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Why do people use social computing? An experiential perspective

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Abstract

Purpose – The purpose of this paper is to develop a conceptual framework to describe the continual usage of social computing systems from an experiential perspective.

Design/methodology/approach – A conceptual framework is developed using theories formulated from a variety of disciplines including information system (IS) continuance, relationship formation, human-computer interaction, and motivation theory.

Findings – The conceptual framework encompasses the relationship and experiential perspective of user-computer interactions. The framework also identifies factors that contribute to the continual usage of social computing by users and how these factors are related with system features.

Research limitations/implications – This study does not include an empirical analysis to validate the conceptual framework proposed in this study. Future research is encouraged to examine the ten propositions from the proposed conceptual framework.

Practical implications – The conceptual framework takes a different approach which is well suited for examining the continual usage of social computing applications (SCAs).

Originality/value – Previous research investigating factors that contribute to the continual usage of social computing often examined using static and utilitarian-based models. The conceptual framework in this study provides a different perspective for explaining why people use SCAs.

Keywords Experiential perspective, IS continuance, Social computing, User-computer interactions, Relationship formation, Applications

Paper type Conceptual paper

1. Introduction

Social computing applications (SCAs) are user-friendly web-based applications that enable users to network, collaborate, and co-create content (Ala-Mutka *et al.*, 2009). SCAs include social networking sites (SNSs), blogs, photo and video sharing sites, online multi-player games and collaborative platforms for content creation and sharing (Ala-Mutka *et al.*, 2009; Wu *et al.*, 2013). Online information systems (ISs) like SCAs are only sustainable if they are continually used (Barnes, 2011). Satisfaction is not enough to guarantee continued usage users (Clements and Bush, 2011) given the current proliferation of competing SCAs.

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SCAs are hedonic ISs as users often use and contribute content without considering specific usage benefits beyond the pleasure they gain performing the activity itself (van der Heijden, 2004). A premise of the technology adoption literature is that users adopt technologies to aid task completion, which is influenced by technology functions, features, and/or information. Early technology adoption models (TAM) are not appropriate for hedonic systems like SCAs because constructs like usefulness become irrelevant when system usage is not primarily task based (Wang and Clay, 2010). Subsequent TAM studies employed hedonic beliefs such as perceived playfulness, percieved enjoyment, and feelings to overcome this shortcoming (Kim *et al.*, 2007; Thong *et al.*, 2006; van der Heijden, 2004).

Research exists that examine the antecedents for the continual usage of SCAs (Vassileva, 2012), but has yet to examine when SCA usage tends to be both voluntary and beyond an organizational context (Chang and Zhu, 2012). Individuals often lack the ability to refuse the use of an IS mandated by their employer. SCA usage is typically voluntary and outside the organization context. Individuals usually have the ability to choose the SCAs that they use at their own discretion. The non-voluntariness of IS usage is one of the major criticisms of most IS adoption research. The study on the continual usage of SCAs must take a different approach to address the non-voluntariness of IS usage.

The objective of this study is to develop a conceptual framework for the examination of factors that contribute to the continued usage of SCAs from an alternative perspective. Most studies on IS adoption and continuance (e.g. theory of reasoned action, the theory of planned behavior, and the technology acceptance model) take an expectancy-value theory (EVT) perspective. In this perspective, individuals develop a belief about an object or action when they acquire new information about the object or action. Individuals assign a value to all aspects of the belief and then form an expectation based on a calculation of beliefs and values. The calculation result is typically referred to as an attitude. Individuals' beliefs influence their attitudes and their attitudes affect their behavioral intentions and actual behaviors (Ajzen, 1991).

This study undertakes a relational view and focusses instead on the interactions between a user and an IS rather than the EVT perspective. The interactions that occur between an individual and an IS can be the basis for a user's positive or negative experiences (Al-Natour and Benbasat, 2009; Clements and Bush, 2011). A user decides to continuously use the IS based on their prior experiences, not because they were mandated to use the IS. The relational view is an alternative approach and can better explain the usage behavior of personal hedonic systems like SCAs than the EVT perspective.

The remainder of this study is organized as follows: a literature review is presented in Section 2 while Section 3 describes the major components of the conceptual framework. Section 4 presents the framework process model and introduces multiple study propositions. Section 5 includes a brief discussion and conclusion of the study.

2. Literature review

2.1 IS continuance research

IS usage continuance behavior is a condition when usage surpasses conscious behavior and becomes integrated as normal activity (Bhattacherjee, 2001). IS continuance behavior is the result of an explicit individual decision to continue using a particular IS (Limayem *et al.*, 2007). Research examining IS continuance has been incorrectly applied using continuance intention as a dependent variable, an approach commonly used in

technology acceptance models, instead of continuance behavior (Bhattacherjee and Barfar, 2011). The goal of IS continuance research is to predict actual behaviors and not behavioral intentions. An intention is a mental predisposition and is not the equivalent of behavior, or an actual act (Bhattacherjee and Barfar, 2011; de Guinea and Markus, 2009).

