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# Intention to learn in MMOG: Examining the roles of peer intrinsic and extrinsic motivations

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# INTERNET SOCIAL NETWORKING – DISTINGUISHING THE PHENOMENON FROM ITS MANIFESTATIONS IN WEB SITES

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## Abstract

*Social Networking Sites (SNS) are one of the most popular business models on the Internet at the moment. At the same time, Social Networking is increasingly interesting as a topic of research in Information Systems. Drawing on existing research in the field, in this paper we propose to distinguish ISN (Internet Social Networking) as a phenomenon from its concrete manifestations in the various SNSs in the marketplace. On the basis of this distinction we take to the classification of SNSs grounded in real-life marketplace variety. In doing so, we identify seven different classes of SNSs. We argue that a typology of SNSs is useful for shaping our understanding of the diverse nature of ISN as existing in concrete manifestations. Most importantly, our classification makes accessible existing research for conceptually sound meta-analysis research. In order to fully grasp the phenomenon of ISN we also propose to include in the definition web sites that feature only certain aspects of ISN, while networking is not their core feature. Using our classification we discuss future research directions.*

*Keywords: Social Networking (e.g. Facebook, second life), Web 2.0, Virtual community, Computer-mediated communication (CMC).*

# 1 INTRODUCTION

Social Networking is not a new phenomenon. But with the rise and widespread diffusion of the Internet and its enabling technologies, the topic has gained significant momentum over the past years. Since the emergence of the first web sites that supported the creating and inter-linking of user profiles in the late 1990s (Boyd & Ellison, 2007) social network sites have mushroomed. Today, Social Network Sites (SNSs) are among the most frequently visited sites on the Internet. In popular traffic statistics, SNSs consistently rank among the top sites just behind the ubiquitous search engines (Alexa.com, 2008). Social network sites such as MySpace ([www.myspace.com](http://www.myspace.com)) or Facebook ([www.facebook.com](http://www.facebook.com)) account for more than one hundred million members (Schonfeld, 2008; Zuckerberg, 2008). Moreover, various new, smaller and more specialised SNSs have emerged over the past few years, further signifying the success of this new business model (Costa, 2008; Green, 2008). Also, a new industry is currently developing around the phenomenon; some providers deliver technologies (like [www.elgg.org](http://www.elgg.org)) or even full services (like [www.ning.com](http://www.ning.com)) that enable web site providers to integrate their own social network services, which essentially makes possible and drives the emergence of a plethora of new specialised SNSs. Consequently, thousands of SNSs have been created over the last year alone, providing a networking-space for smaller communities, which are for example characterised by geographical proximity or special interests.

At the same time as SNSs have emerged on the Internet, the phenomenon has gained increasing attention from the scientific community. As a consequence, a considerable body of research on SNSs has been created (Boyd & Ellison, 2007). Studies have researched different social network sites (e.g. Choi, 2006; Schaefer, 2008), have focused on different aspects of Social Networking on the Internet (e.g. Ellison & Steinfield & Lampe, 2007) and shaped our understanding of the specifics of SNSs (e.g. Donath & Boyd, 2004; Kreps, 2008), such as impression management (profiling) (e.g. Lampe & Ellison & Steinfield, 2007; Rosen, 2007), privacy issues (e.g. Govani & Pashley, 2005; Gross & Acquisti, 2005) or the proliferation of special interest networks (e.g. Mellins, 2008; Ploderer & Howard & Thomas & Reitberger, 2008). However, in doing so, existing research is most often quite focused: studies are either limited on researching a single SNS (most often Facebook) or they concentrate on one or few aspects of Social Networking. Few studies have carried out comparisons across cases. Mostly, these are limited to three (e.g. Ahn & Han & Kwak & Moon & Jeong, 2007; Dwyer & Hiltz & Passerini, 2007) or two cases (e.g. Ahn et al., 2007; Kumar & Novak & Tomkins, 2006). Some studies also compare users with none-users of SNSs (e.g. Hargittai, 2007; Ofcom, 2008).

While a lot of empirical work has been carried out in the field, few efforts have been made to align or integrate existing research findings. Research to date remains rather scattered, not only across various studies, but also across communities. This limits its impact in providing a better understanding of the general phenomenon of Social Networking on the Internet. At this point in time, more research is needed that takes stock of what has been achieved so far and that also tries to elicit general streams of understanding from the existing body of work by comparing the findings of existing research.

