LEVEL OF SNS USE: EFFECT OF PERCEIVED RISK AND BENEFIT

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ABSTRACT

This research develops a theoretical model explaining how individual perceptions of benefits and risks associated with SNS use affect usage behavior. The model also considers such factors as perceived enjoyment and social norms which have been found to have a significant effect on intention to use an SNS. This research is among the first to distinguish between deep and shallow use of SNS. An initial pilot study identifies perceptions of risky and beneficial functionalities of SNS use.

INTRODUCTION

Social networking sites (SNSs) such as Facebook, LinkedIn, and Twitter continue to increase in membership and usage. Facebook currently leads the SNS market, with over 750 million users (Facebook Press Release, Timeline). Such enormous growth can have an impact on the type of use by the sites' members. With the popularity of SNS use continuing to increase, there is likewise a growing need for research that addresses the depth and the various types of SNS use. A consequence of the emergent nature of these trends is that there is little research on the broad effects of the growing diversity of the use of SNSs and the effects on individual usage behavior in IS literature.

The growth in size and diversity of SNS membership presents many issues affecting users of SNSs, from the benefits of social presence to be gained by using the SNS to the risk of potential harm from exposing one's character through the use of the system. The ability to interact, share, and extend one's personal network of friends is tempered with issues of privacy and security (Dwyer et al. 2007; Ellison et al. 2007; Fogel & Nehmad 2009). News articles are increasingly reporting unexpected consequences such as employees being fired, students being punished, and even politicians resigning for posting inappropriate messages or pictures on their Facebook, LinkedIn, or Twitter accounts.

The number of cases involving employees being fired from their jobs for inappropriate postings has risen to such a proportion that studies are now conducted attempting to tally the numbers. In a study of companies with 1,000 or more employees, Internet security firm Proofpoint finds that seventeen percent report having issues with their employees' use of social media (Ostrow 2009). Further, the study shows that eight percent of those companies report having fired someone for their behavior on sites like Facebook and LinkedIn. The study reports these numbers doubled from the year before, where only four percent reported having to fire someone over social media misuse.

Recently, Microsoft sponsored a research study conducted by Cross-Tab, a marketing research firm. The study was done by interviewing recruiters and HR professionals about their candidate review process, and then interviewing consumers on how they felt about the use of that information (Cross-Tab 2010). Results of the study confirm that among recruiters and HR professionals, not only are employers checking online sources, but they "have made such online screening a formal requirement of the hiring process" (Cross-Tab 2010, p. 3). In addition, seventy percent indicated they had rejected candidates based on information they discovered online.

From the consumers' point of view, the study finds mixed opinions concerning the appropriateness of such online screening (Cross-Tab 2010). While most reported that online checking of professional sites was appropriate, there was concern about the screening of personal content found on social networking pages, specifically photos. Consumers reported using multiple profiles, adjusting their privacy settings, and refraining from posting content they fear might damage their reputation with an employer. As the parties involved struggle with what type of use is appropriate (and legal), there is little academic research on how individual users cope with the increasing diversity in SNS use. The purpose of this study is to develop a richer understanding of SNS use in terms of perceived risks and benefits related to individual behavior and SNS use.

In this research we develop a theoretical model explaining how individual perceptions of benefits and risks associated with SNS use affect usage behavior. The model also considers such factors as perceived enjoyment and social norms which have been found to have a significant effect on intention to use an SNS (Sledgianowski & Kulviwat 2009). Inspired by Burton-Jones' typology of information technology (IT) use definitions, we distinguish between deep and shallow use of SNS, where deep use allows the user to maximize the benefits associated with SNS use, but also exposes the user to higher risks. On the other hand, the shallow use provides only limited benefits, but minimizes risk exposure. We propose to test the model using a survey of college students.

The structure of the remainder of this paper is as follows: First we build upon existing conceptualizations of IT use to develop a richer definition of SNS use. We then discuss theoretical models explaining IT use and augment them with our proposed conceptual model. We then briefly discuss the findings of our pilot study and proposed methodology to test the entire model and conclude with potential implications of our study for future research and practice.

THEORETICAL FOUNDATIONS

Conceptualizing SNS use

SNSs are a type of online information systems (IS) and therefore, SNS usage needs to be considered in a broader context of IT usage behavior. IT usage has been at the center of IS research for the past few decades. It has been conceptualized as either an independent or dependent variable in different research domains, including IS success, IS acceptance, IS implementation, and IS for decision making. Yet there have been mixed results in regards to its relationship to the other constructs that could be due to poor conceptualization and measurement of usage (Burton-Jones & Straub 2006). These authors propose a staged approach conceptualizing usage based on the context and defined by the elements of usage (structure: user, system and/or task) and measures of those elements as related to other constructs within the context (function).

