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Internet Social Networking

Research State of the Art and Implications for Enterprise 2.0

An overview of the literature on Internet social networking (ISN) is presented. The authors identify four dominant streams of research and review the key contributions to the field. The review reveals that the research field is fragmented and does not yet facilitate a general understanding of the phenomenon. In particular research is very much skewed towards certain user groups (e.g., students) and platforms (in particular Facebook). Further, implications for a corporate context are discussed. In doing so, three contexts of application are differentiated: Social network sites (SNSs) for 1) recruiting and professional career development, 2) relationship facilitation in distributed work contexts, and 3) interactions with end customers. The authors discuss SNS potentials, implications of existing ISN research and future research opportunities. In summary, they seek to contribute to a better understanding of the phenomenon of ISN and to making available the current state of ISN research for the wider Enterprise 2.0 community.

Keywords: Enterprise 2.0, Internet social networking, Social software

1 Introduction

Social network sites (SNSs) have gained much attention from the public over the past few years. Since the emergence of the first web sites that supported some form of creating and interlinking of user profiles in the late 1990s (Boyd and Ellison 2007) SNSs have mushroomed (Richter et al. 2009c), and are among the most frequently used sites on the Internet. For example, Facebook as the most prominent example has more than 500 million members¹ and is the second most visited website² on the Internet. The main aim of SNSs is to facilitate relationships with acquaintances, friends, family, or professional contacts. Hence, with the term Internet social networking (ISN) we refer to the phenomenon of building and maintaining one's social network on the public Internet, which mostly occurs on SNSs, but can be interpreted more generally as people can use a range of other services on the Internet to connect with others (Richter et al. 2009c). Our focus for the matter of this paper will be ISN phenomena on SNSs, or more precisely a review of existing research dealing with such phenomena. SNSs are typically seen as part of the wider class of social software and prototype for the development of intranet social network platforms in the context of Enterprise 2.0. Both terms are widely considered in information systems literature (Boyd 2006b; Davenport 2008; Hippner 2006; McAfee 2006b; Richter et al. 2009b). An overview of the terminology used in our study is provided in Sect. 2 (see also **Fig. 1**). ISN research is a relatively new field; first works appeared in 2003 and since 2007 the field has gained significant momentum. However, the research landscape remains rather fragmented with ISN research being scattered across several communities and with many different aspects of ISN having been researched. Only very few articles have tried to conceptualize the phenomenon and its manifestation on SNSs. A coherent understanding of what typically accounts for ISN research issues is yet to emerge.

¹ <http://blog.facebook.com/blog.php?post=409753352130>.

² <http://www.alexa.com/siteinfo/facebook.com>.

Scope		Public Internet	Enterprise Contexts
General	Phenomenon	Web 2.0	Enterprise 2.0
	Artefact	Social Software Platforms	Intranet Social Software
Specific	Phenomenon	Internet Social Networking (ISN)	Enterprise Social Networking (ESN)
	Artefact	Social Network Sites (SNS)	Intranet Social Network Platforms

Fig. 1 Positioning of Enterprise 2.0, Internet social networking, and corresponding technologies

Against this backdrop, we want to 1) give an overview of existing research and take stock of what has been achieved in order to promote a stronger conceptualization of the phenomenon of ISN. Furthermore, we want to 2) make accessible the existing body of ISN-related research for researchers as well as practitioners engaged in theorizing or facilitating SNSbased social networking in the context of Enterprise 2.0. Enterprise 2.0 as a concept subsumes the efforts of adopting social software, originating from the public Internet, for use in enterprise contexts and for professional purposes (McAfee 2006b). However, as the social software phenomenon is very closely connected to the unique culture of user participation and bottom up emergence typical for Web 2.0 (see O'Reilly 2005), transferring the phenomenon from the public Internet to the corporate context requires a good understanding of the phenomenon and its manifestation in different technical platforms. We believe that a better understanding of the phenomenon of ISN on the public Internet can lead to conclusions that can usefully inform the deployment and adoption of SNSs for enterprise usage. We will refer to the phenomenon of SNS-based social networking in enterprise contexts as Enterprise Social Networking (ESN). Our paper proceeds as follows. We start by defining key terms. In section three we present an overview of our study. We then identify key research areas that structure the field of ISN research to date; moreover, we review in more detail some key contributions in each of the areas and discuss the current state of research as well as implications for future work. In section five we emphasize the potential of SNSs in an enterprise context in the light of our literature review. We conclude the paper with a short summary.

2 Social Network Sites, Definition and History

In order to introduce the concept of ISN, we will first provide working definitions of relevant concepts we use in our study, as to date the terminology of concepts relevant to ISN research

appears to be rather diverse. We then give a brief insight into the short history of this emerging field.

2.1 Key Concepts

2.1.1 Internet Social Networking

ISN refers to the phenomenon of social networking on the Internet. As such, the concept subsumes all activities by Internet users with regard to extending or maintaining their social network. Social network theory further characterizes the concept (Carton and Wellman 1999): a social network is defined as a set of individuals who establish with each other links of some kind, such as acquaintance or friendship (Newman 2003). As such, the individuals and their activities in the social network are interdependent and the linkages are channels for transfer of immaterial resources (Wasserman and Faust 1994). It becomes obvious that ISN is a general phenomenon, which can materialize in many ways and facilitated through a range of technologies. In this paper, we focus on ISN as a phenomenon, but only in the context of SNSs as the technological basis.

2.1.2 Social Network Sites

Boyd and Ellison define SNSs as “webbased services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site” (Boyd and Ellison 2007, p. 211). Typical examples for such sites are Facebook, My-Space, XING, StudiVZ etc. Please note that some have criticized this definition as being too broad (Beer 2008), since it might include web sites that feature the above characteristics in addition to different sets of core features. Examples of web sites that exhibit certain SNS features, but are not strictly SNSs are Youtube, Twitter, or Flickr. In this paper however, we refer to SNSs as services that have the facilitation of ISN as their core purpose.

2.1.3 Social Software

SNSs are one type of what has been termed social software (Bächle 2006; Boyd 2006b; Hippner 2006). Wikis, microblogging, and social bookmarking services are other types of social software. In an enterprise context, feature-wise, social software is closely related to groupware (Groß and Koch 2007), but is often portrayed as being applied and used in a “bottom up” instead of a “top down” approach (Avram 2006), as users generate the content and

define the rules and reasons for usage (Boyd 2006b). As such, social software subsumes tools in the context of the larger phenomenon of Web 2.0 (Boyd 2006b; Hippner 2006; O'Reilly 2005). Another difference to groupware is that social software originates from the public Internet, where the tools emerged and evolved, shaped heavily by its users, while groupware typically refers to software that has been designed to support deliberately the interactions of people in enterprise work groups.

