



## User adoption of social networking sites: Eliciting uses and gratifications through a means–end approach

Peiyu Pai <sup>a,\*</sup>, David C. Arnott <sup>b</sup>

<sup>a</sup> Department of Business Administration, National Chengchi University, Taipei, Taiwan

<sup>b</sup> Warwick Business School, The University of Warwick, United Kingdom

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### ABSTRACT

This research examines users' motives for adopting and using social networking sites (SNSs), with the aim of providing a better understanding of the fundamental reasons behind SNS adoption behavior. To uncover the relationship between the attributes of SNSs and users' perceptions of their consequences and values, this study integrates a means–end approach with uses and gratifications theory and thereby extends the technique to a communication media selection context. Laddering interviews identify users' perceptions of five attributes, 10 consequences, and four values associated with SNS adoption (i.e., Facebook). The results show that belonging, hedonism, self-esteem, and reciprocity are the four main values users attain through SNS adoption. Furthermore, the chains associated with SNS adoption can be represented in a hierarchical value map. This study should help practitioners design online communication platforms that more closely fit their users' needs and provide users with safer, more friendly, and thus more attractive environments.

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### 1. Introduction

Logging onto social networking sites (SNSs) to start their day has become a daily routine for many people (Stone, 2009). Social networks, such as Facebook, MySpace, and LinkedIn, permit users not only to present themselves to a personal network of contacts but also to help them maintain existing or establish new social and professional interactions (Ellison, Steinfield, & Lampe, 2007; Trusov, Bucklin, & Pauwels, 2009). Companies deem SNSs attractive because data in users' profiles and messages provide valuable marketing information; for example, Facebook's database has been termed "a crystal ball for future consumer intentions" (Casteleyn, Mottart, & Rutten, 2009, p. 440). For companies seeking Internet exposure and improved brand loyalty, SNSs represent a marketing and advertising opportunity (Sledgianowski & Kulviwat, 2009). Consequently, and currently, the dominant SNS business model is advertisement based (Gangadharbatla, 2008) and relies on the rapid growth of user registrations. Only by increasing the network of users can emerging Internet technology yield valuable economic returns and generate influence (Strader, Ramaswarni, & Houle, 2007). Therefore, it is imperative for managers to understand SNS

users' motivation for engaging in and adopting new communication technologies.

However, despite the explosive growth of SNSs, research into the phenomenon has not increased proportionally (Ross et al., 2009). In particular, research that explores the psychological processes of joining and the benefits derived from using an SNS is still in its infancy. In this study, we adopt a means–end perspective (Gutman, 1982) and laddering interview methodology to examine user perceptions of the attributes, consequences, and values associated with the adoption and use of SNSs. 'Means' are objects that facilitate actions and activities in which people engage, and 'Ends' are valued states of being, such as happiness. Research in marketing has used means–end chains to explain how consumers' selection of a product or service facilitates the achievement of desired end states (Gutman, 1982).

Because we are interested in users' selection of a communication medium (an SNS), we assert that their adoption decisions are influenced not only by the attributes of the medium, as some traditional computer-mediated communication theories assume (e.g., the social presence model, media richness theory), but also by needs fulfillment and social influence factors (Flanagin & Metzger, 2001). Thus, we explore the psychological processes related to SNS adoption by integrating the means–ends perspective with the uses and gratifications (U&G) theory (Katz, 1959). The U&G theory focuses on intrinsic psychological needs and develops theoretical dimensions of user motivations for media use and selection (Ruggiero, 2000; Stafford, Stafford, & Schkade, 2004).

\* Corresponding author. Address: Department of Business Administration, National Chenchi University, No. 64, Sec. 2, Zhi-Nan Rd., Taipei, Taiwan. Tel.: +886 2939 3091 (81100); fax: +886 22939 8005.

E-mail addresses: [p.pai@nccu.edu.tw](mailto:p.pai@nccu.edu.tw) (P. Pai), [David.Arnott@wbs.ac.uk](mailto:David.Arnott@wbs.ac.uk) (D.C. Arnott).

In summary, this study aims to contribute to the literature on SNSs in three ways. Firstly, to our knowledge, we are among the first to integrate the laddering interview and means–end approach with U&G theory to explore the adoption of SNSs. By doing so, we provide a better understanding of SNS users' behavior and the psychological gratifications they derive from adopting SNSs. This is important because users may perceive functionality differently from system designers. Understanding those perceptions enables creation of SNSs which generate involving user interactions and content, as well as the rapid uptake and growth needed for advertising-based revenue models. Secondly, we examine the motivations of SNS adoption via the key and hierarchical linkages between uses, consequences, and values. These linkages help explain the underlying reasons behind the use of a popular application. Users may or may not recognize or be able to elaborate their motivations for their actual behavior, and laddering interviews enable a hierarchical conceptualization of those motivations. This differs from the typical quantitative research which makes *a priori* assumptions about users' motivations. By interpreting these linkages, we can understand the users' perceptions of the functionalities of SNSs, how users employ them, and why users find those functionalities important. Thirdly, users typically engage in SNSs to connect with families, friends, and others (thus gratifying their need for being connected), but they may also be subject to employer (coworker) surveillance in working contexts or may be surrendering their privacy and information control by unwittingly providing their private information for marketing purposes. Such embedded concerns, likely impediments or barriers to SNS adoption, are surfaced in our means–end, laddering interview methods and may aid practitioners' provision of safer, more friendly, and thus more attractive environments for SNS users.

## 2. Theoretical background and research questions

### 2.1. SNSs

The use of electronic, web-based applications to establish and maintain social or professional contact networks is now commonplace (Trusov et al., 2009). This practice is reflected in the rapid increase in the usage of SNSs. For example, Facebook marked its sixth anniversary in February 2010 with a population of 400 million users (Facebook.com). SNS users start by registering with the site and then creating a personal profile typically containing a picture (or avatar), some demographic information (e.g., age, location, school affiliation), and personal interests (e.g., music, book, movie preferences) or, in the case of professionally oriented networks, type of links sought. Once registered, the user can search for other users he or she either knows or wishes to develop a relationship with and can join various common interest groups. Contacts are made through simple searches or by browsing suggestions made by the SNS's algorithms. The user then sends an invitation to link (as a friend, colleague, fellow alumnus, and so on), and acceptance connects the two profiles and provides each with access to the other's networks. The overlaps between networks become visible and permit invitations to "friends of friends" (Staples, 2009). Although some SNSs aid the connection between strangers based on shared interests or other affiliations, most SNS usage is for the maintenance of pre-existing social networks (Boyd & Ellison, 2007).

Furthermore, SNSs permit simultaneous access to multiple communication tools (Dwyer, Hiltz, & Passerini, 2007). Facebook, for example, permits one-to-many blog-like communications, one-to-one private synchronous chat and asynchronous messaging, and many-to-many discussions. "Links" enable users to connect across different sites and to use "applications" (e.g., games).

Such SNS attributes facilitate and encourage users' communications within and beyond their direct contact networks. In this study, we hypothesize that users adopt SNS functions as a means to an end or to satisfy psychological needs. To explore this proposition, we begin by identifying users' perceptions of SNSs functionality. This leads to our first two research questions:

*RQ1: What SNS functions do users frequently use (i.e., the means)?*

*RQ2: What consequences do users seek to achieve by using these functions (i.e., the ends)?*

### 2.2. SNSs versus online communities

Online communities refer to computer-mediated social spaces of intentional actions in which members create content through ongoing communication processes (Bagozzi & Dholakia, 2002; Jang, Finan, Ko, Koh, & Kim, 2008); thus, SNSs are, by nature, online communities. In addition, various scholars have proposed classifications or typologies of online communities according to their functions. For example, Armstrong and Hagel (1996) suggest *communities of transaction, interest, fantasy, and relationship*, and Dholakia, Bagozzi, and Pearo (2004) suggest *network-based online community* (e.g., a bulletin board, a discussion forum) and *small-group-based online community* (e.g., a closed chat room). We argue that SNSs emerged after the classification schemata of Armstrong and Hagel and of Dholakia et al., and that they are a new type of online community that help users extend their connectivity with *pre-existing* social or professional contact networks and to leverage those contacts via trusted networks. As such, and with the evolution of the technologies, SNS functionality may not permit easy pigeonholing into prior typologies or classifications – they span the typological boundaries.

Thus, while scholars have suggested that online communities pre-date SNSs and offer similar functionality, they also differ in critical ways (Ellison et al., 2007; Gangadharbatla, 2008). We argue that the similarities are based mainly on the attributes (features) of online communities and the differences pertain to the design and usage of the two communication platforms. For example, both SNSs and online communities permit interaction, profile sharing, and the dissemination of user-generated opinion and content. However, online communities tend to attract users seeking topic-oriented content, which then generates interactions among like-minded strangers, who share (usually anonymously) their knowledge of and experiences with the subject matter. SNSs, on the other hand, attract users seeking interpersonal interactions with their existing friends and colleagues, and mutually interesting content results when they share personal details and day-to-day experiences. Table 1 lists the similarities and substantive differences between SNSs and online communities.

