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WHY PEOPLE CONTINUE TO USE SOCIAL NETWORKING SERVICES: DEVELOPING A COMPREHENSIVE MODEL

Pourquoi continue-t-on à utiliser les services de réseaux sociaux : développement d'un modèle général

Research-in-progress

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Abstract

Social networking (SNW) services such as Facebook and MySpace are growing exponentially. While many people are spending an increasing amount of their time on the services, others use them minimally or discontinue use after a short period of time. This research is asking the question: What are the salient factors influencing individuals to continue using and extending the range of SNW services after their initial acceptance? This research recognizes that long-term viability and the eventual success of these services depends on continued usage rather than initial acceptance, and usage continuance of SNW services at the individual level is fundamental to the survival of many social technology-empowered businesses and organizations. We look to the Expectation-Confirmation Model of information systems (IS) continuance and a series of social theories as the underlying theoretical foundations. We develop the Usage Continuance Model of SNW Services to investigate continued usage behavior and enduring impacts of SNW services. The model proposes that usage continuance behavior of SNW services is a joint function of individuals' perceptions of (1) intrinsic flow experience of SNW services, expected instrumentality of SNW services in managing and improving informational and relational values, and social influence as the outgrowth of social capital, and (2) costs in informational risks and participative efforts of time and social exchanges. The joint function is moderated by individuals' use history of SNW features. The proposed model and hypotheses offer a comprehensive framework for empirically extending the IS continuance research to the ever pervasive SNW context.

Keywords: Social networking, continuance, social capital, flow experience, social exchange, social influence, informational value, relational value, informational risks, effort.

Résumé

Cette recherche pose la question suivante : quels sont les facteurs clés poussant les individus à poursuivre et à étendre leur usage des services des réseaux sociaux, une fois l'acceptation initiale passée ? Nous développons un modèle d'usage continu des services de réseaux sociaux pour étudier le comportement d'usage et les impacts sur la durée des services des réseaux sociaux. Le modèle et les hypothèses proposés offrent un cadre général pour étendre empiriquement la recherche sur les usages continus dans le contexte toujours plus pervasif des réseaux sociaux.

Introduction

As a ubiquitous phenomenon, social networking (SNW) is viewed as "the next big thing after Google" (Kirkpatrick 2007). SNW services such as [MySpace](#) and [Facebook](#) have fascinated billions of users. *Forbes* coined the term, *MySpace Generation*, to label this significant phenomena. SNW services are being used by hundreds of millions of people, "resulting in a virtual cornucopia," (PRSA and Dow Jones Report 2007, cited in Dow Jones Factiva 2008). Meanwhile, SNW services such as [LinkedIn](#) are moving into professionals' lives (Kadlec 2007). Businesses have already launched various applications of SNW technologies, and integrated them into corporate settings to enhance marketing channels and organizational performance (Li and Bernoff 2008). For instance, employees at companies such as Wachovia and FedEx use SNW portals to connect and coordinate activities (Cone 2007).

While many people are spending an increasing amount of time using SNW services, others use them minimally or discontinue use after a short period of time (Gladwell 2002). For value-added activities of SNW services to be fully realized, however, long-term viability and the eventual success of the services depend on continued usage rather than the initial acceptance (Bhattacherjee 2001). Usage continuance of SNW services at the individual level will increasingly be fundamental to the survival of social technology-empowered businesses and organizations.

Academia has recognized that the unique characteristics of SNW services warrant SNWs a distinct research domain. Although prior research on both IS continuance and post-adoption of IS virtuality exists, such research fails to capture the domain of usage continuance of SNW phenomena as its usage tends to be more voluntary, more socially bound, and more evolutionary in use attributes and levels of involvement. Extant IS continuance research and its underlying theories greatly inform our approach; the phenomena, however, is different and significant enough to businesses that a unique contextual extension study is needed. This paper first discusses SNW services as a usage continuance phenomena based on an overview of Web 2.0 technologies. We then look to the Expectation-Confirmation Model of IS continuance and a series of social theories to articulate the theoretical foundations of our model, outlines hypotheses, and proposes a methodology to test our model.