2.1.4 Enterprise 2.0

The term Enterprise 2.0 describes the adoption of social software in an enterprise context. Much as ISN denotes the phenomenon and refers to the application of SNS as its main enabling technologies, Enterprise 2.0 refers to the phenomenon of a new participatory corporate culture (with regard to communication and information sharing), which is based on the application of various types of social software technologies. The term Enterprise 2.0 was coined by Andrew McAfee (2006a, 2006b). McAfee defines Enterprise 2.0 as “the use of emergent social software platforms³ within companies, or between companies and their partners or customers” (McAfee 2006a). Enterprise 2.0 is not just about applying social software, but it describes a wider approach that advocates a new culture of participation, inclusion, and sharing. From a management perspective Enterprise 2.0 therefore is as much about implementing new IT artifacts as it is about managing corporate communication structures (Koch and Richter 2007). Henceforth, it will be necessary for research in this domain to aim to better understand the rich set of challenges around applying social software, such as SNS, in an enterprise context in order to help derive strategies to exploit its potentials, while addressing potential change issues at the same time.

2.1.5 Enterprise Social Networking

ESN refers to the phenomenon of social networking in an enterprise context. As such, we can differentiate between two different types of ESN based on the actors that are involved. Firstly, ESN refers to social networking on intranet social network platforms,³ which can functionally be compared to SNSs, but are only accessible in the enterprise intranet. Hence, the set of individuals is restricted to employees of an enterprise and the links mostly reflect professional relationships. Secondly, ESN subsumes phenomena of enterprise usage of public SNSs. Ex-

³ Examples for intranet social network platforms are Jive (<http://www.jivesoftware.com/>) and Lotus Connections (<http://www-142.ibm.com/software/products/de/de/connections/>).

amples are company pages on Facebook, where interaction takes place with potential customers, and the usage of business related SNSs (e.g., LinkedIn) for recruiting.

2.2 A Brief Look at History

The first Internet site, which resembled what we perceive as SNSs today, was SixDegrees (Boyd and Ellison 2007). However, the first of the modern SNSs that had notable success was Friendster, which was founded in 2002 primarily to serve as a dating site. But just when it seemed that Friendster could attract a wider audience, technical issues and management mistakes hampered its further diffusion (Boyd 2006b). Soon after, MySpace was founded and took over many users earlier attracted by Friendster. Then, between 2003 and 2004, most SNSs that are popular today were founded, such as LinkedIn, Facebook, or Xing⁴.

Today, thousands of SNSs exist (Richter et al. 2009c). Besides the popular general purpose SNSs like Facebook and MySpace, the market for SNSs is populated by all kinds of very specific SNSs, some of which target very specific user groups with only few hundred users or even less. Today, the dominant site in the market is Facebook; its user base exceeds 500 million, in contrast to the 130 million users on MySpace as the next biggest player. With Facebook now lacking an even competitor it seems to be heading for a monopoly-like position. With the major share of the market being dominated by a handful of SNSs it appears essential for newly established SNSs to concentrate on niches and more focused business models. Examples for such services are Ning, Audimated, and Folksdirect. Ning for example is a service provider offering to host various third party SNSs, while Folksdirect promises to offer a privacy-focused environment. How these smaller players will fare in the market is not yet foreseeable. A timeline of SNS market appearances is displayed in **Fig. 2**.

3 Literature Review

ISN research as a domain is still relatively young; to our knowledge, the first publication explicitly dedicated to ISN dates back to 2003. Since then a significant body of research has been created. One of the most cited articles in the field is a literature review by Boyd and Ellison (2007), which provides an overview of the early years of research in the domain. Boyd and Ellison illustrated the diversity of research in singling out certain publications and research findings. Moreover, they framed the research field by providing relevant definitions. But since research studies have mushroomed in the past two years in particular, significantly enriching and broadening the research spectrum, we believe it is time for providing an updat-

⁴ For a more detailed description of the history of SNSs until 2007 please see (Boyd and Ellison 2007).

ed overview of ISN research. Indeed most of the articles we found in our literature search process stem from the period 2008 to 2009. This justifies taking a detailed look at the research field again, analyzing what has been achieved as well as what might be missing. In doing so, our literature review aims to identify and describe the state of the art of research on ISN on SNSs, as a basis for identifying future research directions for the field (vom Brocke et al. 2009b). By doing so, we also want to foster and build new ground for comparative literature reviews on ISN by making accessible knowledge that has already been created but also highlighting areas where research is missing. Furthermore, we will elicit implications for enterprise contexts.

3.1 Sampling: Selection of Literature Sources

The timeframe for our literature review comprises the years 2003 to 2009. The first starting point for identifying literature for inclusion in the study was the above-mentioned literature review, as well as an associated literature list, which one of the authors is maintaining on her website⁵. We then carried out a full literature search on every journal that appeared in these sources. Moreover, we included the main journals in the field of Information Systems and the proceedings of the main international and European conferences (ICIS and ECIS) in our literature search. Where possible we tried to search in the full-text articles; for all databases we searched in the abstracts using the following search terms: social networking, social network site and social network service. Depending on the functionality of the search engine we used different forms of string concatenations⁶.

⁵ <http://www.danah.org/researchBibs/sns.html>.

⁶ A detailed description of the search process following the guidelines by vom Brocke et al. (2009b) is presented in the Online Appendix.

