

## 뉴미디어 발전단계모델을 적용한 소셜네트워크 서비스 분야의 연구동향분석

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**요약** 본 연구의 목적은 소셜네트워크 서비스 관련 연구의 개괄적인 흐름을 파악하여 연구 향을 분석하고 향후 연구방향을 탐색하는 것이다. 이를 위해 2006년부터 2011년까지 정보시스템, 커뮤니케이션, 마케팅 등 다양한 분야에서 발표된 학술지 논문들을 검색하고 이들 논문을 뉴미디어연구 발전단계모델을 사용하여 분석하였다. 분석결과 소셜네트워크 서비스 연구는 뉴미디어 발전단계모델의 4단계의 모든 영역에 적절하게 분포되거나 유형화되지 않고 제 1단계와 제 2단계에 집중되어 있는 것으로 나타났다. 대부분의 연구가 소셜네트워크 서비스의 정의나 특성(제1단계), 그리고 소셜네트워크 서비스 이용 및 이용자 분석(제2단계)에 초점이 맞추어져 있어, 소셜네트워크 서비스가 개인의 삶이나 사회에 미치는 영향(제3단계)이나 향후 발전방향(제4단계)과 같은 영역에 대한 연구가 부족함을 확인하였다. 또한 소셜네트워크 서비스 관련 연구의 대부분이 이론적 틀을 이용한 과학적 연구보다는 현상을 기술하고 동향을 파악하는 연구에 집중되어 있음을 알 수 있었다. 앞으로 소셜네트워크 서비스 분야의 연구는 뉴미디어 발전단계모델의 3단계와 4단계에 초점을 맞출 필요가 있으며, 기존이론의 검증이나 새로운 이론의 개발과 같은 이론적인 틀을 중심으로 하는 연구가 필요하다.

주제어: 소셜네트워크 서비스, 소셜네트워킹 사이트, 소셜 미디어, 뉴미디어 발전단계모델

## A Review of Research on Social Network Services Using the New Media Evolutionary Model

Hyun Kwak, Ho Geun Lee

**Abstract** The purpose of this paper is to indicate possible future research directions for social network services(SNS) by reviewing past and recent trends in SNS studies. The framework used for the analysis is the New Media Evolutionary Model(NMEM) proposed by Wimmer and Dominick, a four-phase system for research on new media development. Although early forms of SNS emerged in the late 1990s, most research in this field has been published in the past five years. We searched for SNS-related articles published from 2006 to August 2011 from academic journal archives in information systems, communication, marketing, and other fields, and classified them according to the NMEM to analyze the current state of SNS research. Researchers in this field have so far focused on the first two phases of the model(the media itself and use of the media), but little research has been conducted on the third(effects of the media) and fourth phases(improvements in the media). Although SNS research is still in its early stages, we suggest the need for more studies on the effects of SNS and how it can be improved. Very few studies test existing theories or build new theories related to SNS. Thus, a more rigorous approach towards SNS research is warranted, and future research should focus on theory building and testing.

Keywords: social network services, social networking sites, social media, new media evolutionary model

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## I. Introduction

In the past decade, social media have become so pervasive in our society that many users cannot remember life without them. Social network services(SNS) such as MySpace, Facebook, Cyworld, and Bebo have attracted millions of users, and many consumers have integrated these services into their daily routine(Boyd, et al., 2007). The online phenomenon of SNS has consistently grown in popularity over the last five years(Boyd, et al., 2008). For instance, as of January 2011, Facebook was the second most visited website both in the United States and worldwide(Alexa Top 100, 2011), and the number of active users had surpassed 750 million(Business Insider, Jan. 2011). In the U.S. between 2009 and 2010, the proportion of adults using SNS increased from 46% to 61%. In that same time period, the number of users aged 18-29 years increased from 76% to 86%(Madden, 2010).

This unprecedented popularity of an Internet-based technology has instigated a variety of academic studies of the uses and consequences of SNS from several perspectives. Hargittai(2007) compared users and nonusers of four different SNS, while Zhao, Grasmuck, and Martin(2008) investigated identity construction on Facebook. Ellison, et al. (2007) examined the relationships between different ways of using Facebook based upon three types of capital: bonding, bridging, and maintaining social capital. In addition, Walther, et al.(2008) explored the effects of

cues created by social partners on Facebook profiles. They argued that written messages and content posted by visiting friends significantly impacted images of profile owners. In this new field of study, it is important to examine what kinds of research have been done so far, and what further research needs to be conducted.