IS continuance is based on the expectation-confirmation theory (ECT). ECT argues that expectations along with perceived performance result in post-purchase satisfaction (Oliver, 1980). Disconfirmation mediates the relationship between expectations and performance with satisfaction. Post-purchase satisfaction leads to customer loyalty or repeat purchases. The expectation-confirmation model (ECM), derived from the ECT, was the first instance where continuance was adapted to the IS domain (Bhattacherjee, 2001). The ECM posits that a user's IS continuance intention is derived primarily from their satisfaction with previous IS use while user satisfaction is influenced by the expectation of the IS and confirmation of that expectation following actual usage.

The user experience is one of the most important factors influencing interactive system usage (Hassenzahl *et al.*, 2010). A user that experiences positive interactions with a system will likely be satisfied and continue using the system (Morgan-Thomas and Veloutsou, 2013). Pleasure is the primary driver for users of hedonic systems (van der Heijden, 2004) and satisfies emotional needs (Morgan-Thomas and Veloutsou, 2013). Most ECM research addresses non-hedonic concerns and does not account for the user experience (Bhattacherjee and Barfar, 2011). ECT was designed to examine satisfaction with functional products rather than hedonic service products (Oliver *et al.*, 1997) and overlooks the good feelings that exist in long-term product relationships (Carroll and Ahuvia, 2006). Users that have positive online experiences are motivated to make repeated online interactions (Morgan-Thomas and Veloutsou, 2013). Pleasure is the primary reason why a user first uses an IS (van der Heijden, 2004) and exposure to hedonic systems satisfy emotional needs (Morgan-Thomas and Veloutsou, 2013).

User satisfaction is operationalized in the ECT and ECM as functional or utility-based satisfaction, such as ease of use and perceived usefulness, and disregards experiential satisfaction (Hung *et al.*, 2011). Two categories of satisfaction exist and are dependent upon the source of satisfaction (Bianchi, 2003). One category of satisfaction is related to comfort and is derived from activities that either relieve physical pain and distress or save time, effort, and skill. The other category of satisfaction results from pleasure and comes from a stimulation of the senses as well as the exercise and enrichment of one's abilities.

Satisfaction related to pleasure is an experiential satisfaction reached from the users' overall evaluation of their experiences after using a service or a product (Kao *et al.*, 2008). User satisfaction with products comes from both hedonic (stimulation, identification, and evocation) and pragmatic (security and control) evaluations of product quality, but hedonic product quality is solely responsible for the positive user experiences (Hassenzahl *et al.*, 2010). Experiential satisfaction should not be dependent upon task performance, which is a belief inconsistent with the ECM.

An emotional attachment relationship may ensure continued IS usage. Experiential satisfaction in an online environment is the result of the actual interaction of the user with the system (Nambisan and Nambisan, 2008). Repeated instances of experiential satisfaction leads to emotional ties or long-term relationships (Fournier, 1998). A loyal relationship requires the user to form an emotional bond with a system that delivers a service (Patwardhan and Balasubramanian, 2011). Relationships are a phenomena

that evolve and change over a series of interactions and in response to fluctuations in the contextual environment (Fournier, 1998). Experiential satisfaction is an important factor for establishing a relationship between users and SCAs, which may influence continued usage of SCAs.

A relational view of user-IS interactions is gaining greater attention in the IS literature (Al-Natour and Benbasat, 2009; Clements and Bush, 2011). Brand love and romance are relational concepts examined in the marketing literature to study customers post-purchase behavior and loyalty (Batra *et al.*, 2012). While the transactional view of managing the user-IS interaction focusses on task efficiency, performance, and user friendliness, the relational view focusses on user engagement, trust, caring, enjoyment, and entertainment (Benbasat and DeSanctis, 2001). This study focusses on the relational view of usage continuance and user's experiential satisfaction on usage continuance.

2.2 Relationship, interaction, and user's experience

A relationship is a social psychological concept which indicates an emotional attachment between partners (Kelley *et al.*, 1983). Relationships are the result of repeated interactions, but not all repeated interactions will result in a relationship. Only interactions considered pleasurable by the user will result in a relationship (Rusbult and Van Lange, 2003).

Information technology (e.g. IS, web sites, etc.) may be considered as social actors in a relationship with users (Al-Natour and Benbasat, 2009). User interactions with IS are interpersonal in nature and users react to IS in a similar way as interacting in social situations (Marakas *et al.*, 2000). Analogous with human interactions, previous interactions and beliefs about an IS along with the outcomes formed as a result of previous interactions influence successive interactions and the overall beliefs a user has about an IS and their association with it (Al-Natour and Benbasat, 2009; Wang and Clay, 2010). User-IS interactions also regulate users' attitude toward the interaction and the system, and consequently the quality of the relationship to be formed (Marakas *et al.*, 2000; Chen *et al.*, 2013).

Users' experience has an important role in determining the users' attitude toward IS usage. Experience is "a stream of feelings, thoughts and action; a continuous commentary on our current state of affairs" (Hassenzahl *et al.*, 2010). Every user experience may be unique based on the emotion that the user had during the interaction activity (McCarthy and Wright, 2004). A users' emotional reaction to an interaction influences the interaction itself and impacts the users' product evaluation (Hassenzahl *et al.*, 2010). IS usage continuance by an individual depends on the emotional relationship formed between the user and the particular IS.