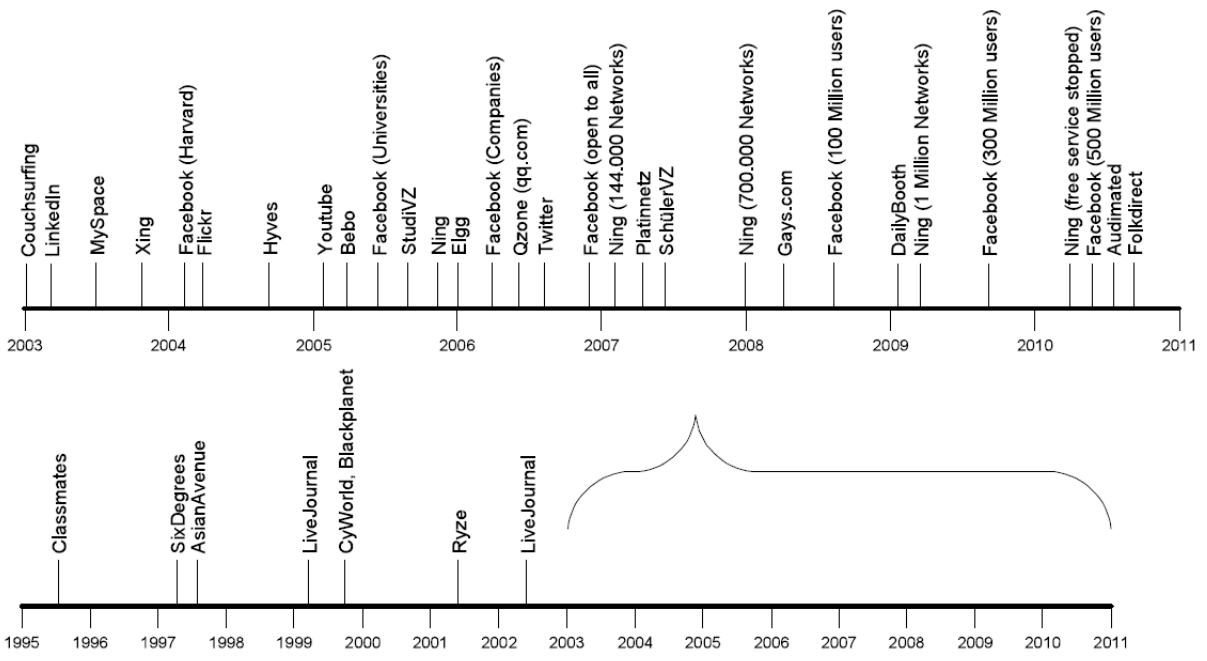


Fig. 2 SNSs history

Journal	#Publications
First Monday	20
Journal of Computer-Mediated Communication	18
CyberPsychology & Behaviour	13
Lecture Notes in Computer Science	9
Computers in Human Behaviour	8
Communications of the ACM	3
New Media & Society	3
Journal of Adolescent Research	2
Information, Communication & Society	2
Computers and Composition	2
Communication Research	2
Archives of Pediatrics & Adolescent Medicine	2
American Journal of Pharmaceutical Education	2
European Journal on Information Systems	1
International Conference on Information Systems (ICIS)	6
European Conference on Information Systems (ECIS)	4

Tab. 1 Important Publication Sources included in the review⁷

It is notable that a large number of publications appear in a relatively small number of Journals (see **Table 1**), with most of the highly ranked journals in the Information Systems field not yet among them. One reason for this may be that the research field is not yet mature enough to identify findings that yield general, theoretical contributions to the Information Systems field, which would be of broader value, or simply that the review process of these journals is too long to have resulted in publications yet. In our analysis we point to and reason on evidence of why they have not found their way into the Information Systems mainstream literature just yet.

3.2 Overview of the Identified Literature Sample

In this section we take a brief look at the nature of ISN research found in our sample. In total, we have identified 297 papers over a time span of seven years that deal with topics in the con-

⁷ Only Journals are listed that contained relevant articles. In total 37 journals have been searched including the major IS journals (AIS senior scholars' basket of eight). A complete list can be found in the Online Appendix.

text of ISN. **Fig. 3** displays the number of publications over time, highlighting its strong growth until 2008.

