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MOTIVATIONS AND USAGE PATTERNS ON SOCIAL NETWORK SITES

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Abstract

Social network sites count millions of members these days. For a growing number of Internet users, maintaining a profile on a social network site is part of their everyday life today. The debate of the social use of the Internet has focused on the one hand, on whether persons establish new relationships online and, on the other hand, on how persons use the Internet to maintain relationships. Social network sites explicitly aim at supporting people in both aspects. The number of members shows their success, but do social network sites really afford the maintenance of existing and establishment of new contacts? As yet, there has been no systematic investigation of the motivations and usage patterns on social network sites. This study lays the groundwork describing the social networks displayed as well as the perceptions members have of the displayed connections between others. Furthermore, the frequency, motivations and outcome of the creation of links to yet unknown persons are investigated. Participants of a German SNS were surveyed with an online questionnaire. The results show rather small networks which consist of both work and private contacts suggesting a substantial overlap with the offline networks. Regarding new links, over half of the users have added an as yet unknown person to their contact list, but many of new relationships do not develop further.

Keywords: Internet, social network analysis, social network sites, motivations.

1 INTRODUCTION

The Internet has altered our lives by affording a whole range of new possibilities. It permits easy access to a vast amount of information, enables fast synchronous as well as asynchronous communication, and offers a wide array of entertainment prospects. Moreover, it allows to diversify the personal social circle by enabling access to more and also more diverse persons than one might have in the “real” world, e.g. permitting to meet persons with the same interests. Hence, Usenet, a first generation communication system, has evolved into a myriad of thematic subgroups. Since then, communication systems for discussion and information exchange have evolved into newsgroups, discussion fora, chat rooms, etc. Today, advanced services allow even more possibilities for meeting persons, e.g. by sharing pictures or bookmarks. Concerning existing relationships, the Internet offers diverse quick and inexpensive communication channels to maintain them, thus affording larger social circles (di Gennaro & Dutton 2007, Donath & boyd 2004).

To support both the meeting of new persons and the maintenance of relationships is the explicit intent of social network sites (SNS) which focus on different aspects of ones’ lives, e.g. business networking, romantic relationships, pets, etc. SNS enjoy wide-spread popularity with ever-growing user numbers. While some studies show that SNS help people to enhance their social capital (Ellison, Steinfield & Lampe 2007), the contrary is suggested by newspaper articles pointing to the meaninglessness of these portals. For example, a computer-generated contacting script resulted in a 30% success rate in creating links on Facebook, a SNS formerly only open for college students (Jump 2005), or a service provides fake friends to embellish contact lists (Slotnik 2007). Other research describes the rather unexpected user intentions to maximize the sheer number of contacts (Donath & boyd 2004).

The diverse accounts raise several questions as to what SNS essentially represent. The goal of this paper is to gain an insight into SNS. Therefore, we investigate the purpose and manner in which SNS are used which result in the nature of information developed and depicted on it. As a second issue, the question if SNS support persons in expanding their social network by meeting new people and establishing meaningful relationships is explored.

The article is structured into six parts. In section 2, the theoretical framework of social network analysis is introduced and in light of existing literature the research questions are posed. Next, Xing, the SNS studied, is described. The survey and the sample characteristics are illustrated in section 4. In section 5, the results are presented. We conclude with a discussion of the findings.

2 RESEARCH QUESTIONS

Individuals don’t exist in a vacuum, but are embedded into a social environment. The field of social network analysis (SNA) describes and investigates persons in connection with their social network as well as the networks themselves. A social network consists of its actors and the connections among them. From an individual perspective, all relationships of a person compose his personal network. A central concept of SNA is the status of a person which is indicated by the size of the personal network.

However, not all connections are equal. Some of our contacts are close to us or we spend a lot of time with them while others we see less frequent. This difference was conceptualized as the strength of a tie (Granovetter 1973) consisting of the dimensions of time, emotional intensity, intimacy and reciprocity. Strong ties are usually assumed between friends and relatives as well as for ties of mutual choice and mostly provide support (Ellison et al. 2007). Work colleagues, acquaintances, and friends of friends, are seen as weak ties. The most cited benefit of weak ties is information dissemination (Granovetter 1973, Ellison et al. 2007). Granovetter defined as a third “state” the absent tie which includes “both the lack of any relationship and ties without substantial significance” (1973, p. 1361).