Inspired by Burton-Jones and Straub (2006) we aim to develop a richer conceptualization of SNS use. Specifically, we define deep usage as the type of IT usage that allows the users to maximize the benefits of IT, yet exposes them to maximum IT related risks. By comparison, shallow use is the use that offers only limited benefits, but also has limited risks associated with it. Although we view the depth of use as a continuum, with certain task/functionality combinations representing deeper use than others, for the purpose of this study we focus on use representing the opposite ends of the depth spectrum.

In the context of SNSs, we define shallow use of an SNS to be the use of the system functionalities that do not overly expose the user's character. These are the functionalities of the SNS that are limited to making connections with others (i.e. becoming friends) and viewing other users' information (including wall posts and photos) while limiting a user's own sharing activities. We propose that this type of usage allows the user to benefit from being an SNS user while not exposing them to any perceived risks. Deep usage on the other hand, is related to the type of functionalities that allow a user to share information through the updating of: status, photos, wall posts, links etc. We propose this type of usage is influenced by an SNS user's desire to maximize the benefits but could be hindered by the perception of the risks involved. As per Burton-Jones and Straub's (2006) classification of richness of usage measures, we aim to conceptualize a somewhat rich measure that incorporates the system (SNS) and task (SNS functionalities). We further believe that the extent (frequency and duration) of each type of use (shallow vs. deep) may be influenced by different factors.

Determinants of IS/SNS Use

The rational view of IS usage suggests that individual use of IT is influenced by individual perceptions of benefits and costs/risks associated with such use. Perceived benefit and perceived risk are constructs adapted from economics and psychology literature by IS researchers to study intention to use and actual use of an IS (Chan and Ngai 2007; Kim et al. 2009). The concepts of perceived benefit and perceived risk in information systems research can be found in the literature related to online purchasing activities and adoption of e-services (Pavlou 2003; Featherman and Pavlou 2003; Il et al. 2008). In looking at intentions to purchase a product or service online, Kim et al. (2009) find that perceived benefits provide potentially strong incentives. These studies contextualize perceived benefit in terms of utilitarian benefit, providing a value through a product or service. As the current study is looking at a hedonic system, perceived benefit is extended beyond cost savings to include benefits in the context of social presence, or social capital.

Research also found that acceptance of e-commerce is influenced significantly by reducing perceived risk (Pavlou 2003). Featherman and Pavlou (2003) define perceived risk to be "the potential for loss in the pursuit of a desired outcome of using an e-service." This is based on Bauer's (1967) definition of perceived risk as "a combination of uncertainty plus seriousness of outcome involved." Il et al. (2008) suggest that "Perceived risk or uncertainty affects people's confidence in their decisions." We find therefore, that perceived risk is a person's assessment of the combination of uncertainty and potential loss involved with a specific activity. In the adoption of information systems, perceived risk is found to be a significant moderator to better explain users' acceptance within the TAM model (Il et al. 2008).

Prior literature suggests there are different facets to perceived risk which include: performance risk, financial risk, time risk, psychological risk, social risk, privacy risk and overall risk. Our study's context is related to the perceived social risk that is defined as "Potential loss of status in one's social group as a result of adopting a product or service, looking foolish or untrendy." However in the study concerned with the adoption of e-services, social risk is found to be insignificant. We believe this is related to the utilitarian context it was measured in. Within the hedonic context, Qin et al. (2009) propose that a SNS user's privacy concern (one of the risk facets) will have a negative effect on usage behavior of an SNS. We however, propose that social risk will have a negative influence on a user's deep use of the SNS.

Technology acceptance models (TAM, TAMII, UTAUT, etc.) represent the dominant paradigm of individual acceptance and use (Karahanna et al. 1999; Malhotra, and Galleta 2005; Venkatesh et al. 2003). These models are rooted in the theory of reasoned action (TRA), which suggests that a person's attitude toward a particular behavior is either positive or negative and is affected by subjective norms, or the perception that most of the people who matter to an individual believe the action should or should not be performed (Fishbein and Ajzen 1975). With its roots in social psychology, TRA was the basis of Davis' (1989) Technology Acceptance Model (TAM) which has been extended numerous times, primarily looking at user acceptance of information systems as determined by perceived ease of use and perceived usefulness. In addition, the theory of planned behavior (TPB) was also adapted from TRA to include perceived behavioral control, or the perceptions of constraint on behavior (Ajzen 1991).