### 2.3. U&G theory

The U&G theory (Katz, 1959) addresses the issues of media choice and consumption and of what people do with media, especially emergent media. Thus, it is well suited to investigating online communication media (Ruggiero, 2000). The U&G theory suggests that cognitive and affective needs motivate people's choices when consuming media and reveals the consequences that follow from needs, motives, and behavior (Joinson, 2008; Katz, Blumler, & Gurevitch, 1974). Wright (1974) adopts a functional analysis approach to U&G to explore the consequences (manifest and latent) of mass communication for individuals, groups, and societies and cultures. However, Rubin and Rubin (1985) argue for a broadening of U&G to a general communication paradigm. They achieve this by including interpersonal (instead of mass) communication channels as functional alternatives to media use

**Table 1**

A comparison of online community sites and SNS.

Online communities	SNSs	Source
Content precedes connections	Connections precede content	Mayfield (2005)
Topic-driven	Context-driven	
Main purpose: Information	Main purpose: Social–emotional support	Rau, Gao, and Ding (2008)
Dominant exchanges between strangers	Dominant exchanges between friends/unknowns	
Disguised, indirect, impersonal connections	Undisguised, direct, person-to-person connections	Staples (2009)
Topic- and interest-oriented	People-oriented	
<i>Similarities</i>		
User-generated content; global reach; personal opinion		Smith (2008)
Interaction; social support; profile sharing; user-created content; new connections		Kim, Jeong, and Lee (2010)
Online groups; synchronous and asynchronous personal communication		

and the individual's needs and motives for media use. This “means–end” orientation in U&G theory provides the basis for studying mediated communication as a functional process that is purposeful and leads to specific psychological or social consequences (Lin, 1996). Our approach represents an implementation of this approach.

Researchers have adopted U&G theory in studies of traditional communication media (e.g., radio and television broadcasts) in which gratification is mainly derived from (1) media content, (2) exposure to the media, and (3) the social context that typifies the situation of exposure to different media (Katz et al., 1974). In studies of new media, such as the Internet, U&G theory is also relevant (Dwyer et al., 2007; Ellison et al., 2007); for example, Katz et al. (1974) contend that in studies on media content gratification, less attention has been paid to the exposure under the social context. Extending this notion, Stafford et al. (2004) offer strong support for the existence of social gratification, and therefore we explore it further in this study.

Table 2 summarizes SNS-specific U&G literature and reveals the relevance of social gratification to this context. However, the main shortcomings of these prior related works are their use of questionnaire-based, quantitative methodologies. These studies fail to adequately explore abstract concepts by examining “gratifications” qualitatively. Without understanding the fundamental drivers behind the attributes, the attributes and concepts may vary widely when they are factor analyzed to obtain higher-level constructs (Wolfenbarger & Gilly, 2003). More specifically, tools such as factor analysis reveal the basic uses of attributes but have limited value because the uncovered orthogonality does not reveal interconnectedness with the end of the chain (i.e., gratifications). Thus, we aim to combine the concept of U&G theory and the means–end chain by viewing Katz's gratifications as synonymous with Gutman's ends. This leads to our final and central question:

RQ3: What are the gratifications (ends) of SNS adoption?

### 3. Methodology

#### 3.1. The means–end approach

By focusing on the linkages among product attributes, the consequences caused by the attributes, and the resultant personal val-

ues, the means–end approach is “...one of the most promising developments in consumer research since the 1980s...” (Grunert, Beckmann, & Sørensen, 2001, p. 63). This approach has been widely used in marketing to understand consumers' decision-making processes (van Rekom & Wierenga, 2007). Integrating the means–end perspective to expectancy–value theory assumes that consumers' adoption decisions are based on the anticipated consequences of their actions that are associated with different choices of attributes (Reynolds & Olson, 2001). The theory conceptually views consumers as goal-oriented decision makers who choose behavior that will most likely lead to desired outcomes (Bagozzi & Dabholkar, 1994). Consumers' perceptions (knowledge) of product attributes hold different levels of abstraction (i.e., attributions, consequences, and values), and these are related hierarchically (Reynolds & Olson, 2001). A hierarchical goal system provides the motivational foundation for ascertaining a consumer's goal (Bagozzi & Dholakia, 1999). Consequently, we examine the relationship between a consumer's values and a collection of attributes (Pieters, Baumgartner, & Allen, 1995).

Studies in consumer research have used the means–end approach to examine consumer perceptions of price and service quality (Voss, Gruber, & Szmigin, 2007; Zeithaml, 1998). Recent research has used means–end analysis to investigate users' behavior when adopting online applications, such as web-based document management systems (Chiu, 2005), online shopping (Lin & Wang, 2008), and e-learning systems (Sun, Cheng, & Finger, 2009). In particular, scholars have begun using the means–end approach to investigate user goals in social virtual worlds such as Second Life (Jung & Kang, 2010). Because these online contexts are similar in nature to SNSs in terms of satisfying users' social, functional, and hedonic needs, means–end analysis is applicable for understanding users' perceptions of and motivations for adopting SNSs.

#### 3.2. Laddering interviews

To elicit the full means–end chain for SNSs, or the uses and gratifications from engaging in them, we suggest the need to adopt a qualitative approach through in-depth interviews using laddered interview techniques. Laddering interviews enable the exploration of both explicit and implicit choice criteria by probing “why” questions that take the respondent “up the ladder” from concrete

**Table 2**

Research applying U&amp;G theory to SNS contexts.

Source	U&G
Clark, Lee, and Boyer (2007)	Maintaining relationships/friendship; passing time; seeking information; convenience; entertainment
Joinson (2008)	Social connection; shared identities, photographs and created content; social investigation; network surfing; updating current status
Raacke and Bonds-Raacke (2008)	Main uses: keeping in touch (with old and current friends); posting/viewing pictures; making new friends; locating old friends. Supplementary uses: learning about events; organising social functions; feeling connected; sharing personal information
Zhang, Tang, and Leung (2011)	Social surveillance; recognition; emotional support; network extension; entertainment; network maintenance

attributes to abstract values (Grunert et al., 2001; Reynolds & Gutman, 1988). For example, if a respondent expresses a preference for a specific SNS, a response to “Why do you prefer that SNS?” tends to produce a list of attributes representing the tangible and intangible characteristics (Henneberg, Gruber, Reppel, Ashnai, & Naudé, 2009). The laddering interviewer then probes each attribute in turn using questions such as “Why is this important to you?” The interviewer continues to probe the resulting answers. Laddering is suggested as a method that can produce relatively structured knowledge because the interviewer can slowly “climb the ladder” to understand the implicit reasons for consumer choices, and thus it enables the creation of meaningful mental maps (Wansink, 2000). These high levels of abstraction are the consequences and values or, in Katz’s terminology, gratifications, of interest to this research. Values are either terminal (i.e., a preferred end-state such as happiness, security, accomplishment) or instrumental (i.e., external influences on the end-state such as how others perceive us). Consequences are physiological (e.g., satisfying hunger), psychological (e.g., self-esteem), or sociological (e.g., enhanced status) factors (Gutman, 1982), and are the linkages between the attributes and the values.

Rather than forcing the respondents into predetermined value categories, as in “macro-survey” approaches (Reynolds & Gutman, 1988, p. 11), we allow respondents to define their personal attitudes and values in their own terms and contexts. Thus, we use a soft laddering approach, which involves semi-structured, one-on-one, in-depth interviews. This approach contrasts with hard laddering, which employs highly structured interviews (Walker & Olson, 1991).

### 3.3. Sampling

To study the phenomenon of SNS adoption, we choose Facebook users as the population of interest. Facebook is one of the largest global SNSs with more than 400 million users (May 2010) collectively spending more than 500 billion minutes per month on the site, having an average of 130 ‘friends’, and with 50% of users logging on daily (Facebook.com, accessed in May 2010).

The Facebook phenomenon and its users’ motivation have recently drawn a great deal of attention from scholars, but most of the research has used data from the United States (e.g., Baek, Holton, Harp, & Yaschur, 2011; Ross et al., 2009; Smock, Ellison, Lampe, & Wohn, 2011). Thus, little is known about the factors that influence Facebook user motivation in societies that are culturally distinct from the United States, such as China. The same personal values may lead to different outcomes in another country, or behavior may be driven by the same motivation but through a different process, further supporting our research purposes of understanding the links among the attributes, consequences, and values.