Social network sites gather and display the personal networks of their members. Their aim is to support the management of one’s network by displaying and mapping it and to facilitate the creation

of links (Lampe, Ellison & Steinfield 2006). Members set up personal profiles which can be linked to others on the SNS who are then displayed as friends. Furthermore, most SNS support virtual groups and guestbooks as communicative facilities. Other possible features include sharing pictures and message functions. In general, SNS are online environments in which people create self-descriptive profiles, articulate their social networks, and establish or maintain connections with others.

SNS can be classified as applications of the Web 2.0 (O'Reilly 2005) and are thus a form of computer-mediated communication (cmc). The social use of cmc has been studied from the very beginning of computer use (Hiltz & Turoff 1978, Rice & Love 1987) and since then a large body of research has accumulated (for reviews see Parks & Floyd 1996, Bargh & McKenna 2004). Early theories compared cmc to face-to-face (ftf) communication and focused on the deficits (Sproull & Kiesler 1986), but studies showing social content soon rebutted them (e.g. Rice & Love 1987). Consequently, newer approaches turned their attention to how the Internet has changed our lives and differentiated between different online services. The widespread Internet use has led to more communication with all and, specifically, with distant ties as well as to overall more ties maintained. However, distance influences the use of most communication channels (Mok & Wellman 2007). The distance effect does not affect IM which is by now the most common cmc tool of students who use it more frequently than offline communication (ftf and telephone) and email (Quan-Haase 2007). Contrary to the assumed generation gap regarding Internet use, the students use IM with both friends and relatives. In a different vein, di Gennaro and Dutton (2007) investigated how different online contexts affect the formation of relationships. In some contexts, finding new friends seems to be the norm (e.g. on MOOs, Parks & Roberts 1998) whereas in e.g. newsgroups the occurrence is not as ubiquitous (Parks & Floyd 1996).

SNS, in particular, have only very recently received the attention of scientists. They make the process of data collection of social networks suddenly very easy by posing "rich sources of naturalistic behavioral data" (boyd & Ellison 2007). This development has been acclaimed widely (Ghoshal & Holme 2006, Licoppe & Smoreda 2005) while few have pointed out the potential noise in these data. Early accounts discussed the function of the display of ties (Donath & boyd 2004) and data privacy concerns (Gross & Acquisti 2005). Recent studies show that the majority of US-teenagers maintain a profile on a SNS (Lenhart & Madden 2007). Although the accounts provide a first insight, there is no systematic research describing the motivations and patterns of use of members. In order to gain an empirical based description of usage goals and behavior, several basic research questions are raised for investigation. Based on research of Internet use in general, first hypotheses are posited.

What are the motivations and goals of people for using SNS? After the early theories of technological determinism, recent approaches employ the uses and gratifications model. It assumes that personal goals and needs determine individual media use and have an impact on the outcome (Katz, Blumler & Gurevitch 1973). Thus, an interaction between the features of the Internet context and personal goals (Spears, Postmes, Lea & Wolbert 2002) regarding the effects of Internet use is postulated. Accordingly, different purposes of general Internet use predicted meeting people online and migrating the online relationship to other channels (di Gennaro & Dutton 2007).

With regard to SNS, not much is known about peoples' goals for maintaining a profile. First surveys show that highschool and university students use SNS mainly to communicate with and find out more about existing offline friends than to meet new persons online (Lampe et al. 2006, Lenhart & Madden 2007). Apart from the dimension of existing vs. new ties, other possible goals include entertainment or representational purposes. Concerning existing ties, possible motivations can further be split up into managing one's social network, communicating and keeping in contact with ties, and reactivating lost contacts. Especially on business-focused SNS, a relevant motivation is to search for a job, respectively for a suitable candidate. Finally, a reason is the availability of a continuously updated address book.

What is displayed on SNS? This question targets the composition of the networks, i.e. which types of ties constitute the network, and their size. Conceivably, the contact lists on SNS are a complete image of the real life social networks of persons or they contain little overlap. Thus, the types of connections, e.g. friends, family, work colleagues, acquaintances, configuring the contact lists are investigated.

