

9-2013

Understanding Member Use of Social Networking Sites: A Value Analysis

Rui Chen
Rchen3@bsu.edu

Sushil K. Sharma
Information Systems and Operations Management, Ball State University

Follow this and additional works at: <https://aisel.aisnet.org/cais>

Recommended Citation

Chen, Rui and Sharma, Sushil K. (2013) "Understanding Member Use of Social Networking Sites: A Value Analysis," *Communications of the Association for Information Systems*: Vol. 33 , Article 6.

DOI: 10.17705/1CAIS.03307

Available at: <https://aisel.aisnet.org/cais/vol33/iss1/6>

This material is brought to you by the AIS Journals at AIS Electronic Library (AISeL). It has been accepted for inclusion in Communications of the Association for Information Systems by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Communications of the Association for Information Systems

CAIS 

Understanding Member Use of Social Networking Sites: A Value Analysis

Rui Chen

Information Systems and Operations Management, Ball State University

rchen3@bsu.edu

Sushil K Sharma

Information Systems and Operations Management, Ball State University

Abstract:

In this research, the authors examine members' decisions to continue using social networking sites. Site use leads to the growth of social relationships, increased volume of site traffic, and an accumulation of user-generated contents; hence, it is imperative to the long-term success of social networking sites. Drawing on the Theory of Consumption Value, we develop a research model to examine the key values that members derive from networking sites. This model systematically identifies functional, social, epistemic, emotional, and conditional values and contends that these values influence members' continued site-use decisions. In addition, the research model captures the major determinants of the five value constructs as stemming from networking service attributes, member personalities, website designs, and computing environment. The research model was empirically validated through survey data collected from social networking site users, and the analysis results provided strong support to the hypothesized relationships. The current study generates new knowledge on the literature of social networking sites; it also sheds light on site management for networking service providers.

Keywords: social networking site, value analysis, Theory of Consumption Value, use behavior, survey methodology

Volume 33, Article 7, pp. 97-114, September 2013

The manuscript was received 30/12/2012 and was with the authors 4 months for 2 revisions.

I. INTRODUCTION

Social networking sites have prospered since the recent years [Cheung and Lee, 2010]. Boyd and Ellison defined networking sites as online services that allow members to create personal profiles, establish connections, and browse their friends profiles [Boyd and Ellison, 2007]. These websites offer an open platform for individuals to interact with one another and to manage interpersonal relationships. Millions of Internet users are now affiliated with one or more networking sites. Academia has recognized the significance of social networking sites. Several research streams exist, yet less is known as to what motivates online users to use these sites. New knowledge in this regard is imperative to the long-term sustainability of social networking sites. First, site use gives rise to online users' engagement in social interactions through activities such as profile browsing, comments exchange, and reciprocation of mutual favors, ultimately leading to the growth and expansion of cross site social networks [Jia, Zhao, and Lin, 2010]. Second, site use boosts the volume of site visits and traffics, allowing service providers to successfully attract advertisers for higher advertising revenues. Third, individuals who engage in site use are likely to create user-generated-contents (UGCs) such as photos, videos, and blogs. UGCs contribute to the wealth of an online community and subsequently attract new members. Increasing network externalities for economies of scale allows social networking sites to propagate their business model for greater success. To sustain the success of a social networking site, it is important, therefore, that online users continuously use the site to maintain its vitality. Despite the strategic importance of site use, recent studies confirmed that online users had started reducing their use and even abandoned social networking sites [della Cava, 2010; Swearingen, 2008].

The current study answers the following research question: *What affects members' decision to continue using a social networking site?* New knowledge in this regard will help service vendors develop strategies that successfully promote site use. Drawing on Theory of Consumption Values (TCV), we develop and validate a research model that provides a preliminary answer to this question. This research makes a twofold contribution. The main contribution of this research article is an integrated and empirical examination of the key consumption values that affect members' continued use of social networking sites. Through the lens of TCV, we identified a wide spectrum of values that members derive from using networking services and subsequently influence their continued site use. While prior studies have examined several of these values, their examinations are significantly limited in a number of ways. First, none has surveyed the perceived values in a systematic and integrated manner. Most studies examined only a small set of the value components and neglected the other imperative ones. Second, due to the incomplete selection of the values constructs, the existing literature missed the opportunities to understand the relative strengths of the varying perceived values in cultivating end-user behavior. Third, a majority of the prior studies have been limited to descriptive or conceptual discussion and modeling. As a consequence, the real impact of the value constructs on individual behavior was not found. To this end, our article makes a noticeable contribution as it is among the first to survey and test the key value constructs following an established theoretical framework (i.e., TCV). Unlike prior studies that provided fragmented findings on the value constructs, we offer empirical findings that provide a holistic and integrated view of the major value constructs with their actual and relative impacts on members' use of social networking sites. In this study, we introduce *social image* as an important value construct for the first time to the literature on social networking studies. We are also the first to empirically validate the actual impacts of value constructs such as *learning* and *social image* on members' continued use of networking sites.

The second contribution of this article is the extension of TCV to reveal the major sources of influence on user-perceived consumption values. While TCV recognizes the multifaceted nature of consumption values of a system or product, it does not capture the antecedents to these values. As a result, TCV is significantly limited in its ability to offer actionable guidance for information system designers who are keen to enhance system values. In this study, we synthesize existing literature that pertains to social networking sites and highlight the core factors that shape user perceived values of networking sites. By surveying 222 users of social networks such as Facebook, MySpace, and Friendster, we confirmed that the networking service attributes (e.g., critical mass and information quality), personal traits (e.g., social conformity and value of privacy), website design features (e.g., social presence), and the computing environment (e.g., Internet risk) jointly molded an online user's perceived values in using a networking site. These findings provide a rich account of the stimuli to the value perceptions. Consequently, the current study provides directions for networking service vendors to encourage site use through properly managing these factors that shape users' value perceptions of social networking sites.

The rest of the article is organized as follows: the subsequent section briefly reviews the literature in social networking sites as well as the theoretical underpinning of the current study. Next, we present the research model

along with the research hypotheses. This is followed by research methodology and data analysis. We conclude the article by discussing its theoretical contributions, practical implications, limitations, and venues for future research.

II. LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

Prior Studies in Social Networking Site

To date, a number of research streams exist in the domain of social networking sites [Boyd and Ellison, 2007]. One stream of research has examined site user self-presentation, impression management, and reputation management. Boyd conducted an ethnographic fieldwork on Friendster to study individuals' presentation of self and the status quo of presentation accuracy [Boyd, 2004]. Marwick summarized the typical strategies that individuals adopted in constructing creative profiles, along with the impacts of these strategies on the collection of business intelligence [Marwick, 2005]. Others have explored the typology of social networks and their development. Through an examination of 362 million messages by 4.2 million Facebook users, Golder, Wilkinson, and Huberman [2007] analyzed the network structure of social relationships as well as the temporal rhythm of relationship expansion. Based on 30,773 user profiles, Lampe, Ellison, and Steinfeld [2007] investigated the associations between member profile attributes and the development of friendships at Facebook. Studies have also been conducted to understand self-disclosure behavior at social networking sites. In the application of the Facebook newsfeed controversy, Xu, Parks, Chu, and Zhang [2010] conceptualized the potential impact of information control and trust on information disclosure behavior. By surveying eighty users, Lo [2010] tested the role of risk and trust in members' willingness to offer personal information at networking sites. Further research has explored the derived values of social networking sites and argued their potential impacts on members' site use. Studies have discussed values such as usefulness [Chen, Chen, Lin, and Chen, 2011; Qin, Kim, Tan, and Hsu, 2009], pleasure and arousal [Wang, Xu, and Chan, 2008], playfulness [Sledgianoski and Kulviwat, 2008], utilitarian and hedonic value [Wu, 2009], information value and relational value [Hu and Kettinger, 2008], and usefulness and enjoyment [Kim, 2011]. While these studies have enriched our understanding, their limitations must be noted. First, none has surveyed the perceived values in a systematic manner. Most studies examined only a small set of the value components and neglected the other imperative ones. Second, due to the incomplete selection of the values constructs, the existing literature missed the opportunities to understand the relative strengths of the varying perceived values in cultivating end-user behavior. Third, a majority of the prior studies have been limited to descriptive or conceptual discussion and modeling.

Theoretical Background

Theory of Consumption Value (TCV) is a theory that explains how consumers judge and use a specific product or service [Sheth, Newman, and Gross, 1991]. TCV synthesizes existing findings in economics, sociology, psychology, marketing, and consumer behavior, and it is applicable to individual choices involving a full range of products and services, both tangible and intangible. In its essence, TCV posits that (1) consumer choice decision making is influenced by multiple consumption values, (2) the consumption values make differential contributions in any given choice situation, and (3) the consumption values are independent [Sheth et al., 1991]. TCV identifies five major consumption values which influence consumer choice attitude and behavior and these values are *functional value*, *social value*, *emotional value*, *epistemic value*, and *conditional value*. These values are consistent with various components of models developed by Maslow [1970], Katona, Strumpel, and Zahn [1971], Katz [1960], and Hanna [1980]. TCV has been used recently in the field of information systems to investigate phenomenon such as online purchase [Kim, Koh, and Lee, 2009], mobile auction use [Tang and Forster, 2007], and e-government adoption [Hsu and Chen, 2007].