The purpose of this study is to provide an overview of existing SNS studies and identify research trends by reviewing major research work in this field. We adopt the New Media Evolutionary Model(NMEM) proposed by Wimmer, et al.(2000) as a framework for analysis. In addition, we propose some theories for testing and use in future SNS research.

## II. Social Media and Social Network Services

Although no formal definition exists, social media are generally understood to comprise Internet-based applications that carry consumer-generated content. According to Blackshaw(2006), the term 'social media' encompasses consumer-created media impressions which are archived or shared online for easy access by other consumers. Kaplan, et al.(2010) defined social media as 'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user-generated content.' Kietzmann, et al. (2011) argued that "social media introduced substantial and pervasive

changes to communication between organizations, communities, and individuals (p. 250).” These communication changes are enabled by ubiquitously accessible and scalable communication techniques. Social media include a variety of applications that allow consumers to ‘post’, ‘tag’, ‘digg’, or ‘blog’ on the Internet.

With social media, consumers can communicate with each other across platforms as diverse as forums, blogs, wikis, and photo/video-sharing services. Thus, social media exist in a variety of forms and serve numerous purposes(Kaplan, et al., 2010). Examples of social media include collaborative communities(e.g., Wikipedia), blogs, content-sharing communities(e.g., Flickr and YouTube), virtual worlds(e.g., Second Life), and especially SNS(e.g., MySpace and Facebook). SNS are applications that enable users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and instant messages back and forth(Armstrong, et al., 2008). Personal profiles can include any type of information, including photos, video, audio files, and blogs(Boyd, et al., 2007; Ellison, et al., 2007).

The first form of SNS was created in 1997 with an Internet site called SixDegrees(Boyd, et al., 2007), which is generally regarded as the first social networking site to combine user profiles with the ability to communicate with friends. Following its launch, several community sites based on ethnicity or

geography evolved into social networking sites, including AsianAvenue, CyWorld, and BlackPlanet. In 2002, Friendster expanded on the original premise, allowing more detailed profiles, photo sharing, messaging, and testimonials. However, MySpace, launched in 2003, quickly emerged as the market leader in SNS by addressing Friendster's shortcomings and providing users with functionality that encouraged self-expression.

Diverse SNS applications exist depending on the types of relationships users want to build. There are dating sites, such as Match.com, whose primary aim is to help people find a partner. Other networking sites, such as Bookcrossing.com, target people with similar interests. There are friend networking sites, such as MySpace and Facebook, whose primary goal is to enable members to establish and maintain their networks with friends.

According to Wikipedia, the largest SNS today is Facebook. Facebook was founded in 2004 by Mark Zuckerberg, who wanted to stay in touch with his fellow students from Harvard University. Segmentation of users into college networks proved to be the key driver of Facebook's early success, as it captured people's real-world relationships. Facebook later opened its membership to the public and began to grow rapidly, ultimately attracting more than 750 million users. Facebook allows users to create a profile, display personal information, upload pictures, access other users' profiles,

accumulate online friends, and interact with those friends through messages, gifts, and other applications(Schonfeld, 2008). The average amount of time spent on Facebook ranges from 30 minutes(Ellison NB, et al., 2007) to over 2 hours a day(Raacke, et al., 2008; Sheldon, 2008). Nowadays Facebook is so popular, especially among young Internet users, that the term 'Facebook addict' has been included in the Urban Dictionary as an English slang term(Kaplan, et al., 2010).

SNS are revolutionizing social behaviors and networking practices. In the commercial world, several companies are already using SNS to support the creation of brand communities and for marketing research. For politicians, SNS have become an essential tool for political campaigning, and celebrities depend on SNS to maintain their popularity. SNS are so pervasive in our lives that it is