3. Conceptual framework

Usage continuance depends on the formation of an intimate relationship between the user and the system. The intimate relationship is the result of dynamic interactions between the user and the system and is created through an attribution process of user experiences. The fulfillment of basic psychological needs is the main motivational factor for the formation of the intimate relationship between the user and the system. Figure 1 illustrates the major components of the study's conceptual framework.

The ECM posits that a user's IS continuance intention is derived from their satisfaction with previous IS use. The conceptual framework in Figure 1

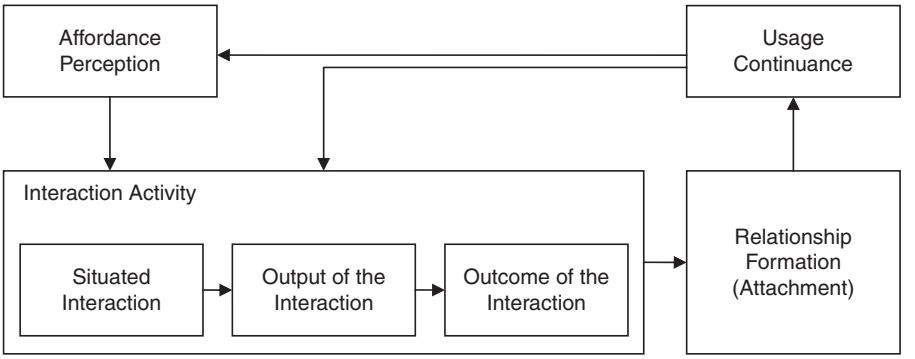


Figure 1.
Conceptual framework

has a similar theoretical basis with the ECM. Satisfaction is the result of a users' experience shaped from interaction activities. Satisfaction leads to relationship formation (attachment) and attachment results in system usage continuance.

3.1 Affordance perception

An affordance is a quality of an object or environment which allows an individual to perform an action (McArthur and Baron, 1983). The perception of environment affordance is essential in shaping how information is perceived as useful to an individual's actions and goals. The information that an individual is attuned to varies depending upon their learning style, goals, expectations, and actions. As an individual's perception develops, the individual extracts additional environmental stimuli and relationships previously undetected (McArthur and Baron, 1983). Affordances may change corresponding with a change in the environment (Chemero, 2003).

What a user knows about an IS depends on their perceptions. Affordances in ISs are the user actions possible as a result of interacting with the IS (Kannengiesser and Gero, 2012). Information system affordances are dynamic as they emerge from interactions between the user and the system, which also influences the interaction activity. Users may interact differently with the same artifact, which leads to different interpretations of affordances by users (Kannengiesser and Gero, 2012).

3.2 Interaction activity

Interaction is an action that involves two or more entities and a set of exchanges that effect changes to each entity (Marchionini, 2008). Interactivity exists either as a feature of technology, as a process of message exchange, or as something that a user perceives after using a technology (Lowry *et al.*, 2009). IS interactions with users occur through a system's user interface. A system's user interface represents action potential or the task environment, tools, and interactions possible between the system and the user (Laurel, 1993).

Human information interaction (HII) describes how individuals interact with, relate to, and process information regardless of the medium (e.g. smart phone, netbook, desktop, etc.) (Chang and Wang, 2011). HII is different from human-computer interaction (HCI) because the focus is on how individuals interact and interpret information as opposed to interacting with a computer interface. HII effectiveness is

evaluated by examining what an individual does after being exposed to information (Albers, 2008). HII exemplifies the interaction activity of this study's conceptual framework and influences the relationship formation process.

3.3 Relationship formation

A relationship is built and maintained over a series of interactions between known parties (Fournier, 1998). Humans form relationships with computers in the same way that they establish relationships with other people (Nass and Moon, 2000). The interactions between two parties are verifiable by analyzing the interpersonal patterns of events, which may include actions, reactions, emotions, and thoughts (Kelley *et al.*, 1983). An event may also be characterized as a segment of time (Zacks and Tversky, 2001), a distinctive action (Zacks *et al.*, 2007), or as unit of information (McArthur and Baron, 1983).

Changes that result from information interactions include differences in an individual's mental state and the physical/digital state of the information object (Marchionini, 2008). Relationships between an individual and an IS may be analyzed by identifying the event patterns among the user, the system, and the content. An IS consists of an information architecture, the design of the interaction or user interface, and the identity of the system (Kuniavsky, 2003). Event patterns include the types of actions that can be performed by the user, how the actions are constrained or facilitated by the information architecture and user interface, as well as the type of emotions and thoughts experienced by the user. The information interactions between a user and an IS influence event patterns and shape a user's mental state as well as the digital state of an IS. Information interactions subsequently influence the user-IS relationship and is the basis for understanding IS usage continuance.

3.4 Sense-making process

Online user experiences are the cognitive and affective impressions that result from user and web site interactions (Rose *et al.*, 2011). Individuals do not simply engage in online experiences but actively construct them through a sense-making process (Wright *et al.*, 2003). Sense making is the process by which people give meaning to an experience. ISs like SCAs do not guarantee an experience for the user, but offer an environment in which users could have an experience.