Against this backdrop, we argue that we need to develop a more differentiated conceptual understanding of Social Networking on the Internet. More specifically, we propose to distinguish between the phenomenon of Internet Social Networking (ISN) and its concrete manifestations in existing Social Network Sites (SNS). We argue that current definitions do not provide a differentiated enough understanding, which however is necessary to fully grasp the phenomenon and the variety of manifestations in the respective web sites (Beer, 2008). For example, if we want to draw conclusions from comparing the findings of existing studies, we need to understand the variations in the underlying manifestations of the phenomenon as influenced by the concrete SNSs. Today, even though similarities can be found in the findings of studies based on specific SNSs, these results can not be readily compared or generalised (Hargittai, 2007). Essentially, such comparisons are problematic without a good conceptual understanding of the existing diversity in manifestations of ISN across different SNS. For example, we would expect that user behaviour, and thus the proliferation and role

of phenomena such as user profiling, turns out quite differently on SNSs like LinkedIn (a business-related SNS) when compared to Facebook (a SNS with a focus on students).

Henceforth, we propose that we need to derive a conceptual understanding of the existing variation in manifestations of ISN across different types of SNSs. Essentially, by identifying different types of SNSs we are able to take into account the various SNS characteristics in setting up future research studies. Therefore, in this paper we set out to deriving a typology of SNSs as the basis for future meta-analysis type research and for new cross-case empirical studies. In doing so, our main argument is that user behaviour on SNSs can vary greatly depending on the characteristics of the site such as domain (O'Murchu & Breskin & Decker, 2004) or target group focus (compare Friendster example in Boyd, 2006b), the culture of the member community (compare MySpace example in Rosen, 2007 or Friendster example in Boyd, 2006b), or the role of Social Networking Features (SNFs) on the site.

More specifically, if we want to deduce findings regarding ISN as a phenomenon from researching (a set of) specific SNSs, we need to understand the specific characteristics of the latter and their possible impact on user behaviour. In essence, we have to be able to describe and analyse the concrete manifestation of ISN on a specific social networking platform. We argue that, for doing so, we firstly need a set of criteria to suitably describe SNSs and to further distinguish SNSs into different classes in order to branch out future research in an increasingly complex and diverse field.

Our paper proceeds as follows. In section two, we begin by providing a brief discussion of existing definitions of SNS. Based on this we set out to distinguishing ISN from SNSs. Moreover, we give a short overview of existing research in the field. In section three we derive, based on extant literature, a set of criteria for describing SNSs. This is followed by a classification of a set of 60 social network sites on the basis of which we arrive at a typology of SNSs featuring seven distinct types. In section four we discuss the types and derive distinct sets of research questions for each of them, which illustrates not only the value in investigating ISN phenomena across a set of different types of SNSs, but also provides possible directions for future research. We conclude the paper with a short summary.

## **2 LITERATURE REVIEW**

We propose to distinguish between the phenomenon of Internet Social Networking (ISN) and its concrete manifestations in existing Social Networking Sites (SNSs). In the following, we will first define ISN and give examples of observations on this phenomenon and then derive an SNS definition.

### **2.1 Internet Social Networking**

ISN can be understood as the phenomenon of Social Networking on the Internet. Hence, the concept subsumes all activities by Internet users with regard to extending or maintaining their social network. We draw on social network analysis theory for further characterising the concept (Carton & Wellman, 1999). A social network thus 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 & Faust, 1994). Hence, our unit of analysis is not the individual, but the collection of individuals represented in the social network as well as the linkages among them.

Existing ISN research typically investigates phenomena such as the self-presentation of people by way of SNS profiles (e.g. Kreps, 2008; Lampe et al., 2007) or friends lists (e.g. Donath & Boyd, 2004; Rosen, 2007) or phenomena such as social browsing and searching (e.g. Lampe & Ellison & Steinfield, 2006), which describe the ways in which users utilize their networks of friends. Other phenomena, more concerned with the utility of ISN, are the maintenance of weak tie networks (e.g. Paul & Brier, 2001; Schaefer, 2008) or the initiation of new contacts through web sites (e.g. Ellison & Heino & Gibbs, 2006; Thew, 2008). In doing so, research into ISN is typically targeted at observations made in SNSs, as the concrete manifestation of ISN on the Internet.

