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“A brave new (digital) world”? Effects of In-house Social Media on HRM**

Social media offer many opportunities for organizations but present, at the same time, many challenges, too. Particular attention must be paid to the new patterns of behavior emerging in organizations. We argue that these patterns derive both from the technical characteristics of the virtual environment and also from specific social structural conditions currently emerging. By referring to two case studies, we want to highlight and discuss the implications of these current developments and their opportunities, threats and consequences for Human Resource Management. Our analysis will be supported by theories and research on the reproduction of rules and norms, on the one hand, and on social structural studies about digital natives and Generation Y, on the other. In order to sharpen our argument and to highlight the challenges of social media for human resource management, we propose the concept and notion of a ‘parallel world.’

“A brave new (digital) world”? Konsequenzen von in-house Social Media für das Personalmanagement

Die Nutzung von Social Media bietet viele Möglichkeiten für Organisationen, aber auch zahlreiche Herausforderungen. Vor allem die Emergenz neuer Verhaltensmuster seitens der Organisationsmitglieder gilt es zu berücksichtigen. Diese, so unsere Argumentation, lassen sich sowohl aus den technischen Besonderheiten virtueller Umgebungen als auch aus besonderen, gegenwärtig emergierenden sozialstrukturellen Konstellationen herleiten. Dies hat auch Konsequenzen für das Personalmanagement, was in dem vorliegenden Beitrag anhand zweier Fallstudien exemplifiziert und diskutiert werden soll. Argumentativ gestützt wird die Analyse von Theorien und Studien zur Reproduktion von Regeln und Normen einerseits, und sozialstrukturellen Studien zu Digital Natives bzw. zur Generation Y andererseits. Zur scharfen Konturierung gegenüber der Offline-Welt mit Blick auf das Personalmanagement schlagen wir vor, Social Media mit Attributen einer ‚Parallelwelt‘ zu versehen.

Key words: **social media, computer-mediated communication, digital natives, group-coherence, organizational structures, rule-following**
(JEL: D01, D04, D023, M14, M15, O15)

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1. Introduction

The management of knowledge, innovation, production processes, and almost all other processes in modern organizations and corporations requires negotiation and discussion, or, as Braczyk (1997) states, “discursive coordination.” Decision-making about and commitment towards goals, for instance, are subject to negotiation – not only in senior positions but also on the shop-floor level. Social media have become a major trend in organizations and corporations for supporting these kinds of coordination (Gartner, 2010). They connect people in new ways, for example, by changing their relationships to time (synchronous vs. asynchronous communication) and space (remote vs. local interaction) (Evans & Brooks, 2005), by using technological means to express oneself (Hauptmann, 2012), or by changing the level of transparency of action (Boyd & Ellison, 2008). Moreover, the different birth cohorts of employees adapt differently to the existence of new media in organizations and, therefore, act differently towards social media (Eisner, 2005; Palfrey & Gasser, 2008; Tapscott, 2008).

Discussions about professional social media often refer to topics such as efficiency of work or knowledge management (e.g., Koch & Richter, 2009; O’Reilly, 2005) and neglect the consequences for HRM. Issues such as group-coherence or changes of communication and leadership are treated with positive connotations (the more transparent and/or the more equal the hierarchy, the better) or are formulated normatively as demands. Although some studies have challenged these perspectives, they predominantly focus on analyses of more traditional tools such as e-mails (e.g., Ducheneaut, 2002; Jäckel, 2008; Turnage, 2008). These studies do indeed pick up on genuine HRM issues but fail to address the full complexity of social media.

Social media exhibit some characteristics that differ significantly from e-mail and other computer-mediated communication (CMC). CMC is generally embedded in a technical environment that restricts or enables certain forms of interaction (DeSanctis & Poole, 1994; Orlikowski, 2000). Social media, in particular, constitute a frame of interaction that connects organization members constantly; the phenomenon of being virtually present (Healey, White, Eshghi, Reeves, & Light, 2007) or virtual praises via “digital gestures” such as Facebook’s well known “like”-button (Hauptmann, 2012) are just two examples of this. Technical possibilities such as these create a kind of ‘working together’ or even a ‘being together’ in organizations. Therefore, they may exert a much higher influence on organization members’ behavior than traditional organizational IT environments.

However, social media transcend traditional CMC like e-mail not only due to technical innovations. With the advent of social media, social structures have changed, too. The interrelation between young people and social media, for example, has featured widely in recent academic discussions (Twenge, 2010). The so called “digital natives,” who were born after 1980, have grown up with the internet and play a particular role in new media related in-house communication in organizations (Eisner, 2005; Palfrey & Gasser, 2008; Prensky, 2001; Tapscott, 2008). For example, they are particularly prone to making use of the opportunities of new media (Eisner, 2005), they long to be connected with others all the time (Palfrey & Gasser, 2008; Tapscott,

2008), and there are good reasons to assume that they adopt styles of behavior from Facebook and other (semi-)public platforms when engaging with in-house social media (Hauptmann, Lang, & Steger, 2012). Characteristics such as these distinguish digital natives from older cohorts (Prensky, 2001). Hence, both technology and social structural conditions are major and intertwining factors concerning HRM issues of social media in organizations.

This brings us to the starting point of our paper. We are interested in *whether, and, if so, how social media usage influences and changes the everyday life of organizational members and, therefore, of HRM*. Instead of discussing single HRM aspects, we wish to contribute to this discussion in three ways: *First*, we outline in-house social media usage in a way that, we think, allows for a representative perspective on this phenomenon. By referring to different approaches of organization theory and with the help of the metaphors for social media such as a 'place of encounter' and a 'parallel world,' we provide social media with a distinctive theoretical basis and set the scene for further analysis. *Second*, we illustrate these theoretically developed ideas with some exemplary issues in the field of HRM, reflecting the interrelationship of technology and social structure. We do this on the basis of two case studies conducted in two different organizational settings. *Third*, we discuss some potential consequences and dynamics for HRM through in-house social media usage in the mid and long run.