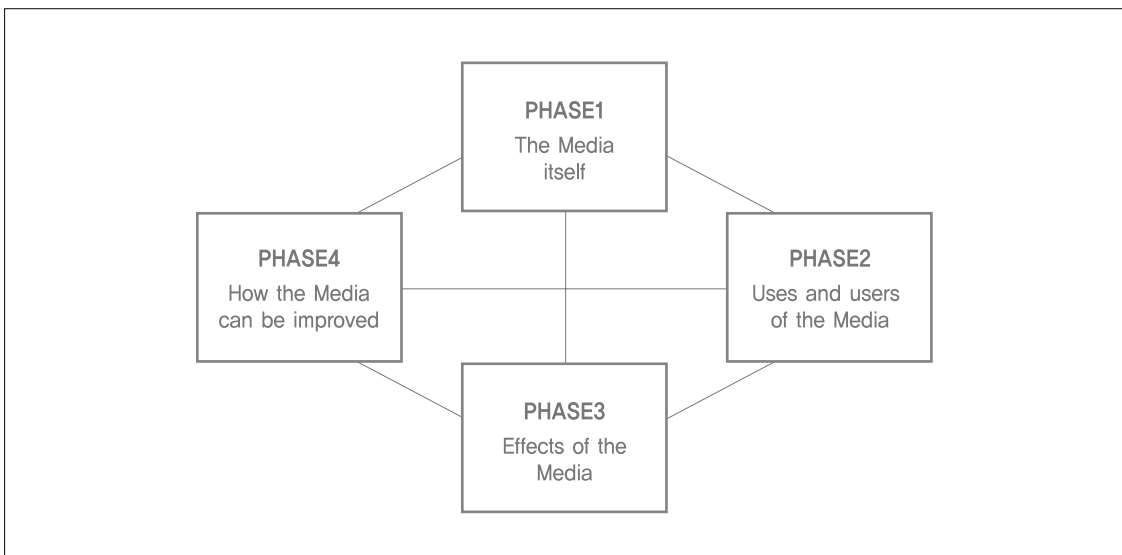
worth reviewing past research and making recommendations for future SNS studies.

### Ⅲ. Social Network Services: Research Issues

#### 1. Analytical Framework: New Media Evolutionary Model

When a new media form emerges and has significant impact on daily life, related research follows a certain pattern. The most common patterns in media research are outlined in the New Media Evolutionary Model(NMEM; see Fig. 1) proposed by Wimmer, et al.(2000).

The NMEM divides research on new media into four phases. In the first phase, most research focuses on interest in the media itself. Once the media is understood to a



〈Figure 1〉 New Media Evolutionary Model

certain degree, the focus shifts to the uses and users of the media in the second phase. In the third phase, researchers investigate various effects of the media. Lastly, research interests in phase four are mostly concerned with improvements in the media and development of new concepts or theories related to it. Table 1 shows specific research questions addressed in each phase.

It should be noted that in the NMEM framework, research phases are not intended to be linear; earlier phase research issues can be readdressed again in later research phases. In other words, research may be categorized simultaneously in all four phases. For example, although TV has been around for

decades, researchers continue to investigate the TV itself(Satellite-delivered digital audio and video), its uses(e.g., play-per-view programming), effects(e.g., violent programming), and improvements(e.g., smart TV). In the NMEM, the four-phase research pattern is not linear, but rather cumulative. We investigate SNS research using the NMEM framework because SNS can be characterized as a new media. Table 2 provides examples of specific research questions that might be addressed in the four phases of SNS research.

The NMEM is a theoretical framework that enables analysis of new media developments by categorizing accumulated research about the new media. It is a useful tool for classifying

〈Table 1〉 New Media Evolutionary Model

Phase	Research topic	Research question
The media itself	Studies demonstrate an interest in the media itself.	1)What is it? 2)How does it work? 3)How is it similar to or different from what we already have?
Uses and users of the media	Specific information is accumulated about the uses and users of the media.	1)Why do people use the media in real life? 2)Do they use it for information only, to save time, for entertainment, or for some other reason? 3)Do children use it? Do adults use it? Why? 4)How do the new media provide gratification?
Effects of the media	Investigation of the social, psychological, and physical effects of the media.	1)Does it change people's perspectives about anything? 2)What do the users of the media want and expect to hear or see? 3)Are there any harmful effects related to using the media? 4)In what way, if any, does the media help people?
How the media can be improved	Conducted to determine how the media can be improved, either in its use or through technological developments.	1)Can the media provide information or entertainment to more types of people? 2)How can new technology be used to perfect or enhance the sight and/or sound features of the media? 3)Is there a way to change the content to be more valuable?

Adapted from Wimmer and Dominick(2000)

this research into the four phases described in Table 1, thus providing an overview of research trends. The NMEM facilitates our research goal to investigate the state of SNS research trends and indicate directions for future work.

We examined research works published from 2006 to 2011 in this field. Although some SNS were introduced earlier than 2006, interest in social networking was stimulated by the success of Facebook, whose membership was opened to the general public(Everyone aged 13 and older with a valid email address) in September 2006. Thus, most major studies were published in the period of 2006 – 2011.

Since SNS research is interdisciplinary, we broadened our search to include many

different academic disciplines such as information systems, communications, marketing, sociology, and psychology. In order to construct our research dataset, we conducted a journal-by-journal search through electronic databases, including Academic Search Complete(EBSCOhost), Communication & Mass Media Complete (EBSCOhost), and Elsevier Science Direct. Both titles and subject term fields were searched using the following keywords and their combinations: social network(ing) service, social network sites, online social networking, Facebook, and Myspace.