TCV is suitable to the studies of social networking sites. Social networking represents one of the most noticeable services that individuals use during their Internet engagement. A 2010 Nielsen report found that social networking service was the fourth most popular online service [Nielsen, 2010]. Social networking sites such as Facebook and MySpace attract millions of online users each year, and they provide free services to the members who rely on these sites to manage their personal networks. Social networking sites share similarities with traditional platforms wherein a consumer's choice always involve a purchasing decision (e.g., to buy or not buy), but also significantly differ from the latter. Due to the zero cost associated with site use, members are able to fully experiment a given social networking site and obtain direct use experience by trying its available features. This opportunity allows site members to assess the complete spectrum of consumption values in TCV. For traditional platforms, however, consumers are restrained with their abilities to evaluate a product or service before a final purchase is made. Even for products with free trials, they are often configured with an incomplete set of features available for trial usage; therefore, consumers become incapable of developing comprehensive perceptions of the consumption values. Sheth et al. suggests that it is not always practical for a study to examine all five consumption values as the actual choice situation may be driven by a smaller set [Sheth et al., 1991]. As a result, social networking sites provide an appropriate research context to apply TCV in its full capacity.



Several research frameworks have been employed in the prior studies of social networking sites (see Table 1). While they bring in unique perspectives, they omit the fundamental decision factors (i.e., perceived consumption values) in members' continued use of networking services. Perceived consumption values constitute the basic use experience and enable the subsequent decision-making process. An improved understanding of the key consumption values also supports the application of the alternative theoretical frameworks. The application of Technology Acceptance Model (TAM), for example, functions on site usefulness which assesses the level of site support (i.e., values) in performing tasks such as the management of personal networks, quest for information, and pursuit of enjoyment. Similarly, the application of Expectation Confirmation Theory (ECT) assesses the extent of expected consumption values being realized during members' site use. Unfortunately, none of the prior studies has systematically analyzed the main consumption values of networking sites, and their surveys of the consumption values were often oversimplified or incomplete. As a consequence, applications of the alternative theoretical frameworks were unsuccessful, and prior findings were inadequate. In this article, we consider TCV as the underlying theoretical underpinning in the exploration of the core set of consumption values that members perceive. The findings allow us to understand what the major consumption values are within the current research context and how they contribute to members' continued use of networking services.

Table 1: Prior Studies of Continued Use of Social Networking Sites	
Prior studies on continued site use	Theoretical foundations employed
Qin et al., 2009	Combination of Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM) and TAM2
Wang et al., 2008	Technology Acceptance Model (TAM)
Sledgianoski and Kulviwat, 2008	Technology Acceptance Model (TAM)
Wu, 2009	None
Hu and Kettinger, 2008	Expectation-Confirmation Theory (ECT), Social Exchange Theory, Social Capital Theory, and Flow Theory
Kim, 2011	TRA, TAM, and ECT
Chen et al., 2011	TAM and ECT

Other studies have borrowed from multiple theoretical frameworks. The lack of an overarching research framework renders the selection of research variables and the establishment of the hypotheses questionable. To this end, TCV provides a parsimonious theoretical framework to investigate the current phenomenon. Richards noted that "a parsimonious theory is more straightforward, more likely to be internally consistent and easier to connect with reality than a complex theory that ties numerous concepts together in many different ways. ... Because it is simpler, it is more likely to be internally consistent, and easier to connect with reality" [Richards, 1998]. As a consequence, the application of TCV allows researchers to uncover the primary drivers of members' use of networking services without the likelihood of leading to ambiguous or equivocal predictions. In this article, therefore, we adopt TCV as the preferred theoretical lens in our study of members' continued use of social networking sites.

III. RESEARCH MODEL AND HYPOTHESES

Drawing on TCV, we develop a research model that explains individuals' use of a social networking site. Figure 1 suggests that users are motivated to use a networking site with an attempt to achieve functional value, social value, emotional value, epistemic value, and conditional value. The research model also underlines, among others, networking service attributes such as critical mass and information quality, individual personality traits such as social conformity and value of privacy, website design such as social presence, and computing environment such as Internet risk are the imperative antecedents to users' perceived values. These antecedents are highlighted in the literature for their relevance to the respective value constructs.

In this study, attitude refers to an individual's positive evaluative affect about using a social networking site. Through the use of networking services, members develop their attitude toward the service which, over a period of time, results in a positive or negative judgment [Kang and Kim, 2006]. Expectancy Value Theory (EVT), also known as Theory of Attitude, suggests that attitude is developed based on subjective assessments about beliefs and values and that attitude leads to behavioral outcomes [Fishbein, 1961]. In line with EVT, we expect that one's attitude predicts his or her behavioral choice of using a social networking site.

H1: Attitude will positively relate to site use.

TCV defines *functional value* as the perceived utility that is acquired from an alternative's capacity for functional, utilitarian, or physical performance [Sheth et al., 1991]. Implied by Economic Utility Theory [Marshall, 1890; Stigler, 1950], functional value is presumed to be a primary driver of individual choice. Where social networking is concerned, personal network management, both maintenance and extension, represents a key functional utility that

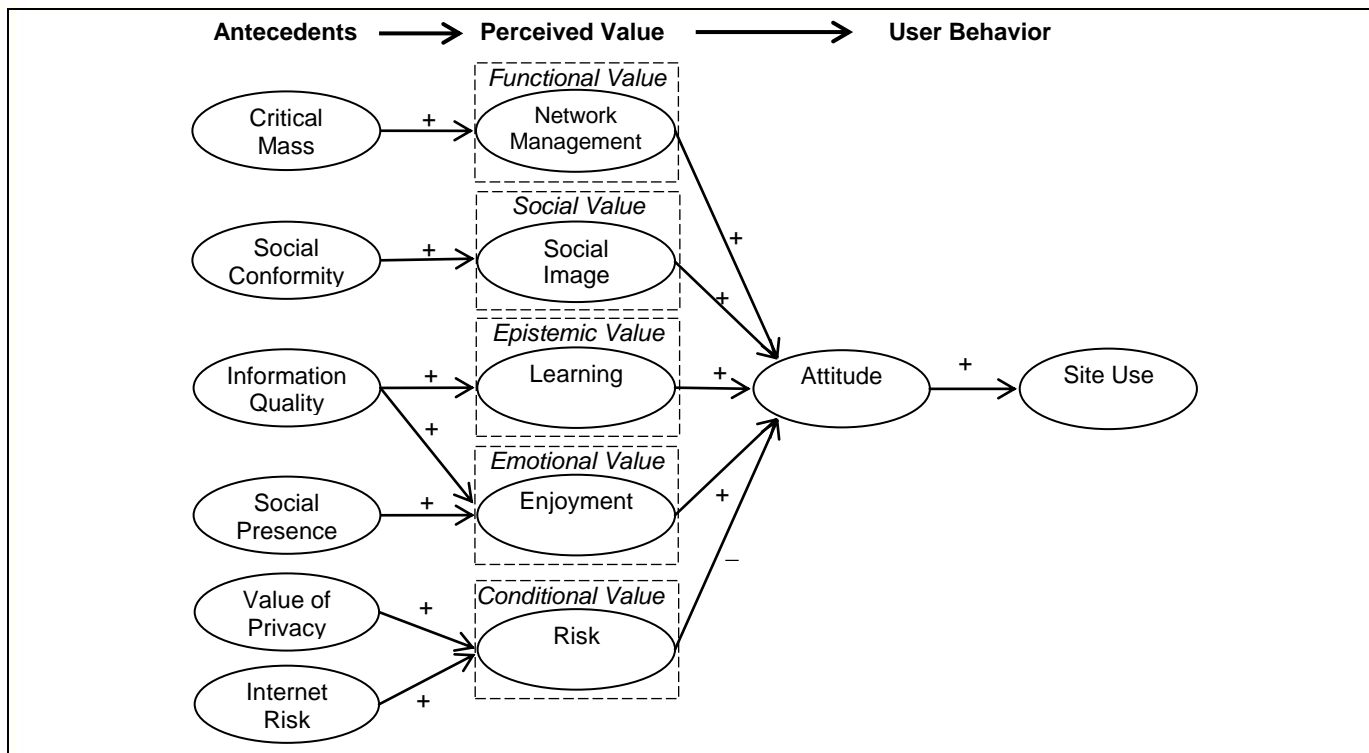


Figure 1. Social Networking Site Use—A Value Perspective

one derives through site use [Nielsen, 2009]. Average users of Facebook, for example, maintain 130 friends [Facebook, 2010]. Through profile browsing and search functions, networking site members actively engage in managing the old contacts, finding the alike, making new acquaintances, and expanding their own relationships. Providers of networking sites have continued to refine their services to facilitate member network management. Facebook, for example, launched a new friends page in 2009 to help members find old and organize their existing connections with higher efficiency [Roche, 2009]. When an online user perceives that a networking site successfully helps him or her reach the value in network management, it is likely that the members will develop a positive attitude toward the site. Hence, we expect:

H2: Perceived value in network management will positively relate to attitude.

The opportunities in personal network management are dependent on the number of related others at the same site [Hsu and Lu, 2004]. Critical mass is the point where sufficient users have used a technology so that its continuous usage is self-sustaining [Van Slyke, Ilie, Lou, and Stafford, 2007]. Unlike other technologies, a social networking site is a community-based service, and it requires collective efforts and interdependency among the members. As a result, the benefit of using a networking site for network management purpose cannot be achieved by an individual unless the site contains a significant number of members with whom one may associate [Lou, Luo, and Strong, 2000]. More members offer greater opportunities in interpersonal contact and relationship acquaintance through activities such as grooming and poking [Tufekci, 2008]. Therefore, a site member may perceive a high potential in reaching social network management when he or she perceives a satisfactory critical mass [Wasko, Teigland, and Faraj, 2009]. We expect:

H3: Critical mass will positively relate to perceived value in network management.