Our paper proceeds as follows. We start with a short introduction to the current state of social media and CMC in organizations, and outline the opportunities and threats associated with their use (section 2). We then develop a theoretical basis for analyzing interactions in social media. This mainly derives from ideas and concepts of organizational and everyday communication as well as of social action and social structure (Goffman, 1974; Höfllich, 1998, 2003; Ortmann, 2003, 2010) (section 3). Subsequently, two empirical cases of in-house social media usage will be introduced (section 4) in order to illustrate and discuss some HRM-related phenomena related to technological environment and social membership (section 5).

2. Opportunities and threats of social media in organizations

2.1 Social media in organizations

Although computer-mediated communication (CMC) in organizations is still dominated by e-mail communication, in the coming years it will be accompanied, and in many cases even substituted, by social media (Gartner, 2010). Social media connect people in a rather different way compared to e-mail. It is an infrastructure that transfers the bilateralism of e-mail communication to an n-relational base of communities. This means that connections between people as well as whole streams of communication among people become transparent to the whole group gathered in the social medium (Boyd & Ellison, 2008). This principle of connecting is similar to the internet platform Facebook. People meet virtually in order to share documents, to write messages and to comment on the work of others, or to work together on content, as is the case in a Wiki.

At the beginning of the social media movement, this class of applications was coined 'Web 2.0' (O'Reilly, 2005) and 'Enterprise 2.0' (McAfee, 2006). According to their advocates (e.g., Koch & Richter, 2009; McAfee, 2006), working with these appli-

cations enhances efficiency and performance (see also Bughin & Chui, 2011). At the same time, these applications, if integrated into daily work-routines, create an environment that, in terms of communication and interaction, differs significantly from e-mail. It is particularly the omnipresence of being connected that makes much more transparent what other people are communicating about or commenting on, what interest groups they are part of, etc. Therefore, social media deliver indications of how people behave online within groups. Just as the behavior of people becomes visible in a physical space where people meet face-to-face, similar behavior is observable in social media.

Some of the newest social media platforms used in organizations are similar to Facebook. Even when these platforms are used in professional environments, they develop meeting spaces similar to Facebook. The extraordinary success of Facebook and its omnipresence in everyday practices, the ongoing diffusion of such platforms in organizations (Gartner, 2010), or the habit of using Facebook itself in professional contexts call for investigations of such platforms and their opportunities and threats for organizations.

2.2 Opportunities

In terms of professional work, social media can be said to be relatively easy (and cheap) to introduce (Davenport, 2011) and are subsequently used to support different functions in the organization, such as project management (Böhringer, Richter, & Koch, 2009), customer relationships (Bughin & Chui, 2011), corporate information dissemination (Smith, Holmes, & Harwood, 2011), and even the decentralization of labor in general (Kohler, Fueller, Matzler, & Stieger, 2011; McAfee, 2006).

Social media can be especially helpful to human resource management (HRM) when it comes to facilitating personnel recruitment (Weitzel, Eckhardt, & Laumer, 2009), promoting learning processes on an individual, team, and organizational level (Li, D'Souza, & Du, 2011), and enhancing community building and a trustful organizational culture through open communication (Jackson, Yates, & Orlikowski, 2007; Smith et al., 2011). In modern working environments, community building, organizational learning, and creative work are closely related (Lave & Wenger 1991; Orr, 1996). Hence, employee creativity (Oldham & Cummings, 1996) may be strengthened by social media. Knowledge management nowadays is not just about sharing relevant information but also about bringing people together, which can also be supported by social media (Koch & Richter, 2009). Knowledge management, according to community building, also means accepting a mixture of business relevant communication and private communication (Hauptmann, 2012). Hence, social media might be a powerful tool for adding some kind of "mindless work", i.e., work with a low cognitive complexity, feedback seeking, community building activities, etc. (Elsbach & Hargadon, 2006), to over saturated and stressful workdays.

In larger organizations in particular, social media also offer the opportunity to bring people together who have hardly met before, especially those working or residing outside the organization (Hauptmann, 2012). Even more, they bear the potential to quickly organize disparate groups of individuals in increasingly fragmented workplaces (Schoneboom, 2008; Smith et al., 2011), thus also enhancing the qualitati-

ve level of attendance of employees for their employer and making virtual organizations more efficient (Bughin & Chui, 2011).

Social media also comprise a variety of (innovative) technologies that deliver new possibilities to daily communication (e.g., new kinds of networking, or the "like"-button that is known from Facebook). As with other forms of CMC such as e-mail, social media can be beneficial for individuals as well as for the organization because new kinds of relations can be established – for example, by enhancing the potential of people's ability to express themselves and by forming relationships that are even more intimate than in face-to-face situations (Walther, 1996).

Social media, therefore, bear the potential to cover both formal (e.g., meeting minutes, appointments, reports, etc.) and informal activities that are important for community building. Mayer & Schoeneborn (2008) further assume that social media based collaboration (e.g., with wikis) is also consequential due to the increased transparency of decision making processes through continuous data storage and an easily accessible history function. In this context, the contingent characteristics of many decisions within an organization may become visible for all organization members. This latter point in particular can also be seen as a problem. If decision processes can be reevaluated ex-post by all organization members, then the "garbage can" of organizational decision-making (Cyert & March, 1963) may become visible. A double-edged consequence such as this leads us to focus on the downside of social media in organizations.