The following sections outline our investigation of existing research on SNS from 2006 – 2011.

**<Table 2> Research Questions Related to SNS according to the NMEM Framework**

Phase	Research topic	Research question
1: Focus on SNS itself	-Definition and History -Features	1)What is SNS? 2)What are the main features of SNS? 3)Why are some SNS successful, while others are not?
2: Focus on uses and users of SNS	-User behaviors -Motivations	1)Why do people use SNS? 2)What are the characteristics of users of SNS? 3)What uses do people have for SNS? 4)How do SNS provide gratification?
3: Focus on effects of SNS	-Privacy and security issues -Social outcomes -Educational effects	1)Are there any harmful effects related to using SNS? 2)What are the consequences of SNS? 3)What are the educational effects of SNS?
4: Focus on how SNS can be improved	Advanced applications -Social games -Social commerce	1)Is there a way to change the structure or content of SNS to make it more useful or effective?

## 2. Phase 1: Focus on SNS Itself

Definitions of SNS in the literature have slightly different focuses, but they share common features. For example, Bartlett-Bragg(2006) defined SNS as a range of applications that not only augment group interactions, shared spaces for collaboration, and social connections, but also aggregate information exchanges in a web-based environment. Similarly, Boyd, et al.(2007) defined SNS as web-based services that allow individuals to “construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system.”

As mentioned earlier, SNS began in 1997 with the launch of SixDegrees, which allowed users to create profiles and maintain a list of friends(Boyd, et al., 2007). Although several other SNS launches followed SixDegrees, most research work in the first phase focused on two websites: MySpace and Facebook. According to Kwong(2007), MySpace and Facebook were unique because they provided personalized, interactive services based on users' interests and activities on the web. Boyd, et al.(2007) stress that MySpace differentiated itself by regularly adding features based on user demand and by allowing users to personalize their pages. This feature emerged because MySpace did not restrict users from adding HTML to the forms that framed their

profiles. MySpace users were thus able to generate personalized backgrounds and layouts. MySpace also enabled users to create profiles with the options to share photos, choose a profile song, list personal interests and personality traits, identify schools and universities attending or attended, announce upcoming user events, develop a user calendar, and maintain a personal journal or ‘blog’ (Kwong, 2007).

Facebook is not only the most popular SNS, but also the website that helped ‘tip’ SNS into mainstream culture. One of the key success factors of Facebook is ‘News Feed,’ which reveals the recent activities of friends(facebook, 2010). In addition, Facebook Platform, a set of robust tools that enabled third-party developers to build Facebook applications, greatly contributed to its rapid growth. Together with ‘News Feed,’ Platform helped to differentiate Facebook from other SNS. Thus, first-phase research literature on SNS provides not only definitions and features of SNS, but also insights into why some SNS succeeded while others failed.

## 3. Phase 2: Research on Uses and Users of SNS

SNS research in the second phase of the NMEM focuses on two streams of SNS user behaviors: demographic factors and motivations.

### 1) User Behaviors: Demographic Factors

Early adopters of SNS were college students.

One study found that college students visited social network sites on average 2–4 times a day; they spent an average of 2.5 hours per day using SNS (Raacke, et al., 2008). As older people gradually began participating in SNS, scholars started to investigate whether SNS uses differ depending on demographic factors such as age, gender, and race. The sections below summarize these findings according to these factors.

**Age.** Pfeil, et al.(2009) investigated age differences and similarities in SNS use. By investigating MySpace user behaviors, they compared social networking in older people to that of teenagers. They found that the majority of teenage users communicate with friends in their own age range( $\text{age} \pm 2$  years), while older people's networks of friends tend to be more diverse in age distribution. Their findings also showed that teenagers tend to use more multimedia content(e.g., videos, music) than older groups. Furthermore, younger users tend to make more self-references and express more negative emotions when describing themselves in their personal profiles than older people do. Some scholars compared characteristics of messages posted by different age groups. For instance, Zaphiris, et al.(2006) employed a social network analysis method to determine differences in the characteristics and structures of messages communicated between younger and older user groups. Their findings showed that teenage users are more active than older users; they tend to

send more messages per person, and longer messages on average, than older people.