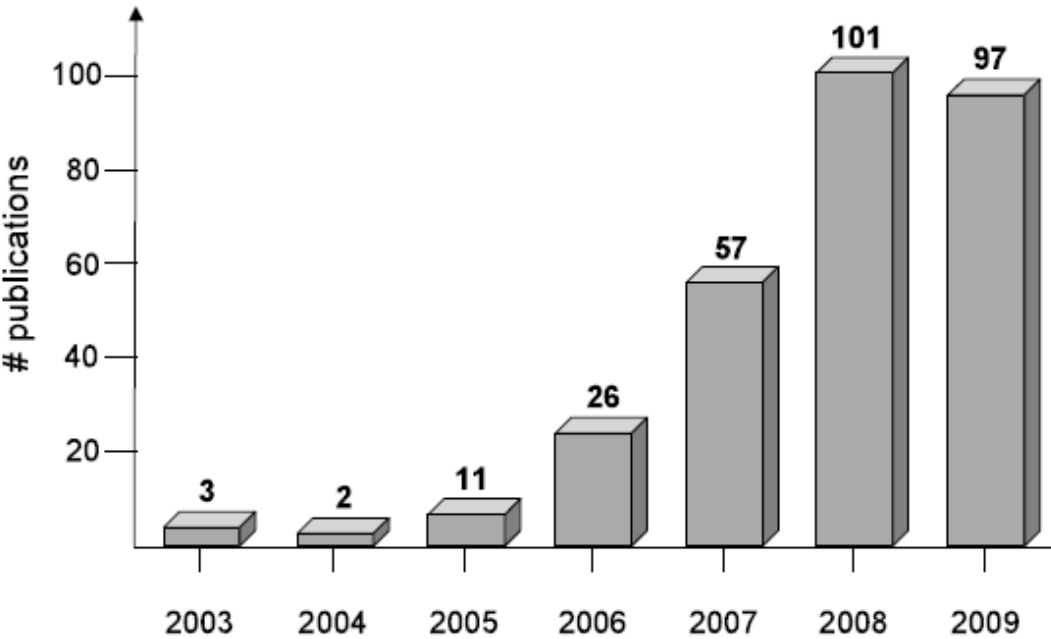


Fig. 3 Distribution of publications over time

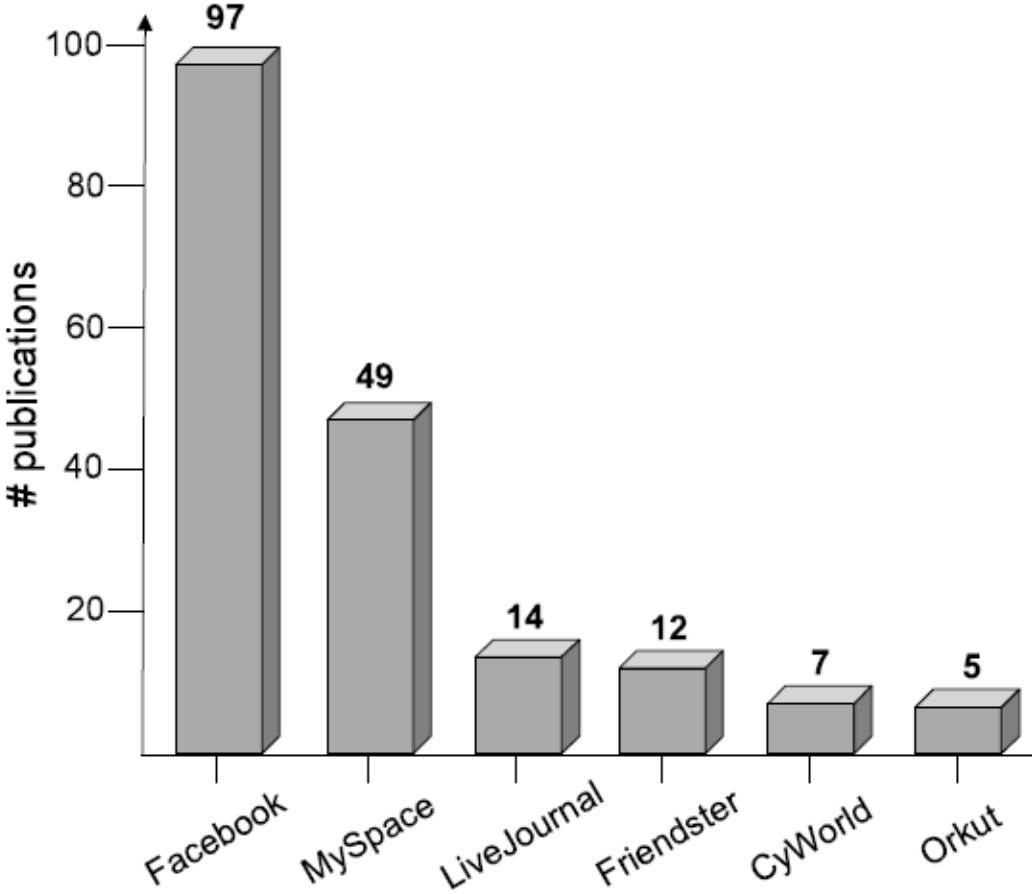


Fig. 4 Distribution of publications by social network sites

Of the 297 identified publications 202 publications were included in the review. The remaining 95 publications either deal with ISN in a broader sense, e.g., on other websites (like weblogs), technical design issues of SNSs or social network analysis. They do not refer to or explain aspects of ISN on SNSs and are hence omitted. Most of the remaining 202 publications are either empirical studies focusing on one SNS or on a group of SNSs, with studies on one SNS far outnumbering those looking at more than one SNS (130 to 35). Among those SNSs by far the most studies concentrate on either Facebook or MySpace. Other SNSs appear to be marginalized in the existing body of research (cf. **Fig. 4**).

Finally, twenty publications – ten percent – take a theoretical view on ISN. Those papers that use a theory to frame their research most often use social capital theory, which is used in five studies. Other theories, such as transaction cost theory or signaling theory, are used only occasionally. This is another indication that the research field is still young, with most papers evolving around describing or explaining the technology or various facets of the phenomenon, but not yet theorising in more general terms. In the following section we discuss in detail those areas of research we identified in our literature analysis.

4 Streams of Research on Internet Social Networking

As a result of our literature review, we identified four streams of research that look into various aspects of the ISN phenomenon: 1) Personal information disclosure and user privacy, 2) Nature of links and the role of the personal social network, 3) User self-presentation and impression management, and 4) User motivations for adopting and using SNSs. We present our findings according to these subject areas. The order of presentation reflects the number of studies in the respective areas, with user privacy related studies accounting for the majority in our sample. A summary of our main findings in the four areas is presented in **Table 2**.

Streams of Research		Key Findings
1	Personal information disclosure and user privacy	<ul style="list-style-type: none"> • SNS users have become more careful about revealing personal information • Young users seem to control their information disclosure by adjusting profile visibility
2	Nature of links and the role of the personal social network	<ul style="list-style-type: none"> • Differences exist on how friendship links establish and are perceived on SNSs <ul style="list-style-type: none"> • online vs offline relationships • importance of the size of the personal network • nature and role of relationships • The influence of social norms and cultural backgrounds in this is not understood yet
3	User self-presentation and impression management	<ul style="list-style-type: none"> • SNS users seem to execute similar strategies for utilizing relationships for impression management online and offline • Impression management is not limited to profile design <ul style="list-style-type: none"> • friends list is used to generate attention and prestige • blackboards and testimonials are used to co-form identities • Relationship to close friends is perceived as the most trustworthy information • Notable differences seem to exist concerning impression management on different kinds of SNSs
4	User motivations for adopting and using SNSs	<ul style="list-style-type: none"> • Main motives for Facebook usage seem to be <ul style="list-style-type: none"> • Staying in contact • Finding out more about new offline contacts • The facilitation of gossip • Little research exists dealing with other SNSs or the motives of adult users

Tab. 2 Overview of key findings in ISN research

4.1 Personal Information Disclosure and User Privacy

The idea of ISN on SNSs centers around users creating semi-public profiles and the ability to browse these profiles (Boyd and Ellison 2007). Therefore – by their very nature – SNSs are designed to capture, store, and make available personal information. Consequently, while the information revealed in personal profiles is one of the main value propositions of SNSs, at the same time it poses a significant potential for misuse (Livingstone 2008). Not surprisingly, with the beginning of their wider diffusion during 2005 and 2006 privacy issues soon started to dominate ISN research. In general, research into user privacy on SNSs focuses on Facebook and MySpace. While about half of the studies looked at Facebook exclusively, two-thirds included Facebook among others. As Facebook has its roots and most dominant user population in the United States, and given the fact that students and youth were the first to adopt the service (Lenhart and Madden 2007), privacy-related research seems to be of special interest to the US community (Barnes 2006).

