 12.61% of the work-related tweets there was a reference to employees' professional commentary on work-related issues. For instance one employee commented on a work-related event: "Nice place #delamar for the event #publicmatters2014 #hostmanship http://t.co/[…]." Moreover, in 9.4% of the tweets sent by employees voiced a call to action to their audience. This became apparent in encouragements to apply to vacancies, or requests to share or like organizational information such as in this case; "Are you the new top sales person for our #Icentre in #place? Apply quickly via this link! http://t.co/[…].".

Finally, 8.5% of the work-related tweets refer to web care activities (n = 1170), providing information about products and services of the organizations or offering help to consumers. An overview of the frequencies and percentages for each category of work-related tweets is provided in Table 3. We will delve deeper into the type of communication, i.e., interactivity and sentiment, in the following section.

4.3. Type of communication

The second research question relates to the manner in which work-related issues are discussed online which might differ from the way in which non-work related issues are discussed. We examine different tweet characteristics such as interactivity and sentiment. Interactivity was examined by assessing the following message characteristics; retweets, @-mentions and the use of hash tags. The sentiment in the tweets could be positive, negative or neutral.

Four types of content are most profound in work related tweets − i.e., content relates to three levels: the profession, the organization and daily work behaviors; additionally, the content often related to co-workers, which we labelled in-group communication. Type of communication was assessed to determine whether the way in which these topics are discussed differs. We conducted a MANOVA with interactive features and sentiment as dependent variables and the tweet categories as independent variables. First we discuss the overarching category, work-related tweets, subsequently we discuss the four largest categories.

Retweets are more profound in work-related tweets ($M = .384$, $S.D. = .006$) than in non-work related tweets ($M = .245$, $S.D. = .012$; $F (1, 38,124) = 292.34$; $p < .001$). A similar pattern arises with employees' hashtag use. Employees use more hashtags in their work-related tweets ($M = .442$, $S.D. = .007$) than in their non-work related tweets ($M = .363$, $S.D. = .012$; $F (1, 38,124) = 85.05$; $p < .001$). In turn, @-mentions are represented in the majority of both work-related ($M = .714$, $S.D. = .006$) and non-work related tweets ($M = .736$, $S.D. = .012$; $F (1, 38,124) = 7.12$; $p = .008$). Hence, work related tweets include @-mentions less often. In total 83.1% of all tweets contained at least one of these interactive features. Furthermore, work-related tweets more often include links ($M = .563$, $S.D. = .007$) to other online sources than non-work related tweets ($M = .461$, $S.D. = .013$; $F (1, 38,124) = 134.87$; $p < .001$).

The majority of tweets was characterized by a neutral sentiment. Although the differences are small, neutral sentiment was more prevalent in work-related messages ($M = .695$, $S.D. = .006$) as opposed to non-work related tweets ($M = .634$, $S.D. = .011$; $F (1, 38,124) = 60.04$; $p < .001$). A positive sentiment was used more often in non-work related tweets ($M = .316$, $S.D. = .011$) than in work-related tweets ($M = .280$, $S.D. = .006$; $F (1, 38,124) = 24.71$; $p < .001$). Finally, work-related tweets are less likely to include a

negative sentiment ($M = .023$, $S.D. = .003$) than non-work tweets ($M = .049$, $S.D. = .005$; $F (1, 38,124) = 63.61$; $p < .001$). Table 4 presents the mean differences by type of communication.

With regard to profession-related tweets a similar pattern arises. Profession related tweets are more often retweets ($M = .351$, $S.D. = .012$) than non-profession related tweets ($M = .278$, $S.D. = .007$; $F (1, 38,124) = 69.31$; $p < .001$). However, hash tags are not significantly more profound in profession-related tweets ($M = .409$, $S.D. = .012$) than in non-profession related tweets ($M = .396$, $S.D. = .007$; $F (1, 38,124) = 2.05$; $p = .153$). Likewise, there is no significant difference in the use of @ mentions between profession-related ($M = .727$, $S.D. = .007$) and non-profession related tweets ($M = .723$, $S.D. = .012$; $F (1, 38,124) = .15$; $p = .698$). In turn, hyperlinks are more often present in these tweets ($M = .587$, $S.D. = .013$) than in non-profession related tweets ($M = .437$, $S.D. = .007$; $F (1, 38,124) = 257.84$; $p < .001$).

The results point to some differences between the tweet categories. The most profound differences are the following: Tweets that are organization related are more often retweets ($M = .412$, $S.D. = .012$) than tweets that are not organization related ($M = .217$, $S.D. = .007$; $F (1, 38,124) = 435.29$; $p < .001$). Tweets that refer to work behaviors are less likely to be retweets ($M = .154$, $S.D. = .012$) than tweets that are not related to employees' work behaviors ($M = .475$, $S.D. = .006$; $F (1, 38,124) = 1093.45$; $p < .001$). Finally, in-group communication more often includes @-mention ($M = .859$, $S.D. = .012$) than tweets that are not characterized as in-group communication ($M = .590$, $S.D. = .007$; $F (1, 38,124) = 292.34$; $p < .001$).