Overview of Social Networking Services

Web 2.0 technologies can be characterized along such attributes as user contributed value and participative informational communications (Chen 2007), which drastically enable the phenomenal explosion of SNW virtuality in terms of the size and scope of social reaches, and the locus of grassroots control over the creation of virtual value (Parameswaran and Whinston 2007). Through the deployment of Web 2.0 technologies, SNW services focus on maintaining and improving social resources within a bounded system for communities of individuals, who share common connections and interests through the creation of a self-descriptive profile. Further, SNW services are configured as an egocentric virtuality, with individual users being the core value creators (Boyd and Ellison 2007).

The primary practice of SNW services is to facilitate individuals to "articulate and make visible their social networks" (Boyd and Ellison 2007). SNW functions such as reputation building and friending requests expand existing social networks of individuals. SNW virtuality is structured as gathering havens of otherwise "deracinated individuals" reflecting a variety of genuine "human voices" and personalized interests (Rosen 2007). In SNWs, spectrums of relationships, interests and values are embedded in varying social presentations and informational cues (Walmsley 2007). Technically, SNW portals are equipped with high connective flexibility, allowing individuals to develop and maintain social capital offline and online.

We propose that participation in SNW services signifies the learning process of social resources management. Value-added activities are cultivated because individuals are highly, and in some cases continuously, engaged in the context. SNW services embody an interactive and reciprocal culture, which "encourages users to check in frequently" (Rosen, 2007, p.30). Individuals' beliefs and behaviors in using SNW services are influenced by their initial SNW experience and through re-evaluation of their earlier adoption decisions. Individuals continue using SNWs if their social interactions result in relational and informational value from continued engagement with the platform. While the perceived value of SNW virtuality draws individuals towards increased embeddedness, it also imposes costs to the extent that participative risks, efforts and informational social exchange are involved. As SNW users believe they are receiving higher proportional value relative to their invested participative risks, they are likely to continue participating in the series of mutual social deals associated with usage SNW continuance.

Theoretical Foundations

In IS research, usage continuance has been defined as individuals' intention and/or behavior to continue using IS (Parthasarathy and Bhattacherjee 1998). This research stream specifies that overtime individuals' usage behavior transcends conscious usage and develops into a series of habitualized routines resulting in comprehensive and frequent use (Jasperson et al. 2005; Limayem et al. (2007). Our research is premised upon the Expectation-Confirmation Model of IS continuance, social exchange theory, social capital theory, and flow theory as the underlying theoretical foundations. This section provides a general review of these theories, which inform our model, hypotheses, and the proposed research methodology, all of which are discussed in the subsequent sections.

Expectation-Confirmation Theory: IS Continuance

In IS research, adapting the Expectation-Confirmation Theory (ECT) from the consumer behavior literature, Bhattacherjee (2001) develops the expectation-confirmation model (E-C model) to explain cognitive belief and affect of IS continuance behavior. The E-C model suggests that individuals' continuance intention is determined by usage satisfaction with their initial IS use and perceived IS usefulness. Perceived usefulness and confirmation of expectations play an antecedent role in shaping the level of usage satisfaction. While the seminal work of IS continuance is anchored to ECT, theoretical elaborations can be found in the Theory of Reasoned Action (Fishbein and Ajzen 1975). Jasperson's et al. (2005) more recent work on continuance incorporates Venkatesh et al. (2003) IS acceptance cognitions as the most important explanation of post-adoptive intentions to continued usage. Limayem et al. (2007) includes the construct 'habit' as a critical factor to account for IS continuance. Our research model uses the E-C model as the departure point to examine individuals' continuance intention to using SNW services.

Social Exchange Theory

Social Exchange Theory stresses that individual behavior is driven for maximum gain and marginal utility - a course of calculating and balancing benefits and costs of exchange (Blau 1994). Social Exchange Theory characterizes interpersonal interactions as reciprocity of resource and reward. As norms of reciprocity "is not contingent on prescribed obligations" (Blau 1994, p. 152-156), mutual efforts to fortify social exchange are engendered. Social Exchange Theory further suggests the criticality of trust in collective exchange actions among individuals (Blau 1994). Basically, ingrained in the established trust as mutual reinforcement, individuals are willing to engage in and sustain exchange transactions of benefits versus costs. This research positions the participation in SNW services as an overall longitudinal course of benefit/cost calculations. Holistically concerned with norms of reciprocity, general trust, and affective ties of social exchange as contrasted to informational risks and uncertainty inherent in online actions, SNW individuals may persist in the services as long as they perceive SNW benefits and opportunities exceed participative exchange costs. Otherwise, individuals may withdraw from the services.
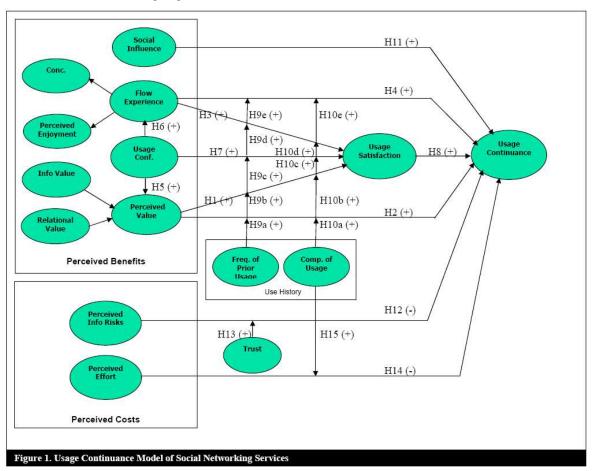
Social Capital Theory