Thus, to ensure cultural distinctiveness from the existing research and based on an accessibility criterion, we sampled Taiwanese Facebook users. An online group may form its own identity through a shared language (e.g., specific symbols, expressions, jargon), which may make it difficult for non-members to understand or get involved. Thus, we chose Taiwanese samples because of our access to and understanding of that cultural background (in terms of both national culture and Facebook culture).

Furthermore, with our interest in SNS adoption, we targeted Taiwan because it had not yet fully embraced SNSs at the time of the study. The penetration of Taiwanese Facebook users had reached just 5.06 million users or 21.9% of Taiwan’s total population (checkFacebook.com, accessed on March 11th 2010), or 47.4% of its online population (the Institute for Information Industry, Taiwan, 2010), and was growing rapidly (up from 2.8 million in September 2009, checkFacebook.com, accessed on March 11th

**Table 3**  
Facebook users in Asia.

No.	Country	Estimated total Facebook users <sup>a</sup>	Total population <sup>b</sup> (millions)	% of Facebook users in total population
1	Indonesia	24,583,860	230	10.69
2	Philippines	13,903,460	92	15.11
3	India	9,431,860	1181	0.8
4	Malaysia	6,795,860	28	24.29
5	Taiwan	6,585,860	23	28.65
6	Thailand	3,627,580	63.5	5.72
7	Hong Kong	3,229,460	7	46.14
8	Pakistan	2,359,620	169.5	1.39
9	Singapore	2,141,160	5	42.8
10	Japan	1,139,480	127	0.9
11	Vietnam	941,180	85.8	1.1
12	Bangladesh	869,340	162.2	0.54
13	South Korea	826,160	50	1.66
14	China	45,760	1339	<0.01

<sup>a</sup> CheckFacebook.com, accessed on May 15, 2010.

<sup>b</sup> Wikipedia.com, accessed on May 15, 2010.

2010). Such rapid growth makes this sample highly appropriate for exploring the adoption motives and usage of SNSs.

To better present the significance of the Taiwanese sample, we compared it with other countries in Asia. Table 3 summarizes the number of estimated total Facebook users and compares its percentage with the total population. Although Taiwan is fifth in the Asian region in terms of total Facebook users, its penetration rate (28.65%) is the third highest behind Hong Kong (46.14%) and Singapore (42.8%). Whilst all share a Chinese culture, with similar cultural backgrounds, and are likely to hold similar personal values, the official language of both Hong Kong and Singapore is English, rather than Chinese, which may affect the cultural norms and influence our findings. Therefore, we focused on the Taiwanese sample.

We conducted 24 soft laddering interviews in summer 2010 in Taipei, Taiwan, using a snowball sampling method. This number exceeded the basic threshold of 20 respondents for laddering interviews (Reynolds & Olson, 2001) and ensured that the sample size was more than adequate for the purposes of an exploratory study, providing significant understanding of the main attributes, consequences, and values of Facebook adoption.

The demographics of Taiwanese Facebook users (Table 4) reveals a nearly equal split between genders (50.4% men) and that the majority of users are aged 18–44 (84.2%) (checkFacebook.com, accessed March 11th 2010). Thus, we focused on users aged 20–40 years as being representative of Facebook users in Taiwan. Table 5 shows the structure of the our final sample.

**Table 4**  
The distribution of Facebook users in Taiwan (total users: 6,585,860).

	Population <sup>a</sup> (%)	Accumulation (%)
<i>Gender</i>		
Male	50.4	50.4
Female	49.6	100
<i>Age</i>		
≤13	1.5	1.5
14–17 year	9.8	11.3
18–24 year	32.0	43.3
25–34 year	40.5	83.8
35–44 year	11.7	95.5
45–54 year	3.1	98.6
≥55	1.4	100

<sup>a</sup> CheckFacebook.com, accessed on May 15, 2010.



**Table 5**  
Sample demographics ( $n = 24$ ).

Gender		Time spent online (daily)	
Male	13	Less than 1 h	3
Female	11	1–2 h	7
Age		2–3 h	3
21–25 years	6	3–4 h	4
26–30 years	8	4–5 h	5
31–35 years	9	More than 5 h	2
35–40 years	1	Number of “Friends” on Facebook	
Education		Fewer than 50	6
Graduate	11	51–100	7
Postgraduate	13	101–150	5
Employment		151–200	3
Student	5	201–250	2
Employed	19	More than 250	1

### 3.4. Interview procedure

This research follows Reynolds and Gutman's (1988) guidelines for conducting laddering interviews: a relaxed location without distractions, introducing the background of the research, positioning of the respondent as the expert (to reduce socially desirable responses) and recording of the interviews with permission.

Each interview began with a triadic elicitation exercise (Kelly, 1955): the generation of a set of bipolar constructs of similarity and contrast among three items (in our case, three communication platforms—bulletin board systems, blogs, and SNSs), in terms of how they relate when two are similar to each other but different from the third. For example, as one respondent stated, BBS and blogs are similar because they are both based on interactions with strangers, whereas SNSs users interact with acquaintances, producing a possible bi-polar construct of interactions with strangers versus interactions with acquaintances. The respondent then indicates which end of the construct they prefer and why, the latter of which provides one end of a second level construct. In our example, the respondent stated that she preferred “interacting with acquaintances” because it “is a trusting environment for sharing.” An “as opposed to what?” question reveals the other end of the second construct (in our case yielding “uncertainty of the privacy issue” thus completing the superordinate construct of trusting environment versus uncertainty of privacy. The process is repeated, revealing higher-level constructs, until respondents are unable to explain why they had a preference and thus providing an overarching basis for evaluation of a personal value priority. After the number of distinctions is exhausted, respondents then chose their most preferred item (universally Facebook in our case) as the object for successive probing processes (Reynolds & Gutman, 1988). Specifically, when the respondents indicated their preferred functions on Facebook, the interviewer used the probing question “why is that important to you?” to elicit higher-level construct linking attributes, consequences, and values to explore the means-end chains. Table 6 illustrates the semi-structured interview protocol. Each response to each question represents a statement that serves as a unit of analysis (Paul, Hennig-Thurau, Gremler, Gwinner, & Wiertz, 2009).

The interviews lasted approximately 30–45 min (averaging 40 min) were conducted in Chinese and transcribed into English. A randomly selected 20% of each translated transcript was tested for translation accuracy by using an independent translation agency. The inter-translator accuracy exceeded 80%, which ensured a lack of translation bias (Baker, 2002).

## 4. Analysis

Reynolds and Gutman (1988) analysis methodology was used to generate content codes, an implications matrix, and a hierarchical

**Table 6**  
Outline of the interview questions.

Procedures	Semi-structured Questions
1. Opening	1.1. Explaining the purpose of this conversation 1.2. Emphasizing that there is no right/wrong answer to the questions 1.3. Privacy is protected
2. Anchoring	2.1. Have you had experience of using BBS/blog/Facebook? 2.2. When did you start using BBS/blog/Facebook? 2.3. What's the benefit of using BBS/blog/Facebook? 2.4. Any problems/shortcomings of using BBS/blog/Facebook?
3. Comparing (Triadic elicitation; Kelly, 1955)	3.1. What do you think the differences are between BBS/blog/Facebook? 3.2. What do you think the differences are between BBS/Facebook? 3.3. What do you think the differences are between blog/Facebook? 3.4. Which one do you prefer? Why? 3.5. Why is it better than the others? 3.6. Are there any specific functions that you like the most among them?
4. Laddering	4.1. Why is the function important to you? 4.2. What is its consequence? (Why is it important to you?) 4.3. What is the meaning for you? 4.4. What is the value it brings to your life?

value map (HVM). Content coding identifies the attributes, consequences, and values. The implications matrix converts the qualitative data to quantitative elements by examining the frequencies with which one code leads to another (Deeter-Schmelz, Kennedy, & Goebel, 2002). The HVM is derived from the implications matrix and maps the significant attributes, consequences, and values to form network nodes (concepts) and the links (chains) between those nodes.

### 4.1. Content codes

The interview data was inspected for words or phrases that reflected respondents' attributes, consequences, and values. For example, “I like to see...many options to customize my personal things” was coded as the attribute “customizability”; “I like my page to look like me; different from others” was coded as a consequence of “being unique”; and “I care what they think of me” was coded as the value “self-esteem.” Table 7 lists the coding examples.

We followed Grunert et al.'s (2001) suggestion that coding reliability can benefit from having parallel coders and that the analyst who conducted the laddering interviews is the best possible coder due to recall of contextual information. The second coder was blind to the exact context. Coding was then discussed in an initial coding session, and coding differences resolved after full and final coding of the data. The inter-coder reliability score at 82% was acceptable (Subramony, 2002) and this phase of analysis revealed 15 attributes, 21 consequences, and seven values (see Table 8) with analysis of the probing sequence revealing 45 ladders (see Table 9).