TCV defines *social value* as the perceived utility that is acquired from an alternative's association with one or more specific social groups [Sheth et al., 1991]. Products and services often possess symbolic or conspicuous value in excess of their functional utility [Veblen, 1899]. Therefore, social value is measured on a profile of choice through imagery as individuals choose certain products or services to acquire a desired social image to be evoked beyond its functional performance. Guo suggested that networking sites enhance one's social image as site use was often deemed to be "cool" and "trendy" by the members [Yi, 2010]. Through in-depth interviews with informants, Lee et al. found that using a social networking site allowed its members to show off and gain popularity [Lee, Im, and Taylor, 2008]. Individuals are likely to develop a positive attitude toward networking sites when they perceive that the site use boosts their social images in the reference group. Hence we postulate:

H4: Perceived value in social image will positively relate to attitude.

Individuals strive to keep an improved social image through their active engagement in networking sites. The desire to remain popular and acceptable motivates one's efforts to conform to the existing norms of the social group [Newman and Newman, 1976]. Social conformity is a personal trait that assesses the extent to which individuals adopt a certain course of action that is sanctioned by their peer group. Conformity is a measure of behavioral disposition, and it affects how one cooperates, fits in, gets along with others, and avoids negative evaluations [Schlenker and Weigold, 1990]. Individuals with low social conformity tend to disregard the judgment of the peers and devalue the significance of self-images that others hold, and hence less appreciate the value of a networking site in altering their images. On the contrary those with high social conformity place high value in their social images and greatly appreciate the utility of networking sites in boosting their social status. In other words, social conformity may bias one's perception about the potential value of a social networking site in fulfilling his or her social image needs. Given the same networking site, users with low social conformity are likely to underestimate the values in social image, whereas those with high social conformity tend to overestimate the values in social image. Therefore:

H5: Social conformity will positively relate to perceived value in social image.

TCV defines *epistemic value* as the perceived utility that is acquired from an alternative's capacity to satisfy a desire for learning [Sheth et al., 1991]. Social networking sites introduce great opportunities for members to go beyond their everyday life experience and engage in "*social learning*" that is enabled through extended access and conversations with an online community [Bingham and Conner, 2010]. By using social networking sites, members meet new friends and join group activities to appreciate different cultural values, personal perspectives, and life stories of the other members. Social networking sites, therefore, encourage knowledge transfer and allow members to share and discover in a nonstop manner. Learning through networking sites not only supplements knowledge acquired through daily routines, it also complements knowledge that an individual is rarely able to obtain otherwise. When one perceives that a networking site satisfies his or her craving for learning, an online user is likely to develop a positive attitude toward it. We posit:

H6: Perceived value in learning will positively relate to attitude.

Members' learning process is enabled through continuous information collection efforts [Rosen and Kluemper, 2008]. Therefore, quality of the information that is shared by other members largely determines the outcome of one's learning inquiries. The qualities of disclosed member information vary across a networking site. Gross, Acquisti, and Heinz [2005], for example, found that about 90 percent of the names on Facebook were truthful, leading some to describe Facebook as the *Google of people*. On the other hand, members were also found to supply inaccurate, incomplete, and unreliable information so as to avoid frauds or thefts [Tesh, 2009]. Learning is fulfilled only when members can acquire information of each other. Low quality of member shared information will reduce the efficiency of this learning process; members may not be able to develop a full understanding of their peers and the community, leaving their craving for learning unfulfilled. And thus we expect:

H7: Information quality will positively relate to perceived value in learning.

TCV defines *emotional value* as the perceived utility that is acquired from an alternative's capacity to arouse feelings or affection [Sheth et al., 1991]. A key emotional response associated with using a social networking site is the perceived enjoyment. Perceived enjoyment is defined as the extent to which using a system is perceived to be enjoyable in its own right [Davis, Bagozzi, and Warshaw, 1992]. It is often referred to as the hedonic component of an information system [Hwang and Kim, 2007; Van der Heijden, 2004]. As far as networking sites are concerned, this platform allows individuals to interact with friends and family, to exchange messages, pictures, videos, and to participate in groups and events. Therefore, the use of these sites are hedonic as users experience fun and entertainment [Wang et al., 2008]. Prior studies summarized adventure, escapism, and affiliation as the foremost enjoyment at a networking site [Wu, 2009]. We expect that members are more inclined to favor a networking site when they find it enjoyable.

H8: Perceived value in enjoyment will positively relate to attitude.

Prior studies have pointed out that the quality of information exchanged in a social platform may affect the affective use experience. In their study of online retailing, Ahn, Ryu, and Han [2007] found evidence that high quality information helped users generate fun. Similarly Zhu, Tsai, and Huang [2010] confirmed that information quality cultivated playfulness. In the context of social networking sites, Zhou, Li, and Liu [2010] suggested that the quality of information shared in social networking sites improved the flow experience and sensation. Therefore, we expect that:

H9: Information quality will positively relate to perceived value in enjoyment.

Literature suggests that website design features, such as social presence, are instrumental in shaping user experience [Lee, Kozar, and Larsen, 2009]. Social presence is defined as the extent to which a computer medium allows a user to experience others as being psychologically present [Fulk, Steinfield, Schmitz, and Power, 1987]. Prior studies have identified website designs that facilitate the establishment of social presence, including emotive text and pictures [Hassanein and Head, 2006], personalized greetings [Gefen and Straub, 2003], human audio [Lombard and Ditton, 1997], and human video [Kumar and Benbasat, 2002]. Lombard and Ditton [1997] suggested that one of the most prominent psychological impacts of social presence was enjoyment. Yoo and Alavi [2001] also noted that social presence might foster a psychological connection between users and a Web system and renders the latter more fond. Therefore, we postulate:

H10: Social presence will positively relate to perceived value in enjoyment.

TCV defines *conditional value* as the perceived utility that is acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker [Sheth et al., 1991]. Sheth [1974] and Sheth et al. [1991] underlined key forms of conditional value in individual choice as the potential loss due to consumption inhibitors such as threats, pressure, and worries that stem from the surrounding environment. Using social networking sites comes with cost, and members may consider it risky [Hu and Kettinger, 2008]. Perceived risk is defined as the significant and disappointing outcomes that may be realized [Sitkin and Pablo, 1992]. Prior studies have pointed out that users of networking sites may experience identity theft, monetary loss, or reputation damage [Dumitru, 2009; Prince, 2008]. Therefore, risk is high in using these websites, and it is likely to cast a negative impact on member attitude toward the sites. The existing literature of TCV has advocated the inclusion of perceived risk as a conditional value [Andrews, Kiel, Drennan, Boyle, et al., 2005]. We posit:

H11: Perceived risk will negatively relate to attitude.

Perceived risk may be influenced by members' value of privacy [Steel and Fowler, 2010]. Value of privacy refers to the importance an individual places on personal privacy [Fisher, 2002], and it may be cultivated by individual disposition, culture, and past privacy invasion experience [Awad and Krishnan, 2006; Milberg and Burke, 1995]. Interactions on networking sites give rise to privacy release as one discloses identity, interest, and personal opinions into publicity [Chen and Williams, 2009]. Privacy divulged may be subsequently used against one's will for purposes such as stalking, embarrassment, and extortion. At a high privacy value, members tend to exaggerate the uncertainties in privacy breach and abuse, exhibit unwarranted confidence in their judgment, and overestimate the risks in using social networking sites [Wang, Chen, Herath, and Roa, 2009]. When privacy value is low, on the contrary, members are likely to underestimate the risks that may be incurred. Therefore, we expect:

H12: Value of privacy will positively relate to perceived risk.

Perception of risk in using a social networking site may also be shaped by individuals' belief of the computing environment. Internet risk perception measures one's uneasiness about using Internet [Wang et al., 2009]. Internet is known for the prevalence of cyber threats which significantly jeopardize online users and businesses [Grazioli and Jarvenpaa, 2000; Pavlou, 2003]. Internet risk perception may lead decision makers to exaggerate uncertainties in networking sites, exhibit unwarranted confidence in their judgment, and subsequently overestimate the risks in using social networking sites [Wang et al., 2009]. Members of social networking sites have varying levels of Internet risk perception as a result of their prior Internet use (e.g., online shopping) and outcome history. It is common for one to become reluctant to use a networking site because the sense of Internet risk may be overwhelming. Therefore, we expect:

H13: Internet risk perception will positively relate to perceived risk in site use.

IV. RESEARCH METHODOLOGY

Measurement Development

Measurement items for the principal constructs in this study were borrowed from existing measures to improve validity [Stone, 1978]. The detailed measurements of the principal constructs and their sources are shown in Appendix A. The survey instruments were pretested with sixty users of a social networking site to check the psychometric properties of the measurement scales [Churchill, 1979]. Following these pretests, the measurement instruments were shortened, refined, and validated for their statistical properties.

Survey Administration

The research model was tested using survey data. We collected survey responses from 222 college students who took undergraduate courses at a large institution in the Midwest-region of the United States. College students are a significant segment of social networking site users. A recent Pew survey showed that college students represent the largest portion of Facebook users [Lenhart, Purcell, Smith, and Zickuhr, 2010]. As a result, the student sample is

appropriate for the current research. The respondents were recruited from four undergraduate courses that were offered in a business college. The samples consisted of business and non-business major undergraduates; as a result, the samples were heterogeneous. Respondents were guaranteed both confidentiality and access to the aggregated survey results. Participation in the survey was voluntary. Table 2 provides the descriptions on respondent demographic information.

Gender	60% male and 40% female
Age	20 yrs. on average. 98% respondents are within the 18–24 yr. age group.
Year of experience in computer usage	10.6 yrs.
Year of experience in Internet usage	9.2 yrs.
Membership of social networking sites (in case of multiple memberships, choose only the one that is the strongest)	Facebook: 95% respondents MySpace: 3% respondents Friendster: 2% respondents

V. ANALYSIS AND RESULTS

We tested the research model using structural equation modeling analysis. We used partial least squares (PLS), which employs a component-based approach for estimation and places minimal restrictions on sample size and residual distributions. PLS is best suited for testing complex relationships by avoiding inadmissible solutions and factor indeterminacy [Chin, 1998]. PLS also supports exploratory research. Our article studies an important yet understudied research perspective (i.e., TCV), and it adopts a complex research model; therefore, PLS is appropriate.