Social Capital Theory interprets human behaviors through individuals' embededness in networks of social connections. Social Capital Theory maintains trust and norms of reciprocity as critical components of interpersonal interactions (Lin 1999). According to the theory, individuals of a social network are expected to contribute reciprocal efforts and obligations to accumulate "the collectivity-owned capital" (Bourdieu 1986, p. 249). Social Capital Theory asserts that social network connections are identified to tie individuals within common culture and value systems, and bridge diverse individuals (Dekker and Uslaner 2001). As such, Social Capital Theory maintains that bonding social capital is horizontally localized within individuals of a community, who share a large level of commonalities, whereas bridging social capital vertically spans across individuals of varying communities and networks (Wallis et al. 1998).

As SNW instrumentality in social capital construction is subject to certain levels of social influence and ethical challenges, this research incorporates Social Capital Theory to investigate the interactive dynamics of these factors. Surrounding SNW instrumentalities, SNW virtuality formulates a social composite of individuals, the environment where they are bound, and the technologies that they use to interact and take collective actions (Daniel et al. 2003; Ellison et al. 2007). Thus, fundamental to the collaborative notions of SNW virtuality are measures of technological sensemaking, social norms and protocols of reciprocity, engagement efforts to exchange values and meanings, and

shared history and identification within the emerging cultures (Daniel et al. 2003). Effective interplays of these factors can affect individuals' continuous motivation to continue to use SNW services. In this sense, constituent constructs and variables of social capital theory are relevant to the understanding of SNW phenomena.

Flow Theory

Flow Theory interprets human motivation through the impact of contextual traits and situational variables on individuals (Ghani and Deshpande 1994). Csikszentmihalyi (1977) defines flow as "the holistic sensation that people feel when they act with total involvement." People in flow experience "shift into a common mode of experience when they become absorbed in their activity" (p. 72). Flow Theory is specifically concerned with the intrinsic role of flow experience in terms of concentration and perceived enjoyment. As to SNW instrumentality in building hedonics and taste performance (Liu 2007), SNW virtuality creates a stage for "highly imaginative role-playing" (Donath 2007; Lenhard & Madden 2007). Hedonic virtues of SNW applications such as virtual fictional interactions recapture some of "social grooming" created through SNW services (Donath 2007). As SNW individuals attach much hedonic credibility to SNW services, this research applies Flow Theory to delve into flow experience of individuals undergoing continued use of SNW services.

Figure 1. Usage Continuance Model of Social Networking Services

Usage Continuance Model of Social Networking Services

In this research, we suggest that individuals conceive usage continuance of SNW services as the functional dynamics of varying benefit/cost factors and relations. Within the process, perceived values, costs, risks, and trade-offs are constantly calculated, contrasted, and balanced to steer individuals' temporal decision making on their post-adoptive behaviors. Through incorporating insights from the theories aforementioned, we propose an overall research model in Figure 1, the Usage Continuance Model of SNW Services. The model postulates that usage continuance of SNW services is a joint function of individuals' perceptions of (1) intrinsic flow experience of SNW

services, expected instrumentality of SNW services in managing and improving informational and relational values, and social influence as the outgrowth of social capital, and (2) costs in informational risks and participative efforts of time and social exchanges. The joint function is moderated by individuals' use history of SNW features.