## 2.2 Social Network Sites as manifestation of ISN

Boyd and Ellison define Social Network Sites as “web-based 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 & Ellison, 2007). While others have criticised this definition on the grounds that it is too wide and includes all sites that feature social network of any kind (and not just as core features) (Beer, 2008), we agree with the wider interpretation by Boyd and Ellison. Otherwise, research into many sites offering SNFs as non-core features would be left out.

We argue that research on sites where SNFs are not the core features (e.g. Holme & Edling & Liljeros, 2004; Kumar et al., 2006; Maia & Almeida & Almeida, 2008) can contribute significantly to a better understanding of the phenomenon of ISN in general. It should be taken into account that ISN might manifest in a different way on these sites. Examples are the Chinese SNS QQ ([www.qq.com](http://www.qq.com)), the most popular Korean SNS (Choi, 2006) Cyworld ([www.cyworld.com](http://www.cyworld.com)) and the French SkyRock ([www.skyrock.com](http://www.skyrock.com)), which have started as Instant Messaging Service (QICQ), discussion forum or Weblog respectively. Hence, research into these sites might contribute to understanding how a social network starts to form and how this is reflected in the concrete usage of the site. One popular example today is YouTube ([www.youtube.com](http://www.youtube.com)), the world’s leading video sharing website. Also, at Youtube the SNFs are mostly focused on the development, presentation and community rating of video content (Maia et al., 2008). Therefore it offers a very specific view on ISN as a phenomenon.

Henceforth, we follow the above definition and regard all websites that implement any features for enabling Social Networking as SNSs. In this definition all sites are included that support/enable Social Networking regardless of whether it is the core/defining or a non-core feature of the site. It is worth mentioning that no consensus exists in the literature with regard to how narrow or wide the term SNS should be defined (e.g. should it include technologies such as weblogs). We argue that our proposed distinction between the phenomenon of ISN and SNSs can help to overcome this problem as it offers the opportunity to classify both core and non-core SNSs. By classifying SNSs using a set of criteria such as domain (O’Murchu et al., 2004), target group focus (Boyd, 2006b), the culture of the member community (compare MySpace example in Rosen, 2007), or the role played by SNFs on the site, the impact different SNSs and their specific characteristics have on the phenomenon of ISN can be investigated more specifically. By spelling out the specifics of different manifestations, i.e. different types of SNSs, research into phenomena such as self-representation, social grooming or social browsing might gain credibility. Comparison studies using cross-case approaches are then able to compare ISN across different types of SNSs.

In the following section we will draw on the existing body of research on SNSs. We will show that research is fragmented and few efforts have been made to align observations made based on different SNSs. In doing so, we will motivate the necessity of a classification of SNSs.

## 2.3 Fragmented research in an emerging research field

Existing research is most often characterised by a focus on one specific SNS (e.g. Schaefer, 2008). Most studies also concentrate on specific aspects of this SNS, like the self-presentation in profiles (e.g. Lampe et al., 2007; Liu, 2007), the value of friendship-links (e.g. Fono & Raynes-Goldie, 2006; Rosen, 2007), the network-structure (e.g. Holme et al., 2004; Maia et al., 2008), the relation to offline networks (e.g. Choi, 2006; Ellison et al., 2007) or security/privacy issues (e.g. Govani & Pashley, 2005; Gross & Acquisti, 2005). Only some studies research multiple SNSs (e.g. Ahn et al., 2007; Dwyer et al., 2007; Lenhart & Madden, 2007) or take a more general view on the phenomenon of ISN (e.g. Donath & Boyd, 2004; Kreps, 2008).