The outcome of a sense-making process depends on the situation and the user's state of mind and is the basis of the user-system relationship (Reinhard and Dervin, 2012). A sense-making process involves a number of stages including anticipation, connecting, interpreting, reflecting, appropriating, and recounting (McCarthy and Wright, 2004). The sense-making process is integrated with external events. External events are actions where the users' mind influences their environment while sense-making events are actions where the users' environment influences their mind (Clark, 2008). A series of mental processes or internal actions occur in a sense-making process before, during, and after exposure to external events (Wright *et al.*, 2003). This study employs a sense-making process (see Figure 2 and Table I) as the foundation for the conceptual framework to analyze a user's information interaction experience.

3.4.1 Anticipation. Anticipation is the expectation about the occurrence or non-occurrence of an event and the emotional outcomes resulting from the event (Baumeister *et al.*, 2007). The anticipation of an interaction activity may invoke emotions like pleasure, excitement, and anxiety. A user's prior knowledge, expectations, and goals may influence their anticipation of an interaction activity (Al-Natour and Benbasat, 2009).

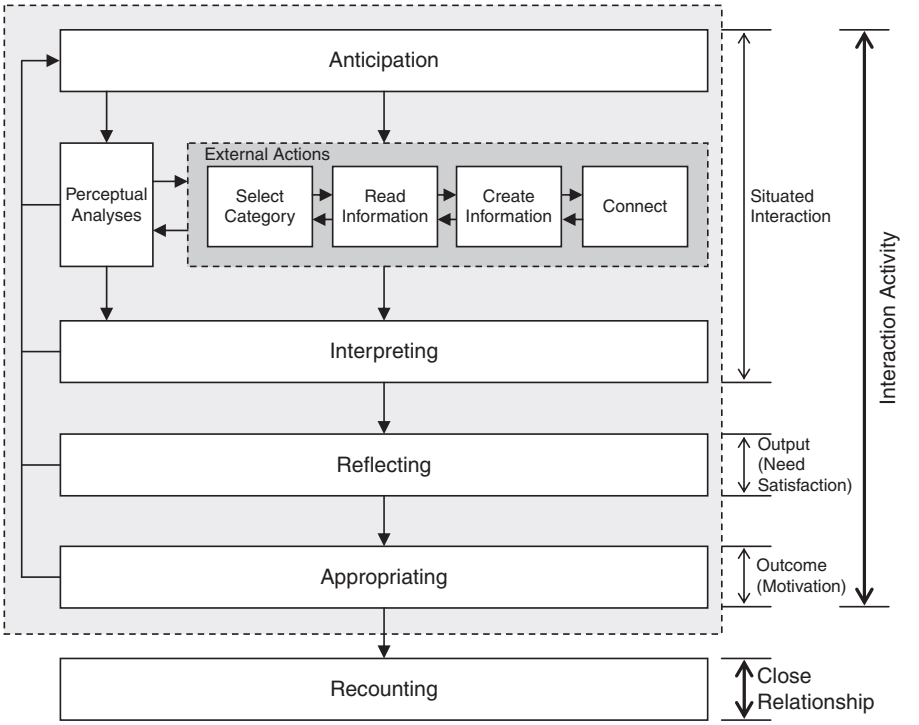


Figure 2.
Sense-making process

3.4.2 Perceptual analysis. A user first interacts with a system during the perceptual analysis stage in the sense-making process. The perceptual analysis stage influences a user's senses without assigning meaning (Wright *et al.*, 2003). The user is exposed to environmental stimuli during the perceptual analysis stage which may initiate interpretations of the situation, external actions or information interactions, as well as anticipation for a subsequent event.

3.4.3 External actions. External actions are the information interaction activity. A primary activity that occurs following perceptual analysis is category selection (Toms, 2002) in which a user selects a category, guided by the information architecture and user interface, based on previous experience (Kuniavsky, 2003). External actions in a SCA context also include consuming and producing information (Kaplan and Haenlein, 2010). After a user selects a category, the user differentiates pertinent information and extracts relevant details. The user discards the selection and continues on if the selection is not deemed important (Guthrie and Mosenthal, 1987).

3.4.4 Interpreting. A user assigns meaning to the experience through an interpretation and appraisal of the situation after perceiving what is occurring. A user will discern what and how the experience unfolds, what will likely happen and how the experience relates to their needs, hopes, and fears, and utilizes previous experience to assign meaning to the experience (McCarthy and Wright, 2004). The emotional reaction from an appraisal of the external actions significantly influences a user's interpretation. Appraisal is an evaluative process to determine the