Research Hypotheses

Perceived Value

Social capital theory makes the distinction between the relational and cognitive dimensions of social capital (Nahapiet and Ghoshal 1998). The former refers to the type of interpersonal relations that individuals have built and sustained "through a history of interactions" (p. 244). The latter refers to "those resources providing shared interpretations and systems of meaning among parties" (p. 244). Likewise, two types of organizational knowledge can be discerned (Brown and Duguid 2001): 1) in communities of practice, individuals of communal practice and social contexts are interdependent upon each other over time; 2) in networks of practice, individuals of heterogeneous groups with different practices interact with each other as a "loose epistemic group" (p. 205).

SNW connections and reaches encode all kinds of virtual interpersonal and organizational interdependencies (Wasko and Faraj 2005). SNW services provide a digital platform of social benefits and opportunities (Donath 2007; Ellison et al. 2007; Wasko and Faraj 2005). The reconfiguration and establishment of rich sets of SNW values transcend far beyond the recognition of IS usefulness in connection to specific social interactions (Brenda and Nah 2008). Based on social interdependency, SNWs build a virtual community of practice, in which interconnected individuals interact to create social values (Wasko and Faraj 2005). We assert that the primary dimension of perceived value of SNWs is manifested in the course of construction and enhancement of the relational value among existing social networks of individuals, and is consolidated through the continued use of SNW services.

Additionally, SNW services launch varying virtual networks of practice (Donath and Boyd 2004), where, via the individuals' reciprocal participation, SNW virtuality builds a digital stage for individuals to extend structural links and influences to the networks of social collaboration of interest, information and knowledge (Wasko and Faraj 2005). Our research views acquisition of informational value through the enactment of virtual networks of practice as the secondary dimension of SNW value. Through the construction of virtual networks of practice, individuals benefit from informational collaboration of SNW virtuality, which lead to positive reputation and image enhancement (Donath 2007; Kankanhalli et al. 2005), and in turn facilitates continued participation in and ongoing informational contribution to the virtual networks. Meanwhile, the development of virtual communities of practice promotes individuals' active expectations of SNW services in maintaining relational value, which can stimulate them to intensively retain with the services (Ellison et al. 2007). Thus, individuals' perceptions of SNW value in terms of relational and informational value lead to their use satisfaction with and continued usage of SNW services.

> *Hypothesis 1: Individuals' perceived value of SNW services is positively related to their usage satisfaction with SNW services.*

> *Hypothesis 2: Individuals' perceived value of SNW services is positively related to their usage continuance of SNW services.*

Flow Experience

Flow theory suggests that flow experience occurs within the interactions with symbolic systems. Symbolic systems create a "sur-reality," where individuals gain hedonic experience. Engaged in the systems, individuals can be so cognitively spontaneous and playful (Webster and Martocchio 1992) that they feel "loss of self-consciousness", and "a sense of control over the environment" (Csikszentmihalyi 1977, p. 72). Agarwal and Karahannal (2000), Ghani and Deshpande (1994), and Koufaris (2002) suggest concentration and perceived enjoyment as the key characteristics of flow experience, and empirically confirm that they are significantly related to the extent of IS usage. Other IS researchers (e.g., Venkatesh and Brown 2001; Webster and Martocchio 1992) also validate the antecedent role of perceived enjoyment as a significant intrinsic motivator of IS continuance.

SNW virtualities create a set of personas and avatars for self and social expressions (Donath 2007; Ellison et al. 2007). First, SNW services offer a digital opportunity of "self-expression and self-seeking", where individuals

"display egotism and modesty - an embodiment of your personality" (Rosen 2007, p. 15). Second, by interacting with friends and strangers to share personal stories and experiences, SNW individuals socially satisfy the needs of intrinsic curiosity, exploration, and venture into people's life (Donath and Boyd 2004). Both self and social expressions gain individuals instant escape from the boredom, emptiness, and trivialism of the trifling world. As flow theory implies that continued use of hedonic IS affords users to temporarily deviate away from and regain the power over the mundane world (Venkatesh and Brown 2001), practitioners report that such absorption into SNW activities can be so enjoyable that individuals are easily immersed in SNWs with a great level of concentration.