2.3 Threats

Obviously, social media in organizations are Janus-headed in that they are also sources of severe threats for organizations (Kaplan & Haenlein, 2010). In general, social media competence is a prerequisite for its efficient usage. Where it is lacking, i.e., when employees are not skilled at searching for, using, or sharing knowledge via social media, social media use will quickly become ineffective (Davenport, 2011). Since social media platforms blur the line between work and private life (Hauptmann, 2012; Smith et al., 2011), employees may misapply social media for private conversation with people outside the organization (Davenport, 2011), or for promoting mobbing campaigns or other forms of "incivility" (Turnage, 2008). They may waste organizational resources as networks become congested with frivolous multimedia content, or they may even cause data leaks when accidentally or maliciously sharing things they should not (ClearSwift, 2009). Moreover, social media may be used to enable unwanted or illegal employee campaigns and riots (e.g., flash-mobbing) against management (Smith et al., 2011). Notwithstanding these risks, problematic activities may also be undertaken by management, for example, when social media is used to steal the ideas of employees or to spy on employees' privacy (Smith et al., 2011). Whenever any such misapplications hit the headlines of public media, the damage to the reputation of the organization will be serious (ClearSwift, 2009). Issues such as these lead many managers to ban social networks (Lynas, 2007).

If we assume that the so called "digital natives", i.e., the younger birth cohort within the organization, will set the agenda for new communication media within organizations (Palfrey & Gasser, 2008; Prensky, 2001; Tapscott, 2008), we can expect

that they will introduce the manners exhibited by social media outside of the organization, i.e., on the internet in general (Hauptmann, 2012). This raises the question about the risks organizations may be faced with if they allow social media to emerge unchecked in the organization. Official rules and norms may be subverted by employees who install communication devices without the agreement of the management (Hauptmann, 2012).

Furthermore, if we assume that digital natives and “post-digital natives”, i.e., those who grew up with social media (Hauptmann et al., 2012), will become the profiteers of using social media in organizations, then a large number of employees (and managers), particularly from amongst the elder cohorts, may become subject to exclusion from this kind of communication (Prensky, 2001). Moreover, where social media serve organizational purposes, new questions emerge, for example, whether a right not to participate exists or whether social media rather constitute a kind of *participate-or-perish* dilemma.

3. Social media frame and ‘parallel world’ – the place of encounter

In the previous section, we outlined several studies that focus on challenges and risks that are present when social media is used professionally. These studies refer to many different dimensions of HRM such as competencies, social-structural conditions, or behavior in terms of decision making and acting (writing messages). In this section, we aim to give a theoretical fundament to this multidimensionality. As early as in the late 1990s, Höflich (1998) referred to analogies between computer-mediated and face-to-face interaction. We pick up these ideas because we think that encounters in social media show even more similarities to face-to-face encounters than the media of the 1990s. Furthermore, we include the dynamics of using social media over time. For this, we refer to ideas of structuration theory (Giddens, 1984) that are closely related to the encounter perspective.

3.1 Computer frame

All human interaction is embedded in social contexts. Goffman (1974) defines such contexts as “frames,” meaning that these contexts are embedded in recurrent natural processes as well as in a framework of social norms. A working day in a factory, for instance, can be seen as a social frame constituted by the factors ‘workplace’ and ‘working hours’. Here, norms and behavior are different compared to settings outside of the firm (Theis-Berglmair, 2003, p. 236).

According to Höflich (1998, 2003), in CMC situations people act within so called “computer frames” (“Computerrahmen”) that are very similar to Goffman’s frame. Like in face-to-face interaction frames, both the social setting in CMC (e.g. the motives for communication, social structural conditions, etc.) as well as the (technical) place are constitutive. The “like”-button in Facebook, for example, causes a type of communication that resembles gestures in a face-to-face encounter and, therefore, calls for investigation into similar conversation styles in face-to-face situations.

As with the technical means for communication, the norms and expectations in computer frames are also different from those in face-to-face frames. The absence of social cues such as gesture, facial expressions as well as hierarchical status information

(e.g., age, appearance, office size etc.) tend to make hierarchical differences disappear (Kiesler, Siegel, & McGuire, 1984; Sproull & Kiesler, 1986). Furthermore, the lack of immediate social feedback tends to alter the norms that are effective in face-to-face encounters. However, the lack of social cues in CMC can be compensated by appropriate strategic action (Walther, 1996).

The more institutionalized computer frames are, the more transparent the social rules are for all participants. Then, a "clear frame" (Goffman, 1974) emerges. However, right now the most professional social media frames are less clear because they constitute rather new arenas of interaction in which expectations and orientations are still in constant flux. Digital natives in particular may refer to their expectations and experiences made with social media frames outside of the organization (Palfrey & Gasser, 2008; Prensky, 2001; Tapscott, 2008). This experience may be consequential for the constitution of social media frames within the organization and may even spill over to the structure of the whole organization (Hauptmann et al., 2012).

There is a potential for digital natives to set the agenda on expectations and the norms of behavior within a social media frame due to their ambitions and experiences. This may even happen in cases where there are strict organizational rules about how to behave in social media frames. This potential can be explained as follows: According to Giddens (1984), who refers to Goffman's analytical work on human encounter, rules are the outcome of recurrent social practices rather than of declarations. They must be understood as norms and world views that are normally not reflected but that, nevertheless, regulate human encounter. Hence, even if there are declared rules, which is typical for organizations, these are just "codified interpretations of rules rather than rules as such" (Giddens, 1984, p. 20). Accordingly, rules are action scripts that rely on the perception and interpretation of reality (cognitive scripts) and of the legal system (norms). Rules are reproduced in the course of repetitive social practices. They are in constant flux but show some characteristics of stickiness as well (Barley & Tolbert, 1987). But even if people follow the rules, be they declared or not, there is always a slight drift (Ortmann, 2003, 2010). A rule is never complete; with each rule-enacting activity a 'supplement' (add-on) to the rule or a slight reinterpretation of the rule occurs (Ortmann, 2010, p. 207), which, after several reiterations of rule-enacting, results in a change of the rule.