In 2005, Gross and Acquisti (2005) were among the first to highlight typical privacy issues associated with the use of SNSs; they analyzed 4000 Facebook profiles and pointed out the

potential harm that could be caused by information disclosed therein. At the time, research into the topic quickly began to grow, as did public awareness of the topic. Interestingly, research findings point to an evolution of user awareness of the topic and changes in behaviour over the past years. Early studies revealed that especially young SNS users seemed to be relatively unconcerned, if not unaware, of potential pitfalls (Acquisti and Gross 2006; Stutzman 2006). Barnes at the time reasoned that “often teens are not aware of the public nature of the Internet” (Barnes 2006). However, more recent studies reveal that SNS users, the more experience they gain with ISN, the more they become careful about revealing personal information (Lewis et al. 2008). Moreover, it seems that awareness for the privacy topic is growing (Christofides et al. 2009). Further studies have investigated how users react to the privacy challenges. For example, younger users, such as students and adolescents, seem to control their information disclosure by adjusting profile visibility rather than by reducing the information disclosed on their profiles (Tufekci 2008). Other studies found that users are more active today and exhibit increasing control over their information disclosure (Hinduja and Patchin 2008; Jones et al. 2008). Consequently, Ybarra and Mitchell (2008) show in a study with 1588 young people that SNSs are a less risky environment for sexual harassment than chat and instant messaging. Nevertheless, SNSs disclose more personal information than any other service before. Facebook alone hosts personal information on more than 500 Million individuals. Even though recent studies have not found SNSs to be a more risky environment than the Internet in general, the sheer amount of data does imply a risk for misuse. Research has to further investigate how personal data on SNSs can be secured as well as where concrete potential for misuse exists, with one of the concerns being that the platform provider itself exhibits a strong interest in using its users’ information for various commercial purposes⁸.

4.2 Nature of Links and the Role of the Personal Social Network

The second stream of ISN research looks into the nature and proliferation of relationships and social networks within SNSs. In doing so, studies have shown that users inscribe different meaning to their links with other SNS users. Specifically, studies have revealed that 1) differences exist between online and offline relationships, 2) the size of the personal network is judged quite differently on different platforms, and 3) notable differences exist between the nature and role of relationships and personal social networks on different platforms (e.g., links in Facebook and MySpace are perceived rather differently). Such differences are likely to

⁸ E.g., <http://www.guardian.co.uk/business/2009/feb/01/facebook-seeks-to-exploit-user-information>.

result from differences in group culture and the social micro environment on these platforms. What accounts as friendship offline is not necessarily the same as having friends online (Boyd 2006a). For example, a significant share of users on MySpace and Bebo appears to collect “friends” in order to improve the impression made by their own profile (British Office of Communication 2008; Rosen 2007), with having more friends being regarded beneficial. In contrast, on other SNSs, such as Facebook or CyWorld, the online social network seems to reflect better the users’ offline networks (Chun et al. 2008; Lampe et al. 2006; vom Brocke et al. 2009a). In fact, studies have shown that contrary to MySpace, having too many links on Facebook can have a negative reputation effect as this reportedly lessens the perceived trustworthiness of a user profile (Tong et al. 2008).

Moreover, no consistent interpretation exists of what accounts as friendship online (Fono and Raynes-Goldie 2006). However, it has been shown that social norms, which regulate the articulation of relationships, can differ significantly between social groups (cf. British Office of Communication 2008; Rosen 2007). Such differences are likely to cause the emergence of SNS usage patterns specific to those social groups. And while many smaller SNSs exist, which target certain social groups with differing cultural backgrounds, to our knowledge almost no studies so far have looked into the influence that social norms and hence the cultural group background poses on SNS usage. Exceptions are one study by Byrne (2007) on the adoption of the SNS BlackPlanet and a study by Carroll (2008) focusing on the usage of MySpace by Puerto Ricans. Both studies are very focused on specific aspects of SNS usage and create no general understanding of how these SNSs are used or how cultural differences influence adoption and use. Hence, to date we have no clear understanding of how strong the influence of different social norms and cultural backgrounds on the adoption of SNSs is.

4.3 User Self-Presentation and Impression Management

The third stream of research captures studies that have investigated how users draw on the various SNS features to manage self-presentation and the impressions they leave with other users, as well as the effects thereof. Impression management commonly refers to methods or strategies with which people try to influence the impressions others hold about them (Goffman 1959). In this important strand of ISN research, studies have looked at various aspects of impression management, such as 1) the nature of and differences between self-presentation online and offline, 2) how users draw on various SNS features in going about

their impression management, 3) what the effects are of 'good' self-presentation, and 4) differences in user self-presentation between platforms and vis-à-vis different user groups.

The first publication to mention impression management appeared in 2004 (Donath and Boyd 2004). According to the authors, SNS users seem to execute similar strategies for utilizing relationships for impression management online and offline. Similarly, Dwyer (2007) found in her qualitative study that individuals seem to execute one strategy of impression management and apply this strategy in all communication channels they are using. Studies comparing impression management on Facebook and offline also reveal strong similarities (Buffardi and Campbell 2008; Evans et al. 2008; Gosling et al. 2007). However keeping in mind the different nature of SNS usage observed on sites like MySpace (i.e. Rosen 2007) this finding is likely to be limited to SNSs that reflect a real world context like Facebook (see above).

Interestingly, user impression management is not limited to 1) actively creating one's user profile but also includes 2) friendship links and 3) page content, e.g., comments on one's blackboard left by other users. At the same time however, researchers acknowledge that in managing impressions users have more immediate control over their own profile information; therefore this information can better describe how a person wants to be perceived (Zhao et al. 2008) or what the person is looking for online. Lampe et al. (2007) revealed in a qualitative study on Facebook that the detail level of profiles correlates with the number of online friendship links. They argue that those profile elements that help identify common interests or similarities in background help foster the creation of new friendships.

However, some users attempt to present online an ideal self that is too good to be true (Zhao et al. 2008). This stretching of the truth can reach a level where other users perceive it as outright lying (Session 2009). On some SNSs lying about oneself seems to have formed a common pattern (British Office of Communication 2008). Consequently, probably due to the risk of being lied at, profile information is not perceived as particularly trustworthy.