> *Hypothesis 3: Individuals' flow experience with SNW services is positively related to their usage satisfaction with SNW services.*

> *Hypothesis 4: Individuals' flow experience with SNW services is positively related to their usage continuance of SNW services.*

Usage Confirmation

Prior research in social exchange indicates that social actors are motivated to continue engagement in social systems of relations and contacts when the systems create value and opportunities via social interactions (Jones et al. 1997). The E-C model indicates that usage satisfaction is shaped by expectations of IS value and confirmation of expectations. Both Social Exchange Theory and E-C models treat instrumental sense-making as a key cognitive driver of usage satisfaction with and continuance of IS. Empirically, the expectation-confirmation-satisfaction association of IS continuance gains partial empirical support (e.g. Bhattacherjee 2001; Limayem et al. 2007). Our research model interprets the expectation-confirmation-satisfaction sequence as a cognition-behavior feedback loop whereby users' cognitive reflections of prior usage influence their decision on continued use.

Two instrumental expectations of SNW services underlie individuals' initial SNW adoption for their ongoing SNW needs: (1) the reliance on virtual communities and networks to enhance relational and informational values, and (2) the dependence upon self and social expressions for flow experience. Once individuals' usage experience with SNWs results in social 'sense', the usage expectation-confirmation leads to their satisfaction with and continued use of SNW services. Practitioners and sociologists observe that the more valuable and enjoyable individuals feel and confirm SNWs are, the more actively and even addictively they are embedded in such services (Rosen 2007).

> *Hypothesis 5: Individuals' extent of usage confirmation is positively related to their perceived value of SNW services.*

> *Hypothesis 6: Individuals' extent of usage confirmation is positively related to their flow experience with SNW services.*

> *Hypothesis 7: Individuals' usage confirmation of SNW expectations is positively related to their usage satisfaction with SNW services.*

> *Hypothesis 8: Individuals' satisfaction with SNW services is positively related to their usage continuance of SNW services.*

Use History: Frequency and Comprehensiveness of Prior Usage

The E-C model of IS continuance indicates that post-adoptive behaviors are based on a preexisting set of cognitions from initial usage experience. When individuals make more frequent and comprehensive IS use, their usage behavior is continued and extended. Meanwhile, as captured in use history, usage habit conditions post-adoptive behavior. Three variables are identified as the key antecedents of habit formation: satisfaction, frequency, and comprehensiveness of prior usage. While habitualized use modifies the relationship between continuance intention and actual continuance behavior, use history in terms of frequency and comprehensiveness of prior usage plays a moderating role between the antecedents of usage continuance and continuance behavior (Limayem et al. 2007).

Social capital is acquired and improved over a historical course, in which social norms and values are developed only when engaged parties facilitate usage actions of social resources in a timely and deliberate manner (Putnam et al. 1993). In SNWs, the more frequently engaged and structurally embedded individuals are with SNW services, the more valuable and enjoyable they may feel and confirm SNWs are (Daniel et al. 2003). Prior social capital research indicates that the density and intensity of a social network structure results from frequent and structural interactions

among individuals of a social network (Jones et al. 1997). As individuals' instrumental expectations of SNWs are enhanced, their use history can strengthen perceptions of usage expectations and satisfaction with SNWs, and lead them to continue and extend usage behavior of SNW services (Wasko and Faraj 2005).

> *Hypothesis 9 and 10 (a,b,c,d,e): The influence of individuals' usage confirmation, perceived value and flow experience of SNW services on usage satisfaction with and continuance of SNW services will be modified by their frequency and comprehensiveness of usage, such that effects of these factors will be stronger on usage satisfaction with, and continuance of, SNW services.*

Social Influence

Social exchange occurs within interactive contexts in relation to and under influences of family, friends, colleagues, and others. Social Capital Theory indicates that social influence signals the importance of the expectations of the individuals' salient referents as well as their motivation to conform to the expectations (Karahanna et al. 1999). As such, social influence may explain continued IS use behaviors (Jasperson et al. 2005). Tiwana and Bush (2005) posit that subjective norms shed light on users' continuance intentions. Supportive findings exist on effects of social influence on IS continuance (e.g., Bhattacherjee and Sanford 2006; Karahanna et al. 1999). As individuals participate in SNW virtual communities for informational and relational ties, social influence is inherent in their continued usage (Kadlec 2007). Communities and networks of practice may reflect effects of social influence in that individuals adopt and continue using SNW services to enhance their existing social structures.