Even though similarities can be found in the results gained with different SNSs these results cannot be easily generalized (Hargittai, 2007). The existing body of research might entice scholars to mixing the

results gained from the various, often very different, SNSs in order to form a general understanding of ISN, which however is likely to lead to problematic conclusions. The vast majority of SNS studies deal with Facebook. Other SNSs that have been repeatedly researched are MySpace (e.g. Boyd, 2006a; Dwyer et al., 2007), CyWorld (e.g. Choi, 2006), LinkedIn (e.g. Thew, 2008) and Xing (www.xing.com) (e.g. Schaefer, 2008). Only little research exists on other SNSs. Such a concentration on very few SNSs potentially prohibits identification of specific kinds of behaviour that might only exist on certain other SNSs.

Comparing the results of studies on SNSs it becomes obvious that the ISN phenomenon does not manifest in the same way across SNSs, but that significant differences can be observed in site usage. For example, people seem to use business and leisure-related SNSs not only for different reasons, but also in a different ways. On business-related SNSs for example the presentation of oneself can serve as a potential gateway to new employments or business contacts (King, 2006). Therefore, self representation is done very carefully (Schaefer, 2008). This does manifest in the profile description as well as in the choice of contacts (Thew, 2008). The usage of leisure-time SNSs in contrast can be characterised as being much more playful (Sledgianowski & Kulviwat, 2008). Profiles are filled up with information about favourite music, artists or TV-shows, personal heroes and every kind of pictures (Liu, 2007). The choice of contacts is much more unstrained. The search for a romantic partner by users of dating-related SNSs again can result in a different form of self-presentation; users tend to present their “ideal self”. Due to risks of misrepresentation, users also adopt various strategies to proof the credibility of their profile (Ellison et al., 2006). This implies that a comparison of results on the usage of different SNSs needs a conceptual understanding of their differences.

All in all, we face a highly fragmented marketplace of SNSs. Sites are characterised by different focus and functional settings, by an integration in different real world communities, and by a significant variance in user count. This fragmentation, heterogeneity and diversity are not mirrored sufficiently in research yet. Moreover, current research seems to be unaware of this diversity. In contrast, current research seems to treat all SNSs as one of a kind. While existing research has pioneered the field in achieving a first overview of the marketplace and initial understandings of ISN phenomena, we think that now is the time to take stock of the actual variety of SNSs existing in the marketplace in order to take ISN research to the next level. In the next section we carry out a classification of SNS, before we discuss the role of our classification in future research.

### 3 CLASSIFICATION OF SOCIAL NETWORK SITES

For classifying SNSs we first analysed the current body of research in order to derive criteria for differentiation. Subsequently, we identified SNSs in the marketplace and applied the criteria to them. We were able to derive six criteria for classification and we identified seven different classes of SNSs.

#### 3.1 Criteria for Classification

Based on an extensive literature review, we identified six criteria for classifying SNSs, all of which are briefly described in the following sections.

**Relationship Notion:** One core element of SNSs is displaying the connections that exist between users (Donath & Boyd, 2004). In doing so, the relationships between two users do not have the same label or the same notion across platforms. Popular labels for relationships are for example “friends” or “contacts” (Boyd & Ellison, 2007). But more importantly these relationships can reflect very different understandings of who is a friend or contact online. The meaning of friends online and offline can be both diametric or exactly the same (Boyd, 2006a). Even though the relationship notion might be specific to every single user (Ofcom, 2008; Schaefer, 2008) it is also highly dependent on the SNS. Two major aspects have to be mentioned: (a) the culture on the SNS and (b) the main purpose of the SNS. The emerging culture (a) found on an SNS can shape the understanding of the value of a relationship. On MySpace for example, encouraged by the system functionality, the collection of as

many friends as possible is much more common than on most other SNSs (Rosen, 2007). Differences in the interpretation of 'relationships' have also been observed across SNSs with different purposes (b), like business, leisure-time, dating or online-gaming SNSs (Boyd, 2006a; O'Murchu et al., 2004). Relationships can be characterised as business-partners or colleagues on business-related SNSs, or as friends or acquaintances on leisure-time related SNSs. On online gaming-related SNSs relationships are more with 'playfellows' than real-life friends. The characteristic of "relationship notion" thereby offers to differentiate between SNSs according to different interpretations of relationships influenced by site purpose and emerging culture.