### 4.2. Implications matrix

An implications matrix reveals two types of relationships – direct and indirect. Direct relationships are those in which one code leads directly to (is adjacent to) another with no intervening codes. Indirect relationships incorporate at least one intervening element. For example, ladders 7–10 (Table 9) reveal that four

**Table 7**

Overview list of the attributes, consequences, and values.

Attributes	Times	Example verbatim
A1: Well-designed interface	2	"I like to design my profile page with fancy functions, such as the wallpaper made from my own picture"
A2: Interesting, interactive games	4	"I love the social games, which are so interesting and interactive"
A3: Customizability	4	"I like to see that I have many options for customization."
A4: Ease of use	1	"It's very easy for me to post messages from anywhere (even via mobile phones)."
A5: Privacy/control others' access	1	"I think it's my right to decide who can see my page"
A6: Simultaneous communications	3	"My colleagues and I use Facebook to send instant messages"
A7: Browsing others' pages	6	"Once I log onto Facebook, the first thing I do is to browse friends' pages, checking their updates."
A8: Instant responses	3	"When I see my friends' messages or invitations, I'll reply to them immediately."
A9: Uploading pictures	3	"The function of uploading pictures is what I use most on Facebook."
A10: Posting articles	2	"I frequently post new articles on my Facebook page, whenever I can."
A11: Many connections/friends	4	"I have more than 200 friends now because I actively invited my friends to join my Facebook once I joined it"
A12: Keeping diaries	3	"I update my Facebook page about what I've done and where I've been, on a daily basis."
A13: Leaving messages	4	"My close friends like to leave short notes on each others' wall."
A14: Staying anonymous	1	"Sometimes I don't like to reveal my 'tracking records' to my friends."
A15: Recommendations to join	4	"I just followed friends' suggestions to join Facebook. Then I suggest and guide my friends to join too"
<i>Consequences</i>		
C16: Being unique	6	"I like to make my page look different from others."
C17: Desire for popularity	6	"I hope that my 'wall' is full of my friends' messages, because it shows my popularity."
C18: Conform to others	7	"I want to be like others."
C19: High level of responsiveness	8	"Usually it's possible to have more than 10 following messages within one hour when I post a message."
C20: Intention to give feedback	6	"After I have viewed a message on my friends' pages, I like to leave a comment on it, showing I've read it."
C21: Ease of self-expression	2	"The trusting environment makes me feel at ease and allows me to freely express myself."
C22: Breaking the ice	2	"When I started my new job, many colleagues said hello to me via Facebook."
C23: Shared topic of conversations	5	"I needed to join it because during tea time, all my colleagues were talking about their 'farming progress' in the social game 'Happy Harvest' on Facebook."
C24: Getting to know new friends	2	"I hope to know friends' friends by browsing their pages on Facebook."
C25: Convenience	2	"Uploading pictures on Facebook is more convenient than sending emails with lots of attachments."
C26: Keeping in contact	8	"My friends will catch up with each other's lives through browsing the pictures."
C27: Meeting with friends online	5	"Sometimes it's easier for friends to meet online because we are far from each other."
C28: Helping friends	1	"My friends and I will post our predicament on Facebook and someone will help if he/she can."
C29: Gaining useful thoughts/insights	3	"When reviewing the news or good articles posted on Facebook, I'll have my own reflections. I feel I learn something from the process."
C30: Respect from others	4	"I hope my friends can respect me when I show my ability to solve their problems."
C31: Quick solutions to problems	2	"Sometimes, such prompt responses help me solve problems in a very short time."
C32: Satisfying curiosity	5	"I care about my friends' lives. How have they been? What are they doing?"
C33: Killing time	1	"Sometimes I just have nothing to do. It's a good way to kill time browsing the pages of others."
C34: Connecting friends to friends	2	"It's surprising to find old acquaintances through the links with my colleagues."
C35: Arranging meetings	2	"When a meeting is needed, we send invitations directly on friends' walls."
C36: Looking for gossip	2	"Sometimes colleagues talk about the 'news' from our mutual friends."
<i>Values</i>		
V37: Self-actualization	2	"Solving problems for others makes me feel satisfied with my personal ability."
V38: Self-esteem	5	"Being popular among peers and being needed makes me feel that I am irreplaceable."
V39: Belonging	17	"I feel I am a part of them, not an outsider."
V40: Hedonism	10	"Having fun is my way. I'll pursue anything that makes me feel happy."
V41: Self-direction/control	4	"I believe controlling my own life and possessing my own intellectual property are equally important."
V42: Reciprocity	3	"When I receive a favour from my friends, I like to give feedback as soon as possible."
V43: Confirmity	4	"I am afraid to be excluded from the group I belong to, so I will follow what my friends/family do."

respondents indicated attribute 3 (customizability) as a starting point, four of which are directly and none of which are indirectly related to consequence 16 (being unique). This is recorded, by convention, as 4.00 (indicating 4 direct and 0 indirect relationships – the two places after the period permit up to 99 indirect relationships to be recorded). Thus analysis of the data in Table 9 produces the implications matrix of Table 10, which summarizes all identified relationships as well as row (links from) and column (links to) totals.

#### 4.3. Hierarchical value map

The implications matrix was then used to identify means–end (use–gratification) chains. We used the Hierarchical Value Map

(HVM) to explore the relationships in the implications matrix to develop the means–end chains. Means–ends chains form if  $A \rightarrow B$ ,  $B \rightarrow C$ , and  $C \rightarrow D$ ; thus implying that  $A \rightarrow B \rightarrow C \rightarrow D$ . Table 10 is interpreted by starting with each attribute (rows 1–15) and reading across until a direct relationship value equal to or greater than a predefined cut-off point is noted. This cut-off point varies according to the number of respondents and chains. With 50 respondents, Reynolds and Gutman (1988) suggest using a cut-off of four direct relationships, whilst other researchers (e.g., Henneberg et al., 2009; Leitner, Wolkerstorfer, & Tscheligi, 2008; Subramony, 2002) suggest using just two, especially with fewer (20–30) respondents. The cut-off decision is a trade-off between data reduction and retention (Gengler, Klenosky, & Mulvey, 1995) and between detail and interpretability (Christensen &

**Table 8**  
Content codes.

Attributes	Consequences	Values
1: Well-designed interface	16: Being unique	37: Self-actualization
2: Interesting, interactive games	17: Desire for popularity	38: Self-esteem
3: Customizability	18: Conform to others	39: Belonging <sup>a</sup>
4: Ease of use	19: High responsiveness	40: Hedonism
5: Privacy/control others' access	20: Intention to give feedback	41 Self-direction/control
6: Simultaneous communications	21: Easy self-expression	42: Reciprocity
7: Browsing other's pages	22: Breaking the ice	43: Conformity
8: Instant responses	23: Shared topics of conversations	
9: Uploading pictures	24: Getting to know new friends	
10: Posting articles	25: Convenience	
11: Many connections/friends	26: Keeping in contact	
12: Keeping diaries	27: Meeting with friends online	
13: Leaving messages	28: Helping friends	
14: Staying anonymous	29: Gaining useful thoughts/insights	
15: Recommendations to join	30: Respect from others	
	31: Quick solutions to problems	
	32: Satisfying curiosity	
	33: Killing time	
	34: Connecting friends to friends	
	35: Arranging meetings	
	36: Looking for gossip	

<sup>a</sup> Belonging also includes respondents' references to belonging, friendship, affiliation, intimacy, identification, and being loved.

**Table 9**  
Raw matrix of identified ladders (Note: For convenience the table has been sorted and numbered on 1st content code, i.e., attribute).

Ladder	Content codes						Ladder	Content codes					
	1st	2nd	3rd	4th	5th	6th		1st	2nd	3rd	4th	5th	6th
1	1	16	19	39			24	8	27	28	42		
2	1	16	40				25	9	26	25	41		
3	2	32	40				26	9	26	39			
4	2	27	39				27	9	23	19	40		
5	2	18	26	39			28	10	18	26	39		
6	2	18	17	43			29	10	31	37			
7	3	16	17	30	38		30	11	34	26	39		
8	3	16	41				31	11	34	19	17	30	38
9	3	16	17	39			32	11	27	40			
10	3	16	40				33	11	17	38			
11	4	19	25	41			34	12	21	40			
12	5	21	20	41			35	12	18	39			
13	6	19	29	20	42		36	12	19	35	39		
14	6	18	43				37	13	20	19	17	30	38
15	6	22	23	39			38	13	27	39			
16	7	32	24	40			39	13	23	20	26	39	
17	7	33	35	39			40	13	18	43			
18	7	32	36	40			41	14	32	36	40		
19	7	29	20	42			42	15	18	43			
20	7	29	20	37			43	15	23	26	39		
21	7	26	39				44	15	22	23	39		
22	8	19	31	30	38		45	15	32	24	40		
23	8	27	39										

Olson, 2002). Higher cut-off points increase interpretability but result in information loss. Given our 24 respondents, we adopted a cut-off of two direct relationships.