Building upon the foundations of TRA and TAM, Venkatesh et al. (2003) introduced the unified theory of acceptance and usage of technology (UTAUT) as an attempt to bring together the most significant predictors determined from a study on comparisons of the aforementioned theories of acceptance and usage. UTAUT suggests that expectancies of performance and effort, along with facilitating conditions and social influence are direct determinants of intention to use. In addition, UTAUT includes social influences as a direct predictor of intention to use the technology. Social influences are defined similarly to subjective norms in TRA, or simply as the degree to which an individual believes that others who are deemed important to that individual believe the action should or should not be performed (Venkatesh et al. 2003).

The key TAM constructs include usefulness and ease of use. Usefulness broadly represents the benefits associated with the use of the system, whereas ease of use is an indicator of perceived costs associated with using the system. Because usefulness represents primarily utilitarian benefits of using the system, the models were modified to include other benefits that are more salient when considering the use of hedonic IS. Specifically, building upon UTAUT and TAM, Sledgianowski and Kulviwat (2009) empirically test the intention to use and actual use of SNSs by combining factors from both models to develop their Social Network Site Adoption model. These authors combine traditional acceptance factors of perceived ease of use and perceived usefulness with the social factors of normative pressure (or subjective norms) as well as trust, critical mass (the point where enough users have adopted the innovation to make it self-sustaining), and playfulness.

When looking at interactive media technologies, Dickinger et al. (2008) report that network externalities, or the reliance on the usage of peers as a requirement of interactive media use, may lead to higher perceptions of usefulness and perceived enjoyment. Their study indicates that social norms and perceived enjoyment are two strong predictors of both usefulness and usage intentions. The study also finds that the usage of applications by peers affects perceived enjoyment (Dickinger 2008).

SNS use and individual risk/benefit perceptions

Dickinger et al. (2008) indicated that social norms and perceived enjoyment were two strong predictors of usage intentions as the more users perceive social norms, the more they perceive the service as useful. As previously noted, Sledgianowski and Kulviwat (2009) find that a user's perception that a critical mass of like users are using the site and perceived normative pressure from those important to the user also contribute to determining intention to use and actual use of the SNS. Therefore, we propose:

H1: Social norms will have a positive effect on perceived benefits.

In addition, we believe that social norms will have a direct effect on shallow use of the SNS rather than deep use. We reason that if an individual does not see significant benefits for using SNS, but experiences pressure from referent others to use the SNS, he/she will concede to such pressure by engaging in shallow SNS use. Therefore we propose:

H2: Social norms will have a positive effect on individual's shallow use of SNS.

Individual perceptions of SNS costs and benefits are also likely to be influenced by how much an individual enjoys using the SNS. The research initiated by van der Heijden (2004) investigates user acceptance of hedonic systems, finding that predictors vary depending on the context in which the system is used, being either utilitarian or hedonic. When looking at the use of a hedonic system such as a SNS, Sledgianowski and Kulviwat (2009) find that the intrinsic motivator of perceived playfulness or enjoyment one finds by using the system has the strongest impact on intent to use. Therefore, following the research of van der Heijden (2003) and Sledgianowski and Kulviwat (2009), perceived enjoyment is defined as the level of pleasure a user of a SNS believes using that site gives him/her. Therefore we propose:

H3: Perceived enjoyment will have a positive effect on perceived benefits.

We further propose that individual's decisions regarding SNS use are at least partly influenced by their perceptions of benefits and risks associated with SNS use. However, we believe that such effects are likely to be different for deep and shallow use. Because shallow use does not expose individuals to significant risks, perceived risks will only have a negative effect on deep use of SNS, while perceived benefits are likely to have a positive effect on both deep and shallow use. Therefore, we propose:

H4: Individual's perceptions of SNS benefits will have a positive effect on that individual's shallow use of SNS.
H5: Individual's perceptions of SNS benefits will have a positive effect on that individual's deep use of SNS.
H6: Individual's perceptions of SNS risks will have a negative effect on that individual's deep use of SNS.

The propositions are summarized in the research model shown in Figure 1.