**Purpose of Usage:** Whether the intrinsic motivation for SNSs usage is largely hedonistic, altruistic or utility-based, is expressed in the characteristic "purpose of use". Whereas SNSs like Facebook or MySpace are mostly used for hedonistic purpose (Sledgianowski & Kulviwat, 2008), SNSs concentrating on business matters like LinkedIn or Monster.com have a clear focus on utility (Thew, 2008). They can act as mediators for job assignments or useful business contacts. The usage of SNSs that focus primarily on information exchange or the dissemination of multimedia content is mostly hedonistic in nature. Exceptions are the usage of SNSs concentrating on health issues, being utility based, or of SNSs seeking for social good like TakingItGlobal.org, which is rather altruistic in nature.

**Role of SNFs:** SNSs can be differentiated by SNFs being the core features, like in the case of Facebook, MySpace or LinkedIn, or none-core features like on YouTube or Flickr (Beer, 2008; Boyd & Ellison, 2007). Sites not implementing SNFs as the core features can use SNFs as added value or as an enabler. Good examples for using SNFs as added value are dating sites whose focus is on the mediation of contacts to potential dates. The building up of a social network among users can provide additional quality information about users as the social network of a person can give insights into that person's life and personality (Donath & Boyd, 2004). Thereby information on the social network of a person can help identify whether s/he is a possible partner or not. Websites focusing on health issues can use SNFs as an enabler to foster information exchange between professionals and patients (Kamel Boulos & Wheelert, 2007). An example for a professional health network is theijs.com, an SNS build around the International Journal of Surgery.

**Mode of Usage:** The way people adopt the functionality of an SNS can vary greatly depending on the context of the site as well as the community represented on it. This can be illustrated by again comparing leisure-time and business-related SNS. In leisure-related SNSs, users act relatively informal and unconcerned regarding their self-presentation (Govani & Pashley, 2005; Liu, 2007; Sledgianowski & Kulviwat, 2008). The messaging functionalities are used intensively and relationship requests are only very rarely denied (Ito & Horst & Bittanti & Boyd & Herr-Stephenson & Lange & Pascoe & Robinson, 2008; Ofcom, 2008). On business-related SNS users seem to care more about self-presentation. The profile needs to be appealing to potential employers or business partners (King, 2006). Messaging functions are only rarely used (Thew, 2008). Usage is concentrated on a favourable self-presentation whereas usage of leisure-related SNSs focuses on interaction with others. Hence, we differentiate between the modes of usage "interaction" and "self-portrayal".

**Target and Domain Focus:** The most popular SNSs today count more than one hundred million users (Schonfeld, 2008; Zuckerberg, 2008). SNSs like MySpace or Facebook, limited to a specific audience in the beginning (music/students), opened up to attract more and more users eventually seeking market domination. A large number of users is not only advantageous for the provider, but also for users, who are able to connect to more other users. But this also implies that users can only present one identity to all possible contacts, be it business contacts, parents or co-students. This can have negative effects on the communication taking place within a specific social group on a SNS (Boyd, 2006b). Hence, even though hidden behind the success of the "big players" an increasing number of domain and target group specific SNSs have emerged (Green, 2008). Open source platforms, such as elgg.org, or full service providers, like ning.com allow social groups to easily create their own SNSs. On ning.com alone thousands of SNSs have already been created, concentrating on specific target groups like fire fighters (firefighternation.ning.com) or college students (playboyu.com), or on domains like sports (streeball.com) or gothic living (fairiesvampires.com).

### 3.2 Classification

Using the above-described criteria we characterized a total of 60 SNSs. Through techniques of grouping and displaying (see Miles & Huberman, 1994), we were able to derive seven main classes/types of SNSs. Figure 1 gives an overview providing four examples for each category.

**Public-SNSs** do not limit their potential audience by any means. Some started with a focus on domain-topics or target-groups but abandoned these restrictions in favour of further growth. Consequently, the SNSs with the biggest user group (Facebook, MySpace, QQ or CyWorld) can be found in this class. Public-SNSs are core-SNSs that are used for interaction with a hedonistic purpose. The self-presentation is playful (Sledgianowski & Kulviwat, 2008) and the friends online do often match with friends offline (Ellison et al., 2007; Paul & Brier, 2001) even though this differs slightly between the certain sites of this class (Rosen, 2007).