**Gender.** Hum, et al.(2011) investigated whether usage behaviors on Facebook differ depending on gender. No significant differences were found between men and women. However, their findings are not consistent with the results of earlier research conducted in online communities. Sussman, et al.(2000) argued that women are generally more active than men in online communities where information is shared and topics are discussed. Even in SNS research, Bond(2009) found that females tend to disclose self information more than males in SNS. Morgan, et al.(2010) found significant gender differences in the type of content posted on SNS. According to their study, men are more likely to place self-promoting content as well as risqué content(involving sex or alcohol) on their profiles than women are. In addition, women are more likely than men to post romantic or cute pictures and/or information. They noted that photo disclosure by women is generally motivated by the desire to store data and record memories. They emphasized that men are more likely to use networking sites for dating purposes, thus maintaining a large number of friends linked to their accounts. In contrast, women tend to set their profiles to private, thus maintaining a smaller number of friends linked to their profiles. It makes sense, then, that women retain friend networking accounts for a longer period of



time than men do(Raacke, et al., 2008).

**Race and Ethnicity.** Many scholars found that racial/ethnic groups demonstrate different behaviors in SNS. For instance, Hargittai(2007) argued that nonwhites tend to be more active than whites in SNS. He found that Hispanics are more likely to use MySpace than whites, and Asians and Asian-Americans are more active in using Xanga and Friendster than whites. This may imply that nonwhites feel more need for social networking than whites do. Ellison, et al.(2007) also found significant differences in the use of Facebook between whites and nonwhites, but offered no speculation about the meaning of the differences. One study found that Facebook networks of black and Asian students far exceeded those of white students in size as well as heterogeneity (Lewis, et al., 2008).

## 2) Motivation to Participate

Motivation to participate in SNS is a major area of SNS study in the second phase of the NMEM framework. The literature suggests that SNS fulfill a wide array of user needs, ranging from companionship and emotional support(Ellison, et al., 2006; Joinson, 2008) to information sharing(Lampe, et al., 2006). Users also turn to the SNS to keep in touch with friends, stay updated on community events, and maintain offline connections (Boyd, et al., 2007; Ellison, et al., 2007). Most recent research also revealed that people participate in SNS for entertainment

/enjoyment, maintaining/developing relationships, finding support, and seeking information(Kim, et al., 2010; Lin, et al., 2011).

**Maintaining and Developing Relationships.** Murray, et al.(2007) identified social networking websites as virtual communities, which enable people to connect and interact with each other on a particular subject or just to hang out together online. By joining SNS, users can build and maintain contacts with friends and acquaintances(Boyd, et al., 2007; Ellison, et al., 2007). According to Ellison, et al.(2007), Facebook users engage in searching for people with whom they have an offline connection rather than browsing amongst complete strangers. SNS are mainly used for the maintenance of social relationships, especially for upholding contacts with weaker social ties(Ellison, et al., 2007). Ellison, et al.(2007) noted that participants mainly use SNS to maintain or solidify existing offline ties rather than creating new ones or connecting with strangers. Boyd, et al.(2007) also concluded that most social networking sites primarily support pre-existing social relations.

**Information Sharing.** Due to the ubiquitous nature of the Internet, organizations and individuals are able to explore diverse knowledge-sharing tools. SNS are frequently suggested as one of the foremost modes of knowledge sharing(Hsu, et al., 2008). Huang, et al.(2010) studied motivations of students

using SNS for travel services. They found that users' intention to share travel knowledge in SNS was mainly driven by three functional motives: obtaining travel information, information dissemination, and personal documentation. Kelly(2008) found that most users participate in SNS because of the need for recognition and attention from friends, but information seeking about their subjects of interest also served as important motivation. Kelly's study also found that teenagers use SNS to learn from friends' experiences and advice. It is interesting to note that in the micro-blogging services such as Twitter, people use their status updates to seek or share information(Java, et al., 2007). Jansen, et al. (2009) reported that 20% of status updates by Twitter participants are used for seeking and sharing information, particularly for exchanging opinions on specific brands. Many scholars revealed that information and knowledge sharing is an essential motivation in SNS usage(Yang, et al., 2009; Burke, et al., 2009). Nov, et al.(2009) revealed that knowledge sharing is also a major motivation to participate in Flickr.

**Self-identification.** Social networking sites offer an assortment of tools specifically designed to help users create a digital impression of themselves(Manago, et al., 2008). Because Internet tools provide anonymity and freedom from the constraint of physical realities, they furnish adolescents with increased opportunities to test out

aspects of their identities(Greenfield, et al., 2006; Manago, et al., 2008; Valkenburg, et al., 2006). In fact, Internet use among college students is associated with the moratorium identity status, a psychological classification characterized by exploration and lack of commitment to a defined sense of self(Matsuba, 2006).