Measurement Model

Table 2 reports the correlation matrix, the AVEs, and the descriptive statistics of the principal constructs. Measurement reliability is assessed using composite reliability [Werts, Linn, and Joreskog, 1974] and Cronbach's alpha [1971]. Fornell and Larcker suggested that a composite reliability of .70 or greater is considered acceptable for research [Fornell and Larcker, 1981]. Nunnally suggested that a Cronbach's alpha of .70 or greater is considered acceptable for research [Nunnally, 1978]. As in Table 3, the internal consistencies of all variables are considered acceptable since they exceed .70, signifying satisfactory reliability.

Convergent and discriminant validity are inferred when (1) the square root of each construct is larger than its correlations with the other constructs (i.e., the AVE shared between the construct and its indicators is larger than the AVE shared between the construct and the other items), (2) all AVEs are greater than .50, and (3) the PLS indicators load much higher on their hypothesized construct than on other constructs (i.e., own loadings are higher than cross loadings) [Chin, 1998]. As shown in Table 3, the square roots of the AVE are all greater than 0.5 and greater than all other cross correlations, indicating that the variance explained by each construct is much larger than the measurement error variance. As in Appendix B, all items load high on their own constructs. These tests validate the measurement properties of principal constructs.

Since the research data was collected from a single survey, we checked for the common method bias. First, the Harman's one-factor test was performed by including all the variables in a principal components factor analysis [Podsakoff, MacKenzie, Lee, and Podsakoff, 2003]. Common method bias exists when one single factor emerges or when one factor accounts for the majority of the covariance among the variables. The results showed that none of emergent factors explained the majority of the covariance. Second, the partial correlation method was performed by adding the highest factor that was produced in principal component factor analysis into the PLS model as a control variable. This factor did not significantly increase the variance explained by the research model, indicating no common method bias. Third, the correlation matrix was examined for highly correlated factors. The common method bias exists when there are extremely high correlations ($r > .9$). Table 3 does not reveal such evidence.

Structural Model

The PLS path coefficients are shown in Figure 2. All these paths are statistically significant. The structural model explains 42 percent of the variance in attitude and 22 percent of variance in site use. The theoretical model thus offers satisfactory explanatory power in capturing members' use of social networking sites.

The PLS results indicate that member attitude ($b = .47$, $p < .001$) significantly contributed to site use, supporting Hypotheses 1. Results also found that the values in network expansion ($b = .18$, $p < .05$), social image ($b = .14$, $p < .01$), learning ($b = .15$, $p < .05$), enjoyment ($b = .38$, $p < .001$), and risk ($b = -.16$, $p < .001$) jointly influenced attitude

Table 3: Descriptive Statistics, Correlations, and Average Variance Extracted

Principal construct	Mean	Std	CR	CA	1	2	3	4	5	6	7	8	9	10	11	12	
1 Attitude	5.31	1.08	.93	.89	.90												
2 Enjoyment	5.60	1.04	.91	.86	.57	.88											
3 Information quality	4.19	1.19	.94	.90	.35	.29	.91										
4 Internet risk	3.57	1.47	.95	.89	-.13	-.08	.13	.95									
5 Learning	4.40	1.50	.96	.93	.38	.37	.39	.08	.94								
6 Critical mass	6.49	1.00	.95	.90	.12	.11	-.02	-.23	.01	.96							
7 Network management	5.98	1.00	.92	.88	.48	.55	.24	-.18	.35	.38	.85						
8 Risk	3.25	1.43	.96	.92	-.16	-.06	.10	.54	.09	-.24	-.14	.96					
9 Social conformity	3.50	1.31	.91	.85	.05	.00	.17	.10	.12	-.12	.00	.06	.88				
10 Social presence	4.83	1.29	.89	.82	.45	.39	.34	-.07	.38	.20	.41	-.05	.00	.86			
11 Social image	3.58	1.39	.95	.92	.27	.23	.40	.14	.30	-.08	.15	.22	.20	.28	.93		
12 Value of privacy	4.26	1.44	.88	.74	-.22	-.05	-.03	.31	.01	-.03	-.06	.28	-.05	-.06	.03	.89	
13 Site use	5.47	1.59	.96	.95	.47	.49	.17	-.05	.28	.23	.44	-.12	-.04	.28	.14	-.08	.93

CR: Composite Reliability, CA: Cronbach's Alpha
 The diagonal elements (in bold) represent the square root of AVE

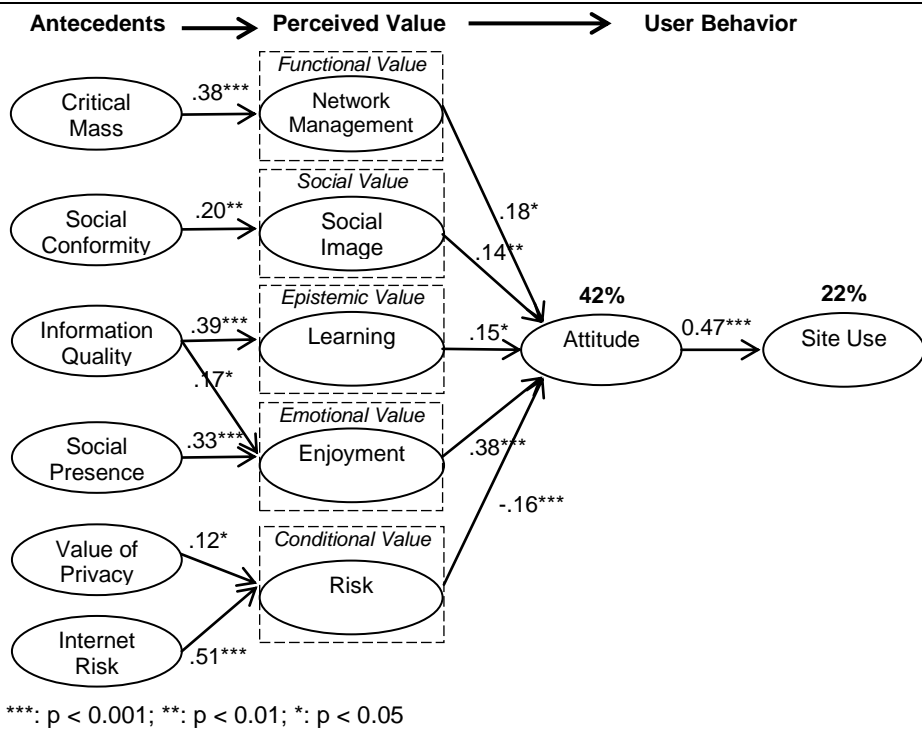


Figure 2. PLS Result

perceived by members. Therefore, Hypotheses 2, 4, 6, 8, and 11 are supported. Furthermore, critical mass ($b = .38$, $p < .001$), social conformity ($b = .20$, $p < .01$), information quality ($b = .39$, $p < .001$), information quality ($b = .17$, $p < .05$), social presence ($b = .33$, $p < .001$), value of privacy ($b = .12$, $p < .05$), and Internet risk ($b = .51$, $p < .001$) were found to positively affect an individual's perceived value in network expansion, social image, learning, enjoyment, and risk respectively. Thus, Hypotheses 3, 5, 7, 9, 10, 12, and 13 are supported.

VI. DISCUSSION AND CONCLUSION

Social networking sites provide an open platform to accommodate online users and enable them to develop interpersonal networks and enjoy friendships [Wang, 2009]. Social networking sites continue to increase in popularity. The latest Pew survey shows that worldwide 47 percent of online adults used social networking sites and that 73 percent of teens and young adults were members of at least one social network [Lenhart et al., 2010]. A 2010 Nielsen report found that the world spent over 110 billion minutes on social networks, and the numbers of people visiting these sites increased by 24 percent over the last year [Nielsen, 2010]. To sustain the success of a

social networking site, it is important that users continuously and constantly use the site to maintain its vitality. Site use leads to users' active engagement in communal activities, growth and expansion of cross-site social relationships, increased volume of site visits and traffic, and an accumulation of user generated digital contents. Despite its strategic importance, recent studies confirmed that some members had started reducing their use and even abandoned social networking sites [della Cava, 2010; Swearingen, 2008]. Drawing on TCV, the current study explores individual voluntary use of a networking site through a value system approach. The research model thus developed highlights functional, social, epistemic, emotional, and conditional values as key values that individuals derive through their use of a networking service; the research argues that these values subsequently affect online users' attitudes and actual site use behavior. In addition, the research model posits that service attributes (e.g., critical mass and information quality), personal traits (e.g., social conformity and value of privacy), website design (e.g., social presence), and the computing environment (e.g., Internet risk) jointly shape the perceived values. We collected survey data from 222 social networking site users to validate this research model and found strong support on all the research hypotheses.