Size estimates of complete personal networks range from 150 up to 5000 (cf. Hill & Dunbar 2003). However, virtual networks have properties of their own. For example, one cannot lose contact on a SNS because the system preserves all relationship links until the user actively deletes them. A complete overlap with the real life social network is not to be expected because people meet new persons online, and because presumably not all of one's contacts maintain a profile, especially of older generations. Concerning social networks in the virtual world, contact lists of several thousands can be observed easily on SNS. Hence, it could be expected that the size of the social networks is at the high end of the estimated range. Furthermore, as it has been shown that people who use the Internet for communication and learning purposes more likely form relationships online (di Gennaro & Dutton 2007), differences in network size depending on the motivations of use are predicted.

H₁: The network size varies depending on the different user motivations.

How do users perceive links between other persons? This question captures the information content of the connections displayed. If users add others indiscriminately to their contact list as described in the press, a link would not indicate a meaningful relationship and would lose its function to discriminate between a connection and none (Donath & boyd 2004). The perceived information of a link includes the dimensions of closeness and relationship context. On the first dimension, different degrees of closeness, e.g. knowing each other via cmc, having met, or having frequent contact, could be inferred. Contexts of the relationship include work, university, leisure, or loose acquaintances without shared context. The cost of establishing a link influences its reliability (Donath 2007). On the SNS investigated here, a link request is posed by clicking on a button on the other's profile. Although, the receiver's confirmation is necessary for the link creation, the costs of establishment are low. We pose the research question which information the bidirectional, yet "cheap" links contain for the users.

How often do people establish new relationships on SNS? Whether and under what conditions people form new relationships online has been intensely debated since the start of Internet adoption. With new online applications arising constantly, this issue still receives widespread attention (di Gennaro & Dutton 2007, boyd & Ellison 2007). Previously, forming new relationships online has not been regarded as common. Theories of cmc, e.g. 'cues filtered out' theory (Sproull & Kiesler 1986) or social presence theory (Rice & Love 1987), focus on the perceived deficiencies such as anonymity and the lack of non-verbal cues. For these reasons, as well as missing physical propinquity, severe doubts as to the social affordance of the Internet and its potential for forming new relationships were raised. Yet, studies consistently showed the usage of diverse online services to maintain and establish social relationships (Bargh & McKenna 2004, Boase & Wellman 2004, McKenna, Green & Gleason, 2002, Parks & Floyd 1996, Parks & Roberts 1998, Rice & Love 1987) demonstrating that "cyberspace is just another place to meet" (Parks & Floyd 1996, p.94). Research from various online contexts provides frequencies ranging from 20% of people establishing new relationships to almost 94% of MOO-users (di Gennaro & Dutton 2007, Parks & Floyd 1998). SNS can be regarded as rich online contexts: the profiles of SNS include information about a person's social context, depending on the focus of the SNS pastimes or professional position. Furthermore, on most SNS, a personal picture is to be included which shows the physical appearance. Thus, relationship formation could be expected to be common.

Aside from the frequency of the occurrence, a basic research issue concerns who establishes relationships online. So far, no particular sociodemographic attribute has been consistently connected with relationship formation. Women were found repeatedly to be more likely to form relationships in discussion forums (McKenna et al. 2002, Parks & Floyd 1996). In other studies, age, marital and employment status and experience in that online context related to meeting new persons (di Gennaro & Dutton 2007, Parks & Floyd 1996). As these findings result from different contexts, we investigate if they can be replicated for SNS. A second set of individual characteristics are peoples' motivations. On SNS, possible motivations for maintaining a profile range from active networking to managing one's network to entertainment. First evidence showed that those who are online for the purposes of learning and communication establish more relationships (di Gennaro & Dutton 2007). Thus, we posit:

H₂: The frequency of adding unknown persons varies depending on the different user motivations.

Why are links to unknown persons sought and accepted and by whom? In contrast to other online environments where relationships develop gradually and are subject to definition of both sides, on SNS establishing a link is an explicit gesture. After the affirmation, the link is by default publicly visible on both contact lists. With regard to creating links to unknown others, i.e. establishing new relationships, the question about intent arises. On most SNS, this is a two-sided process consisting of a request and the confirmation, therefore motivations on each side are explored.

On the seeking side, for some persons accumulating “friends” seems to be an end in itself (Donath & boyd 2004). SNS also introduce members randomly on the entry pages, therefore seeing a profile by chance could motivate a contact request. More traditionally, requesting a link originates in an interesting clue about a person. Such clues could be:

- searching for somebody with specific attributes, e.g. same interests
- searching for that person specifically because of having read or heard something about him/her
- having had cmc contact in a social function on the SNS, e.g. on a discussion forum or guestbook
- having seen the other in a contact’s contact list
- being virtually introduced to one another by a third person

Furthermore, we investigate if sociodemographic and motivational differences predict requesting links to get to know new persons. An influence of the motivation for SNS use is assumed:

H₃: The frequency of requesting links from unknown persons varies depending on the different user motivations.