SNS provide users with great opportunities to identify and represent themselves because anonymity is no longer a factor. Since SNS have evolved to the point that online networks significantly overlap with offline relationships, anonymity is difficult to maintain(Subrahmanyam, et al., 2008; Zhao, et al., 2008). These features of SNS provide adolescents and emerging adults with opportunities to try out different aspects of their identities, enabling them to gauge their friends' opinions on their online activities (Valkenburg, et al., 2006). Impression management and self-promotion to friends, alongside maintaining contacts with them, are known to be central motives for SNS usage(Kramer, et al., 2008). In many cases, visual impressions are manifestations of these aspects. Visual impression management through photo and video uploads plays a critical role in self-presentation in SNS(Pempek, et al., 2009; Siibak, 2009; Strano, 2008). Young users of SNS, such as college students, generally use photos to demonstrate physical attractiveness (Siibak, 2009; Strano, 2008; Zhao, et al., 2008) and to promote a desired or hoped-for image as part of their identity(Manago, et al., 2008;

Zhao, et al., 2008). People commonly evaluate and leave comments on visual impressions of their friends, thus providing immediate and powerful feedback on these self-displays (Manago, et al., 2008; Valkenburg, et al., 2006). Siibak(2009) pointed out that SNS users are acutely aware of the criteria for social approval from their peers and are quite deliberate in choosing photos to represent themselves on their profiles.

**Personal Pleasure.** Personal pleasure is also frequently mentioned as a motivation to use SNS(Sledgianowski, et al., 2009). Kang, et al.(2010) pictured SNS as a group of pleasure-oriented information systems and argued that users continue to use SNS if they are perceived as enjoyable. Most SNS enable users to post photos, films, and weblogs, and to share links with friends (Powell, 2009; Tapscott, 2008). Sledgianowski, et al.(2009) found that enjoyment is one of the most important factors affecting the behavior of SNS users. This finding was also supported by Kelly(2008), who concluded that mood enhancement was a major reason to use SNS as a way to relieve boredom.

#### 4. Phase 3: Effects of SNS

The third phase of the NMEM addresses the effects of a new media on users and society. SNS have significantly changed human interactions and impacted several aspects of our society. SNS can have negative effects such as increased privacy

threats, but it can also benefit users in terms of increased well-being or self-esteem. In addition, SNS have significantly increased civic and political involvement. Education and marketing can also be influenced by SNS.

##### 1) Privacy and Security Issues

Pervasive technology often leads to unintended consequences such as threats to personal privacy. Many scholars have emphasized potential threats to privacy and security in SNS, which include inadvertent disclosure of personal information, damaged reputation due to rumors and gossip, unwanted contact and harassment/stalking, surveillance by others due to backtracking functions, use of personal data by third parties, hacking, and identity theft(Boyd, et al., 2007).

SNS provide users with greater access to other people's personal information(Boyd, et al., 2007), thus raising concerns over interpersonal surveillance and breaches of personal privacy. SNS enable users to track other members' activities and increase possibilities of surveillance in online communities(Lampe, et al., 2006). In his study, Joinson(2008) asked Facebook users what concerns about SNS crossed their minds, and found that social surveillance is the second most common concern associated with SNS use. According to Lampe, et al. (2006), college students are more likely to use SNS for social surveillance rather than finding new contacts. Security issues arise

when unauthorized hackers gain access to personal profile information. Jagatic, et al.(2007) experimented with a “phishing” scheme in SNS to see if they could obtain personal information. When they made themselves look like a friend, most subjects were willing to share their personal information. SNS users may be aware of privacy threats and thus may take steps to minimize potential risks. The survey data of Lenhart, et al.(2007) offers a more optimistic perspective on the issue, suggesting that teens are aware of potential privacy threats and are proactive about taking steps to minimize certain potential risks. They found that 55% of online teens have private profiles, 66% of whom report that their profile is not visible to all Internet users.

## 2) Civic and Political Involvement

SNS influence our society by increasing people’s civic and political involvement (Ellison NB, et al., 2007; Raacke JR, et al., 2008; Valenzuela, et al., 2009; Dara NB, 2008). According to Valenzuela, et al.(2009), Facebook has raised people’s level of life satisfaction, social trust, civic engagement, and political participation. For example, Facebook Groups(an application feature that allows a user to join a sub-network of people with a common interest) have the power to increase civic and political participation through reciprocal relationships. Young voters use Facebook to communicate their political opinions, and Facebook Groups uses the community of registered voters to

disseminate political information. Thus, SNS serve as a means to unify and empower communities with similar interests and views(Valenzuela, et al., 2009). These online groups strengthen social contacts, community engagement, and attachment by connecting the whole community through networks(Raacke JR, et al. 2008). Park, et al.(2009) reported similar research results: college students involved in Facebook Groups demonstrate a higher level of civic and political engagement. According to them, although students join Facebook Groups with several objectives(to obtain information about on- and off-campus activities, socialize with friends, seek self-status, and find entertainment), they find it more enjoyable when participating in social events and politics. Dara(2008) investigated community life in BlackPlane, a social networking site for the black, and found that users are deeply committed to ongoing discussions on several black community issues.