Before a discussion of the contributions and implications of this study, some limitations that create interesting opportunities for future research must be acknowledged. First, we test the current research model using survey data that is collected from 222 samples. While this sample size is comparable to prior studies [Lo, 2010; Lo and Riemenschneider, 2010; Wang et al., 2008], it is a small sample and may limit the power of the statistical analyses. Future research that employs a greater sample size is needed to validate the research model. Second, the current study recruits college students as the research sample. While college students present the largest user group of leading networking sites such as Facebook, others such as teenagers and working adults over age twenty-two are actively engaged in Facebook. And thus the results must be treated with caution in terms of its generalizability to other user populations of social networking sites. It is imperative that new studies validate the research model among these populations. Third, the current study employs a cross-sectional design and does not allow us to observe the longitudinal impact. Hence, the results should be treated with caution, in that causality cannot be inferred with cross-sectional data. While a longitudinal analysis is preferred, solid cross-sectional models must first be established before future research can examine their viability over time [Pavlou and El Sawy, 2006]. Fourth, the current study utilizes self-reported survey data to assess online use behavior at a networking site. In his study of social networks, Whinston [2009] noted that self-reported data "reveal information that the user is willing to provide which might be biased or even inconsistent with her actual opinion or behavior." Future research may employ objective measurements to assess the actual disclosure of the research samples. Fifth, the current study has explored a limited set of antecedents to the value constructs. These antecedents are suggested by the pertinent literature, and they have received strong support from the empirical test. Future studies may enrich the research model by incorporating more antecedents that are informed by findings of relevant literature. Yet an expansion as such may inevitably complicate the research model and distract the research focus. To this end, an alternative is to develop a series of studies that examine individual value constructs and explore their respective antecedents. Sixth, our results are applicable to social networking sites such as Facebook and may not apply to other types of networking sites. Take Match.com for example. The values consumers can derive from this network depend on the number of potential "dates" on the network, but consumers can also face an increasing disutility with every additional "date seeker" using the same platform, as the presence of other users makes it harder for the user to find "the perfect date." As a result, the network expansion (the functional value) may have mixed impacts (both positive and negative) on an individual's usage of such social networking site. Prior studies, such as Li, Liu, and Bandyopadhyay [2010b], have explored the potential negative impact of network expansion for social networking sites featuring a two-sided market. Therefore, the findings that are reported in the current study must be treated with caution in terms of its generalizability to other social networking sites. Moreover, our study does not explicitly consider the costs that are associated with site usage. Typical costs such as time and opportunities may incur for an average user to interact with a networking site. Therefore, future studies may consider both the benefits and costs factors. Lastly, it is likely that the dimensions of perceived value may be dependent on each other. For example, social value and epistemic value may influence emotional value. Future studies may examine such potential relationships.

This study makes a twofold contribution. First, it systematically captures the major values of social networking sites that affect site use. Existing literature on networking sites has surveyed a random set of networking service values, and the accumulated knowledge is limited [Hu and Kettinger, 2008; Wu, 2009]. It does not do a fair job of presenting the real significance of a networking site as a promising information systems artifact, nor does it allow researchers to identify the key service values that may encourage member site use. The current study fills this research gap by generating a broad view of user-perceived values that are theory-informed. The research confirms that network expansion, social image, learning, enjoyment, and risk are the major values that one receives in using social networking services. Second, the current study extends TCV by identifying the major sources of influence on perceived consumption values. TCV is constrained in its inability to generate actionable guidance that allow service vendors to achieve the desired consumption values. In the context of social networking sites, we found that networking service attributes (e.g., critical mass and information quality), personal traits (e.g., social conformity and

value of privacy), website design features (e.g., social presence), and computing environment (e.g., Internet risk) jointly shaped one's perceived value in using a networking site. These findings provide a rich account of the stimuli to the value perceptions and offer directions for service vendors to improve their services for higher perceived values.

The current study also provides managerial insights and guidance to the social networking service vendors. Site use adds vital support to the sustainable success of networking sites, and social network service providers may stimulate the use extent by improving perceived consumption values. To boost network extension value, service vendors may increase the perceived critical mass through improved site designs, intensive promotions, potential user discovery, and user education programs [Chan, Gong, Xu, and Thong, 2008; Li, Chau, and Slyke, 2010a; Sledgianoski and Kulviwat, 2008]. Psychology literature pointed out that personality is malleable and may be reformed given proper incentives from the task environment [Markus and Nurius, 1986]. To this end, site-wide campaigns that promote a cooperative and communal culture are likely to inspire members to turn conformable and subsequently recognize higher utility of networking services into enhancing social images. When learning value is concerned, vendors may adopt management policies that advocate greater information quality in social exchanges. For example, vendors may choose to reward members who offer accurate, complete, and reliable information with positive reinforcements (e.g., virtual currency) while punishing the publication of low-quality information [Arazy, Kumar, and Shapira, 2010; Zheng and Jin, 2009]. To leverage users' enjoyment, service providers may increase website social presence through the adoption of emotive text, human pictures, personalized greetings, and human audio and/or video [Gefen and Straub, 2003; Hassanein and Head, 2006; Kumar and Benbasat, 2002]. Our research notes that an individual's Internet risk perception affects his or her site-use risk perception. To this end, public awareness and educational campaigns may be exercised. Educational campaigns are suggested to improve end-user knowledge and skills in combating Internet threats and consequently reduce the perceived risks of being attacked [Marcolin, Compeau, Munro, and Huff, 2000; Staples, Hulland, and Higgins, 1999]. Awareness programs help remove the cognitive bias pertaining to Internet risks and cultivate a healthy and accurate risk assessment. Our findings also suggest that members' perception of site-use risk grows out of concerns for privacy abuse. Prior studies suggest that appropriate policy designs may reduce the likelihood of privacy breach and avoid subsequent abuse [Liu, Marchewka, Lu, and Yu, 2005; Stewart and Segars, 2002]. Vendors may also protect member privacy through technical solutions by using privacy-aware system architecture and software features that offer users the ability to search and query information, reasoning about intelligent actions with respect to privacy preservation [Chen and Williams, 2009]. Our results suggest that perceived enjoyment and risk have the greatest impact on members' site-use decisions. As a consequence, vendors of networking services may prioritize their improvement efforts in these two aspects.

ACKNOWLEDGMENTS

We would like to thank the Associate Editor and the anonymous review panel for their constructive comments that have significantly improved this article.

REFERENCES

Editor's Note: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the article on the Web, can gain direct access to these linked references. Readers are warned, however, that:

1. These links existed as of the date of publication but are not guaranteed to be working thereafter.
2. The contents of Web pages may change over time. Where version information is provided in the References, different versions may not contain the information or the conclusions referenced.
3. The author(s) of the Web pages, not AIS, is (are) responsible for the accuracy of their content.
4. The author(s) of this article, not AIS, is (are) responsible for the accuracy of the URL and version information.

Ahn, T., S. Ryu and I. Han (2007) "The Impact of Web Quality and Playfulness on User Acceptance of Online Retailing", *Information & Management*, (44)3, pp. 236–275.

Andrews, L., G. Kiel, J. Drennan, M.V. Boyle and J. Weerawardena (2005) "Gendered Perceptions of Experiential Value in Using Web-based Retail Channels", *European Journal of Marketing*, (41)5/6, pp. 640–658.

Arazy, O., N. Kumar and B. Shapira (2010) "A Theory-driven Design Framework for Social Recommender Systems", *Journal of the Association for Information System*, (11)9. pp. 455-490

Awad, N.F. and M.S. Krishnan (2006) "The Personalization Privacy Paradox: An Empirical Evaluation of Information Transparency and the Willingness to Be Profiled Online for Personalization", *MIS Quarterly*, (30)1, pp. 13–28.

Barton, J., L. Chassin, C. Presson and S. Sherman (1982) "Social Image Factors as Motivators of Smoking Initiation in Early and Middle Adolescence", *Child Development*, (53), pp. 1499–1511.

- Bingham, T. and M. Conner (2010) "The New Social Learning: A Guide to Transforming Organizations Through Social Media", in *The American Society for Training & Development*, Nashville, TN: Abella Publishing Services, LLC.
- Boyd, D. (2004) "Friendster and Publicly Articulated Social Networks", *ACM Conference on Human Factors in Computing Systems*, New York, NY.
- Boyd, D.M. and N.B. Ellison (2007) "Social Network Sites: Definition, History, and Scholarship", *Journal of Computer-mediated Communications*, (13)1. pp. 210-230
- Chan, K.Y., M. Gong, Y. Xu and J. Thong (2008) "Examining User Acceptance of SMS: An Empirical Study in China and Hong Kong", *Pacific Asia Conference on Information Systems*, Suzhou, China.
- Chen, S. and M.A. Williams (2009) "Privacy in Social Networks: A Comparative Study", *Pacific Asia Conference on Information Systems*, Hyderabad, India.
- Chen, S.C., H.H. Chen, M.T. Lin and Y.B. Chen (2011) "A Conceptual Model to Understand the Effects of Perception on the Continuance Intention in Facebook", *Australian Journal of Business and Management Research*, (1)8, pp. 29–34.
- Cheung, C.M.K. and M.K.O. Lee (2010) "A Theoretical Model of Intentional Social Action in Online Social Networks", *Decision Support Systems*, (49)1, pp. 24–30.
- Chin, W. (1998) "Issues and Opinions on Structural Equation Modeling", *MIS Quarterly*, (22)1, pp. 7–10.
- Churchill, G. (1979) "A Paradigm for Developing Better Measures of Marketing Constructs", *Journal of Marketing Research*, (16)1, pp. 64–73.
- Cronbach, L.J. (1971) "Test Validation", in Thorndike, R.L. (ed.) *Educational Measurement, 2nd edition*, Washington, DC: American Council on Education.
- Davis, F.D., R.P. Bagozzi and P.R. Warshaw (1992) "Extrinsic and Intrinsic Motivation to Use Computers in the Workplace", *Journal of Applied Social Psychology*, (22)14, pp. 1111–1132.
- della Cava, M.R. (2010) "Some Ditch Social Networks to Reclaim Time, Privacy", *USA TODAY*, Feb. 10, http://usatoday30.usatoday.com/tech/webguide/internetlife/2010-02-10-1Asocialbacklash10_CV_N.htm (current Aug. 23, 2013).
- Deutsch, M. and H.B. Gerard (1955) "A Study of Normative and Informational Social Influences upon Individual Judgment", *Journal of Abnormal and Social Psychology*, (51)3, pp. 629–636.
- Dumitru, B. (2009) "The Risks of Social Networking and the Corporate Network", *IT Business Edge*, July 6, <http://www.itbusinessedge.com/cm/community/features/guestopinions/blog/the-risks-of-social-networking-and-the-corporate-network/?cs=33877> (current Aug. 23, 2013).
- Ellison, N., C. Steinfeld, and C. Lampe (2006) "Spatially Bounded Online Social Networks and Social Capital", *Annual Conference of the ICA*, Michigan State University, MI.
- Facebook (2010) "Statistics: Facebook Inc." <http://newsroom.fb.com/Key-Facts> (current May 5, 2012).
- Fishbein, M. (1961) "A Theoretical and Empirical Investigation of the Interrelation Between Belief About and Object and the Attitude Toward That Object", Unpublished dissertation, Los Angeles, CA: University of California.
- Fisher, J.G. (2002) "Implications of Electronic Mail Policies of Fairness and Invasion of Privacy: A Field Experiment", PhD dissertation, Albany, NY: University at Albany.
- Fornell, C. and D. Larcker (1981) "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error", *Journal of Marketing Research*, (18)3, pp. 39–50.
- Fulk, J., C. Steinfield, J. Schmitz and J.G. Power (1987) "A Social Information Processing Model of Media Use in Organizations", *Communication Research*, (14), pp. 529–552.
- Gefen, D. and D. Straub (2003) "Managing User Trust in B2C E-Services", *E-service Journal*, (2)2, pp. 7–24.
- Gefen, D. and D.W. Straub (2004) "Consumer Trust in B2C E-Commerce and the Importance of Social Presence", *Omega*, (32)6, pp. 407–424.
- Golder, S.A., D. Wilkinson and B.A. Huberman (2007) "Rhythms of Social Interaction: Messaging Within a Massive Online Network", *The Third International Conference on Communities and Technologies*, London, England.