> *Hypothesis 11: Social influence is positively related to individuals' usage continuance of SNW services.*

Perceived Informational Risks

Various studies show that as people get more involved with online services, they become more concerned with information privacy (Pavlou et al. 2007). Empirical findings of IS research suggest a negative relationship between individuals' informational risk perceptions and their intention to use and continue online services (Dinev and Hart 2006; Pavlou et al. 2007). In SNW virtualities, the gain of flow experience and the maintenance and improvement of social capital imply giving away more personal data, creating more informational risks. In the real world, various forms of deception based on false information haunts over social interactions. This particularly occurs in SNW virtuality (Boyd and Ellison 2007; Donath 2007). Anecdotes abound about how people use SNW sites to track down others' SNW activities and communications (Raskin 2006; Ward 2007). Thus, we hypothesize that individuals are concerned with informational risks when making decisions on usage continuance of SNW services.

> *Hypothesis 12: Individual users' perceptions of informational risks of SNW services are negatively related to their usage continuance of SNW services.*

In social exchange contexts, trust has been viewed as an important aspect of social networks and an enabler of collective actions (Wasko and Faraj 2005). When individuals of a social network trust in each other for their capability, benevolence, and integrity, they are more willing to engage in and sustain social exchange activities (Nahapiet and Ghoshal 1998). IS research indicates that individuals' trust may mitigate their informational risk perceptions of online services, leading to the adoption and continued use of IS services (Dinev and Hart 2006; Pavlou et al. 2007). Despite informational risks, SNW users may continue their use of the services based on trust in: (1) SNW service policies and providers, and (2) individual actors holding their personal information in SNW virtualities. In SNWs, individuals generally assume "an atmosphere of trust and safety" within the services (www.xing.com), and therefore continue use SNW services.

> *Hypothesis 13: The negative influence of users' perceived informational risks on continuance of SNW services is modified by their trust, such that its effect will be weaker on continuance of SNW services.*

Perceived Effort

Norms of reciprocity are critical to social resources management in social contexts. While most norms of reciprocity are not specified, and compliance to them is voluntary, individual actors' active efforts and durable obligations are required to uphold social activities and sustainability of a social network (Butler 2001). Extant perspectives of IS continuance indicate IS post-adoption is a process of usage behavior formation, alteration, and fixation, during

which individuals' continuous effort is required to sustain usage satisfaction and experience with the IS (Jasperson et al. 2005). For a great many IS applications and services, individuals' effort reflects their enduring commitments and obligations to the IS use, which critically impacts on the usage maintenance and continuance of overall IS functionalities (Bateman et al. 2006; Wasko and Faraj 2005).

Effort investments in SNW virtualites, however, can make individuals reluctant to continue the services due to the labor and troublesomeness usage effort may induce (Ba et al. 2001). Time and effort needed for knowledge codification and interaction are usually viewed as opportunity costs (Kankanhalli et al. 2005); it appears irrational for users to voluntarily invest time and effort in knowledge management systems (Wasko and Faraj 2005). In SNW services, usage effort is evidenced in the process of managing and developing virtual communities and networks of practice, which requires individuals to assume virtual presence and contribute efforts and social resources to the SNW environment (Ba et al. 2001; Markus 2001). Individuals may make usage decisions on the basis of benefit/cost perspectives, and many individuals may be reluctant to continue SNW services due to the effort burdens.

> *Hypothesis 14: Individuals' perceived usage effort in SNWs is negatively related to their usage continuance of SNW services.*

According to the E-C model of IS continuance, as individuals make comprehensive use of SNW functionalities, they learn to appreciate flow experience and social value of SNWs, and will extend usage effort to varying situations – the practice that may promote their continuance of SNW services. Parthasarathy and Bhattacherjee (1998) indicate that, despite usage effort, individuals with more extensive utilization of IS applications are more likely to continue their use than those with less extensive usage experience. Thus, we hypothesize that individuals' comprehensiveness of usage modifies the relationship between effort perceptions of usage and continuance of SNW services.

> *Hypothesis 15: The negative influence of individuals' perceived effort on usage continuance of SNW services will be modified by their comprehensiveness of usage, such that the effect of perceived effort will be weaker on their usage continuance of SNW services.*

Research Next Steps: Testing the Usage Continuance Model of SNW Services

Our continuing research on this topic will empirically test the Usage Continuance Model of SNW Service. In Appendix 1 we provide the definitions, literature resources, and operationalization examples of the key research constructs. Various constructs of the Usage Continuance Model of SNW Services will be measured applying multiple-item scales from previously validated measures. Modifications will be made to these scales to adapt them the specific context and targeted population of SNW services. If necessary, new scales development will follow the standards of psychometric measure construction procedures.