## 3) Well-being and Self-esteem

Several studies suggest that SNS can improve users’ well-being. Ellison, et al. (2007) reported a positive relationship between Facebook usage and users’ social capital. They found that SNS can benefit college students with low self-esteem, and that SNS users report much more satisfaction with their friendships than non-SNS users. Lee, et al.(2011) investigated the relationship between SNS usage and users’

subjective well-being. They found that although amount of time spent on SNS is not related to well-being, the amount of self-disclosure on SNS is positively related to subjective well-being. Valkenburg, et al.(2006) conducted a survey among 881 adolescents(10-19-year-olds) who had online profiles in a Dutch friend-networking site. Using structural equation modeling, they found that the frequency with which adolescents used the SNS site had an effect on their social self-esteem and well-being.

#### 4) Educational Effects

SNS are rapidly being adopted by millions of students with several purposes in mind, some of them educational(Lenhart, et al., 2007; Selwyn, 2007). Social networking tools support educational activities through interaction, collaboration, participation, and information/resource sharing(Ajjan, et al., 2008; Mason, 2006; Selwyn, 2007). Forkosh-Baruch, et al.(2011) examined how SNS are utilized by educational institutions in Israel to facilitate informal learning. In some high-level educational institutions, online social networks are used to support classroom work(Roblyer, et al., 2010).

#### 5) SNS as a Marketing Channel

In 2007, US\$1.2 billion was spent on advertisement in SNS worldwide, and this amount was expected to triple by 2011(Bebra, 2007). Online social networking sites have become a popular venue to share and disseminate marketing content. Many

business organizations employ SNS for viral marketing of their products and services. Trusov, et al.(2009) investigated the effectiveness of electronic word-of-mouth in SNS. They measured the effects of referral marketing such as new customer acquisition. Brown, et al.(2007) demonstrated how the word-of-mouth mechanism influences consumers' decision making as well as attitude formation for brands. Thus, SNS provide marketing managers with new challenges; they have to understand the new communication paradigm that acknowledges the pervasiveness of information now being exchanged among consumers in SNS. Marketing managers need to combine traditional market communication tools with word-of-mouth communications enabled by SNS.

### 5. Phase 4: How SNS Can Be Improved

The last phase of the NMEM addresses how SNS can be improved through new applications and technological development. Because the SNS field is still in its early stage, research in this area is limited. Two interesting applications - social network games and social games - have recently been suggested as applications that can enhance the current forms of SNS.

#### 1) Social Network Games

In virtual worlds, users can appear in the form of personalized avatars and interact with each other as they would in real life.

With high levels of social presence and media richness, SNS can be a powerful platform for social network games. Top Eleven Football Manager, FarmVille, and Dawn of the Dragons are some examples. Unlike online causal games, where users play alone, social network games utilize network relations already built into SNS. Chen(2010) noted that social network games in major SNS are growing fast and are likely to be among the top SNS applications. Järvinen(2009) found that social network games available today require the involvement of multiple players and asynchronous features. If social network games are embedded in a service, it can provide users with more entertainment. Social network games have the potential to revolutionize the game industry(Barker, 2009).

## 2) Social Commerce

As SNS continues to grow, many e-commerce sites have started to embrace the concepts of ‘social commerce’ and ‘social shopping’ in order to take advantage of the rich communication among consumers on online shopping sites. Social commerce utilizes an Internet-based platform that allows people to participate in marketing and selling of products and services in online marketplaces. It combines the characteristics of online shopping with those of social networking(Tedeschi, 2006). Stephen and Toubia(2010) examined the economic value offered by social networks between sellers and buyers in a large online social commerce

marketplace. Huatong(2011) investigated two successful cases of social commerce websites, TaoBao of China and Etsy of the U.S., and argued that social commerce web design should implement effective SNS features. Dholakia(2010) conducted a survey of vendors working with Groupon, one of the most famous social commerce sites in the U.S., and suggested several ways to enhance social commerce using networks. SNS provide excellent venues where consumers can exchange information and execute transactions. Thus, by embedding social commerce in their networks, SNS can provide new value to participating users.

〈Table 3〉 summarizes key findings of SNS research in each phase of NMEM, together with related references.