Getting into contact with potential business-partners and looking for employments or employees are the predominant usage patterns on **Business-SNSs** (Purpose of Use: utility). These SNSs are less used for communication. Characteristic is a very careful design of the self-presentation concerning the profile as well as the contact list (Schaefer, 2008; Thew, 2008). Contacts can be real-world contacts, distant acquaintances or even users not known from the offline world (Thew, 2008). SNFs are usually the core features with the exception of recruiting sites, which use SNFs as additional features. The most popular SNS in this class is LinkedIn.com with more than 30 Million users.

**Content-SNS** focus on the production, sharing and discussion of content such as pictures (Flickr.com), video (YouTube.com), music (imeem.com) or stories (tokoni.com). The manifestation of ISN on this type of SNS has not been widely researched as yet. SNFs on the sites are mainly used for enriching the discussion on the content (role of SNFs: adding).

**Target-SNSs** are targeted at certain real-world groups like students (studiVZ), mothers and mothers-to-be (cafemom.com) or people of a certain age (like platinnetz.de: over 50/ or clubpenguin.com: children). With the notable exception of focusing on a specific target group these SNSs are very similar to Public-SNSs. The major Public-SNSs Facebook started as a Target-SNSs focused on students until it was opened to a wider public. However, it is to be expected, that the bounded character of social networks will lead to different behaviour on the SNSs, as users tend to feel less observed in such environments (Boyd, 2006b).

**Domain-SNS** aim at bringing together people on a specific domain-topic, like sports (ruku.com: rugby), travel (passportstamp.com) or health (patientslikeme.com). Like Target-SNS, Domain-SNS are comparable to Public-SNS. But again the focus on a certain topic domain can influence ISN manifestation on the SNS. For example, Domain-SNS concerned with health issues, where patients can find assistance, will most likely be used in very specific ways. Little research has been conducted on Domain-SNSs so far.

Users of **Activity-SNSs** usually follow a certain goal, which can be meeting a romantic partner, a playfellow for an online game, or business contacts for setting up a project. Hence, Activity-SNSs are strongly grounded in real life and aim at mediating contacts in a specific domain. The purpose of use can vary depending on the domain like charity (altruistic), business (utility) or online gaming (hedonistic). Many Activity-SNSs are none-core SNSs.

**Micro-SNSs** can be very different in their character and very closely related to other SNS-classes. The major aspect for differentiation is neither a domain focus nor a specific aim, but their size. Micro-SNSs usually only have a few hundred to a couple of thousand users. They are used to accompany conferences (fowa-miami.crowdvine.com), for supporters of a sports team (spiritof12.com) or are dedicated to students of a specific university (community.brighton.ac.uk). The development of Micro-SNSs is only possible due to providers delivering the technologies or services (see above).

Relationship Notion	Purpose of Usage	Role of SNFs	Mode of Usage	Target Group Focus	Domain Focus		
friends, often real world	hedonistic	core	interaction	none	none	Public-SNSs	facebook.com
friends, often informal	hedonistic	core	interaction	none	none		mySpace.com
friends	hedonistic	core	interaction	none	none		cyWorld.com
friends	hedonistic	core	interaction	none	none		orkut.com
business contact	utility	core	self-portrayal	none	none	Business-SNSs	xing.com
business contact	utility	core	self-portrayal	none	none		linkedin.com
business contact	utility	Core, adding	self-portrayal	none	none		monster.com
business contact	utility	core	self-portrayal	none	none		plaxo.com
friends	hedonistic	enabling	Interaction, self-portrayal	none	stories	Content-SNSs	tokoni.com
friends	hedonistic	adding	interaction	none	musik		imeem.com
friends	hedonistic	adding	interaction	none	videography		youTube.com
friends	hedonistic	adding	interaction	none	pictures		flickr.com
friends	hedonistic	core	interaction	mothers and mothers to be	none	Target-SNSs	cafemom.com
friends, co-students	hedonistic	core	interaction	college students	none		playboyu.com
friends, co-students	hedonistic	core	interaction	students	none		studiVZ.net
friends	hedonistic	core	interaction	over 50	none		platinnetz.de
friends	hedonistic	core	interaction	none	bodybuilding	Domain-SNSs	bodybuilderpassions.com
friends	hedonistic	core	interaction	none	rugby		rucku.com
friends, fellow-sufferer	utility	core	interaction	none	health		patientslikeme.com
friends	hedonistic	core	interaction	none	travel		passportstamp.com
friends, dates	hedonistic	adding	self-portrayal	none, singles	dating	Activity-SNSs	match.com
friends, playfellows	hedonistic	adding	interaction	none	online games		wow-europe.com
business contact	altruistic	enabling	Interaction, self-portrayal	none	social good		takingitglobal.org
business contact	utility	adding	self-portrayal	freelancer, customers	videography		poptent.net
friends, co-fans	hedonistic	core	interaction	none	Seattle Seahawks	Micro-SNSs	spiritof12.com
friends, co-students	hedonistic	core	interaction	students in Brighton	University of Brighton		community.brighton.ac.uk
co-participants	utility	adding	interaction	conference participants	Future of Webapps		fowa-miami.crowdwine.com
friends	hedonistic	core	interaction	none	Sneakers		my.kicksonfire.com