Moreover, by using blackboards and testimonials other users also participate in the evolution of one's profile as they help co-form one's presented identity (Boyd and Heer 2006). Lee and Bruckman (2007) analyzed the dating behavior of individuals on SNSs and found that both the friends listed as well as the conversations with close friends play a vital role in the search for a potential partner. This corresponds with studies on the perceived attractiveness of SNS users, which looked at various influence factors of selfpresentation (Walther et al. 2009, 2008). The relationship to close friends is perceived as the most trustworthy information. Most

of the above-presented work on impression management stems from analyses on the usage of Facebook, MySpace, or Friendster. Very few studies also deal with other SNSs like Xing or Lunastorm. In comparison, these studies reveal notable differences in the practices of impression management. For example strategies of impression management are executed more carefully on business-oriented SNSs such as Xing (Schaefer 2008), as users concentrate less on gaining attention and more on making a trustworthy impression to potential employers and business partners. On the other hand, Facebook usage is much more playful than that of Xing, but still fairly accurate (Evans et al. 2008; Zhao et al. 2008), while MySpace is even more playful yet less accurate (Rosen 2007). While impression management has been well-researched in the core target group of students and youth, little understanding exists about what and how strategies for managing self-presentation work effectively in other social groups or even a business environment.

4.4 User Motivations for Adopting and Using SNSs

Another strand of research has looked into user motivations for adopting SNSs. However, while there have been a number of studies in this field, almost all of them have looked into SNS usage among (university) students. Moreover, existing research seems to be fairly fragmented. Krasnova et al. (2008), by applying human needs theory, have found that the need for belongingness through connection with others and esteem needs through self-presentation are two important drivers for SNS usage. Bumgarner points out that Facebook is used by students to stay in contact with old friends, to get in contact with co-students, romantic partners or similar, but that most prominently Facebook is used to facilitate the exchange of gossip (Bumgarner 2007). Other studies have revealed the maintenance of contacts with old friends and the intensification of links to co-students as the two main motives for using SNSs (Lampe et al. 2006; Raacke and Bonds-Raacke 2008; vom Brocke et al. 2009a). Lampe et al. refer to the latter motive as the need for social searching, which constitutes an important usage pattern for students. Social searches utilize the SNS to find out more about newly made offline contacts, such as fellow students one has met in class (Lampe et al. 2006). Others have argued that, as SNSs usage is said to have a positive influence on the emergence of bridging social capital (Steinfeld et al. 2008), students utilizing SNSs early in their studies are better integrated into the social network of the university later in their studies (Steinfeld et al. 2008). Social searching thus seems to assist an individual in integrating into a new social (offline) environment.

Apart from these studies, which have researched motives for engaging in ISN among students, little research exists on the motives of other user groups. One exception is a study on

motives of professional users, which looks at Xing (Schaefer 2008). The study identified three major motives in this context: (1) staying in contact, (2) reactivation of contacts, and most importantly (3) the management of one's existing contact-network.

However, apart from this, to our knowledge no work exists on the motivation of adults using SNSs. Also, existing research almost exclusively focuses on Facebook. This certainly leaves room for future research, especially with a focus on professional users of SNS and their motives.

4.5 Summary: Current State of Research and Open Questions

Our literature analysis reveals a significant body of research in the context of ISN on SNSs. We identified some research strands capturing those ISN aspects that have been well-researched. However, the current state of research is not without limitations: 1) Existing research is very much limited to studies investigating SNS usage among students and youth. 2) Not many studies recognize differences between existing SNSs. Many studies treat ISN across SNSs as being homogeneous, while we believe differences exist with regards to technology and typical use practices. 3) Moreover, and partly as a result of the first two limitations, the ISN research landscape remains rather fragmented, since not many studies have attempted to carry out cross-literature research, which aims to draw more general conclusions across use contexts and SNSs. 4) So far, only very few studies, apart from some show case stories, look into the enterprise use of SNSs and how ISN phenomena observed on the public Internet might translate into an enterprise context. We briefly discuss future research opportunities for general ISN research, before we look into implications for enterprise applications.

As mentioned above, most ISN studies concentrate on students or young people, using Facebook or MySpace in the USA. Hence, existing research is constrained with regards to user population, geographical region, and technology artifact. Such limitations are likely to hamper the identification of both more general patterns across different contexts and the specifics of ISN in certain contexts or on other types of platforms.

Our analysis above revealed that the culture of a user group can exert a strong influence on SNS usage (cf. Friendster case in Boyd 2006b and MySpace case in Rosen 2007). Due to the proliferation of ISN among students as early adopters (Facebook originates from this user group) and the easy access to empirical data on Facebook, this combination has been well-researched. Meanwhile however, SNSs have turned into a mass phenomenon permeating a range of user groups. But we know very little about the adoption and use among other groups.

Moreover, we also know little about how students continue using SNSs once they make the transition from university into work life.

Furthermore, existing research is very much embedded culturally in a Western context, while some preliminary work suggests that geography plays indeed a very important role in explaining certain adoption and use pattern; see for example the case of the Korean SNS CyWorld (Choi 2006) or the Japanese SNS Mixi (Fogg and Iizawa 2008). But also smaller contextual differences can cause different patterns of adoption like shown in a study on SNS usage among students in Germany and Liechtenstein using Facebook and StudiVZ (vom Brocke et al. 2009a).

To this day, very little work has been undertaken to conceptualize the differences between SNSs (as different artifacts). The existing heterogeneity in the market for SNSs is not reflected in the literature so far (Richter et al. 2009c). Studies including business-oriented SNSs like Xing (Schaefer 2008; vom Brocke et al. 2009a) or LinkedIn (Thew 2008) highlight differences in the adoption of certain features compared to SNSs like Facebook or MySpace. More cross-case research is needed to investigate these differences. These limitations lead us to propose two major directions for future SNS research, as is displayed in **Table 3**. On the one hand we propose to broaden the empirical basis by carrying out research across different user groups, use contexts, and SNSs. On the other hand we see a necessity to also carry out cross-literature studies in order to better capitalize on and exploit existing research findings. Based on the extensive literature on Facebook and MySpace a comparison of findings concerning the adoption of these two SNSs by students might serve as an obvious example. This paper might act as a starting point for such comparative cross-literature research.