When an attribute row intersects a column containing a direct relationship score that matches the cut-off criterion, the consequence or value number of the column is noted and the reading of the data continues in the same column but on the row with the same number. By way of an example, and referring to Table 10, attribute 3 (customizability) shows four direct links to consequence 16 (being unique), which then has two direct links to consequence 17 (desire for popularity), which, in turn, has three direct links to consequence 30 (respect from others), which then has four direct links to value 38 (self-esteem). The result is a means–end chain of 3 → 16 → 17 → 30 → 38, from the initial attribute of customizability to the end value of self-esteem. In a different chain,

the same attribute, customizability, also leads to an end value of hedonism (value 40). All identified chains are listed in Table 11, from which the HVM (Fig. 1) can be drawn, producing an interpretable visualisation of the key attributes, consequences and values of the respondent sample. Seven means–ends chains emerged consisting of five attributes, 10 consequences, and four values, from which an evaluation of the dominant direct and indirect relationships can be made.

### 5. Results and discussion

Although we only considered elements with two or more direct links in the HVM, interpretation of the data requires reviewing both the HVM (Fig. 1) and the row (from) and column (to) totals in Table 10, as well as the seven chained relationships shown in

**Table 10**

The implications matrix. (1–15 = Attributes; 16–36 = Consequences; 37–42 = Values; Bold italics highlight  $\geq 2$  direct linkages.)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43		
(1) Well-designed interface	1.00			1.00																			0.01	0.01					2.02	1
(2) Interesting, interactive games		0.01	<b>2.00</b>								0.01	1.00					1.00							0.02	0.01			0.01	4.06	2
(3) Customizability	<b>4.01</b>	0.02													0.01								0.01	0.01	0.02	0.01			4.09	3
(4) Ease to use				1.00						0.01																0.01	0.01		1.02	4
(5) Privacy/control others' access		1.00			0.01	1.00					0.01															0.01			1.02	5
(6) Simultaneous communications			1.00	1.00	0.01		1.00	0.01							0.01									0.02			0.01		3.07	6
(7) Browsing others' pages					0.02				0.01		1.00				<b>2.00</b>		<b>2.00</b>	1.00		0.01	0.01	0.01		0.03	0.02		0.01		6.12	7
(8) Instant responses				1.00								<b>2.00</b>	0.01		0.01	0.01							0.01	0.01			0.10		3.15	8
(9) Uploading pictures					0.01			1.00		0.01	<b>2.00</b>													0.01	0.01	0.01			3.05	9
(10) Posting articles			1.00								0.01					1.00							0.01						2.03	10
(11) Many connections/friends		1.01		0.01							0.01	1.00						<b>2.00</b>					0.02	0.01	0.01				2.08	11
(12) Keeping diaries			1.00	1.00		1.00									0.01					0.01				0.01	0.01				3.04	12
(13) Leave messages		0.01		0.01	1.00								1.00										0.01	0.02					2.05	13
(14) Staying anonymous		1.00															1.00				0.01			0.01	0.01			0.01	1.02	14
(15) Recommendations to join			1.00			1.00	1.01	0.01			0.01						1.00							0.01		2.00			4.07	15
(16) Being unique		<b>2.00</b>													0.01								0.01	0.02	<b>2.00</b>	1.00		1.00	5.03	16
(17) Desire for popularity															<b>3.00</b>								1.03	0.01			<b>2.01</b>		6.03	17
(18) Conform to others		1.00								<b>2.00</b>			1.00											1.00					6.03	18
(19) High responsiveness		<b>2.00</b>			0.01					1.00				1.00	0.03	1.00	1.00			1.00				0.03	1.02	1.00	0.01		8.10	19
(20) Intention to give feedbacks		0.01		1.00											0.01								1.00	0.01	0.02	<b>2.00</b>			5.05	20
(21) Ease self-expression				1.00																					1.00				2.01	11
(22) Breaking the ice								<b>2.00</b>																0.02					2.02	22
(23) Shared topics of conversations				1.00							1.00													<b>2.01</b>	0.01				4.02	23
(24) Getting to know new friends																								<b>2.00</b>					2.00	24
(25) Convenience																													2.00	25
(26) Keeping in contact										1.00	1.00														6.00				7.01	26
(27) Meeting with friends online													1.00											3.00	1.00	0.01			5.01	27
(28) Helping friends																										1.00			1.00	28
(29) Gaining useful thoughts/insights					<b>3.00</b>																	0.01	0.02		0.02				3.05	29
(30) Respect from others																							<b>4.00</b>						4.00	30
(31) Quick solutions to problems															0.01								1.00	0.01					2.01	31
(32) Satisfying curiosity									2.00															<b>2.00</b>		1.04			5.04	3
(33) Killing time																				1.00							0.01		1.01	33
(34) Connecting friends to friends			0.01		1.00						1.00													0.01	0.01				2.04	34
(35) Arranging meetings																								<b>2.00</b>					2.00	35
(36) Looking for gossip																									<b>2.00</b>				2.00	36
(37) Self-aactualization																													0.00	37
(38) Self-esteem																													0.00	38
(39) Belonging																													0.00	39
(40) Hedonism																													0.00	40
(41) Self-direction/control																													0.00	41
(42) Reciprocity																													0.00	42
(43) Conformity																													0.00	43
	5.01	6.07	6.00	8.03	5.05	2.00	2.00	4.02	2.02	2.02	7.04	5.00	1.01	3.01	4.10	2.01	5.00	1.00	2.00	2.02	2.02	2.03	5.15	16.31	10.16	4.07	3.16	3.04		



**Table 11**  
Partial chains by relationships.

From/to	27	39	Total		
<i>A: "Instant responses–meeting friends online–belonging" chain</i>					
8	2.00	0.01	2.01		
27		3.00	3.00		
Total	2.00	3.01	5.01*		
From/to	26	39	Total		
<i>B: "Uploading pictures–keeping in contact–belonging" chain</i>					
9	2.00	0.01	2.01		
26		6.00	6.00		
Total	2.00	6.01	8.01		
From/to	18	26	39	Total	
<i>C: "Interesting, interactive games–conform to others–keeping in contact–belonging" chain</i>					
2	2.00	0.01	0.02	2.03	
18		2.00	1.02	3.02	
26			6.00	6.00	
Total	2.00	2.01	7.04	11.05	
From/to	29	20	42	Total	
<i>D: "Browsing others' pages–gaining great thoughts–feedback–reciprocity" chain</i>					
7	2.00	0.02	0.01	2.03	
29		3.00	0.02	3.02	
20			2.00	2.00	
Total	2.00	3.02	2.03	7.05	
From/to	32	36	40	Total	
<i>E: "Browsing others' pages–satisfying curiosity–looking for gossip–hedonism" chain</i>					
7	2.00	0.01	0.02	2.03	
32		2.00	1.04	3.04	
36			2.00	2.00	
Total	2.00	2.01	3.06	7.07	
From/to	16	40		Total	
<i>F: "Customizability–being unique–hedonism" chain</i>					
3	4.01	0.02		4.03	
16		2.00		2.00	
Total	4.01	2.02		6.03	
From/to	16	17	30	38	Total
<i>G: "Customizability–being unique–desire for popularity–respect from others–self-esteem" chain</i>					
3	4.01	0.02	0.01	0.01	4.05
16		2.00	0.01	0.01	2.02
17			3.00	1.03	4.03
30				4.00	4.00
Total	4.01	2.02	3.02	5.05	14.10

8: Instant responses; 27: Meeting with friends online; 39: Belonging.

9: Uploading pictures; 26: Keeping in contact; 39: Belonging.

2: Interesting, interactive games; 18: conform to others; 26: Keeping in contact 39: Belonging.

7: Browsing others' pages; 29: Gaining great thoughts; 20: Feedback; 42: Reciprocity.

7: Browsing others' pages; 32: Satisfying curiosity; 36: Looking for gossip; 40: Hedonism.

3: Customizability; 16: Being unique; 40: Hedonism.

3: Customizability; 16: Being unique; 17: Desire for popularity; 30: Respect from others; 38: Self-esteem.

Note: Numbers of direct relationships appear before the decimal point. Numbers of indirect relationships appear after the decimal point.