The receiving side can confirm or decline the request. The link is only established in the first case, therefore, only this was included in the survey. Previous research has shown that complying with a request can be caused by avoiding to offend the other with a refusal (boyd 2006, Fono & Raynes-Goldie 2006). Also, complying could be due to an appealing phrasing of the request or an interesting profile. Furthermore, a sense of carelessness is conceivable as is uncertainty about knowing the other.

Finally, the **continuation of new relationships** is of interest. Two lines of research have been explored: migration of relationships to other communication channels and the developed tie strength. The use of other communication channels has been consistently observed (Boase & Wellman 2004, di Gennaro & Dutton 2007, McKenna et al. 2002, Parks & Floyd 1996, Parks & Roberts 1998) indicating a natural development. Therefore, we focus on the strength of the relationship. Most relationships formed online are weak ties according to subjective appraisals (Parks & Floyd 1996, Petróczi, Nepusz & Baszso 2006). When asked about contact frequency, newsgroup users reported communicating weekly for over half of the new relationships and more than weekly for almost a third (Parks & Floyd 1996). To investigate the tie strength developed in SNS relationships, the contact frequency is used as indicator.

3 THE SOCIAL NETWORK SITE

Xing is a German business focused SNS founded in 2003 and, until the end of 2006, known as openBC. It’s mission is to “bring people together“ (Xing 2005) by facilitating the meeting of new persons and supporting the management of one’s social network. As of September 2007, it counted 2,65 million user (Heise 2007). The Internet platform offers a free basic service and a premium service for a (small) monthly fee which provides users more functions mostly for searching and contacting others. To become a member, users complete a personal profile stating their occupation and current as well as former companies. Further details include what is sought and offered on the SNS (e.g. knowledge sharing), interests, attended universities, and languages spoken. Including a personal picture is encouraged. By default, this information along with the number and list of all contacts, affiliations in discussion groups, and activity meter is shown in the public profile. The display can be regulated with privacy settings. Personal data, e.g. business and private contact information and birthday, can be stated in the contact section. The personal data is only visible to direct contacts after the permission given when adding someone as a contact. Users decide for each established contact which personal information to display, e.g. business address, private address, phone, email, etc.

Users establish links to others by sending and receiving requests to add the other to their contact lists which form the social networks. To assist in expanding the online social network, Xing offers to compare users' address books of other applications with its database. Alternatively, the search options include parameters for all public profile data. There are also defined searches, e.g. all persons viewing the own profile or all contacts of one's current organization or former university. Xing visualizes all possible network paths from the own profile to that of unconnected persons on the other profile.

Several functions support the management of the network. Users can "tag" their contacts and order them by tags. Further functions include a birthday reminder and a message service. Regarding the more distant social network, it is possible to display or search within all second step contacts, i.e. contacts of contacts. Supporting the core function of managing and expanding the social network, there are groups of discussion fora for communication and information exchange and the possibility to announce public events and job offers.

4 DATA COLLECTION AND ANALYSIS

The empirical data was collected in fall 2007. Invitations to the online survey were sent out to the second step network of one seed profile in Xing. This design was chosen to permit further analysis of the complete social network which could be biased by a random sampling design (see Breiger 2004). , However, while this design respects the network structure self-selectivity effects might arise. Therefore, in section 4.2., the questions of sample bias is controlled by comparing the sample attributes with known attribute parameters on Xing. Due to technical restraints on the SNS, sampling was two-folded: an email was sent to all of 11% of the network while a random sample was drawn from the remaining network and invited via a message on the SNS. As the majority of Xing users are German, the questionnaire was posed in German.