- Grazioli, S. and S. Jarvenpaa (2000) "Perils of Internet Fraud: An Empirical Investigation of Deception and Trust with Experienced Internet Consumers", *IEEE Transactions on Systems, Man, and Cybernetics*, (30)4, pp. 395–410.
- Gross, R., A. Acquisti and H.J.I. Heinz. (2005) "Information Revelation and Privacy in Online Social Networks", *ACM Workshop on Privacy in the Electronic Society*, New York, NY.
- Hanna, J.G. (1980) "A Typology of Consumer Needs, in Sheth, J.N. (ed.) *Research in Marketing*, vol. 3, Greenwich, CT: JAI Press, pp. 83–104.
- Hassanein, K. and M. Head (2006) "The Impact of Infusing Social Presence in the Web Interface", *International Journal of Electronic Commerce*, (10)2, pp. 31–55.
- Hsu, C.L. and H.P. Lu (2004) "Why Do People Play On-line Games?", *Information & Management*, (41)7, pp. 853–868.
- Hsu, F.M. and T.Y. Chen (2007) "Understanding Information Systems Usage Behavior in E-Government", *Pacific Asia Conference on Information Systems (PACIS)*, Auckland, New Zealand.
- Hu, T. and W.J. Kettinger (2008) "Why People Continue to Use Social Networking Services: Developing a Comprehensive Model", *International Conference on Information Systems*, Montreal, Canada.
- Hwang, Y.H. and D.J. Kim (2007) "Customer Self-service Systems: The Effects of Perceived Web Quality with Service Contents on Enjoyment, Anxiety, and e-Trust", *Decision Support Systems*, (43)3, pp. 746–760.
- Jarvenpaa, S.L., N. Tractinsky, L. Saarinen and M. Vitale (1999) "Consumer Trust in an Internet Store: A Cross-Cultural Validation", *Journal of Computer-mediated Communication*, (5)2, pp. 44–71.
- Jia, Y., Y. Zhao and Y. Lin (2010) "Effects of System Characteristics on Users' Self-Disclosure in Social Networking Sites, 2010 Seventh International Conference on Information Technology, Las Vegas, NV.
- Kang, Y.-S. and Y.J. Kim (2006) "Do Visitors' Interest Level and Perceived Quantity of Web Page Content Matter in Shaping the Attitude Toward a Web Site?", *Decision Support Systems*, (42)2, pp. 1187–1202.
- Katona, G.C., B. Strumpel and E. Zahn (1971) *Aspirations and Affluence: Comparative Studies in the United States and Western Europe*, New York, NY: McGraw-Hill.
- Katz, D. (1960) "The Functional Approach to the Study of Attitudes", *Public Opinion Quarterly*, (24), pp. 163–204.
- Kim, B. (2011) "Understanding Antecedents of Continuance Intention in Social-networking Services", *Cyberpsychology, Behavior, and Social Networking*, (14)4, pp. 199–205.
- Kim, H.W., J. Koh and H.L. Lee (2009) "Investigating the Intention of Purchasing Digital Items in Virtual Communities", *Pacific Asia Conference on Information Systems (PACIS)*, Hyderabad, India.
- Kumar, N. and I. Benbasat (2002) "Para-Social Presence: A Reconceptualization of 'Social Presence' to Capture the Relationship Between a Website and Her Visitors", *The 35th Annual Hawaii International Conference on System Sciences*, Big Island, Hawaii.
- Lampe, C., N.B. Ellison and C. Steinfeld (2007) "A Familiar Face(book): Profile Elements as Signals in an Online Social Network", *Conference on Human Factor in Computing Systems*, New York, NY.
- Lee, D.-H., S. Im and C.R. Taylor (2008) "Voluntary Self-disclosure of Information on the Internet", *Psychology & Marketing*, (25)7, pp. 692–710.
- Lee, Y., K.A. Kozar and K.R. Larsen (2009) "Avatar E-mail Versus Traditional E-mail: Perceptual Difference and Media Selection Difference", *Decision Support Systems*, (46)2, pp. 451–467.
- Lenhart, A., K. Purcell, A. Smith and K. Zickuhr (2010) *Social Media & Mobile Internet Use Among Teens and Young Adults*, Pew Internet, www.pewinternet.org (current May 5, 2012).
- Li, D., P.Y.K. Chau and H. Lou (2005) "Understanding Individual Adoption of Instant Messaging: An Empirical Investigation", *Journal of the Association for Information System*, (6)4, pp. 102–129.
- Li, D., P.Y.K. Chau and C.V. Slyke (2010a) "A Comparative Study of Individual Acceptance of Instant Messaging in the US and China: A Structural Equation Modeling Approach", *Communications of the Association for Information Systems*, (26) Article 5, pp. 85–106.
- Li, S., Y. Liu and S. Bandyopadhyay (2010b) "Network Effects in Online Two-sided Market Platforms: A Research Note", *Decision Support Systems*, (49)2, pp. 245–249.

- Liu, C., J.T. Marchewka, J. Lu and C.S. Yu (2005) "Beyond Concern—A Privacy-Trust-Behavioral Intention Model of Electronic Commerce", *Information & Management*, (42)2, pp. 289–304.
- Lo, J. (2010) "Privacy Concern, Locus of Control, and Salience in a Trust–Risk Model of Information Disclosure on Social Networking Sites", *Americas Conference on Information Systems*, Lima, Peru.
- Lo, J. and C. Riemenschneider (2010) "An Examination of Privacy Concerns and Trust Entities in Determining Willingness to Disclose Personal Information on a Social Networking Site", *Americas Conference on Information Systems*, Lima, Peru.
- Lombard, M. and T. Ditton (1997) "At the Heart of It All: The Concept of Presence", *Journal of Computer Mediated Communication*, (3)2, p. 0, [doi:10.1111/j.1083-6101.1997.tb00072.x](https://doi.org/10.1111/j.1083-6101.1997.tb00072.x)
- Lou, H., W. Luo and D. Strong (2000) "Perceived Critical Mass Effect on Groupware Acceptance", *European Journal of Information Systems*, (9)2, pp. 91–103.
- Marcolin, B.L., D.R. Compeau, M.C. Munro and S.L. Huff (2000) "Assessing User Competence: Conceptualization and Measurement", *Information Systems Research*, (11)1, p. 37.
- Markus, H. and P. Nurius (1986) "Possible Selves", *American Psychologist*, (41)9, pp. 954–969.
- Marshall, A. (1890) *Principles of Economics: An Introductory Volume*, London, England: MacMillan.
- Marwick, A. (2005) "I'm a Lot More Interesting Than a Friendster Profile: Identity Presentation, Authenticity, and Power in Social Networking Services", *Internet Research 6.0*, Chicago, IL.
- Maslow, A.H. (1970) *Motivation and Personality, 2nd edition.*, New York, NY: Harper and Row.
- McKinney, V., K. Yoon and F.M. Zahedi (2002) "The Measurement of Web–Customer Satisfaction: An Expectation and Disconfirmation Approach", *Information Systems Research*, (13)3, pp. 296–315.
- Milberg, S.J. and S.J. Burke (1995) "Values, Personal Information Privacy, and Regulatory Approaches", *Communications of the ACM*, (38)12, pp. 65–74.
- Newman, P.R. and B.M. Newman (1976) "Early Adolescence and Its Conflict: Group Identity versus Alienation", *Adolescence*, (11), pp. 261–274.
- Nielsen (2009) *March 2009 Global Faces and Networked Places: A Nielsen Report on Social Networking's New Global Footprint*, New York, NY: The Nielsen Company.
- Nielsen (2010) *Social Networks/Blogs Now Account for One in Every Four and a Half Minutes Online*, New York, NY: The Nielsen Company.
- Nunnally, J.C. (1978) *Psychometric Theory*, New York, NY: McGraw-Hill.
- Pavlou, P.A. (2003) "Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model", *International Journal of Electronic Commerce*, (7)3, pp. 69–103.
- Pavlou, P.A. and O.A. El Sawy (2006) "From IT Leveraging Competence to Competitive Advantage in Turbulent Environments", *Information Systems Research*, (17)3, pp. 198–227.
- Podsakoff, P.M., S.B. MacKenzie, J.Y. Lee and N.P. Podsakoff (2003) "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies", *Journal of Applied Psychology*, (88)5, pp. 839–903.
- Prince, B. (2008) "Researchers Outline Security Risks of Social Networking Sites", *eWeek.com*, Ziff Davis Enterprise Holdings Inc. <http://www.eweek.com/c/a/Security/Security-Researchers-Outline-Security-Risks-of-Social-Networking-Sites-at-Black-Hat/> (current May 5, 2012).
- Qin, L., Y.J. Kim, X. Tan and J. Hsu (2009) "The Effects of Privacy Concern and Social Influence on User Acceptance of Online Social Networks", *Americas Conference on Information Systems*, San Francisco, CA
- Richards, W.D. (1998) *The Zen of Empirical Research*, Vancouver, Canada: Empirical Press.
- Roche, A. (2009) "Organizing Your Connections on the New Friends Page", *Facebook*. <http://blog.facebook.com/blog.php?post=80116337130> (current May 5, 2012).
- Rosen, P.A. and D.H. Kluemper (2008) "The Impact of the Big Five Personality Traits on the Acceptance of Social Networking Website", *Americas Conference on Information Systems*, Toronto, Canada
- Schlenker, B.R. and M.F. Weigold (1990) "Self-consciousness and Self-presentation: Being Autonomous versus Appearing Autonomous", *Journal of Personality and Social Psychology*, (59)4, pp. 820–828.