	Broaden the empirical basis	Comparative research
Subject of Analysis	Empirical research has to be conducted in order to overcome the existing constraint with regards to: <ul style="list-style-type: none"> • user groups • use contexts • Social Network Sites 	The specific focus of ISN research to date has created a profound basis for in depth analysis and comparison of e.g. <ul style="list-style-type: none"> • Facebook vs. MySpace • Usage by students vs. young people Comparative research executed on this literature base potentially can create an understanding of the influence of the social context of use (social norms, cultural backgrounds, etc.)
Methodology	<ul style="list-style-type: none"> • Phenomenological research • Longitudinal studies • Case studies 	Cross-literature research comparing <ul style="list-style-type: none"> • The adoption of one SNS in different contexts (university, ...) • The adoption of different SNSs (mainly Facebook vs. MySpace) in the same context

Tab. 3: Suggested directions for general research on ISN

5 Enterprise Social Networking: Implications and Outlook

The above-presented analysis has revealed existing ISN research in some selected key areas (e.g., privacy, personal impression management etc.). However, while some findings are certainly useful, transferring results from the public Internet to an enterprise context has to be done very carefully. Preliminary studies on enterprise use of SNSs have pointed to the fact that these are open technologies in a way that they need to be appropriated according to context-specific circumstances (Richter and Riemer 2009). SNSs and their features do not precipitate adoption and use, so that SNS usage practices and benefits are likely to be very different in an enterprise context. Hence, while the existing research on public SNS usage serves as a valuable basis and starting point, more dedicated research on SNSs in the context of Enterprise 2.0 is needed. In a professional context, benefits yielded by SNSs are likely to be very different, as some preliminary studies have shown (see above). In the following, we will highlight potentials for SNS application in three enterprise-related contexts: 1) recruiting and professional career development, 2) relationship facilitation in distributed work contexts, and 3) business-to-customer interactions. **Table 4** displays a summary of the identified potentials, as well as a selection of future research questions on aspects of enterprise social networking.

	Potential of SNS usage	Exemplary Future Research Directions
Recruiting and career development	<ul style="list-style-type: none"> • Marketplaces for the exchange of skills • Advancing career opportunities • Hire and recruit business professionals 	<ul style="list-style-type: none"> • What renders recruiting activities in SNSs successful? • Creation of a systematic understanding of the potential and role for professional career development.
SNSs in Distributed work contexts	<ul style="list-style-type: none"> • Facilitation of internal network building, social encounters and group work • Creation and maintenance of social structures containing social capital and as channels for information transfer between individuals • Creation of a common basis for communication even between distant co-workers 	<ul style="list-style-type: none"> • Under which circumstances will employees be willing to disclose significant amounts of data about themselves? • Can strategies like „Social Searching“ executed on public SNSs be successfully adapted for intranet SNSs? • How can SNSs be successfully integrated into the IT infrastructure?
to engage with consumers	<ul style="list-style-type: none"> • Advertising (by facilitating targeted approaches and viral marketing) • Product development (by including consumers in the design process, i.e. prosuming) • Market intelligence (by observing and analyzing the data generated by users in SNSs) 	<ul style="list-style-type: none"> • Why did viral marketing on SNSs not live up to the high initial expectations yet? Will it do so in the future? • How are brand pages used? Can they facilitate prosuming? • How can SNSs be used for gathering market intelligence?

Tab. 4 Suggested directions for enterprise-related research on ISN

5.1 SNSs in Recruiting and Professional Career Development

Some initial studies have looked into the use of SNSs by business professionals for advancing their own career opportunities, as well as by businesses wanting to hire and recruit business professionals. As such, certain SNSs that cater for a professional audience, such as LinkedIn or Xing, can be viewed as marketplaces for the exchange of skills. Schaefer (2008) has shown that users on such platforms actively engage in building and maintaining a professional contact network with the aim to advance one's career opportunities; also see Thew (2008). On the other hand, as people typically disclose a range of information about themselves (Stutzman 2006), SNSs also yield significant potentials for businesses wanting to recruit new expertise. This is well-reflected in the intensive usage of such SNSs by R&D companies (Thew 2008), which are in constant need to identify and contact people with specific skills. The use of SNSs for this purpose is facilitated by the more or less correct self-representation people apply on these professional platforms.

More research is needed to better understand such practices and how they can be incorporated systematically in corporate human resource strategies, e.g., what renders recruiting activities in SNSs successful? On the other hand, the potential and role for professional career devel-

opment, e.g., by building social capital, also need to be understood in more systematic ways. This offers ample opportunities for future research.

5.2 SNSs for Relationship Facilitation in Distributed Work Contexts

Complementary to the professional use of public SNSs, companies increasingly engage in setting up dedicated SNS platforms on their Intranets for facilitating internal network building. Work in contemporary organizations has been described as highly knowledge intensive (Davenport 2005; Drucker 2000), with organizations being increasingly dependent on the performance of knowledge workers, who are often involved in many different distributed projects and virtual teams (Bultje and van Wijk 1998). At the same time it has been argued that virtual collaboration in distributed setups is often precarious (Breu and Hemingway 2004; Introna 2001) leading to problems of information transfer (Davenport 2005; Steinfield et al. 2009) and hindering the emergence of necessary shared understanding of group matters (Riemer and Klein 2008). In this context, SNSs offer an apparent solution for facilitating the creation and maintenance of social structures containing social capital and as channels for information transfer between individuals (Burt 1992; Granovetter 1983; Steinfield et al. 2008).

However, surprisingly little (empirical) research exists in this area investigating ISN phenomena in this context. One study has shown that internal SNSs can help employees in identifying topics of mutual interest that can create a common basis for communication between distant co-workers (DiMicco and Millen 2007). Other studies have pointed to the potential of SNS usage for maintaining and extending one's social capital within the organization (DiMicco et al. 2008; Steinfield et al. 2009). For such purposes, crucial features for Intranet SNSs are said to be those that help employees in identifying potential new contacts (e.g., through searching by common interests), thereby forming valuable weak tie social capital (DiMicco et al. 2008; Farzan et al. 2009).

Some businesses have been on the forefront of piloting the use of SNSs in this context, among them IBM, SAP, and Accenture (DiMicco et al. 2008; DiMicco and Millen 2007; Richter et al. 2009a; Richter and Koch 2009).

Furthermore, findings derived from public SNSs suggest that SNSs can help users to get to know and settle in to a new social environment. Hence, we can assume that new employees who join an organization should benefit tremendously from joining an existing SNS at the same time, as they can investigate, in an unobtrusive way the interests and background of

their new co-workers (social searching), thereby forming the basis for shared understanding to emerge. Similarly, SNSs facilitate the search for experts on the basis of people's profiles, which can contain detailed information on skills, capabilities, project experience and interests. Thereby, social networking opens up new possibilities for skill-based staffing of knowledge-intensive projects. Existing studies however have shown that to date SNSs do not seem to yield such behaviors (Dwyer 2007; vomBrocke et al. 2009a). Our analysis above also points to significant privacy concerns in conjunction with using SNSs. Hence, it remains to be seen whether or not (and under which circumstances) employees would be willing to disclose to the rest of the organization significant amounts of information about themselves. As profiles in this context are likely to only reflect the professional (and not private) lives of the employees, the hurdles for disclosure are likely to be lower; nevertheless more research is needed to derive a better understanding in this area.