**Table 11.** From the implications matrix (Table 10), the significant attributes (means) of SNSs emerging from the data include (1) browsing others' pages, (2) instant responses, (3) uploading picture, (4) interactive games, and (5) customizability. In addition, the strongest values (gratifications) emerging from the data are belonging, hedonism, self-esteem, and reciprocity. We discuss each of these means (uses), consequences, ends (gratifications) in turn and provide both interpretations of respondents' descriptions and conversations in prior research. In addition, the ethical concerns

of SNS usage were revealed in our interviews and thus discussed for further considerations.

### 5.1. The means (uses) and consequences of SNS adoption

The analysis reveals five critical functionalities of SNSs: browsing others' pages, instant responses, uploading picture, interactive games, and customizability. We suggest that these five critical functionalities are related to interpersonal communication and impression management. For example, the respondents believed that the functions of instant responses, interactive games, and browsing others' pages were most helpful in their intra-network interpersonal communication, while picture uploading and the ability to customize were more useful in managing their self-image, or the image they wish to be seen by their network.

#### 5.1.1. Browsing others' pages

*Browsing others' pages* is the starting point for any 'newbie' and for future interpersonal communication. Such non-public participation is important for getting to know a community (Nonnecke, Andrews, & Preece, 2006). Respondents indicated that they satisfy their curiosity and gain useful thoughts by browsing others' pages. These two consequences provide respondents with the values of hedonism and reciprocity from reading gossip and getting feedback from postings, respectively.

#### 5.1.2. Instant responses

*Instant responses* refers to the synchronicity of communication, which allows users to deliver and receive a response in real time (Hoffman & Novak, 1996). Respondents meet with friends online via real-time dialogue to gratify their need for belonging. In addition, although it is not a significant chain, *instant responses* also leads to self-esteem (getting respect from others) via helping others quickly solve problems through such instant responses.

#### 5.1.3. Uploading pictures

*Uploading pictures* was viewed as a way of self-disclosure by the respondents. Doing so also provided them a way to keep in contact with friends, in turn fulfilling their need for belonging. In addition, and again not meeting the cut-off criteria though, one respondent noted that he usually initiated new conversations by uploading pictures (e.g., as traveling diaries) because he could gain hedonic gratification through the high responsiveness in the discussions.

#### 5.1.4. Interactive games

We found *interactive games* to provide the same benefits as *instant responses* for SNS users who seek belonging by meeting with friends online, but again below our cut-off threshold. The only significant means–end chain commencing at *interactive games* leads to belonging via conformity and keeping in contact. It is posited that this is because the Facebook interactive game, Happy Harvest was overwhelmingly popular in Taiwan during the field research period. The respondents indicated that they joined the game, for example, because "most of my friends are playing the game." By cultivating their own farms and visiting friends' farms (or inviting others to visit their farms), users could gain access to common topics in conversations with friends (e.g., how to grow new crops, and the way of decorating the farm). Thus, without engaging with the game, users may feel excluded or lowered levels of belonging.

#### 5.1.5. Customizability

*Customizability* refers to the functionality allowing SNSs users to change the appearance of their own pages. The process of designing their own pages gratifies users' hedonic needs for being unique. Uniqueness (either from the design of the page or from the content generated by the users) draws a great amount of attention and fulfils the desire for popularity. Popularity can

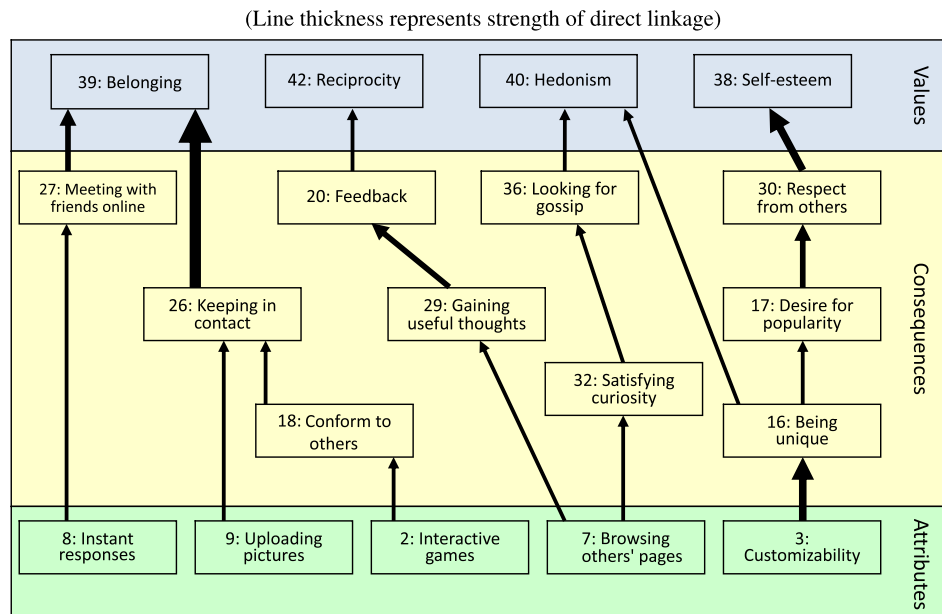


Fig. 1. Hierarchical value map.

lead to self-esteem because of the respect from others. Therefore, the results indicate two significant linkages derived from customizability: “customizability–being unique–hedonism” and “customizability–being unique–desire for popularity–respect from others–self-esteem.”

## 5.2. The ends (gratifications) of SNS adoption

The results show that the *belonging* value builds on the greatest number of linkages, starting with the attributes of *response from others*, *uploading pictures*, and *interactive games* and moving through the consequences of *keeping in contact* and *keeping company with friends*. *Hedonism* shows the second highest number of linkages. Hence the most significant values to Facebook users are those of belonging and of hedonism.

### 5.2.1. First SNS gratification: belonging

*Belonging* (which includes the synonyms of friendship, affiliation, intimacy, identification, and being loved) reflects the human need to communicate and cooperate with others. Extensive research in anthropology (Hill & Dunbar, 2003), sociology (Doyal & Gough, 1984), and psychology (Cacioppo & Berntson, 2002) reflects this component of human social need. As Cacioppo and Berntson (2002, p. 3) aptly state, “. . . Humans are fundamentally social animals who can exist only in a web of relationships. . .” Thus, users appreciate the ability to share personal information through the SNS functions that enable them to upload pictures, engage in instant two-way messaging, and play interactive games. Such activities extend and reinforce normal offline, within-group behavior through the sharing of day-to-day “moments” and experiences:

*. . . in my office, almost everyone is using Facebook. . . I need to be one of them because I don't want to be excluded from the group. (Female, aged 31)*

Such behavior is similar to group and individual communication and within-group offline communication. However, this behavior is temporal rather than physical, it permits short-term asynchronicity in the exchange of messages, and it provides a semi-permanent record of sharing. As one player of Happy Harvest said:

*I know they [friends] will visit my farm, so I have to take care of my farm well, such as doing the watering and mowing. Besides, there is*

*always a surprise for me whenever I visit my farm. It could be messages left by my friends, or that my crops are growing, or even that my crops were stolen by my friends. Anyway, all of these bring fun to my daily life, which makes me happy. (Male, aged 27)*

The logical, and to some extent not unexpected, intervening consequences between the attributes level variables and belonging are conformity (to the group's or others' expectations), keeping in contact, and “meeting” friends online, both in real time and asynchronously.

### 5.2.2. Second SNS gratification: hedonism

Hedonism develops from a combination of the linked functions of customizing one's own page and browsing the pages of others. Customizability, through the consequence of producing a sense of uniqueness, often entails attempts to add interest (through gossip, the current minor events of daily life, humorous anecdotes, and so forth) and to create pages that others want to browse to satisfy their own curiosity, to spread gossip, to offer interesting new facts and to place thoughts on the pages of others:

*[By] reviewing their travel diaries. . . I feel I can also visit the place. Or I may even plan to visit there. (Female, aged 26)*

However, it is worth noting the lack of a direct linkage between “interactive games” and hedonism. Respondents find interactive games more novel than offline PC games. One premise is that the game itself must be “interesting” (according to one respondent, “interesting” is the required factor, not the main motivator for him). The game itself may lead to hedonism directly, but most respondents who played Happy Harvest indicated that they would not join or continue playing the game if they were playing alone (or with strangers):

*If the game itself was not interesting, maybe none of my friends would like to play it. Even I wouldn't play it very long, not to mention that playing games alone is boring. (Male, aged 27)*

The attraction of interactive games is not the game itself but the players' integral networking behavior. Respondents join as players because their friends or friends' friends invite them to do so. This reveals the linkage between interactive games and conformity. In the means–end chains, the last connection is belonging (i.e., keeping in contact with others) rather than hedonism. Respondents

perceive interactive games as a foundational element of *belonging*, through the consequence of *conform to others* and *keeping in contact* (suggesting that the playing of a game of mutual interest offers a prima facie reason for the contact). Hedonism seems to derive more from the excitement of discovery and newness, as opposed to the expected.