- Sheth, J.N. (1974) "A Field Study of Attitude Structure and the Attitude-Behavior Relationship", in Sheth, J.N. (ed.) *Models of Buyer Behavior: Conceptual, Quantitative, and Empirical*, New York, NY: Harper and Row.
- Sheth, J.N., B.I. Newman and B L. Gross (1991) "Why We Buy What We Buy: A Theory of Consumption Values", *Journal of Business Research*, (22)2, pp. 159–170.
- Sitkin, S.B. and A.L. Pablo (1992) "Reconceptualizing the Determinants of Risk Behavior", *The Academy of Management Review*, (17)1, pp. 9–38.
- Sledgianoski, D. and S. Kulviwat (2008) "Social Network Sites: Antecedents of User Adoption and Usage", *Americas Conference on Information Systems*, Toronto, Canada
- Slyke, C.V., G. Dick, T. Case and V. Ilie (2010) "The Importance of Compatibility and Pressure on Intentions to Engage in Distance Learning", *Communications of the Association for Information Systems*, (27) Article 22, pp. 395–414.
- Staples, D.S., J.S. Hulland and C.A. Higgins (1999) "A Self-efficacy Theory Explanation for the Management of Remote Workers in Virtual Organizations", *Organization Science*, (10)6, p. 758.
- Steel, E. and G.A. Fowler (2010) "Facebook in Privacy Breach", *The Wall Street Journal*, New York, NY: Dow Jones & Company.
- Stewart, K.A. and A.H. Segars (2002) "An Empirical Examination of the Concern for Information Privacy Instrument", *Information Systems Research*, (13)1, p. 36.
- Stigler, G.J. (1950) "The Development of Utility Theory", *Journal of Political Economy*, (58), pp. 307–327.
- Stone, E.F. (1978) *Research Methods in Organizational Behavior*, Santa Monica, CA: Goodyear.
- Swearingen, J. (2008) "Social Networking Myths and Risks", *BNET.com*, The CBS Interactive Business Network. http://www.cbsnews.com/8301-505125_162-51219915/social-networking-myths-and-risks/ (current May 5, 2012).
- Tang, Y. and P. Forster (2007) "Exploring the Value Structure Behind Mobile Auction Adoption Intention", *Americas Conference on Information Systems*, Keystone, CO.
- Tesh, J. (2009) "Things You Should Never Reveal on Social Networking Sites", *Intelligence for Your Life*, Sherman Oaks, CA The Tesh Media Group.
- Tufekci, Z. (2008) "Grooming, Gossip, Facebook and MySpace", *Information, Communication & Society*, (11)4, pp. 544–564.
- Van der Heijden, H. (2004) "User Acceptance of Hedonic Information Systems", *MIS Quarterly*, (28)4, pp. 695–704.
- Van Slyke, C., V. Ilie, H. Lou and T. Stafford (2007) "Perceived Critical Mass and the Adoption of a Communication Technology", *European Journal of Information Systems*, (16), pp. 270–283.
- Veblen, T. (1899) *The Theory of Leisure Class*, New York, NY: MacMillan.
- Wang, D.L., L.L. Xu, and H.C. Chan (2008) "Understanding Users' Continuance of Facebook: The Role of General and Specific Computer Self-efficacy", *International Conference on Information Systems*, Paris, France.
- Wang, J., R. Chen, T. Herath and H.R. Rao (2009) "Visual E-mail Authentication and Identification Services: An Investigation of the Effects on E-mail Use", *Decision Support Systems*, (48), pp. 92–102.
- Wang, M. (2009) "Integrating Organizational, Social, and Individual Perspectives in Web 2.0-based Workplace e-Learning", *Information Systems Frontiers*, (12)3, p. 145.
- Wasko, M.M., R. Teigland and S. Faraj (2009) "The Provision of Online Public Goods: Examining Social Structure in an Electronic Network of Practice", *Decision Support Systems*, (47)3, pp. 254–265.
- Werts, C.E., R.L. Linn and K.G. Joreskog (1974) "Interclass Reliability Estimates: Testing Structural Assumptions", *Educational and Psychological Measurement*, (34)1, pp. 25–33.
- Whinston, A.B. (2009) "Opportunities and Challenges in Analysis of Social Networks", *Americas Conference on Information Systems*, San Francisco, CA.
- Wu, H.L. (2009) "Utilitarian and Hedonic Values of Social Network Services", *Americas Conference on Information Systems*, San Francisco, CA.
- Xu, H., R. Parks, C.H. Chu and X.L. Zhang (2010) "Information Disclosure and Online Social Networks: From the Case of Facebook News Feed Controversy to a Theoretical Understanding", *Americas Conference on Information Systems*, Lima, Peru.

- Yi, G. (2010) "A Value Based Analysis of Web 2.0 Usage", *The 4th China Summer Workshop on Information Management*, Wuhan, China.
- Yoo, Y. and M. Alavi (2001) "Media And Group Cohesion: Relative Influences on Social Pretense, Task Participation, and Group Consensus", *MIS Quarterly*, (25)3, p. 371.
- Zheng, W. and L. Jin. (2009) "Online Reputation Systems in Web 2.0 Era", *Americas Conference on Information Systems*, San Francisco, CA.
- Zhou, T., H. Li and Y. Liu (2010) "The Effect of Flow Experience on Mobile SNS Users' Loyalty", *Industrial Management & Data Systems*, (110)6, pp. 930–946.
- Zhu, D.S., C.H. Tsai and S.S. Huang (2010) "An Exploration of the Intention to Use Online Store", *Studies in Computational Intelligence*, (317)1, pp. 85–94.

APPENDIX A: MEASUREMENTS OF PRINCIPAL CONSTRUCTS

Table A-1: Measurements of Principal Constructs		
Principal constructs	Measurement items (1–7 Likert Scale)	Measurement reference
Site use	Please indicate the level to which you agree with the following statement: I regularly log into this social networking site. Using this social networking site is part of my daily routine. I access my social networking site frequently. I use this social networking site to a great extent.	Ellison et al., 2006
Attitude	Your overall attitude toward using this social networking website is: Beneficial Positive Favorable	Jarvenpaa et al., 1999
Social conformity	Please indicate the level to which you agree with the following statement: I tend to pay attention to what others are doing and follow them. It is my feeling that if everyone else in a group is behaving in a certain manner, this must be the proper way to behave. If I am the least bit uncertain as to how to act in a social situation, I look to the behavior of others for cues.	Schlenker and Weigold, 1990
Social image	Please indicate the level to which you agree with the following statement: Engagement in this social networking website will make me popular. Using this social networking website will improve the image others hold of me. Using this social networking website will enhance my social image and status.	Barton et al., 1982
Network management	Please indicate the level to which you agree with the following statement: I can maintain my social networks. I can sustain my relationships with my peers. I can extend my social networks. I can develop new relationships with others.	Wu, 2009
Critical mass	Please indicate the level to which you agree with the following statement: The number of users of this social networking website is large. Many Internet users use this social networking website.	Li et al., 2005
Learning	Using this social networking website satisfies: My desire of new knowledge My interest for new information My craving for learning	Slyke et al., 2010
Information quality	Please indicate the level to which you agree with the following statement: The information shared by members in this social networking site is accurate. The information shared by members in this social networking site is complete. The information shared by members in this social networking site is reliable.	McKinney et al., 2002
Social presence	Please indicate the level to which you agree with the following statement: There is a sense of human contact in this social networking website. There is a sense of personalness in social networking website. There is a sense of human warmth in this social networking website.	Gefen and Straub, 2004
Enjoyment	Spending time on this social networking website is: Enjoyable Interesting Entertaining	Van der Heijden, 2004

Table A-1: Measurements of Principal Constructs – Continued

Risk	Please indicate the level to which you agree with the following statement: In general, it would be risky to use this social networking website. There would be high potential for loss associated with using this social networking website.	Wang et al., 2009
Value of privacy	Please indicate the level to which you agree with the following statement: I am very concerned about threats to my personal privacy. Compared with other subjects on my mind, personal privacy is very important.	Fisher, 2002
Internet risk	Please indicate the level to which you agree with the following statement: There would be too much uncertainty associated with the use of Internet. Using Internet will involve many unexpected problems.	Grazioli and Jarvenpaa, 2000