At the same time, Skeels and Grudin (2009) have stressed the importance of building dedicated intra-firm SNSs, as employees might otherwise start using public SNSs for communication, which is not without problems (e.g., in regards to confidentiality and security). The same problem has been acknowledged in other studies as well (DiMicco et al. 2008; Farzan et al. 2009).

In conclusion, the integration of SNSs into the internal information infrastructure seems beneficial and will most likely gather increasing attention in the future. However, as a study by Richter and Riemer (2009) has shown, implementing SNSs on the Intranet is challenging as it can lead to a 'yet-another-platform' problem, whereby people are unwilling to adopt SNSs as a new medium. Their research into how IBM achieved successful diffusion of their SNS platform suggests that an essential success factor might be the incremental introduction of social networking features to already adopted platforms, thereby growing the new system from inside an existing one.

5.3 SNSs as medium to engage with consumers

Besides the above-discussed potentials, SNSs can also be valuable for supporting interactions with customers. In particular, some initial works point to potentials for 1) advertising (by facilitating targeted approaches and viral marketing), 2) product development (by including consumers in the design process, i.e. prosuming) (Klein et al. 2004; Klein and Totz 2004), and 3) market intelligence (by observing and analyzing the data generated by users in SNSs).

Advertising has changed in the last decade with a major influence being the loss of consumer trust in advertising (Clemons et al. 2007). Most notably, it has been shown that customers tend to vest more trust in recommendations by other customers than in messages coming from companies (Ermecke et al. 2009). Consequently, new concepts such as viral marketing and word-of-mouth gained wide-spread popularity. Today, many online services allow for users to recommend products or services to other users and businesses have set up online presences on SNSs to connect with customers and tap into their social networks by triggering them to pass on the corporate message. However, viral marketing on SNSs has not yet lived up to the high initial expectations (Clemons et al. 2007). On the other hand, research and the development of practical approaches in this field are still in their infancy.

In any case, SNSs are home to quite specialized communities of users, which opens up other opportunities as well. By observing and studying user behavior, SNSs can be used productively in the context of new product development and design. The integration of consumers into design and production activities has been described by others as the practice of prosuming (Klein and Totz 2004; Schumacher and Feurstein 2007). Prosuming in the context of SNSs thus opens up a new field of application and research, which has not been targeted sufficiently so far. Many companies have already created so-called brand pages in SNSs like Facebook. However, how these pages are being used, what potential they yield for prosuming and how (various groups of) consumers react to these attempts remains unknown. Potentials exist to create test markets, actively (maybe playfully) engage SNS users in design activities or observe the public discussions of target groups about a company's (and competitors') products. This might yield highly valuable information for the company at comparatively low cost. At the same time however, considerable risks exist, as companies must fit in with and adhere to the (often unwritten) rules of the SNS (sub) community. More research is needed to explore these issues.

Finally, SNSs show potentials for market intelligence purposes. As discussed above, on SNSs users disclose large amounts of data about themselves. While this raises privacy issues, it is at the same time a valuable source of market intelligence data, which allows companies to learn more about their customers, both on an individual level and on the level of target groups. While currently almost no literature exists on this matter, the trend towards utilizing the po-

tential of SNSs for market intelligence can clearly be observed in industry⁹. Practice-oriented literature further substantiates this observation (Ahonen and Moore 2005; Berkman 2008). This application is fuelled by the fact that most SNSs offer APIs, which allow companies to tap into and harvest customer data in a (semi-)automated way.

6 Conclusion and Outlook

We have presented the results of a comprehensive literature review on the state of Internet social networking (ISN) research, with a focus on Social network sites (SNSs). To this end, we have identified four dominant strands of research, which together provide an overview of those issues that have been well researched in recent years. At the same time we identified opportunities for further research. In particular, we have shown that research to date is rather fragmented and does not yet facilitate a general understanding of the phenomenon. In particular research is very much skewed towards certain user groups (e.g., students) and platforms (in particular Facebook). More comparative research is needed taking stock of the existing body of research. Further, we discussed implications of SNSs application in a corporate context. We differentiated between three contexts of application and discussed SNS potentials, implications of existing ISN research and future research opportunities. As such, our research ties in with the larger research and application field of Enterprise 2.0, a field which is only just emerging.

Our research has certain limitations. First of all we have focused our analysis of ISN on SNSs. With that we have omitted research on web sites that exhibit some form of ISN (such as Youtube or Flickr), but are not strictly SNSs. Hence our perspective is restricted and certain phenomena that have – at least by now – only been observed on such sites are not considered. Future research should widen the scope based on the presented literature sample in order to include such research. Moreover researching the formation of social networks on SNSs by way of social network analysis might add understanding to the body of knowledge, especially concerning the role of network position and structure. Furthermore, our literature review is journal-based. While we have included major AIS conferences, as well as those conference articles listed in the literature collection by Danah Boyd, a good part of relevant research might have been published in conferences only, since the research field is still rather young.

⁹J.D.Power:<http://www.jdpowerwebintelligence.com/>,http://www.aepweb.org/summit/09_Presentations/Mining_Social_Media.ppt. Outsell: <http://www.outsellinc.com/store/products/541>. Xtract: <http://www.xtract.com/social-intelligence/>. ADTelligence: <http://www.adtelligence.de/de/consulting/new-market-intelligence>.

We hope that our analysis can contribute both to creating a research agenda for developing a better understanding of the phenomenon of ISN and to making available the current state of ISN research for the wider Enterprise 2.0 community. After all, Enterprise 2.0 phenomena are likely to become even more relevant over the next few years, since today's youth is growing up with the new technologies and have already included various social software in their daily life routines, to an extent that today's workforce, on average, does not possess (Vie 2008). Almost inevitably, mediated socializing will become even more important in the future (Boyd 2007) and today's enterprises and managers are well advised to get in contact with this new medium and try to understand it in order to utilize this new technology and its aligning culture.

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