Apart from these incremental processes, there are processes of breaking organizational rules that are not just slight drifts but rather acts of intended deviance. As rules are never in constant flux they are subject to interpretation. Therefore, the members of the community will decide ex-post whether a rule was broken or not (Ortmann, 2003, p. 198). In many cases, rule breaking does not even get sanctioned (see Ortmann, 2003, pp. 266-267).

A social media frame within an organization typically starts with a rather obscure set of rules that are still in need of being framed and are particularly open to interpretation. Hence, it can be expected that some deviate activities will remain unsanctioned (Hauptmann, 2012, p. 238-247), making it important for the cohort of digital natives to be particularly focused. Moreover, we also need to closely observe the places of action.

3.2 'Parallel world'

It is worth enhancing the concept of social media frames with some corresponding attributes of a 'parallel world.' We have a twofold understanding of a 'parallel world' in this paper. First, we loosely adapt the idea of a virtual world or cyberspace, i.e., a room of communication without a definite location that constitutes a computer frame (Höflich, 2003, p. 27). We think of the development of manners of communicative action that only work in the virtual world, or of expectations that go hand in hand with CMC but not with face-to-face encounters. Walther (1996) showed that the reduced channels of communication (no voice, no social cues, etc.) in particular serve as a resource because actors can hide attributes that could be disadvantageous. Their presence can easily create an aura of perfection. In chat-rooms in particular, we get an idea of the consequences of attendance for the structures of encounter (Healy et al., 2007): people indicated as being present are present in all the consequences, even if this is only virtually. This means that in such settings of synchronic conversation norms are activated as they would be in face-to-face situations. Hence, individual actions can be sanctioned both during the sessions or afterwards. In terms of questions about the population of such virtual spaces, there are rooms that indicate more presence than others, e.g., because there are more people involved in conversation, and also due to the relevance of the topic. The latter refers to the interesting issue of agendas. The high relevance of a topic (i.e., a popular agenda) causes a spatial "nearness" (Healy et al. 2007) in a virtual world.

Second, we understand a 'parallel world' as a type of social frame based on a pattern of membership that excludes many organizational actors. Similar to old-style CMC, where not everyone was equipped with a corporate e-mail address or a computer, not everyone takes part in a social media frame today. This frame is usually seen as a digital network in which individuals "construct a public or semi-public profile" (Boyd & Ellison, 2008, p. 211) and connect with other individuals. Individuals who act in this network within the organization often do not represent the whole organization but are an exclusive selection of organization members. So, we are faced with a situation of inclusion-exclusion in which the relationship between individual and organization must be taken into account (Luhmann, 1997; Stichweh, 2005). This could mean, for example, questions about requirements or chances, but also pushes to participate.

4. Two cases of social media frames

In order to illustrate and discuss the theoretical ideas developed above, we introduce two case studies representing two different social media frames. On this basis, some exemplary issues of technology and social structure in the field of HRM will be described and analyzed.

4.1 Methods

We conducted two case studies in two different organizational settings with different social media technologies in use. In both cases, we were able to follow the usage of social media, starting from its initial phase over a longer period. Though the purpose of the two cases is not to empirically classify whole lines of work, we

loosely adapt to Barley & Kunda’s (2001) suggestions for a comparative research design. We focus on some resemblances and differences in the two cases and will draw on them in section 5.

The first case (*Business Soft*) is a medium sized German software company with 170 employees, of which 96 employees were communicating with the microblogging tool *Yammer*. The second case (*Inno Research*) is an interdisciplinary German university research group consisting of 26 members that communicated as a whole group with the microblogging tool *Communote*. The two cases constitute two rather different organizational settings. In particular, having a company whose employees are generally highly prone to using social media (software industry) serves as a good contrast to the research group that must be considered fairly reluctant to use social media.

Our data consist of the complete text history of microblogging, of one semi-structured face-to-face interview with the initiator of Yammer use at Business Soft and of a number of unstructured interviews with all members of Inno Research. Moreover, we had the opportunity to do some participant observations (e.g., to follow meetings in which the usage of Communote was reflected upon). The textual data evolved from computer-mediated communication with Yammer within a period of seven months in the case of Business Soft (resulting in 2287 messages) and from communication using Communote within a period of 13 months in the case of Inno Research (1529 messages). Using an offline browser, we were able to analyze the communication flow in its natural html-page design, which means that we got information about activities that are not text-based but nevertheless communicational (e.g., visual communication features similar to Facebook’s “like”-button). In addition, we ran some analytical procedures of the alpha numerical text using the QDA software ‘Atlas.ti’.

For the area of data analysis, the question was raised of where to start looking for rules, habits, and resources that could play a role in social media frames. Herring (2007) refers to the SPEAKING model of Hymes (1974) in order to classify computer-mediated interaction. She distinguishes between technical factors (e.g., modes of message appearance, technical possibilities for remaining anonymous, etc.) on the one hand, and social factors (e.g., social structural data, modes of interaction in terms of rules and norms, rules of access to the platform, writing styles, etc.) on the other. Given our data described above, we were able to describe the computer frame according to Herring’s classification scheme and get an ethnographically “thick description” (Geertz, 1973) about the cases and, hence, about the interaction frames.

In quoting our interview partners in what follows, we do not want to be suggestive of providing any kind of proof or representative results. Rather, these quotes should serve as illustrations of activities within the different social media frames and as a starting point for discussions.

4.2 Frame description

As shown in Tables 1 and 2, the two cases are rather different organizational settings in terms of both their technical (medium) and situational (social) factors. Business Soft (using Yammer) is a company in the IT industry offering products and consultancy related to software. Inno Research (using Communote) is an interdisciplinary group of

researchers working jointly on several projects at the university. Roughly half of the workforce of Business Soft consists of consultants who are, most of the time, not present in the head office but supporting customers Germany-wide. Hence, some of the participants do not meet face-to-face at all, which is different from Inno Research where participants frequently meet face-to-face. In both cases, the hierarchy is rather flat (see Tab. 2).