APPENDIX B: PLS ITEM CROSS-CORRELATIONS

Table B-1: PLS Item Cross-Correlations

	NM	SI	LN	EJ	IQ	RK	IR	AT	WU	VP	SC	CM	SP
NM1	.86	.10	.31	.50	.25	-.16	-.19	.45	.40	-.07	.02	.37	.38
NM2	.88	.09	.24	.44	.20	-.15	-.19	.38	.39	.00	-.04	.42	.39
NM3	.87	.17	.34	.51	.19	-.14	-.17	.44	.32	-.12	.02	.25	.31
NM4	.80	.18	.31	.43	.18	-.02	-.03	.36	.38	.00	-.01	.23	.31
SI1	.19	.89	.29	.21	.40	.16	.08	.24	.15	.04	.20	.01	.28
SI2	.11	.94	.29	.22	.33	.24	.15	.25	.13	.04	.18	-.12	.25
SI3	.13	.94	.27	.22	.36	.23	.15	.25	.10	.00	.17	-.12	.25
LN1	.33	.28	.95	.39	.36	.04	.06	.38	.29	.00	.08	.04	.42
LN2	.39	.30	.95	.39	.40	.04	.05	.38	.30	-.03	.15	.05	.38
LN3	.24	.27	.91	.26	.34	.18	.14	.30	.20	.06	.12	-.06	.27
EJ1	.54	.18	.33	.87	.29	-.04	-.09	.52	.47	-.03	.01	.11	.42
EJ2	.47	.24	.41	.91	.25	-.05	-.05	.50	.39	-.03	.04	.04	.34
EJ3	.44	.20	.24	.87	.21	-.09	-.07	.49	.43	-.08	-.05	.15	.27
IQ1	.24	.33	.39	.29	.92	.07	.11	.33	.20	-.04	.17	.00	.30
IQ2	.24	.35	.36	.23	.92	.09	.12	.32	.15	-.02	.15	.03	.29
IQ3	.18	.41	.33	.26	.90	.10	.12	.31	.10	-.01	.16	-.08	.33
RK1	-.12	.23	.09	-.08	.10	.96	.52	-.15	-.11	.27	.08	-.22	-.05
RK2	-.15	.20	.08	-.04	.09	.96	.53	-.16	-.11	.26	.04	-.24	-.06
IR1	-.15	.18	.10	-.08	.16	.55	.96	-.09	-.03	.28	.10	-.23	-.02
IR2	-.19	.08	.05	-.08	.08	.48	.94	-.15	-.06	.32	.10	-.20	-.10
AT1	.40	.31	.37	.48	.39	-.01	-.08	.87	.38	-.16	.07	.03	.40
AT2	.44	.21	.33	.52	.31	-.19	-.15	.93	.44	-.22	.02	.13	.39
AT3	.45	.21	.33	.55	.27	-.22	-.11	.91	.45	-.21	.04	.14	.43
SU1	.40	.11	.23	.44	.16	-.17	-.09	.40	.91	-.10	-.05	.29	.24
SU2	.43	.12	.29	.49	.18	-.10	-.04	.45	.96	-.07	-.01	.21	.26
SU3	.38	.09	.26	.45	.11	-.13	-.08	.45	.96	-.08	-.03	.21	.23
SU4	.42	.18	.27	.45	.17	-.03	.03	.44	.90	-.04	-.06	.16	.31
VP1	-.09	-.04	-.06	-.10	-.05	.25	.28	-.22	-.07	.89	-.05	-.03	-.05
VP2	-.02	.10	.07	.02	.00	.24	.28	-.16	-.07	.89	-.04	-.03	-.05
SC1	.04	.18	.09	-.04	.13	.04	.05	.02	-.02	-.13	.86	-.12	.00
SC2	.00	.16	.15	.03	.22	.10	.16	.05	-.03	-.01	.90	-.11	.02
SC3	-.05	.18	.09	.01	.11	.02	.08	.06	-.05	.01	.87	-.08	-.03
CM1	.36	-.06	-.02	.11	.01	-.25	-.22	.12	.22	-.05	-.08	.95	.20
CM2	.37	-.10	.04	.11	-.04	-.21	-.22	.10	.22	-.01	-.15	.96	.19
SP1	.38	.26	.30	.35	.24	-.03	-.10	.35	.28	.01	-.02	.23	.87
SP2	.34	.18	.34	.34	.34	-.07	-.03	.43	.23	-.04	-.04	.20	.88
SP3	.32	.29	.35	.32	.29	-.04	-.04	.39	.21	-.12	.05	.09	.82

Notation: Network Management—NM; Social Image—SI; Learning—LN; Enjoyment—EJ; Information Quality—IQ; Risk—RK; Internet Risk—IR; Attitude—AT; Site Use—SU; Value of Privacy—VP; Social Conformity—SC; Critical Mass—CM; Social Presence—SP.

ABOUT THE AUTHORS

Rui Chen is an Associate Professor of Information Systems at Ball State University. He earned his PhD in Management Science and Systems from State University of New York at Buffalo. His research focuses on information assurance, emergency management, emerging media, information technology capability, and information technology outsourcing. His journal publications include *MIS Quarterly*, *Journal of the Association for Information Systems*, *Decision Support Systems*, *Information Systems Journal*, *IEEE Transactions on Professional Communication*, *Communications of the Association for Information Systems*, and *Communications of the ACM*. He is a Coordinating Editor of *Information Systems Frontiers* and has served as editor, program committee member, and session chair at various International conferences.

Sushil K. Sharma is a Professor of Information Systems at Ball State University, Muncie, Indiana. He has co-authored, edited, and co-edited twelve books and published over 240 manuscripts including over eighty refereed journal articles in some of the best journals in his field. His primary research interests are in information systems security, e-Learning, e-Government, computer-mediated communications, human computer interaction (HCI) and community and social informatics. Dr. Sharma currently serves as Editor-in-Chief of *The International Journal of E-Adoption*. He has been a reviewer and member of the editorial boards for several national and international journals. He has wide consulting experience in information systems and e-commerce and has served as an advisor and consultant to several government and private organizations including projects funded by the World Bank.

Copyright © 2013 by the Association for Information Systems. Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and full citation on the first page. Copyright for components of this work owned by others than the Association for Information Systems must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists requires prior specific permission and/or fee. Request permission to publish from: AIS Administrative Office, P.O. Box 2712 Atlanta, GA, 30301-2712, Attn: Reprints; or via e-mail from ais@aisnet.org.



Communications of the Association for Information Systems

ISSN: 1529-3181

EDITOR-IN-CHIEF

Matti Rossi
Aalto University

CAIS PUBLICATIONS COMMITTEE

Kalle Lyytinen Vice President Publications Case Western Reserve University	Matti Rossi Editor, CAIS Aalto University	Shirley Gregor Editor, JAIS The Australian National University
Robert Zmud AIS Region 1 Representative University of Oklahoma	Phillip Ein-Dor AIS Region 2 Representative Tel-Aviv University	Bernard Tan AIS Region 3 Representative National University of Singapore

CAIS ADVISORY BOARD

Gordon Davis University of Minnesota	Ken Kraemer University of California at Irvine	M. Lynne Markus Bentley University	Richard Mason Southern Methodist University
Jay Nunamaker University of Arizona	Henk Sol University of Groningen	Ralph Sprague University of Hawaii	Hugh J. Watson University of Georgia

CAIS SENIOR EDITORS

Steve Alter University of San Francisco	Michel Avital Copenhagen Business School
--	---

CAIS EDITORIAL BOARD

Monica Adya Marquette University	Dinesh Batra Florida International University	Tina Blegind Jensen Copenhagen Business School	Indranil Bose Indian Institute of Management Calcutta
Tilo Böhmann University of Hamburg	Thomas Case Georgia Southern University	Harvey Enns University of Dayton	Andrew Gemino Simon Fraser University
Matt Germonprez University of Nebraska at Omaha	Mary Granger George Washington University	Åke Gronlund University of Umea	Douglas Havelka Miami University
Jonny Holmström Umeå University	K.D. Joshi Washington State University	Michel Kalika University of Paris Dauphine	Karlheinz Kautz Copenhagen Business School
Julie Kendall Rutgers University	Nelson King American University of Beirut	Hope Koch Baylor University	Nancy Lankton Marshall University
Claudia Loebbecke University of Cologne	Paul Benjamin Lowry City University of Hong Kong	Don McCubbrey University of Denver	Fred Niederman St. Louis University
Shan Ling Pan National University of Singapore	Katia Passerini New Jersey Institute of Technology	Jan Recker Queensland University of Technology	Jackie Rees Purdue University
Jeremy Rose Aarhus University	Saonee Sarker Washington State University	Raj Sharman State University of New York at Buffalo	Mikko Siponen University of Oulu
Thompson Teo National University of Singapore	Heikki Topi Bentley University	Frank Ulbrich Newcastle Business School	Chelley Vician University of St. Thomas
Padmal Vitharana Syracuse University	Rolf Wigand University of Arkansas, Little Rock	Fons Wijnhoven University of Twente	Vance Wilson Worcester Polytechnic Institute
Yajiong Xue East Carolina University			

DEPARTMENTS

Information Systems and Healthcare Editor: Vance Wilson	Information Technology and Systems Editors: Dinesh Batra and Andrew Gemino	Papers in French Editor: Michel Kalika
--	---	---

ADMINISTRATIVE PERSONNEL

James P. Tinsley AIS Executive Director	Meri Kuikka CAIS Managing Editor Aalto University	Sheri Hronek CAIS Publications Editor Hronek Associates, Inc.	Copyediting by S4Carlisle Publishing Services
--	---	---	--