Figure 1. Classification of Social Network Sites

## 4 DISCUSSION

We differentiated between ISN as a phenomenon and SNSs as its concrete manifestations, which can take different forms. In order to explore the latter, we classified SNSs and identified seven classes. With this we seek to build ground for more structured research on 1) the phenomenon of ISN and 2) the specifics of certain SNSs and types of SNSs.

### 4.1 Research on ISN

Until now, our understanding of the phenomenon of ISN is rather limited. This is despite a considerable body of research on SNSs. We face a highly fragmented marketplace with different classes of SNSs. This fragmentation is not reflected in current research. Rather, SNSs are treated as one of a kind. To better understand the phenomenon we need to understand the specific characteristics of a set of SNSs and their possible impact on user behaviour. With our classification we want to provide a framework for integrating current research results in meta-studies. It is also intended as a means to sensitise future research to the, often quite subtle, differences between certain SNS as object of research. Also, when we want to deduce findings on ISN as a phenomenon from researching (a set of) specific SNS we need to understand their specific characteristics, as they are likely to impact on user behaviour and the concrete manifestation of ISN on the platform.

A recent study by the Office of Communication (UK) classified different types of users and non-users (Ofcom, 2008). One example is the “intellectual rejecter” as a non-user who thinks of ISN as “a waste of time”. However, this might not be true for utility-based SNSs. The different types of users characterised could be a starting point for investigating user types in different SNS classes. Also, an analysis of profile data across the different classes promises to reveal different strategies of SNS usage. Henceforth, whenever we want to compare or draw conclusions from existing research, the classification might be useful as a device for judging, validating and interpreting these results, knowing that the type of SNSs, from which the specific findings have been derived, exhibits certain characteristics. Moreover, each type of SNS (as manifestation of ISN) might offer a unique, different, even novel perspective on ISN as a phenomenon.

### 4.2 Research on SNS classes

The current body of research is mostly concerned with Public-SNSs (cf. the overview in Boyd & Ellison, 2007). Attention is also paid to Business-SNSs (e.g. Schaefer, 2008; Thew, 2008). On the other types, such as Content- (e.g. Maia et al., 2008), Activity- (e.g. Ellison et al., 2006), Target- (e.g. Byrne, 2007) and Domain-SNSs (e.g. Mellins, 2008; Ploderer et al., 2008) only single studies have been conducted. To our knowledge no research has been conducted so far on the relatively new class of Micro-SNSs. In the following, we present some directions for further research on the SNS classes.

Recent traffic statistics on the main Public-SNSs like Facebook and MySpace show, that the number of page views per user is decreasing on these sites (Alexa.com, 2008). This is in contrast to the constant growth in user numbers and reach, which is in line with the platforms’ search for market domination (Schonfeld, 2008). However, it has been argued that the growth of the social network, especially in new user groups, can be a threat to SNSs (cf. Facebook example in Boyd, 2006b). However, it is yet to be seen how the constant growth in user numbers might ultimately change the main Public-SNSs. Research also needs to be conducted on how growth influences user behaviour. Another issue most prominently discussed in the context of major Public-SNS is one of security (recent examples are: Boyd, 2008; Felt & Hooimeijer & Evans & Weimer, 2008; Ybarra & Mitchell, 2008). Users present large amounts of data on themselves without fully comprehending what they are doing (Govani & Pashley, 2005; Gross & Acquisti, 2005). The benefits SNSs provide to their users are very closely interlinked with their potential abuse. Even though a considerable body of research exists on this topic, more research is needed in order to understand how the benefits can be achieved, while minimising the potential risks at the same time.