4.1 The survey

The questionnaire surveyed the motivations as well as use of the SNS and contained 15 – 21 questions. Participants were asked to categorize the size of their personal network on the SNS and estimate the respective portions of friends, acquaintances, relatives, colleagues (former and current), reactivated contacts, and those persons they have met only once before. Several questions concerned the perception of the semantics of links regarding strength, contact frequency, and context. A special part focused on the frequency, motivations and outcome of the creation of links to yet unknown persons. After filtering for the addition of contacts personally unknown at the time of establishing the connection, 158 (55,9%) participants remained which were asked if they had sent or accepted a contact request before. In case of a positive answer, multiple response items inquired about the motivations. Also, the number of connected persons not yet met and the frequency of contact with those were covered. Demographic variables included age, gender, level of education, employment status, Internet experience and affinity. The questionnaire and the online survey application were tested in a pilot study after which minor changes to the wording of some of the questions were made.

4.2 Sample demographics

The sample consisted of 284 responses which corresponds to a response rate of 25,8%. For an Internet questionnaire this response rate can be considered satisfactory (cf. Deutschens, de Ruyter, Wetzels & Oosterveld, 2004, Kaplowitz, Hadlock & Levine, 2004). In our sample, women were slightly underrepresented (22.3%) in comparison to the SNS (26%, Xing, 2006). The mean age (31 years, std. = 5.3) was slightly lower than on Xing (34 years, Xing, 2006). Since these figures are close, the sample can be considered representative in this respect with regard to the Xing-users. Further sociodemographic factors showed a concentration concerning education and employment status. The majority of the participants consisted of people being employed (75%). Another 14.6% were freelancers and 10% were students. The distribution of the highest professional degree achieved was

similarly sloped: 74.2% reported a master degree or diploma (the German equivalent) and an additional 10.4% held a PhD title. Only 13.1% stated high-school graduation as their highest degree and 2.3 % the in Germany still rather uncommon Bachelor degree. No figures for comparison of Xing could be found. An appraisal of the congruence with statistics of Internet users in Germany in general showed that the distribution with regard to age and education is comparable (TNS, 2006, Agof 2007).

5 RESULTS

5.1 Motivations of use

Participants were asked for their agreement with each of nine possible usage intentions. The degrees of agreement are presented in figure 1. The most prevalent motivations are “keeping in contact” with an agreement level of 72.7%, “reactivating lost contacts” (66.5%) and “managing the existing network” (64%). Next in agreement rates are having an “online address book” (38.1%), “communicating with contacts” (33.5%), and using the SNS for “visibility and self-representation” (32.7%). Mere 29.9% of the users intend to establish new contacts. Lastly, the “job and applicant search” (20.5%) and entertainment (15.1%) receive less agreement. The result that peoples’ use of the SNS focuses mainly on existing relationships mirrors that of US-students (Lampe et al., 2006, Lenhart & Madden, 2007).

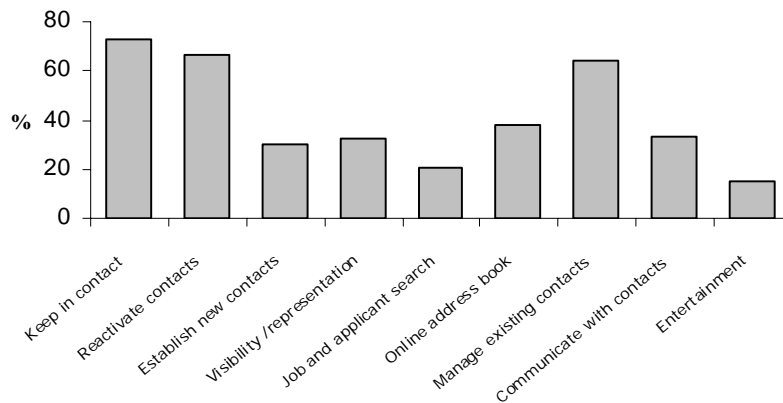


Figure 1: Percentages of agreement with different motivations for SNS use

The nine items were subjected to a principal component analysis. After the rotation, four factors were extracted which explained 61% of the variance. The first factor consists of keeping and reactivating contacts while the second revolves around forming new relationships including the motivations to establish new contacts, job and applicant search, and self-representation. The third represents the idea of an online address book including the management of and communication with contacts. The last factor is solely the entertainment aspect. All but one of the items loaded highly on one of the factors. Only the item “communicating with contacts” loaded almost as high on the management factor as on the entertainment factor showing the motivational duality of preserving the tie and recreation in communicating with others. The following analyses were computed using the motivational factors.