With respect to sentiment a similar pattern arises across tweet categories. The large majority of tweets are characterized by a neutral sentiment. In contrast to general work-related tweets, organizational news, work behaviour and in-group communication are more often discussed with a positive sentiment.

5. Conclusion

This study is among the first to conduct a large scale content analysis of work-related content across employees from different organizations published on personally owned Twitter accounts. Thereby, this study advances our understanding of a widespread albeit understudied phenomenon in organizational communication. We have adopted theoretical assumptions and empirical findings from previous (self-report) studies about the use of social media to develop and examine a framework for work-related use. Our framework corresponds with archetypical social media behaviors outside the work context. We found that almost eight in every ten employees used their personally owned Twitter account for work. The aim of this study was providing insights into the type of content that is shared and the manner in which this is done.

The first research question referred to what type of tweets are published. Employees most frequently share: a) profession related information, b) organization related information, and c) work behaviors while often engaging in d) in-group communication. Work-related content is mostly shared on workdays, however not necessarily during regular work hours. Employees also engage in work-related Twitter use outside regular work hours while engaging in personal use during work-hours.

The second research question taps into the way in which these topics are discussed. We found that there are important differences between work and non-work related tweets. For instance, employees more often rely on pre-existing online information when it comes to work-related knowledge sharing. They do so by retweeting messages from other users or by referring to external information on other online sources through hyperlinks. Furthermore, work-related tweets are overwhelmingly neutral, thus

Table 4
MANOVA differences in type of communication per work related tweet category.

Interactive features	Work-related		Profession-related		Organization news	
	Δ mean	Between sub eff.	Δ mean	Between sub eff.	Δ mean	Between sub eff.
Retweets	.140	$F_{(1,38124)}$ = 292.34, p < .000	.072	$F_{(1,38124)}$ = 69.31, p < .000	.195	$F_{(1,38124)}$ = 435.29, p < .000
@-mentions	−.021	$F_{(1,38124)}$ = 7.12, p = .008	−.003	$F_{(1,38124)}$ = .15, p = .698	.072	$F_{(1,38124)}$ = 61.54, p < .000
Hashtags	.079	$F_{(1,38124)}$ = 85.05, p < .000	.013	$F_{(1,38124)}$ = 2.05, p = .153	.072	$F_{(1,38124)}$ = 54.31, p < .000
Sentiment						
Positive	−.036	$F_{(1,38124)}$ = 24.71, p < .000	−.055	$F_{(1,38124)}$ = 49.81, p < .000	.061	$F_{(1,38124)}$ = 53.10, p < .000
Negative	−.027	$F_{(1,38124)}$ = 63.61, p < .000	.021	$F_{(1,38124)}$ = 34.58, p < .000	−.014	$F_{(1,38124)}$ = 12.82, p = .970
Neutral	.060	$F_{(1,38124)}$ = 60.04, p < .000	.035	$F_{(1,38124)}$ = 17.55, p < .000	−.044	$F_{(1,38124)}$ = 24.85, p < .000
Other						
Links	.102	$F_{(1,38124)}$ = 134.87, p < .000	.150	$F_{(1,38124)}$ = 256.84, p < .000	.178	$F_{(1,38124)}$ = 312.92, p < .000

Interactive features	Work behaviors		In-group communication	
	Δ Mean	Between sub eff.	Δ Mean	Between sub eff.
Retweets	−.322	$F_{(1,38124)}$ = 1093.45, p < .000	−.021	$F_{(1,38124)}$ = 4.82, p = .028
@-mentions	−.274	$F_{(1,38124)}$ = 822.23, p < .000	.269	$F_{(1,38124)}$ = 825.59, p < .000
Hashtags	.083	$F_{(1,38124)}$ = 67.23, p < .000	−.076	$F_{(1,38124)}$ = 60.53, p < .000
Sentiment				
Positive	.076	$F_{(1,38124)}$ = 77.86, p < .000	.134	$F_{(1,38124)}$ = 258.62, p < .000
Negative	.000	$F_{(1,38124)}$ = .001, p = .970	.006	$F_{(1,38124)}$ = 2.43, p = .119
Neutral	−.073	$F_{(1,38124)}$ = 62.68, p < .000	−.137	$F_{(1,38124)}$ = 235.85, p < .000
Other				
Links	−.067	$F_{(1,38124)}$ = 40.98, p < .000	−.203	$F_{(1,38124)}$ = 406.98, p < .000

Note: Variables are binary, 0 = no 1 = yes. Difference scores are based on the two levels of the IV.

employees refrain from being explicitly negative or positive when tweeting about work. This pattern arises across tweet categories.