Stage	Definition	Remarks
Anticipation	The expectation about the occurrence or non-occurrence of an event and the emotional outcomes resulting from the event	May invoke emotions like pleasure, excitement or anxiety Affected by a user's prior knowledge, expectations, and goals
Perceptual analyzes	The user initiates an interaction with a system	A user is exposed to external stimuli during this stage May initiate interpretations of the situation and anticipate for a subsequent event
External actions	The information interaction activities including category selection, consuming, and producing information	A user selects a category, guided by the information architecture and user interface, based on previous experience After a user selects a category, the user differentiates pertinent information and extracts relevant details
Interpreting	The user assigns meaning to the experience	A user will discern what and how the experience unfolds, what will likely happen and how the experience relates to their needs, hopes, and fears, and utilizes previous experience to assign meaning to the experience
Reflection	The user makes a judgment about an experience	Pleasurable interactions gratify one or more of a user's important needs Unpleasant interactions are antithetical to a user's important needs
Appropriating	The user makes an interaction experience their own	A user may relate an experience to their sense of self, their personal history, or their future desires
Recounting	The formation of a close relationship	A user will attribute interaction experience results to an IS after interpreting a situation The attribution process is relatively stable and influences subsequent interpretations and behaviors

Table I.
Sense-making process stages

significance of a stimulus for one's personal well-being (Smith and Lazarus, 1990). Emotions arise from encounters appraised as having beneficial or harmful consequences (Desmet and Hekkert, 2007).

3.4.5 Reflection. Reflection is when a user makes a judgment about an experience as it unfolds and places a value on the experience (Wright *et al.*, 2003). Pleasurable interactions gratify one or more of a user's important needs while unpleasant interactions are antithetical to a user's important needs (Rusbult and Van Lange, 2003). Emotions result from an appraisal of the personal significance of an event rather from the event itself. Appraisals mediate events and emotions which are interpreted differently by different individuals (Smith and Lazarus, 1990).

3.4.6 Appropriating. Appropriating is the stage in the sense-making process in which a user makes an interaction experience their own. A user may relate an experience to their sense of self, their personal history, or their future desires. The degree to which an interaction experience changes a user's sense of self is the extent to which the user identifies with the experience and want it to occur again (McCarthy and Wright, 2004).

Individuals assign attributes to objects that they interact with (Kelley, 1973). Positive interaction experiences include need fulfillment and pleasure stimulation (Hassenzahl *et al.*, 2010, Partala and Kallinen, 2012) which motivates a user to experience the activity again. Users similarly experience satisfaction or dissatisfaction interacting with IS (O'Brien and Toms, 2008). Users assign good or bad attributes to IS based on their interaction experience with the system (Hung *et al.*, 2011). Users initiate the attribution process by evaluating their emotions resulting from their experiences. Repeated evaluations of emotions that result from interaction experiences influences the relationships formed (Hassenzahl *et al.*, 2010).

3.4.7 Recounting. Recounting represents the formation of a close relationship. An attachment relationship will result when the user feels fulfilled about the experience and relates the IS to herself. A user after interpreting a situation will attribute interaction experience results to an IS. The attribution process is relatively stable and influences subsequent interpretations and behaviors (Kelley, 1973). An attributed trait or disposition creates expectations of disposition-related behaviors in the future (McClintock, 1983).

Learned helplessness (LH) theory is an approach to explain IT-related attributions by organizations (Martinko *et al.*, 1996). LH is a passive behavior which results from a previous exposure to failure despite changes in organizational circumstances or conditions. Anticipated negative outcomes related to IT characteristics are positively related to an expectation of failure and are negatively related to the intention to use the IT. Hedonic system users, in contract, expect positive stimulations from system usage. Learned optimism (Peterson, 2000) may better explain the attribution process in hedonic IS.

4. The social computing usage continuance model (SCUCM)

Al-Natour and Benbasat (2009) forward a user-IS (IT artifact) interaction process model which demonstrates how user-IS interactions influence the relationship between the user and the IS. One feature of the process model is that appropriation, the users' choice of IS features within a specific interaction, influences IS behaviors. Appropriation can explain which IS features are used, but cannot explain what the user experiences using the IS features. The user experiences are important with SCAs because they influence subsequent user-IS interactions. Appropriation is appropriate in organizational contexts because a specific work outcome is expected from the IS. Specific outcomes are not generally expected in non-organizational contexts, which are how most SCAs are used, and users evaluate the IS primarily from their experience.

This study proposes a process model to explain the effect of the user-IS interaction with SCAs and subsequent relationship formation process. User experience is employed instead of appropriation to account for the unique nature of SCAs. Figure 3 illustrates the SCUCM.

The SCUCM (Figure 3) consists of three components including: first, design and contextual factors; second, interaction activity; and finally, relationship formulation (attachment). The conceptual framework in Figure 1 and the SCUCM in Figure 3 model the same thing, but the SCUCM is a model that may be more readily adopted in future studies. Design and contextual factors refer to what an application offers to users and in which context an interaction activity occurs. The factors include content and action representation, technology spirit, and social factors. These factors represent affordance perception in Figure 1. Interaction activity and relationship formation are also featured