In our interviews, we also found that curiosity was a main driver for users to log onto Facebook as frequently as possible. For example,

*I usually keep an eye on any changes to my friends' personal annotations, their status, because I like to know how they are or what happened to them, on a timely basis. It's fun for me, so I log onto Facebook as frequently as I can during my working hours. (Male, aged 33)*

### 5.2.3. Third SNS gratification: self-esteem

Self-esteem develops from users' ability to gain "self-publicity" through customization of their own profiles and landing pages. Peer respect derives from the uniqueness of users' profiles and appreciation of their popularity. This echoes Flanagan and Metzger's (2001) suggestion that status enhancement (e.g., to feel important, to impress people) is one of the motivations for Internet use. Recall that a primary difference between SNSs and the alternatives is that SNS "communities" are formed from known offline groups that then use the technology to further develop relationships (Ross et al., 2009). However, such "self-presentation" on Facebook might differ from the identities constructed in offline environments or anonymous online environments. The hoped-for "possible selves" that users project on Facebook are neither their "true selves," commonly witnessed in multi-user domains or chat rooms, nor their "real selves," usually presented in localized face-to-face interactions. Rather, the Facebook "selves" appear as highly socially desirable identities that users aspire to have offline but have not yet been able to embody (Zhao, Grasmuck, & Martin, 2008).

### 5.2.4. Fourth SNS gratification: reciprocity

The last value extracted was reciprocity, or the desire to give back. Wasko and Faraj (2000) suggest that a reciprocal process, in which a person gives back to the community rather than directly to a specific person, can be termed *generalized reciprocity*. One respondent described the process as follows:

*I feel it's like brain-storming sometimes. When I learn something from my friends, I hope to contribute something as well. (Female, aged 35)*

A level of trust develops in the reciprocal interactions on Facebook. The communications on Facebook include both one-to-one and one-to-many activities: Some posted messages were private, while others could be browsed and read by all users. The communications reflect the level of trust with others in and outside the group and with the networking functionality of the SNSs' algorithms. A level of trust in-group members' reciprocity develops through users' constant browsing of in-group members' pages, which enables them to gain useful insights while also offering and receiving feedback on information and exchanging or developing ideas:

*Everyone knows who's who, which makes me feel comfortable to share my feelings with them. Besides, I will be more careful in giving suggestions to friends on SNSs, because I know that I should be responsible for what I say. Everybody can recognize me... By the same token, I trust the suggestions or opinions on SNSs better than those on blogs. (Female, aged 33)*

However, interactions primarily occur within a small group-based online group (in which members can identify each other in the group), rather than a network-based one (in which members

are primarily interested in the venue and are only superficially associated with other members) (Dholakia et al., 2004); thus, reciprocity is likely to be based on group members' common ground and empathy with Facebook. Preece (2000) suggests that common ground and empathy are important in online communication because they facilitate mutual understanding among group members; that is, they help group members understand each other's problems and support each other:

*When I had problems with my boyfriend, I posted my concerns on my Facebook page, and I got very good feedback on solutions and suggestions from my close friends. I believe it is different from the feedback from someone unknown. That's the other reason why I trust SNSs more than blogs. (Female, aged 33)*

However, it is worth noting that the reciprocity and trust we observed in SNSs may be even stronger than those in face-to-face communication. In their research on MySpace (the US-based SNS) and Cyworld (the Korean-based SNS), Lewis and George (2008) demonstrate that deceptive behavior, regardless of culture, is greater in face-to-face communication than in computer-mediated communication. In face-to-face communication, people may be more apt at deception because they can study and immediately react to responses from the receiver, which "allows deceivers to establish and maintain trust, thus reinforcing the truth bias" (Lewis & George, 2008, p. 2959). This may explain why respondents usually accept opinions on SNSs, even if not from an acquaintance, to those from salespeople in shops.

Typically, trust in SNSs is reflected not only in one-to-one and group-level exchanges but also in users' memberships within Facebook communities. These communities may resemble online communities, as discussed previously, and exchanges may occur between strangers with a common interest. However, without some level of trust in the benevolence/reciprocity of others, users are reluctant to use the platform for communications that are, to a large extent, highly personal and revealing. For example, most respondents allowed their friends and family to have access to their profiles and personal pages but do not allow the same privileges to employers and strangers (Peluchette & Karl, 2008).

### 5.3. Ethical considerations of SNS usage

The first ethical consideration pertains to employer (co-worker) surveillance of SNS in working contexts. In our interviews, one respondent emphasized the control of access to her personal page (Ladder #12) because she did not want to share her personal life with her co-workers or her employer. However, as part of the recommendation software that Facebook incorporates, she was presented to co-workers because they work at the same place. It is difficult to reject a co-worker's or manager's request to become a "friend" on her Facebook page, and so she felt forced to accept their invitation requests. However, it limited her self-expression on Facebook. Such publicizing in a work context (Light & McGrath, 2010) has become a conflict of Facebook usage.

The second ethical consideration pertains to privacy and information control. For example, one respondent revealed his usage of picture uploading in relation to others' privacy (Ladder #25). He wanted to use Facebook as a platform for sharing the pictures taken in gatherings with friends. He believed this was a good way to keep in contact with his friends, and from his perspective, it was convenient to let other friends (who also joined the gathering and whose images were in the pictures) download the pictures. So he tagged each friend's names in his photo album. However, not all his friends liked this kind of sharing and recognition. Apparently, the privacy issue is not just about what an individual user does, but what the user does to friends. This situation reflects what

Nissenbaum (2004) defines as “privacy as contextual integrity”, which pertains to the norms of appropriateness, in terms of “the type or nature of information about various individuals that, within a given context, is allowable, expected, or even demanded to be revealed” (p. 120), and “the norms of distribution”, in terms of the “movement, or transfer of information from one party to another or others” (p. 122). It means that in an interaction, people have expectations about what information is appropriate to collect and whether it should be distributed. Thus, some information or communication may be appropriate for sharing among a closed group of friends but may not be appropriate to open to other Facebook friends outside the group.

The final ethical concern involves using the information that has been marked as private for marketing purposes. Although practitioners may argue that the information is public, as Lange (2008) suggests, there are two kinds of SNS user behavior: publicly private vs. privately public. The former refers to when users’ identities are revealed, but content is relatively private and not widely accessed; the latter refers to the behavior of sharing widely accessible content with many viewers, while limiting access to detailed information about users’ identities. Because Facebook users’ profiles are publicly recognized but the contents are usually private (i.e., publicly private), marketers will need to take additional efforts (e.g., making “friends” with consumers) to gain permission to view users’ interactions on Facebook. Collecting data on Facebook for marketing purposes is still an ethical debate; even for academic purpose, Zimmer (2010) discusses the ethics of using the profile data of Facebook users.

## 6. Implications

This exploratory study deepens understanding of SNS users’ behavior, which can benefit both researchers and managers. Theoretically, this study contributes to research on SNS user behavior by constructing an HVM of attribute–consequence–value chains, identifying specific drivers of SNS adoption, and providing a detailed interpretation from the laddering interview data. Practically, the results should help SNS managers design platforms that more closely fit their users’ needs. They also reveal opportunities for marketers to design supplementary attributes that relate better to belonging and self-esteem needs. The creation of a hedonic environment would facilitate reciprocal relationships among the users.

### 6.1. Theoretical contributions

This research offers several theoretical contributions both supporting and adding to existing knowledge. On the support side, the contributions are threefold. First, our results fully support the findings in previous research that SNSs constitute a new communication media platform with web 2.0 features of “user participation, feeling of co-presence and social presence, and interactive reciprocity” (Shin & Kim, 2008, p. 379). Regarding the benefits of adopting SNSs, respondents were aware that such asynchronous media is more enjoyable than face-to-face communication, without losing the interactivity with and the desirable presence of others. Respondents prefer SNSs to blogs and other virtual communities, and their use of SNSs has replaced the importance of other communication media in their lives. Second, our findings align with prior studies on the U&G of media use (Flanagin & Metzger, 2001; Katz et al., 1974), demonstrating that the need for social integration (i.e., belonging in this study), the need for help in achieving goals (i.e., reciprocity in this study), the need for status enhancement (i.e., self-esteem in this study), and the need for entertainment (i.e., hedonism in this study) are significant requirements for SNS users. Third, regarding the recent research on

SNS uses with quantitative surveys (e.g., Kwon & Wen, 2010; Shin & Kim, 2008; Sledgianowski & Kulviwat, 2009), this study complements such accounts with a qualitative means–end approach and laddering interviews. The compatibility of the results is impressive. Specifically, the various antecedents of SNS adoption proposed by previous studies are allocated to (1) reciprocity (e.g., altruism), (2) self-esteem (e.g., normative pressure), (3) belonging (e.g., perceived encouragement, perceived involvement, social identity, trust), and (4) hedonism (e.g., perceived enjoyment/playfulness, telepresence, perceived ease of use, perceived usefulness).