Inno Research particularly uses Communote for project management whereas with Business Soft, Yammer is used only for additional communication such as knowledge management related topics or private talk (see “topic” and “activity” in Tab. 2).

Table 1: Medium factors of the cases

	Business Soft	Inno Research
Platform	Yammer	Communote
Synchronicity	<ul style="list-style-type: none"> • Updates in near-time • Signification of message updates 	<ul style="list-style-type: none"> • Updates in near-time • Webpage must be reloaded
Message transmission	Being presented on a common platform	
Persistence of transcript	Permanent	
Size of message buffer	Length of messages not restricted	
Channels of communication	<ul style="list-style-type: none"> • ANSII • Document uploads • Picture uploads and embedding • Links to other web pages • Like-button (similar to Facebook) 	<ul style="list-style-type: none"> • ANSII • Document uploads • Links to other web pages
Message format	<ul style="list-style-type: none"> • Written messages, the most recent at the top (as with blogs) • Thread function (answers to messages occur below the original message) 	<ul style="list-style-type: none"> • Written messages, the most recent at the top (as with blogs) • Answers also the most recent at the top
Storage location	<ul style="list-style-type: none"> • On server with the service provider (Yammer Inc.) 	<ul style="list-style-type: none"> • On server with the service provider (Communardo GmbH)
Other features	<ul style="list-style-type: none"> • Like-Button • Indication of who is online • Invitation function (snowball system) 	<ul style="list-style-type: none"> • Invitation function (by administrator)

Both Yammer and Communote are cloud services (see “storage location” in Tab. 1) offering microblogging for professional means. Their design and functionality resembles Twitter and the status-sharing functions of Facebook. The main functionality of microblogging is the easy-to-use writing form on top of a web page and the written entries that are listed in reverse-chronological order underneath. Microblogging with Yammer or Communote offers the possibility to ‘utter’ remarks that are rather insignificant and would hardly be accepted in e-mail conversations or other CMC such as forum messages (Hauptmann & Gerlach, 2010).

Table 2: Social factors of the cases

	Business Soft (Yammer)	Inno Research (Commute)
Participation structure	<ul style="list-style-type: none"> • Many to many • Semi-public • In many cases meeting only virtual • 96 participants (from 170 employees; snowball-inviting may not have reached all employees) • Flat hierarchies • 2287 messages between Feb. and Sept. 2010 	<ul style="list-style-type: none"> • Many to many • Semi-public • Meeting mainly face-to-face • 26 participants (from 28 invited) • Flat hierarchies • 1529 messages between Nov. 2009 and Dec. 2010
Participant characteristics	<ul style="list-style-type: none"> • 50% programmer (being in-house) • 50% IT consultants (mostly abroad) • Good knowledge about social media • Bottom-up implementing 	<ul style="list-style-type: none"> • Young researchers; interdisciplinary (economics, social sciences, engineering) • Partial knowledge about social media • Bottom-up implementing
Purpose	<ul style="list-style-type: none"> • Group: information exchange; private conversations • Individual: knowledge exchange; phatic communication 	<ul style="list-style-type: none"> • Group: information exchange; project management; partly private conversations • Individual: knowledge exchange; planning; individual-strategic action; phatic communication
Topic	<ul style="list-style-type: none"> • General professional information; technical advices • Private conversations and plans (e.g., tabletop football tournament) 	<ul style="list-style-type: none"> • Project information and planning-conversation; advice • Sometimes private conversation and planning
Tone	<ul style="list-style-type: none"> • Informal • Humorous • Spontaneous 	<ul style="list-style-type: none"> • Informal and formal • Sometimes humorous • Sometimes spontaneous
Activity	<ul style="list-style-type: none"> • One way communication (advice to all) • Discussions • Informal chatting • Positive group-cohesion communication 	<ul style="list-style-type: none"> • One way communication (advice to all) • Seldom discussions • Seldom informal chatting • Seldom group-cohesion relevant communication • Project planning
Norms	<ul style="list-style-type: none"> • Using real names • No formulated communication rules • No formulated netiquette • No formulated topic taboos, but agreement not to share sensitive data • Access by invitation by members • Texts informal, but rather correct (without spelling mistakes) and professional • Avoiding communication about sensitive topics such as customers, etc. 	<ul style="list-style-type: none"> • Using real names • Some negotiations about communication rules • Some negotiations about netiquette • No restriction in the kind of data to be shared • Access by invitation by administrator • Texts informal and formal, correct (without spelling mistakes) and professional
Code	<ul style="list-style-type: none"> • ANSII text • Smileys • Links • Pictures embedded 	<ul style="list-style-type: none"> • ANSII text • Smileys • Links

Yammer has some specialties that Communote does not offer. They are not listed in Herring's scheme, but, as we will show, they are relevant for our study (see "other features" in Tab. 1):

- With a "like"-button, participants are able to positively comment on a message without the need to give answers using written text. This lowers the threshold for communication even more compared with the low-level threshold of microblog messaging. Furthermore, other members of the network see these "like" comments, too.
- With Yammer, participants can see who is currently active on the web page.
- Yammer offers the functionality to invite others to the network without the need of an administrator. Each member of the network can invite another person by e-mail. The administrator is not involved. This causes a snowball-effect by which the frequency of invitations can increase quickly.

These design-related functionalities seem to be just some technical features. However, as will be shown, they have the potential to make differences in the process of institutionalization of the social media frame (framing process).

5. Analysis and discussion

In this section, we present several thoughts on the specialties of social media usage. As pointed out above, we focus on two structural conditions – technology (5.1 and 5.2) and social structure (5.3) – and discuss them in light of the challenges for HRM.