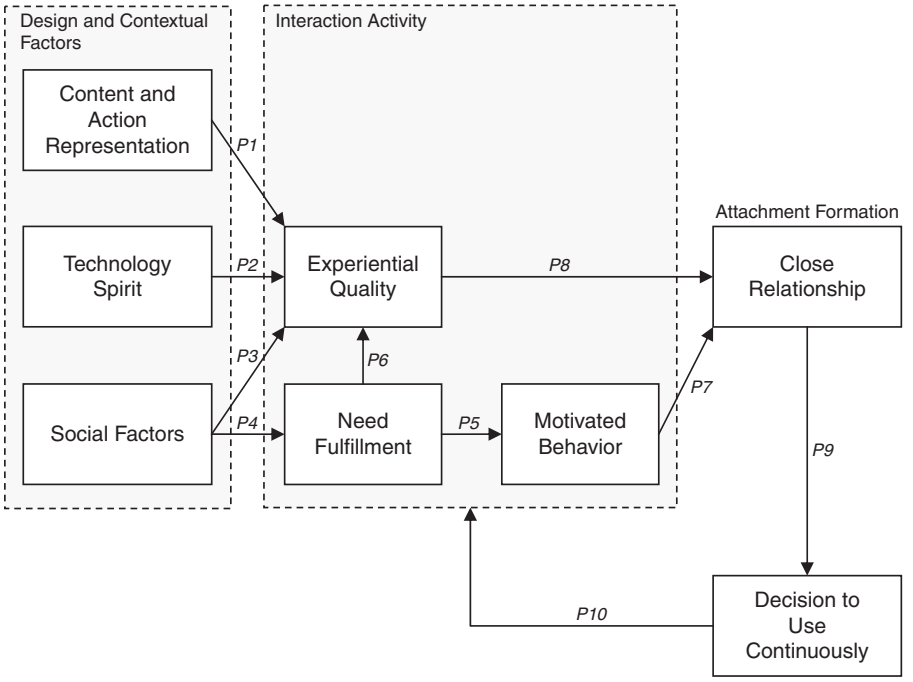


Figure 3.
The social computing usage continuance model (SCUCM)

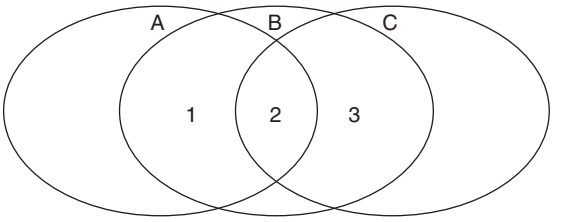
in Figure 1. Figure 2 features one component of the SCUCM in greater detail, the interaction activity. The interaction activity in Figure 3 is captured with experiential quality, need fulfillment, and motivational behavior. These constructs are explained using the six stages of the sense-making process which are illustrated in Figure 2.

4.1 Content and action representation

A well-designed IS may guide users through a sequence of actions (Dourish, 2001). Action representation is one way to control how a user can access a system. Action representation may affect the emotional involvement a user has in an activity (Boehner *et al.*, 2007). Cues, categories, and sequencing are possible action representations in an IS. Sequencing is important for developing a memorable experience (Palmer, 2010). Cues direct a user's attention toward specific information or an information category. Attracting and maintaining attention are crucial success factors for SCAs (Webster, 2011).

Content and action representation also includes the extent to which messages or content in a sequence relate to each other (Pfeil *et al.*, 2010). Each SCA has its own approach for representing content and actions. Facebook has three types of basic content delivered to users (see Figure 4). Content may be produced by the user (e.g. status or profile updates, wall comments, etc.), by the system (e.g. instructions, suggestions, help, etc.), or by other users (e.g. friends, friends of friends, etc.). Figure 5 illustrates multiple ways that Facebook represents, manipulates, and combines basic content.

Theatrical performances establish a relationship between content and structure (Laurel, 1993). A plot determines the action. A carefully crafted plot can engage users.



Basic Content

A = Self-generated content
B = Content generated by the system
C = Content generated by others

Generated or Combined Content

"AB" (1)
- Generated by the system based on the user profile
- Recommendations based on the user friend list

"ABC" (2)
- Recommendation based on the user friends activity on which you already commenting
- Notices about the user friends and others on which you have already show interest
- Notices about others who already show interest on the user generated content (on "A")

"BC" (3)
- Recommendation to the user based on his friend's activity
- Notice to the user based on his friends and others' activities

Figure 4.
Content representation in facebook

Similarities exist between the logic of a dramatic plot and action representation in HCI. Almost anything can happen at the start of computer application, but the possibilities narrow as actions are performed. Laurel (1993) described this action representation as a "flying wedge." Figure 5 illustrates the "flying wedge" principal.

Figure 5 highlights three information categories on Facebook; friend requests, messages, and notifications. (1) Cues exist which indicate the presence of new information (i.e. numbers with red background). A user may anticipate various possibilities focussing on one of the cues and guess what it might be. For example, a cue indicating new notification may compel the user to anticipate who is generating the new message and increase an eagerness to check the source of the notification. Once the user clicks on the "Notifications" category, she will become aware of the source of the cue. If the notification is "X has commented on your photo." (2) The user may then wonder "what did X comment on my picture?" The notification serves as an additional incentive to stimulate user action. Subsequent clicking on the notification link will direct the user to the actual information. (3) The "flying wedge" is one type of action representation among many other possibilities. The way actions are represented will affect the user experience. This study posits:

P1. The content and action representation of a particular SCA influences the experiential qualities of the user's interaction with the SCA.