Further theoretical contributions in terms of adding to knowledge are also threefold. First, although SNSs have their own distinctive characteristics that differ from those of overall online communities, many studies pertinent to SNSs have viewed them as belonging to a single, broad category together with other online communities. This study clarifies the notion of SNSs by differentiating them from other online communities, while also noting their similarities to offline communities. Second, this study lists the significant attributes and desired values of SNSs from users’ perceptions. Such “ends” can be viewed as the motivation for adopting SNSs. Thus, we simultaneously identify the U&G of SNSs. Third, the means–end approach with soft laddering interviews adopted in this study is not based on an *a priori* categorization of reactions, but rather elicits user motivation for adopting SNSs. As a result, we demonstrate that this research procedure is adaptable to a variety of contexts, such as the communication media in this study, and is not limited to use with physical products or intangible service.

The suggested research method (i.e., means–end approach based on U&G theory) forms a workable basis for further research, through either a more extensive set of laddered interviews or more quantitative or structural equation modeling. We also suggest that an exploration of the historical use of other media would reveal similar patterns of behavioral gratifications, providing evidence of the extent to which the psychological needs underpinning the model might be generalizable to “successful” media. Finally, despite the small sample size and the exploratory nature of this study, the resulting means–end or U&G model seems both consistent and interpretable.

### 6.2. Practical implications

Because users’ goals and activities on SNSs are extremely varied, it is a challenge to investigate their use motivation through traditional survey instruments (Hargittai, 2008). Effectively understanding the values that drive individual behavior requires actual choices in natural contexts, which can more effectively predict consumer choices than when using hypothetical contexts (Maniwa & Crawford, 2002). It is worth noting that a conventional means–end approach is ideally used for market segmentation (e.g., benefit segmentation; Botschen, Thelen, & Pieters, 1999), according to different levels, on attributes, benefits, or values and on the linkages between the meanings. Such consumer-oriented thinking indicates that the utility of an SNS is not so much in its features but rather in the functional and psychological consequences it delivers, which are important for identifying consumers’ goals and values. Therefore, this study constructively deepens managers’ understanding of SNS user behavior by adopting a qualitative approach. It identifies the motivation that underlies user needs, thus informing managers how to design tools to support SNS adoption.

On the basis of our findings, we suggest that practitioners should not view the functions of SNSs only through their eyes; they should not ignore users’ perceptions of their values. Although SNSs came after online communities, SNSs users may regard them quite differently, in terms of purposive value and social enhancement value. Traditionally, marketers use brand



communities to encourage problem solving or information sharing among non-acquaintances (purposive value); however, based on our results, SNSs users actually focus more on the social benefits, such as maintaining interpersonal connectivity and social enhancement.

Our findings indicate that only five functionalities of SNSs form effective means–end chains. We find that users employ the functions of instant responses, interactive games, and browsing others' pages, to maintain interpersonal connectivity, and they use the functions of uploading pictures, and customizability to facilitate social enhancement. Thus, we recommend that marketers design SNSs to enable members to use these functionalities in an intuitive way; that is, these functionalities are “applications of process” (Dholakia et al., 2004), which help create the vivid and enjoyable group interactions for SNS users. By generating interactions among friends rather than strangers, marketers can better procure users' thoughts and behavioral patterns in their social activities, which can lead to further product/service innovation and value co-creation (Füller, Jawecki, & Muhlbacher, 2007; Nambisan & Baron, 2009).

### 6.3. Limitations

Although this study offers valuable insights into user behavior in SNS adoption, it has some limitations. First, even though means–end approach is widely used for understanding user behavior, its underlying notion is that individuals are rational decision makers who choose that course of action (e.g., the adoption of SNSs) that is most likely to achieve desired outcomes. For example, when making a decision to join Facebook, online users may rationally consider their perceived value by counting the benefits (i.e., information exchange and social support) and costs (i.e., time investment and security risks); therefore, their actions are goal oriented. However, this assumption has two overt flaws: First, it overstates the rationality of choice. “Choices” contain a set of outcomes for each alternative in a choice set, evaluated by utilities and possibilities. In other words, the model reflects what consumers “are supposed to do” but not what they “actually do” (East, Wright, & Vanhuele, 2008). Second, mental phenomena are undertaken in the decision-making process, such as emotions and social influence (Bagozzi, 2000). Emotions play an important role not only in evoking rational thought but also in stopping rational processes; moreover, emotions influence information-screening processes to help decide when the processing should end (Cohen & Dickens, 2002). Social influence (e.g., word of mouth, group norms) is likely to directly lead to final decision making without rational cognition. The changing process of the psychological state is so crucial to consumers' perception and attitude change that additional caution must be taken when interpreting our results of SNS user motivation.

Second, a potential bias exists in means–end chains because they may represent “stylized descriptions of how respondents think they or others should or might react” (Bagozzi & Dabholkar, 2000, p. 536), rather than their true internal cognitions and inferences. Furthermore, the elicitation of concepts in the laddering interview process relies on both the respondents' ability to link their adoption decisions to personally relevant desired outcomes and researchers' ability to correctly interpret the data. The effectiveness of this step relies on a rapport between the respondent and the interviewer, and in single interviews, this may have limited the responses in areas considered too personal for free discussion with a stranger (Maniyiwa & Crawford, 2002).

Third, we did not discuss the impact of personality on users' perceptions or their evaluations of SNS adoption. We

acknowledge that personality is worth considering when studying online user behavior (e.g., Li & Chignell, 2010). Individual differences are likely to moderate the relationships among attributes, consequences, and values in our study. Thus, we call for future studies to include individual personality traits in their research model.

### 6.4. Further research

The Internet has become a hub of socialization, or a means for social utility (Weaver & Morrison, 2008), and we suggest that SNSs are more than simply an extension of online connections. According to Hum et al., (2011), Facebook views itself as a “...social utility that helps people communicate more efficiently with their friends, family and coworkers...” (p. 1828).<sup>1</sup> Furthermore, SNSs may become a public utility, akin to the old square in town where people came together to chat. Thus, further research should pay more attention to the societal value of SNSs.<sup>2</sup>

In addition, from our interviews, we find that users view communication media as evolving from BBS, to blogs, to SNS. Most users move among these media because their significant others (e.g., colleagues, friends, etc.) do so. Users tend to join Facebook either to break the ice or to avoid being excluded from their group. It is possible that normative influences play a key role in Facebook adoption. For example, we find that users perceive Facebook as a trusting and safer environment than BBS and blogs, one of the most distinguishable features of Facebook. One explanation for this is that most users show their real identity (including their user names and personal information) on Facebook, whereas users tend to be anonymous in BBS or blogs. Another explanation is that most respondents reported interacting with existing acquaintances, which echoes previous research that shows that most SNSs support the maintenance of pre-existing social networks (Boyd & Ellison, 2007). In the Chinese culture in particular, people share with in-group members but often robustly defend their privacy from “unknown” others. Thus, further research should consider normative influence and trust-building strategies when persuading new users to adopt SNSs.

Finally, to enhance the generalizability of our findings, we call for research on SNS adoption in cross-cultural contexts. Although our Taiwanese sample has significance in Asia, it may also contain specific characteristics related to national culture and user personality. For example, Taiwan is a relatively collectivist society, so the normative influence (e.g., norm of reciprocity and belonging) may be a determinant in SNS users' joining intentions. Meanwhile, the success of Facebook in Taiwan, in a relatively short time, may be due to Taiwanese's high level of personal innovativeness. Similarly, it is unclear whether the findings from Facebook can be generalized to other SNSs. Although Facebook is one of the largest SNSs, Ross et al. (2009) suggest that Facebook differs from other SNSs on a key characteristic—namely, the offline-to-online trend. In addition, the sample had a variable level of experience with the SNS, which may affect the results. More insight might be derived from studies of other SNSs (e.g., LinkedIn with its professional characteristics) or of other online communities. Thus, other comparative studies are necessary to confirm the generalizability of our qualitative findings. Finally, a larger sample of Facebook users might also produce more or more robust ladders and thus reveal additional items

<sup>1</sup> When we checked Facebook's factsheet, however, it did not mention “social utility” but instead stated that its mission was “to make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them” (<http://newsroom.fb.com/content/default.aspx?NewsAreal=22>, accessed on April 20, 2012).

<sup>2</sup> We are indebted to the anonymous reviewer for this suggestion.



characterizing the U&G of SNS adoption. Further research could also quantitatively examine the identified SNS attributes, consequences, and values to explain their prevalence and degree of influence on SNS adoption.

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