5.1 "Digital gesture" as a socio-technical feature

In reference to the "like"-button, a Yammer participant from Business Soft states :

"It is like a short answer. Actually, we do not want to answer. But sometimes we find something good and just push the button."

This resembles the gesture of nodding in face-to-face situations, which can be activated to approve something without uttering a single word and without the need to "contextualize" (Garfinkel, 1967), i.e. without the need to set the remarks in a context that makes it unambiguous. Only the newest social media environments offer such functions. We comprehend it as a 'digital gesture' and consider this to be a new communicative resource used to act in a computer-mediated way within a social media frame.

Just as gestures in face-to-face interactions extend the amount of information, the devices for low-level communication in social media lead to a rise in the frequency of communication acts (Hauptmann & Gerlach, 2010). Furthermore, unlike chat-like interaction frames, where instant response is mandatory (Tipp, 2008), digital gestures do not demand instant feedback. This is similar to microblogging messages. Both gestures and short microblog messages that do not require instant feedback offer the possibility to extend the duration of interactivity. This means that a conversation can last days or even weeks whereas a chat or face-to-face conversation stops as soon as people leave the place of encounter. This kind of extended conversation and enduring encounter may also have positive effects for group-coherence (Jackson et al., 2007; Oulasvirta, Lehtonen, Kurvinen, & Reanto, 2009). Hence, this kind of low-level

communication strengthens the aspect of sociability that is important for collaborative work such as co-creation (Kohler et al., 2011) and contributes to knowledge sharing without the need to be involved in long-lasting conversations. In terms of the opportunities mentioned in section 2, it is an efficient communication device.

However, the existence of such gestures could also cause problems related to those mentioned in section 2. For example, similar to gestures in a face-to-face encounter, digital gestures can be used cynically or in another destructive way. We may think of destructive activity by using particular pronunciations in written text as seen in the following content of an e-mail: "DO YOU KNOW WHO WAS TO SEND THIS OUT?????????????????????" (Turnage, 2008, p. 51). Turnage perceives texts like these as "e-mail flaming behavior" that may cause severe organizational conflicts. Though we were able to find a few indications of flaming, e.g., "... where are the others from this session??" in Communote, we did not find indications of the misapplication of digital gesturing with the "like" function in Yammer. However, this would be possible. For example, if someone pressed "like" for all posts by a particular other person, this could be described as abnormal behavior and would most probably be considered as an act of flaming by others.

Gesturing with the "like"-button has the potential to enhance group-coherence but also to disturb it. On the one hand, it offers the possibility to encourage others to go on with a certain action. On the other hand, however, it also offers the possibility to chum up with others by 'liking' their posts inappropriately often, with the consequence that group-coherence may suffer. Activities within social media frames are not completely different from activities in other social frames but rather mimic them. However, the example of the "like" function shows how the virtual world works compared to the physical world. Pressing a button on a computer vs. a physical gesture: while the latter is much more an activity that cannot be controlled, the former allows for a delay and, therefore, for strategic action.

As a low-level communicative act, however, digital gesturing opens a new channel of communication and, therefore, raises the organizational "media richness" (Daft & Lengel, 1986). According to Daft & Lengel, organizational information processing needs a rich medium in a situation of uncertainty and equivocality. The richest possibility is a face-to-face conversation because gestures, facial expressions, and social cues help to diminish uncertainty and ambiguity. Notwithstanding the threats, digital gestures may contribute positively to the complexities of "discursive coordination" (Braczyk, 1997) in modern workplaces.

5.2 Virtual attendance as a socio-technical feature

Another technical feature that can lead to changes in behavior is virtual attendance, which Yammer offers. Business Soft's Yammer participants can see if someone else is online:

"If we see that there are many people online, we may write more messages. And if we see that there are the right people online, then, I would say, it goes this direction [towards chat communication, the authors]." (Employee of Business Soft)

Here, the formally asynchronous social medium Yammer is turning into a chat-like, i.e. synchronous, communicative device. Indeed, we found some messages in the text

corpus of Business Soft that indicate, through its lack of contextuality, that this must have been a synchronous conversation. The following example clearly shows some similarities to conversations in a chat-room:

A: Participated in a stand-up meeting half-sitting, just now. Strange ;-)

B: What is 'half-sitting'?

A: 50 percent of the participants have been sitting. Still strange ;-)

(Extract from the communication stream of Yammer)

This shows that the technical equipment can have a major influence on the kinds of conversations taking place within an organization. The underlying reason is that, according to the different possibilities to communicate, the expectations within the frame always change. This was also pointed out by Orlikowski (2007) with reference to the push system of Blackberry phones. In chat-rooms, it is even expected that answers follow immediately (Tipp, 2008). Due to the online indication and the immediate updates of new messages in Yammer, it could also become a norm with communication in Business Soft.

We observed that Yammer, with its indication of being virtually present, may support the group-coherence of a remote workforce. Communote, in contrast, lacks this feature. It resembles e-mail communication and, therefore, it is not possible to induce "nearness" (Healy et al., 2007) as mentioned in section 2. However, investigations of online chat-rooms such as those of Healy et al. show that virtual attendance influences the forming of groups, which addresses another major HRM topic. But it can also disturb organizational practices and, therefore, may contribute to the waste of working hours. Referring to Giddens (1984), we can say that structures are both: they restrict and enable the actions of people, and this can also be said of the technical infrastructure. Thanks to a more differentiated look at two – prima facie – similar social media platforms such as Yammer and Communote, we can see that they induce some very different social actions. According to Orlikowski & Scott (2008), the technology is closely interwoven with social structural conditions and, therefore, does not allow the analysis of technical structures merely technically and social structures merely socially. In this respect, they speak of "sociomateriality". Barley & Kunda (2001, p. 85) regard technological or structural differences such as those worked out above as "situational contingencies". Systematically analyzing these differences with the help of broader comparative analyses may lead to clusters that contribute to descriptions of and theories about post-industrial work.