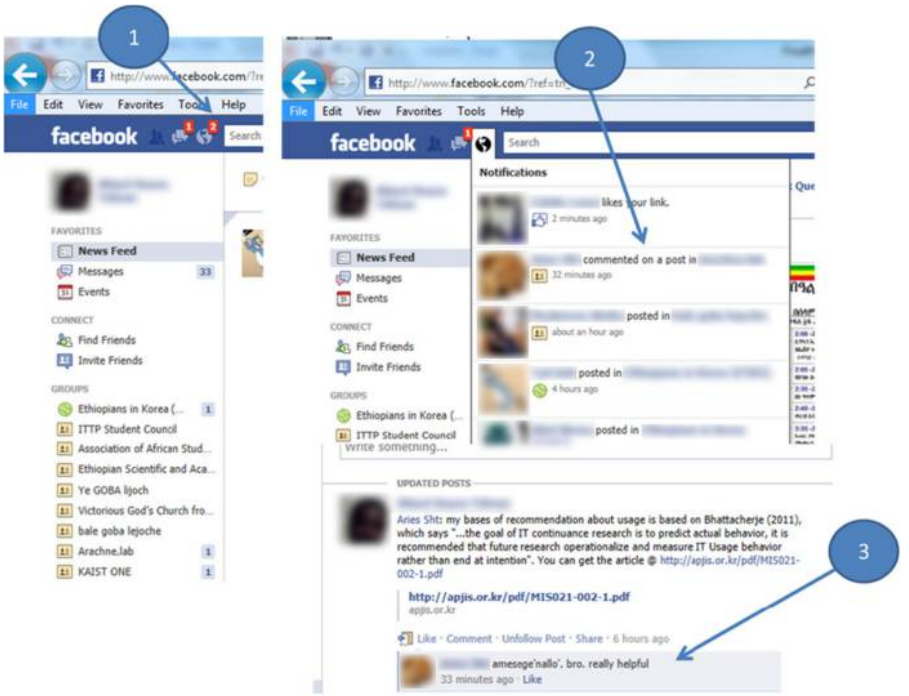


Figure 5.
Cues and categories in facebook

4.2 User and technological context

User experiences are influenced by the context in which the interaction activities take place (Verhoef *et al.*, 2009). Context may refer to the task that the system is performing, the purpose for conducting the task, or factors that impact the user and the system (Dourish, 2001). Context influences an individual's disposition toward an activity (Higgins *et al.*, 2010). Two types of contexts are addressed in this study, "technology spirit" and "social factors."

4.2.1 Technology spirit. User's perception, previous feelings, and values influence how they interact with an object (Forlizzi and Ford, 2000). The user's prior knowledge which influences perceptions about technology is known as "technology spirit" (Desanctis and Poole, 1994; Markus and Silver, 2008). Prior knowledge is the basis of user's evaluation of incoming information regarding an interaction with IS (Rose *et al.*, 2011). A user's technology spirit helps them understand and interpret the purpose of a technology (Desanctis and Poole, 1994). A user's technology spirit influences their perceptions about technology and will impact their online interaction experience. This study posits:

P2. The technology spirit for a particular SCA influences a user's perception of the experiential qualities for the interaction with the SCA.

4.2.2 Social factors. Social factors are either human or non-human factors encountered in a user's social environment (Vallerand and Ratelle, 2002). The psychological meaning that a user assigns a social factor is a critical element in initiating and determining a user's behavior (Deci and Ryan, 1987). Human social factors include

comments from another person. Non-human factors include instructions or signs. Social factors may be categorized into three distinct levels; situational, contextual, and global (Vallerand and Ratelle, 2002). Situational factors are social factors encountered during a specific interaction activity at a specific time. Contextual factors are social factors that reoccur systematically during a specific interaction activity. Contextual factors alter the motivational climate of interaction activities (Reinboth and Duda, 2006). Global factors are social factors that reoccur systematically during any interaction activity. This study posits:

P3. The social factors of a particular SCA influence the user's perception of the experiential qualities of the interaction with the SCA.

Social factors influence a user's perception of their psychological needs. Social factors influence user competence, autonomy, and relatedness, which impact a user's motivation (Ryan and Deci, 2000; Vallerand and Ratelle, 2002). This study posits:

P4. The social factors of a particular SCA influence the user's perception of basic psychological need fulfillment with the SCA.

4.3 Need fulfillment, experiential quality, and motivated behavior

Self-Determination Theory states that humans tend to participate in interesting experiences and are always striving to fulfill basic psychological needs like autonomy, control, and relatedness (Deci and Ryan, 2000; Ryan and Deci, 2000). User's assess online interactive experience satisfaction based on the extent that online activities fulfill basic psychological needs (Tamborini *et al.*, 2010). Individuals engage in attributional activity to uncover the direct meaning and broader implications of a partner's actions, to develop expectations regarding future behavior, and to explain prior behavior (Weiner, 1985). A user will appropriate the experience and attribute a value on the interaction activity if the interaction satisfied their needs (Hassenzahl *et al.*, 2010). A satisfied user will be motivated to engage in future interaction activity. This study posits:

P5. A user's perception of the basic psychological need fulfillment resulting from their interaction activity with a particular SCA determines their motivational behavior toward the SCA.