5.1. Discussion

This study contributes to theory building in the field of organizational communication. The framework presented in this study is a synthesis of earlier findings in related contexts and studies on the antecedents and consequences of social media use. This study fills a void in the current literature by examining the work related content that employees share on personally owned Twitter accounts and the way in which they do so. The findings support previously established social media behaviors outside the workplace and behaviors that have been theorized in previous studies. We show that these behaviors extrapolate to the context of work-related use.

Our content analysis of employees' tweets paints a picture that is consistent with the archetypical social media behaviors — i.e., knowledge sharing and socialization — identified in earlier research (Back & Koch, 2011; Del Bosque, 2013; Ollier-Malaterre et al., 2013; Peluchette et al., 2013; Treem & Leonardi, 2012). Similar to the three levels of identification derived from social identity theory (Bartels et al., 2007; Hekman et al., 2009), employees share profession, organization and work-related information strategically (Gibbs et al., 2013; Majchrzak et al., 2013) with their imagined audience (Litt, 2012; Marwick & Boyd, 2010) — i.e., professional contacts — thus enhancing horizontal communication among organization members (Dimicco et al., 2008).

Thus, our findings inform the theory in the following ways. Research on the use of social media technologies has previously identified social media as vehicles for knowledge sharing and socialization processes in organizations (Ellison et al., 2011; Treem & Leonardi, 2012). Social media enable these behaviors as they are characterized by four affordances — i.e., visibility and association (of people and content), and persistence and editability (of content). Majchrzak et al. (2013) offer a similar taxonomy of affordances of social media. In this paper we proposed a typology for work-related Twitter use, which deepens our understanding of knowledge sharing through social technology use in the workplace. The findings are in line with the exposition of affordances as offered by Treem and Leonardi (2012), insofar that Twitter affords employees

new ways for workplace knowledge sharing and socialization processes. Employees use their personally owned Twitter accounts, in more than one third of their tweets, to tweet about their profession, work or organization with co-workers and other members of their online audience. Hence, their work related content is published frequently and reaches a large audience. These employees contributed to organizational and personal goals by directly sharing work related tweets within their networks.

What type of information is shared might be contingent upon identification processes as employees use social media to express professional identities (Del Bosque, 2013; Ollier-Malaterre et al., 2013). From a social identity perspective employees can identify with their profession, organization or workgroup (Bartels et al., 2007; Hekman et al., 2009), which is in line with the content categories we found in work-related Twitter use. Importantly, these identification processes can simultaneously coexist; likewise employees engage is profession-related, organization-related and work-related knowledge sharing simultaneously. Identity theory also helps to explain the underrepresentation of negative tweets. As employees desire to appear professional and competent, they communicate in a manner that is consistent with their desired self-views. Negative tweets or criticism can be viewed as inappropriate and thus do not contribute to an image of competence or expertise (Cheney & Lee Ashcraft, 2007, Yun et al., 2007).

Moreover, while social media afford the distribution of expertise (Brzozowski, 2009) and sharing of information among co-workers (Dimicco et al., 2008), selective self-presentation and strategic use may present limits on what is shared on social media (Gibbs et al., 2013; Treem & Leonardi, 2012). Gibbs et al. (2013), critique the "ideology of openness" and argue that in an organizational context employees use social media strategically. This is in line with our findings as employees actively include co-workers in online conversations and.

Finally, this study provides insights into the way topics are discussed. Interactivity was assessed by examining interactive features, @-mentions, retweets and hashtags. This is in accordance with recent studies on Twitter use (e.g., Kruikemeier, 2014; Lovejoy et al., 2012; Small, 2011). Notably, we found that work-related tweets from employees are far more interactive than tweets from non-profit organizations (Lovejoy et al., 2012), politicians

(Kruikemeier, 2014) and non-work related tweets from private persona (Honeycutt & Herring, 2009). Again this in line with the idea that employees use their Twitter accounts strategically for work. The use of interactive features makes it possible to increase the visibility of their tweets.

We found that sentiment polarity in work-related tweets is mostly of neutral, sometimes positive and only rarely negative. The findings imply that the conversational nature is somewhat different than in related fields, such as political communication, which are assumed to be of a polarizing conversational nature (Dang-Xuan et al., 2013). This again provides evidence for the strategic use of social media for work, as it suggests at least some selectivity and elaboration in what and the way in which topics are shared with their networks.