Data for the empirical test will be gathered from cross-sectional field surveys of college student users of SNW services, since college students are a major user group of SNW services (Amington 2005). To control response bias, age ranges of the participants will be identified. Moreover, the surveys will be administered to those participants who self-report having used SNW services during the past year. The participants will also be asked to identify the SNW sites they have used and the favorite one(s) they have mostly focused on. Data analysis will be conducted using Partial Least Squares (PLS) for validation of measure validity and justification of research hypotheses (Chin 1998). Future research will apply the model to the professional networks and cross-cultural contexts.

Conclusion

This research develops the Usage Continuance Model of SNW Services. We anticipate that flow experience, expected instrumentality, social influence, and participative costs of SNW services jointly determine individuals' continued behaviors and enduring impacts of SNW services, and the joint function may be moderated by individuals' use history of SNW features. This research aims to 1) contribute to the limited body of SNW research, 2) position SNW services usage and impacts in value-added contexts, and 3) explore theory-driven dimensions of continued usage behavior and perceptions of individuals in the contexts of SNW services. This model and follow-up empirical tests of the model should add significant contributions to IS research by extending the IS continuance research to the ever-pervasive SNW context. For IS practice, as the theory-driven factors and causal relationships are empirically validated, social technology-empowered businesses and organizations could benefit from leveraging users' usage continuance cognitions to maximize business values and organizational performance.

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Appendix 1: Research Construct Operationalization

	Research Constructs	Operationalization Examples	Literature Source
Independent Variable	**Social Influence (SI):** The extent to which individuals believe that significant others think it important that they use SNW.	SN1: People who influence my behavior think I should stay connected with them via SNW.	Karahanna et al. 1999; Venkatesh et al. 2003.
	Usage Confirmation (C): Individuals' perceptions of the congruence between expectations of SNW and the actual performance.	C1: My experience with SNW is better than what I expected.	Bhattacherjee 2001.
	Usage Satisfaction (US): Individuals' affect with (feeling about) SNW.	US1: Very dissatisfied/Very satisfied.	Bhattacherjee 2001.
	Flow Experience (FE): The pleasurable experience of total engagement in SNW that individuals intensely concentrate on.	Perceived Enjoyment1: I find SNW fun. Concentration1: I concentrate fully on what I am doing.	Agarwal et al. 2000; Csikszentmihalyi 1990; Ghani and Deshpande 1994.
	Perceived Value (PI): Individuals' perceptions of the potential benefits and opportunities of SNW in building and managing social capital.	Relational Value1: SNW enables me to stay in touch with my friends. Informational Value1: I am able to learn more information about people and social activities in SNW.	Brenda and Nah 2008; Brown and Duguid 2001; Nahapiet Ghoshal 1998; Putnam 2000.
	Perceived Informational Risk (PIR): Individuals' perceptions of informational risks with the use of SNW.	PIR1: my personal information could be misused.	Divev and Hart 2006; Pavlou et al. 2007.
	Perceived Effort (PE): The extent to which individuals contribute effort, time, and social resources to the SNW environment.	PE1: The effort is high for me to participate in SNW.	Jasperson et al. 2005; Kankanhalli et al. 2005; Limayem et al. 2007.
Dep. Var.	**Usage Continuance (UC):** Individuals' intention to continue using SNW following their initial experience with it.	UC1: I intend to use SNW in the future.	Bhattacherjee 2001; Kim and Malhotra 2005; Jasperson et al. 2005.
Moderator	**Trust (T):** Individuals' intentions to accept risk vulnerability of SNW based on belief that engaged parties will keep their best interest of personal information.	Institutional Trust1: The company that runs SNW is trustworthy in handling personal information. Interpersonal Trust1: People whom I am in touch with in SNW are in general dependable.	Malhotra et al. 2004; Pavlou and Gefen 2004.
	Frequency of Prior Usage (FPU): How often individuals use SNW during a period of time.	Please indicate the frequency of your SNW usage over the last month	Igbaria et al. 1997; Lenhart and Madden 2007.
	Comprehensiveness of Usage (CU): The extent to which individuals use the various applications of SNW for different purposes.	CU1: I use as many features of SNW as I can.	Burney and Matherly 2007; Limayem et al. 2007.
Research Construct Operationalization			