Psychological needs also influence the user experience (Hassenzahl and Tractinsky, 2006; Partala and Kallinen, 2012). Basic psychological need fulfillment promotes users' experiential satisfaction (Hassenzahl *et al.*, 2010). This study posits:

P6. A user's perception of basic psychological need fulfillment resulting from their interaction activity with a particular SCA determines the experiential qualities of the user's interaction with the SCA.

4.4 Attachment formation

Users evaluate the fulfillment of their basic psychological needs based on social factors surrounding an interaction activity (Deci and Ryan, 2000). The user's experience (Hassenzahl *et al.*, 2010) and their motivation (Deci and Ryan, 1987) influence the attachment that is formed between the user and a system. A user will continually use a system once an attachment relationship is formed. The decision to continually use a system influences subsequent interaction activities.

An individual that finds a fulfilling relationship with a partner will develop a close relationship with that partner (Ries *et al.*, 2004). Relationships become intimate if the partner perceives that their partner to be responsive and supportive during the

interaction process. Need fulfillment is the basis of relationship formation. Individuals form intimate relationships with others that support need fulfillment and evade relationships that hinder need fulfillment (La Guardia and Patrick, 2008). An attachment relationship is formed following repeated interactions that result in feelings of need fulfillment and intimacy (Ries *et al.*, 2004; Ji and Fu, 2013). Usage continuance results from the formation of an intimate relationship between the user and IS. This research posits:

P7. A user's motivational behavior toward a particular SCA determines the closeness in the relationship created between the user and the SCA.

All interactions do not lead to a close relationship. Interactions that either benefit the user or capture their interest are capable of facilitating a close relationship between the user and IS (Ries *et al.*, 2004). The user-IS interaction must be a positive experience that is both satisfying and interesting to enable a close relationship to be formed. An intimate relationship will be formed with a system if the user finds the system to fulfill their needs. This research posits:

P8. The experiential qualities that a user experiences interacting with a particular SCA determines the closeness in the relationship created between the user and the SCA.

P9. A close relationship that is created between the user and a particular SCA will influence the user's decision to continuously use the SCA.

A relationship comprises a series of causally connected interactions and includes mental representations of past interactions (Kelley *et al.*, 1983). Relationships are similarly established in repeated interactions with ISs (Al-Natour and Benbasat, 2009). Every interaction that a user has with a system may influence their subsequent interactions with the system. This research posits:

P10. A user's decision and action to use a particular SCA with affect her subsequent interaction with the SCA.

5. Discussion and conclusion

This study proposes a conceptual framework that identifies multiple factors contributing to the continual usage of SCAs. This research has value for researchers as it both enhances and extends the extant literature (Gregor and Jones, 2007; Vassileva, 2012). Al-Natour and Benbasat (2009) developed a conceptual model for the study of user interactions with an IT artifact in an organizational context. This study focusses on SCAs, which are generally non-organizational systems that users voluntarily use. No specific work outcomes are expected in non-organizational uses of a system and a user typically evaluates the system based on her experience. User experience is utilized in this study instead of appropriation to explain the effect of the user-IS interaction.

Usage continuance depends on the formation of an intimate relationship between the user and the system. An intimate relationship is created through dynamic interactions between the user and the system along with the experiential qualities experienced by the user during interaction activities. Experiential qualities are the perceptual and judgment processes that occur within the user during user-IS interaction activities. The study's conceptual framework recognizes that the fulfillment

of basic psychological needs is the primary motivational factor for the formation an intimate relationship between the user and the system.

Multiple factors influence how a user continuously interacts with a system. Content and actions should be represented in an engaging way to capture the user's attention. Users are more attracted to content that they find relevant, appealing, and easily understood. A carefully designed action sequence also engages the user. Social factors encountered while using a system encourages cooperation, competition, or a sense of achievement. The technology spirit guides the user on how to act when using the system. A user's knowledge and assumptions about a system contributes to the user's experiential quality while using the particular technology.

This study also has value for practitioners that provide SNS-related services. A users' continued use of an IS likely depends on the type of relationship that the user establishes with the system. Multiple issues exist surrounding the process of establishing a relationship between the user and a system. Organizations should identify the psychological factors that facilitate the formation of a relationship between the system and its users. This study identifies multiple factors that help to better understand the relationship between the system and its users.

The type of relationship that a user has with SNS-related activities likely determines the user's satisfaction with the service and their intention to continually use the service. Web site designers may need to commit equal attention to factors related to the social context in addition to web site design concerns. This study proposed both social contextual factors and web site design factors that can determine the type of relationship a user may have with SNS activities.

Future research is encouraged to examine the conceptual framework proposed in this study. Multiple propositions are forwarded that are grounded in the literature which offers several insights into the unique nature of SCAs. Previous research investigating factors that contribute to the continual usage of social computing were often examined using static and utilitarian-based models. The study's conceptual framework takes a different approach which is well suited for examining the continual usage of SCAs.

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