However, Healey et al. (2007) also show that even within one sole technical environment ("communication space"), locality and distance must be differentiated. It is not only the technology but also the relevance of the topic (induced by social norms or by individual curiosity) and the relation between people that constitutes "nearness." Investigational findings such as these call for questions about membership, which we will address next.

5.3 Being a member of a 'parallel world'

It is not only the special features of a virtual environment that establish structures to enable or restrict group formation and contribute to group-coherence. And it is not only technology that leads to the exclusiveness of a 'parallel world'. As stated in sec-

tion 3.2, a ‘parallel world’ of social media may also be induced by social processes that create membership. As seen in the case of Business Soft, about half of the firm’s employees communicated via Yammer, the other employees were not registered. This means that Yammer constituted a (virtual) space in which only certain people met.

Both, Yammer with Business Soft and Communote with Inno Research, were introduced by people at a rather low hierarchy level (bottom-up). At Inno Research, this happened at the beginning of a research project as a joint decision by the research group. For Business Soft, it was the decision made by one single employee. He set up a free-of-charge account for the company with which up to 100 people with the same domain in their e-mail address could generate their own profile and communicate. This employee, who, as an IT consultant, rarely attended meetings at the headquarters, used the invitation function of Yammer.

This invitation function is also a technical means that contributes to certain human behavior – in this case it is group formation. Each member of the platform can invite other people without the need of an administrator. Everything is done by the software: an e-mail explaining the registration procedure is sent to the potential new members. This caused a snowball-effect with Business Soft. The initial invitation was sent on a Friday. On Monday, 35 colleagues had already set up an account and were communicating intensively (more than 100 messages within 3 days). After seven months, 96 employees of Business Soft were registered in Yammer (see “participation structure” in Tab. 2).

This kind of snowball-effect derives from the principle that recommendations as well as invitations by friends and acquaintances have a much higher value than those of foreigners (also than those from the IT department). This anthropological principle of *trusting the next of kin* has gained some attention in information systems research (Wierzbicki, 2010). This is a thriving example of how the principles of social relations are molded into software and are then used for HR measurements – as was the case at Business Soft for the formation of a remote group.

As seen, introducing social media within an organization is fairly easy from a grass-root viewpoint and in terms of technology. But doing it without the agreement of top management can cause some problems. Both Yammer and Communote are cloud services, i.e., the messages are stored on servers within Yammer Inc. and Communardo GmbH (see “storage location” in Tab. 1). For this reason, Business Soft’s employees explicitly established the rule that no sensitive topics should be communicated via Yammer (“norms” in Tab. 2). For these they used some other tools, e.g., project management software.

However, they used Yammer without asking management for permission. This seemed to be fairly normal for the initiator of Yammer. He even stated: *“In each company Skype or ICQ is running over an open port”*. Thus, he suggests that in many organizations official rules are continuously subverted by employees who install communication devices without official permission by management. This is also stated by several recent studies (e.g., Kaplan & Haenlein, 2010; Schoneboom, 2011). Indeed with Business Soft, the communicative activities on Yammer took place parallel to the official communication channels of the company. Furthermore, only a part of the company

became involved in this communication. However, some people at Business Soft who had hardly met before met on Yammer.

This provides evidence for a ‘parallel world’ because unlike Inno Research, where all members were also members of the communication platform, many members of Business Soft were excluded from the discourse on Yammer. This refers to the analytical figure of inclusion-exclusion (Luhmann, 1995; Stichweh, 2005) that we introduced in section 3.2. To begin with, we may think of the ability to take part in a given social media network (Davenport, 2011). Social media do not require great knowledge about handling a computer and/or software. Because of this, most people can take part. Another question is whether people are literate enough to use them or not. In both our cases, this was not a problem because almost all members were academics. With Inno Research, however, one member gave serious reflection to the right style for writing messages and thought that writing microblog posts in Communote would require her to be funny and to write very short messages, as is done in Twitter. Obviously, she was not familiar with the rules of behavior in this newly introduced frame and was confused about the expectations of the other participants. But in her position and given the purpose of the frame (project management), self-exclusion was not an option for her, because she would have disadvantaged herself.

When considering the issue of voluntary exclusion, we should note that two of the superiors at Inno Research were invited to join the group. However, since they were not interested in either taking part in project management or in controlling the everyday activities of the group, they ignored this invitation. From their perspective, being absent was no problem. Whether taking part in CMC is necessary or not is, first of all, a question of power (Duchenault, 2002; Jäckel, 2008).

We return now to the Inno Research member’s problem about behaving ‘correctly’ in Communote. Her solution was to mimic the writing behavior of those in the research group who were in charge of Communote. She thought that they would use an adequate writing style (“tone” in Tab. 2). This can be considered a good example of the reproduction of rules by mimicking the behavior of others (see section 3).

The initiator of Yammer with Business Soft was born in 1981, which means he is a digital native. His act of setting up a social media platform within his company cannot be considered a real surprise but rather as being typical for the generation he represents (Eisner, 2005; Palfrey & Gasser, 2008; Prensky, 2001; Tapscott, 2008). Both the initiator of Communote with Inno Research and the initiator of Yammer with Business Soft are moderate in terms of their communication style. However, the question arises of what will happen when the youngest cohort, born after 1990, enters the organization? This cohort has grown up in a context in which not only the internet plays a particular role in general, but social media in particular. The initiator of Yammer sees it as follows:

“Kids nowadays who do not close Skype over night [...] I think that they cannot live without this, whereas digital natives like me are able to use Social Media productively if they need to. But we also can say: ‘Let it go, I do not need to share everything.’”