Users seem to be more careful in their self-presentation on Business-SNSs. This observation should be substantiated by investigating the more concrete differences in the adoption and use of SNFs, for example with regard to the information published in profiles on Business-SNSs in comparison to other SNS classes. Furthermore, Business-SNS claim to improve inter- and intra-company communication in providing contact to potential business-partners. However, this claim still warrants verification.

In Content-SNSs SNFs are provided as additional features and therefore it can be expected that they are used differently compared to core-SNSs. Also the concrete usage patterns are likely to differ depending on the content that is shared on the Content-SNSs. The variety of possibilities for using SNFs as an added functionality and how usage behaviour is affected thereby should also be investigated. Serving a real-world group, Target-SNSs can provide insights on processes of transferring real world contacts online. Especially interesting is a comparison of the behaviour of users on Target-SNSs and other SNSs. Potentially, self-presentation might be less important on such SNSs, when taking into account that the online contacts are often already known from a real world context. Profiles might be more ironic and playful drawing on the knowledge existing from real world contexts.

Until now, only a few findings concerning the adoption of SNFs in Domain-SNSs can be identified. It is unclear whether Domain-SNSs are similar to Target-SNSs or whether site usage is mainly focused on discussing domain matters. It is likely that within the class of Domain-SNSs considerable differences in the adoption might be observable, considering the variety of possible domains (health issues vs. sports discipline). Especially on health related Domain-SNSs the quality of exchanged information and of services should be analysed and threats of misuse should be identified. Addressing a very important part of life, research should search for evidence whether the usage of health-related Domain-SNSs can be helpful or might even be problematic.

Theoretically, Activity-SNSs have a high potential for creating new real-world relationships as users seek to find partners for certain activities. This characteristic of Activity-SNSs can bear significant risks in light of the current security discussion; a recent homicide case was linked to the usage of such an SNS (Ulrich, 2008). Further research might investigate strategies for minimising such risks for the users. With regard to the ISN phenomenon, Activity-SNSs can give insights into different strategies for attracting potential partners. These strategies might in turn influence the design of user profiles, as well as the communication behaviour. While some research exists, in-depth analyses are still missing.

Micro-SNSs have only a relatively small user group. Nevertheless, users take the effort of maintaining an additional profile even for this limited audience. The underlying motives might be subject of future research. However, it is still unclear whether the proliferation of Micro-SNSs is only a short-lived phenomenon. One possibility might be that some survive and grow and others just disappear. A second scenario could be that usage of interfaces (like provided for example by elgg.org) leads to an interconnection of various Micro-SNSs, forming a community comparable to major Public-SNSs, but more diverse in terms of user base.

## **5 CONCLUSION**

We proposed to distinguish Internet Social Networking (ISN) as a phenomenon from its concrete manifestations in the various Social Network Sites (SNSs) in the marketplace, through the implementation of specific Social Networking Features (SNFs). We provided definitions for ISN and SNSs and more importantly proposed a classification of SNSs grounded in real-life marketplace variety. We derived seven SNS-classes: Public-SNSs, Business-SNSs, Content-SNSs, Target-SNSs, Domain-SNSs, Activity-SNSs and Micro-SNSs. Finally, we identified future research directions for both the phenomenon of ISN in general and with regard to the various SNS classes. Most importantly, meta-research seems appropriate in order to align the already existing findings. Consequently, we hope that our paper might indirectly contribute to a better understanding of the ISN phenomenon and that our classification is useful as a sensitising device in comparing research on various SNSs. Our classification should make existing research accessible for conceptually sound meta-analyses. Our characterization of SNSs is based on the current body of literature and an analysis of the marketplace.

While our classification provides a state of the art overview of the SNS market, it is likely to further change and differentiate with the further proliferation of the marketplace. The market of SNSs is still a “moving target”, therefore our classification needs to be revised and updated from time to time.

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