5.2 Composition and size of networks displayed

The composition of the networks results from estimates of the proportions of the respective link categories. The categories are not mutually exclusive, therefore, on average the sum of estimated percentages is 144% (std.=45,60). Adapted to 100%, networks are composed as shown in figure 2. The networks consist mainly of acquaintances (38.7%) and work colleagues (27.2%) as well as, to a lesser extent, of friends (15.7%), and reactivated contacts (11.4%). Persons, one has met only once (5,9%) and relatives (1,1%) are negligible. The size of the individual networks follows the common power-law distribution ranging from 5 to 1184 contacts. On average the contact list includes 145 persons (144,86, std.=130,87) with the median at 117 contacts. Only 5% have contact lists of more than 350.

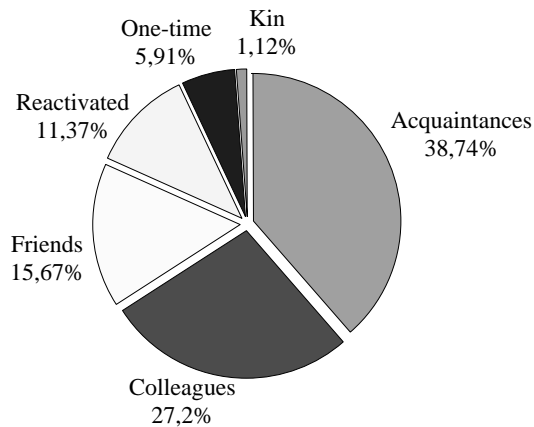


Figure 2: Average proportions of tie categories in the networks.

The composition of the networks is balanced with a focus on weak ties and work connections. The portion of friends is considerable bearing in mind that most people have far fewer friends than acquaintances. Though reactivating contacts is the second most stated motivation, this portion is small in comparison. The marginal portion of one-time contacts rebuts the preconception that people add others indiscriminately. Acquaintances, colleagues, and friends cover over 80% of the networks. Together with the small network sizes, this suggests a large overlap with peoples' real life network.

For want of benchmarks of SNS, we compared the network size with estimates of the size of real life social networks. The average of 145 contacts is even lower than the 150 stated by Hill and Dunbar (2003) and far below other estimates of several thousand contacts. Contact lists counting more than 350 can be seen as the exception on SNS. Thus, our expectation of contact numbers in the upper segment of existing estimates of thousands is refuted. Nor does the result support the view that SNS members maintain more ties than in real life (Donath & boyd, 2004).

In order to identify those with large networks, chi-square tests were computed. With regard to the sociodemographic variables, those with a higher educational degree have larger networks ($\chi^2 = 31.16$, $df. = 12$, $p = .003$). Furthermore, differences in network size depending on the motivations were expected (H_1). Of the four factors, solely the management factor shows a significant correlation with network size, $r = .319$ ($p = .000$). Because effects can be due to moderation of other variables, the partial correlation was computed controlling for the other motivational factors and the sociodemographic variables. The correlation weakens slightly, but remains significant ($r = .285$, $p = .000$). Thus, the hypothesis that network size is influenced by user motivations is supported. The motivation to manage one's social network is positively related to network size whereas the motivations to establish new ties, keep in contact and entertainment have no effect.

5.3 User perceptions of displayed links

Users' ratings of the relationship context of profile links between unknown others reveal a clear focus on business related links. Almost half (45%) say they expect that the linked persons know each other professionally. A relationship from other contexts is assumed less frequently with nearly equal proportions: private acquaintance (12.9%), former acquaintance (12.6%), acquaintance met only once (11.2%), fellow (former) students (9%). Only the extremes, wanting to get to know the other (5.6%) and friends (3.6%), are assumed an unlikely background for a link.

These results are mirrored on the closeness dimension (figure 3). Here, users assume that the linked persons have met ftf at least once (48.8%) with a slight tendency towards the weaker end: 32% expect a weaker connection, i.e. either cmc-only relationship (28.8%) or none (3.2%), versus 25.1% expecting a stronger relationship, i.e. infrequent (23.7%) or frequent (1.4%) communication. Users clearly perceive a link to imply a ftf acquaintanceship. Although establishing a link can be considered cheap on this SNS, the information carried on the links consists of a professional, ftf acquaintanceship,

however loose. Both extremes, i.e. no relationship at all and a very close relationship as in friendship, are assumed highly unlikely.