In this view, a further differentiation is suggested. A distinction can be made between digital natives, who grew up with the internet in general, and post-digital natives, who grew up with social media. Such a distinction is yet to be a topic of current empirical

research literature. There is though growing attention towards some dynamics dealing with the digital natives cohort and this leads to the assumption of the existence of "post-digital natives" (Hauptmann et al., 2012).

Following this assumption, we must state that the customs of this youngest cohort are very different from the customs of all the other organization members. They are always online, communicate in a style that is similar to mobile text messaging and to their behavior in Facebook, etc. In our context, we could ask: What would have happened if a post-digital native was in charge for Communote and used the manners that are typical in Facebook and Twitter? Would the confused member of Inno Research have mimicked this behavior, too?

We cannot give a definite answer to this particular question. Nonetheless, the theoretical conceptions outlined in section 3 help us to set it in context. If we assume, with respect to structuration theory, that formal rules as declarations are seen as "codified interpretations of rules rather than rules as such" (Giddens, 1984), it will hardly be sufficient for HRM to issue a policy for behavior in social media frames. The youngest cohorts will adjust to these interpretations in light of their own background, and, therefore, reinterpret these rules according to this background. During the process of implementation of social media in particular, these rules are blurred, i.e., the norms and world views are mixed, or, in the words of Goffman (1974), the interaction frame is not yet "clear".

When the rule-set is blurred, as is normal in situations of implementing social media, the relevant question is not which activity is a rule-breaching activity, but rather, where are the limits for tolerating rule breaching (Ortmann, 2003, p. 202). In these particular situations, such limits are indeed not easily identifiable. Furthermore, they are established within "taboo zones", which means that those in charge may avoid shifting the focus to issues on behavior in social media frames because they are at risk of blaming themselves if their declarations of rules or their supervision is too far from the expectations of actors. This makes intervention difficult (Ortmann, 2003, p. 202).

Here, we address another genuine question of HRM. After considering the issue from a theoretical standpoint outlined above, we can state that management may tend to laissez-faire leadership. However, this would mean excluding itself from an important 'place of encounter' and may weaken its leadership. Many (HR) managers may even feel worried about the consequences of social media and think about possibilities for banning it (Lynas, 2007). Based on our considerations above, we assume that this would hardly work. Digital and post-digital natives may continuously find ways to bypass such bans. Furthermore, they may even avoid such organizations in the first place. Also, particularly with respect to mobile internet, the boundaries between communication spaces within the organizations and outside them tend to diminish. In addition, in many modern organizations, "discursive coordination" (Braczyk, 1997) in social media frames seems to have become established as standard operation procedures (Gartner, 2010).

Accordingly, formal rules and their monitoring may be important but this is not sufficient. HRM and management in general should exemplify the "good" practice of social media usage and, therefore, hope to evoke desired processes of mimicry

(Ortmann, 2003), which would lead to the desired social practices. Hence, in the wider context of HR development it is also HRM's call to develop media competence. The wide array of communication competence and media competence seems to be the key to invoking efficient practices.

6. Conclusions

Given the success of social media in general and their growing usage in organizations in particular, the topic has also become important for organizational analysis and HRM. Although social media provide many opportunities, e.g., for effective project and knowledge management, we have pointed out some potential threats. We did this by referring to theoretical concepts of human encounter in relation to norms and world views as well as by considering technical and social structures with reference to structuration theory (Giddens, 1984). This enabled us to give several empirical studies on the opportunities and threats of social media usage a framework that allows for abstraction from single incidents, which means it allows for generalizing HR relevant topics in relation to social media and, therefore, for knowledge transfer within the HR community.

With reference to technology and social structures, we have demonstrated how organizational and individual activities may alter when taking place in virtual environments. First, the design, i.e., the technical configuration of social media, restricts but also enables certain activities. It sets the organizational structures that determine how everyday activities are coordinated. Therefore, to regard technology as being closely related to social conditions, i.e., as 'sociomaterial' (Orlikowski & Scott, 2008), can be considered a demand for analyzing post-industrial work. Second, we identified a new array of interaction that parallels the ordinary areas of interactions in organizations as part of membership. In one of our cases, part of the organization's workforce was acting within a closed environment with its own rules of behavior. In relation to social media, we considered the distinctiveness of a particular birth cohort as being relevant for HR. Digital natives and post-digital natives, as the youngest cohorts in organizations, hold their own expectations that, in our view, increasingly diffuse in organizations. This will result, we assume, in some severe changes to communication and behavior.

The activities observed in our case studies and our theoretical explanations have some practical implications for HRM. Technical structures are of great importance, and we propose that an effort must be made to integrate HRM, organization design, and information systems design. As seen in our examples, the mere existence or absence of technical features leads to different behavior. Knowledge about the related principles could lead to developments and implementations of more efficient socio-technical environments in terms of the opportunities and threats in using social media. Furthermore, we would recommend that management should take an active role in the usage of social media, for example, by creating an adequate environment for community building, arranging the technical basis, and setting the rules of conduct. Moreover, as such rules need to be enacted in everyday practices, managerial presence in social media environments should be obligatory. We assume that setting the agenda

of communication style and topics by taking part in everyday communication is a crucial leadership function.

Finally, we need to point to some limitations of our paper. We opened up a complex field of research. Our cases served well as an illustration of incidents within social media frames and as starting points for discussions. But the data we gathered are limited to this utilization. Barley & Kunda (2001) suggest some different comparative research designs for analyzing post-industrial work processes, i.e., looking for family resemblances, working out key parameters of cases, or classifying types of work. To classify work in social media frames, we would need much more data to follow such a research agenda. Even if investigating social media frames has, compared with investigating face-to-face interaction, some advantages concerning the data (the talk is stored as text, which offers the opportunity to analyze it ex-post), some kind of triangulation with other sources, such as interview data and data from participant observation, will still be essential. This, however, would have gone beyond the targets of this paper and must be left to future research.

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