An important underlying mechanism could be the notion of imagined audiences. When communicating on social media the actual audience of a message is often unknown, hence people form perceptions of their audience, referred to as the imagined audience (Litt, 2012; Marwick & Boyd, 2010). The imagined audience is highly influential in determining behaviors on social media (Litt, 2012). For instance, Marwick and Boyd (2010) chronicle the occurrence of self-censorship when content is deemed inappropriate for the imagined audience. Self-censorship can be a useful strategy in the face of an imagined audience that includes employers or supervisors. Making things even more complicated Twitter by default "collapses" contexts and audiences. Thus, co-workers, supervisors, family and friends are all among the same audience. We found that Twitter is used to attend to all of these audiences offering a mix of work and non-work tweets. The findings also suggest employees might be aware of the possibility that their employer or supervisor might be among their audience. This might increase messages about work achievements and the organization while diminishing negativity or criticism.

5.2. Practical implications

Employees' Twitter use provides organizations with the challenge of governing communicative behaviors that occur at the crossroads of professional and personal life domains. Our findings support the notion that employees can increase the organization's communication potential. Several scholars have previously suggested that employees are invaluable assets in maintaining organization-public relations (Utz, Schultz, & Glocka, 2013; Van Zoonen et al., 2014). Employees tweet about the organization and inform their networks about daily work activities. In line with our findings scholars argue that employees are credible and authentic communicators and advocates for brands, products, and the organization as a whole (Dreher, 2014).

However, employees' Twitter use also presents challenges for organizations and employees. This study provides two key insights important to businesses. First, the findings indicate that employees use their Twitter accounts strategically when it comes to work-related knowledge sharing. Employees avoid negative or controversial content, mainly tweeting factual or neutral information. When doing so employees often actively involve co-workers and professional contacts in the conversation. Thus, employees seem to be aware of the potentially negative effects of work-related tweets and engage in work-related Twitter use in a responsible manner. Although this is promising for many organizations employees' personal use of these accounts are two sides of the same coin.

Negative emotions or controversial tweets that refer to issues outside the work domain might in fact have far reaching consequences for employees' career prospects or even organizational outcomes (Dreher, 2014). Although organizations cannot control what happens outside the organizational domain, they can put policies in place to create awareness and regulate social media usage. Organizations that aim to govern employees' social media use should not address work-related use as something independent or impartial of general social media use. Increasing —e.g., through training programs — awareness on the interplay between professional and personal tweets sent through the same medium may prevent negative spill over effects by increasing responsible use of Twitter for personal goals.

Second, social media use in organizations has often been criticized for being a waste of time (e.g., Landers & Callan, 2014). However, our findings present a different picture. In fact more that a third of the tweets send is work-related, and almost half of these tweets are send outside regular of regular office hours. Despite the fact the employees might use social media to attend to personal affairs during work hours if anything our findings show that Twitter expands work beyond the traditional boundaries of the workday. The challenge for organizations is not banning social media from the workplace, instead they should focus how work related use impedes personal time and might increase work to life conflicts.

Ergo, in addition to the issues commonly addressed in social media policies or governance programs organizations should direct attention to complexities of social media use in terms of managing multiple life domains. First, employees might behave responsibly when engaging in work related use, however their personal use is more controversial and could yield negative spill over effects. Thus, since Twitter use spans life boundaries training programs and policies should not be limited to professional use or organizational boundaries but address social media use in its broadest sense. Moreover, since employees often engage in work-related activities outside regular work hours employers should be aware of the potential negative effect on employees' work life balance.

5.3. Limitation and future research directions

A considerable amount of social media use cannot be detected in a content analysis. The exhibition of professional information and identities on social media only exists by the grace of a large user base that engages in voyeurism. Meaning that a considerable amount of social media use for work, might be passive behavior, such as finding information about colleagues, professional relations, or salient work topics. In order to obtain an even more comprehensive framework, future research might enquire to what extent employees use social media to seek work-related information.

Furthermore, the research design, specifically the web-based survey, included an opt-in option, which could potentially bias the sample. Respondents had to give their consent to allow analysis of their timeline. Those unwilling or unable to provide their Twitter username were excluded from further data collection. Possibly employees who feel they have questionable content (i.e., negativity or criticism) on their timelines do not feel confortable in allowing the analysis of their tweets. This could for instance result in an overrepresentation of neutral and positive tweets.

Finally, in order to assess interactivity we relied on operationalizations previously employed by for instance Kruikemeier, 2014, Lovejoy et al., 2012 and Small, 2011. In following these studies we assume Twitter has three tools to facilitate interactivity: Mentions, retweets, and hashtags. However, thereby we neglected another characteristic of interactivity on Twitter; the favourite feature.

This study contributes to a growing body of literature that seeks to deepen our understanding of social media technologies in an organizational context. Rather than condemn employees' Twitter practices as information sharing or socialization process, we can begin to understand the use of personal Twitter accounts for work. Despite some differences in tweet content employees utilize

Twitter's interactive features to a more full extent when sharing work-related information. This study provides empirical support for knowledge sharing and socialization processes on social technologies that are also used for work. Social technologies are used strategically to share knowledge about the field, organization and work behaviors with co-workers.

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