Figure 1. Research Model
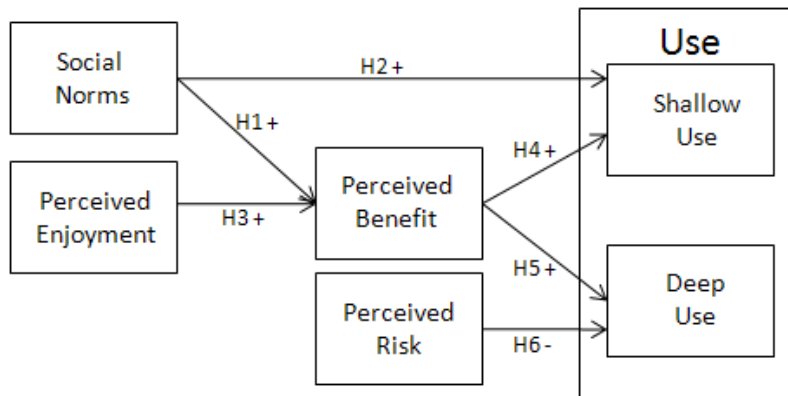
METHODOLOGY

An initial pilot study was conducted to measure the perceptions of risky and beneficial behaviors associated with using an SNS. A web-based survey on the usage of Facebook, the primary choice of college-aged students, was distributed to undergraduate students at a large southwest

university with 116 respondents. Twelve of the responses were incomplete and discarded, yielding a total sample of 104 usable responses. The students were offered extra credit to participate in the study.

Descriptive statistics of the respondents show they were primarily seniors. Ninety one percent of the respondents reported they have a Facebook account and eighty six percent reported using it within the last 24 hours, indicating a significant use of this SNS. Respondents were presented with a list of twenty Facebook functionalities and were asked to rate the items first on how risky and again on how beneficial they perceived each each one to be. The items were rated using a a 7-point Likert scale (1 being no risk/benefit while 7 represented most risk/most benefit). The top 5 riskiest functionalities as perceived by the respondents are included in Table 2.

The riskiest perceived SNS activity identified by the respondents was "Add friends you don't know personally" with a mean value of 4.97. The only activity that was ranked in the top 5 of both risky and beneficial functionalities was "Post new photos." When using this functionality, the user perceives a maximum benefit from this activity, however risks the exposure of more of his or her character by engaging in the sharing of personal information. We believe this is a manifestation of deep use of an SNS that will be tested with future research.

Table 1

Top 5 Riskiest functionalities	Mean	Var.	St. Dev.
1. Add friends you don't know personally	4.97	3.29	1.81
2. Share private activities	4.03	3.39	1.84
3. Post new photos	3.90	2.79	1.67
4. Use applications such as marketplace	3.73	3.95	1.99
5. Share public events	3.69	2.92	1.71

The top 5 beneficial functionalities as perceived by the respondents are included in Table 3. An interesting finding was that the most beneficial activity identified by the respondents, "Add friends you know personally," was also related to adding friends, however it was *only* perceived to be beneficial if respondents know them personally. This is the converse of the item identified as the most risky, "Add friends you don't know personally." We believe this activity to also be related to deep levels of SNS use.

Table 2

Top 5 Beneficial functionalities	Mean	Var.	St. Dev.
1. Add friends you know personally	5.33	3.74	1.93
2. View other people's photos	4.46	3.14	1.77
3. Post on other people's walls	4.4	3.05	1.75
4. Post new photos	4.37	3.35	1.83
5. Send private messages	4.33	2.99	1.73

DISCUSSION AND IMPLICATIONS

The current study represents the initial step in identifying perceptions of risky and beneficial SNS behavior. The findings of this pilot study will be used to develop measurement scales to test

the proposed relationships between perceived risk and perceived benefit and levels of SNS use in our research model. The perceptions of the most risky and beneficial functionalities will be used to test their effect on the level of deep or shallow use of these specific activities. Perceived benefits, perceived risk, perceived enjoyment and social norms will be measured using existing validated scales with some modifications to fit the context of the current study. SNS use will be measured by asking respondents how often they use specific combinations of task/functionality of SNSs (post status, post picture, etc.).

The proposed study stands to make several important contributions to the body of research on SNS use and on Web 2.0 technologies in general. First, it is among the first SNS studies to go beyond the lean definition of SNS use and distinguish between deep and shallow use of SNS. Second, it is among the first studies to combine the perceived risk construct with perceived benefit and other antecedents of technology acceptance in the context of individual use of SNS. The proposed research model can be further extended to incorporate elements of trust, privacy and security concerns and other factors that have been shown to influence individual use of SNS. Such extensions will allow the creation of a more comprehensive model of SNS use and represent a fruitful direction for future research.

As the enormous growth of SNS membership has resulted in diverse and often unexpected uses of SNSs, the proposed research examines the effect of individual perceptions of risk and benefit along with social norms and perceived enjoyment on individual SNS use. We distinguish between deep and shallow use and predict that perceived risks and benefits will influence deep use of SNS, while the shallow use of SNS is influenced by perceived benefits and social norms. If supported, the research model will have significant implications for both research and practice.

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