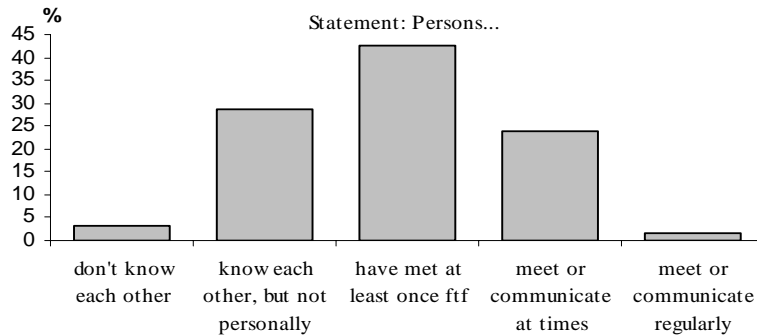


Figure 3: Estimation of tie closeness in percent

5.4 Frequency, motivations for, and continuation of new relationships

Over half of the questionnaire participants (57%) have added at least one person to their contact list who was personally unknown at the time of the addition. These have added on average 13,47 (std. = 29.45) unknown contacts. The median of 5 shows that, for the majority, adding someone unknown is rather the exception than the norm. Regarding the tendency to add unknown others, chi-square tests show effects for educational level and employment status. Persons with a graduate degree rather add unknown others than those with high-school graduation or a PhD degree ($\chi^2 = 6.79$, df. = 2, p = .033). College students do so less than employed persons or freelancers ($\chi^2 = 15.26$, df. = 3, p = .002).

It was posited that the frequency of adding unknown persons varies with the different user motivations (H_2). Correlations with the four motivational factors result in a significant connection with the factor of forming new relationships ($r = .256$, $p = .000$) which is not caused by the sociodemographic and other motivational variables as the partial correlation shows ($r = .253$, $p = .000$). The hypothesis that the tendency to add unknown persons depends on users' motivations is therefore supported.

For the following tests differentiating between seeking and accepting link requests as well as continuing the contact, only those who have added unknown persons were considered ($n = 158$). Of these, 39% have ever sent a link request to an unknown person. Looking at the motivations (figure 4), it's striking that the two most commonly stated reasons point to persons in their second step network, i.e. friends of friends (23,78%) and being introduced (16,08%). Searching for persons and seeing profiles somewhere are equally frequently named: general search (15,38%), seeing a profile by chance (12,59%), searching for a specific person (12,59%), seeing a profile in a group (11,19%) or in a discussion forum (7,69%). Only the guestbook has almost no effect (0,7%). Almost 40% of new relationships originate in the extended network while only 28% start after a search. The remaining categories mirror real life: people "meet" by chance or are drawn together by homophily, e.g. being in the same group or discussing the same topics. The guestbook is shown to have no role in networking.

While only a small portion sends request, nearly all requests are accepted (91,6%) mostly on grounds of an interesting profile (36,74%) or an appealingly phrased request (28,04%). However, a fifth accepts without a reason ("Why not?", 20%) and 13,02% acquiesce avoiding to refuse the request. Uncertainty about knowing the person requesting is a negligible reason (1,4%). Thus, it seems to be a good investment to maintain an attractive profile and write the request carefully.

Compared to the number of unknown persons *added*, the average of persons personally unknown *at the time* of the survey is 13,57 (std. = 30,43), again, with a median of 5. Seemingly, most of the new contacts stay in the virtual world. Regarding the frequency of mediated communication with these contacts, under 5% report communicating monthly or more often. Over half (52,38%) communicate sometimes while the rest, 43,54%, never communicated with these contacts again. Thus, over 40% of the positively answered link requests fail to develop into an even loose relationship, i.e. a weak tie.

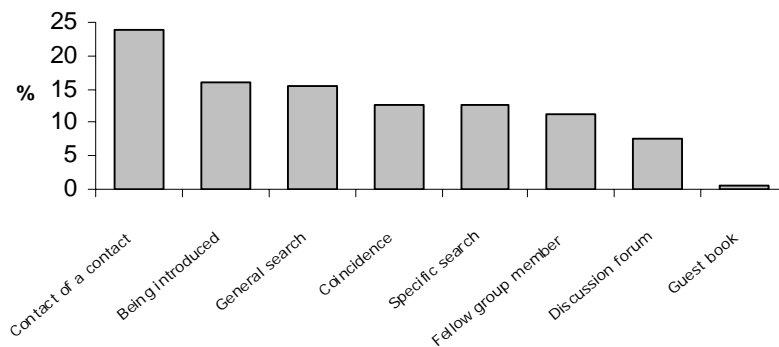


Figure 4: Percentages of agreement with different motivations to request a contact link

6 DISCUSSION AND CONCLUSION

A survey study was conducted to identify the intentions and the manner in which people use SNS. This study replicates the finding that persons use SNS primarily with regard to existing contacts versus establishing new contacts (cf. Lampe et al. 2006, Lenhart & Madden 2007). Entertainment purposes are not considered important on business-oriented SNS. Regarding the composition of the social networks displayed, several conclusions can be derived. Although the social networks of participants consist mostly of acquaintances and work colleagues, the portion of friends indicates a mixed working – private composition. These categories cover over 80% of the networks suggesting a considerable overlap with offline social networks. Finally, shown by the overwhelming majority of personally known contacts, people add others with consideration invalidating the picture sometimes painted in the press (Jump 2005). It should be noted that no conclusion about the closeness or intimacy with contacts can be derived as personal definitions of friendship and acquaintanceship vary. Also, the categories are not mutually exclusive which could limit the validity of the findings. However, the average sum of all categories above 100% can be equally considered to indicate the overlap with the real life social networks since most relationships are multiplex, i.e. spanning several contexts. The network sizes found are small compared to estimates of offline network sizes (Hill & Dunbar 2003) as well as expectations about SNS (Donath & boyd 2004). Conceivably, an estimated network size of several thousands is overrated. However, on business-focused SNS, people might link only to others they perceive as professionally relevant resulting in the work-related part of ones' network being represented. This view is challenged by the large proportion of friends in relation to that of colleagues. Also, non-SNS-users might constitute a large part of peoples' networks. Further research is necessary to determine what part, qualitative and quantitative, of their social networks people represent on SNS.

The motivation to manage one's social network predicts larger network sizes as do neither the intent to reactivate nor to establish links both of which revolve around forming relationships. However, persons with larger networks may have more need to employ SNS to manage their networks. Since the management factor includes the communicative aspect, the result replicates the finding of other online contexts (di Gennaro & Dutton 2007).

For the value of the display, the information on the links plays a crucial role. If the relationships denoted are too weak, the displayed links lose their function to distinguish between present and absent connections (Donath & boyd 2004). For the users of this SNS, the (cheap) links denote rather homogeneously a professional if loose connection between persons who have met at least once. The business focus of the SNS might influence the reliability of the link meaning positively (Donath 2007).

Over half of the users have added someone unknown as a contact. This number is comparable to relationship formation in newsgroups (Parks & Floyd 1996). Effects of professional degree and employment status were found, but no gender difference. The motivational factor of seeking new ties significantly predicts adding unknown persons supporting the hypothesis. Only a moderate portion of users, 21% of all, requests links from unknown persons while virtually all users accept them. 40% of

the requests are directed to persons within the extended network further confirming that peoples' use of SNS and expansion of their social network is directed toward their existing networks.

It is important to note that adding someone to the contact list does not imply starting a meaningful relationship or interaction. Almost half of these additions do not develop further. The number of persons establishing relationships thus decreases from 57% to an actual 32% mirroring rather the results on the Internet in general (di Gennaro & Dutton 2007). The remaining relationships develop, as expected, into weak ties. Although people mostly establish links to persons of their extended network, almost half of all new relationships run aground. These links remain in the contacts lists, however, they can be considered absent ties and therefore, introduce a source of bias into the network.

We empirically studied the motivations and behavioral patterns of SNS use. A focus on existing relationships was found. The perceived information of the links is a weak, but meaningful relationship. This suggests that the contact lists mirror real life social networks to some extent. However, our results may be constrained by self-selectivity effects. Further research should investigate the extent of overlap between online and the current offline social networks in more detail. Motivational influences could be shown regarding social network size and concerning behavior on SNS as adding as yet unknown persons. The majority of SNS users try to form new relationships by adding someone unknown, but the focus on existing connections is continued in seeking relationships with persons in the extended network. The question arises whether this form of network closures produces an increase in social capital, e.g. in information benefit, because these persons were accessible before the creation of the link. Finally, it was found that many of the newly started relationships do not lead to further interaction. The investigation of factors influencing this development could lead to a better support of the process of relationship forming.

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