## IV. Theoretical Applications in SNS Research

Although many study results have been published in the SNS area, few research attempts have been made to test or build new theories. Two theories have been applied in SNS research: usage and gratification (U&G) theory and social capital theory. It should be noted, however, that other theories can be developed for use in SNS research. We encourage researchers to introduce more diverse theories to the SNS research stream.

### 1) U&G Theory

U&G theory is a popular approach to

〈Table 3〉 Summary of SNS Research

Phase	Topic	Findings	References
1: Focus on SNS itself	Definition and Features	<ul style="list-style-type: none"> <li>defining the concepts and delineating the features of SNS</li> </ul>	Bartlett- Bragg(2006), Boyd, et al.(2007) Kwong(2007) – most references address this phase in some degree
2: Focus on uses and users of SNS	Demographic factors	<ul style="list-style-type: none"> <li>young users use more multimedia and longer/more frequent messages than old users</li> <li>women are more active users, maintaining relatively narrower networks with more intensive relationships than men</li> <li>nonwhite people are more active in using SNS than white people</li> </ul>	Lampe, et al.(2006), Zaphiris, et al.(2006) Boyd, et al.(2007), Ellison, et al.(2007) Hargittai(2007), Lewis, et al.(2008) Raacke, et al.(2008), Bond(2009) Pfeil, et al.(2009), Morgan, et al.(2010), Hum, et al.(2011)
	Motivations	<ul style="list-style-type: none"> <li>maintain existing relations or to develop new relationships</li> <li>to seek necessary information or to share knowledge with others</li> <li>to identify and represent themselves through profile information and communication with others</li> <li>to have fun and relieve the boredom of life</li> </ul>	Greenfield, et al.(2006), Matsuba(2006), Valkenburg, et al.(2006) Boyd, et al.(2007), Java, et al.(2007), Murray, et al.(2007) Hsu, et al.(2008), Joinson(2008), Kelly(2008), Kramer, et al.(2008) Manago, et al.(2008), Strano(2008) Subrahmanyam, et al.(2008) Tapscott(2008), Zhao, et al.(2008), Burke, et al.(2009) Jansen, et al.(2009), Yang, et al.(2009), Nov, et al.(2009) Pempek, et al.(2009), Powell(2009), Siibak(2009) Sledgianowski, et al.(2009), Kang, et al.(2010), Kim, et al.(2010) Huang, et al.(2010), Lin, et al.(2011)
3: Focus on effects of SNS	Privacy and security issues	<ul style="list-style-type: none"> <li>increased possibility of privacy and security threats</li> </ul>	Lampe, et al.(2006), Boyd, et al.(2007), Jagatic, et al.(2007) Lenhart, et al.(2007), Joinson(2008)
	Social outcomes	<ul style="list-style-type: none"> <li>increasing civic and political involvement</li> <li>enhancing subjective well-being and self-esteem</li> </ul>	Valkenburg, et al.(2006), Ellison, et al.(2007), Dara NB(2008) Raacke JR, et al.(2008), Park, et al.(2009) Valenzuela, et al.(2009), Lee, et al.(2011)
	Educational effects	<ul style="list-style-type: none"> <li>supporting educational activities through interaction, collaboration, participation, and information sharing</li> </ul>	Lenhart, et al.(2007), Mason(2006), Selwyn(2007) Ajjan, et al.(2008), Roblyer, et al.(2010) Forkosh-Baruch, et al.(2011),
	Marketing Channel	<ul style="list-style-type: none"> <li>affecting marketing communications through word-of-mouth effects</li> </ul>	Brown, et al.(2007), Trusov, et al.(2009)
4: Focus on how SNS can be improved	Advanced application	<ul style="list-style-type: none"> <li>utilizing social networks in games(social network games)</li> </ul>	Barker(2009), Jävinen(2009), Chen(2010)
		<ul style="list-style-type: none"> <li>combining social networks with e-commerce(social commerce)</li> </ul>	Tedeschi(2006), Dholakia(2010) Stephen, et al.(2010), Huatong(2011)

understanding mass communication. It assumes that the choices people make are motivated by the desire to satisfy a range of needs. This approach identifies how people use the media to gratify their needs. The theory places more focus on the consumer, or audience, instead of the actual message itself by asking ‘what people do with media’ rather than ‘what media does to people’ (Rubin, 2009a). It assumes that users of media are not passive, but take an active role in interpreting and integrating the media into their own lives. The theory also holds that users are responsible for choosing media to meet their needs. The approach suggests that people use media to fulfill specific gratifications(Rubin, 2009b). Raacke, et al.(2009) applied the U&G theory to SNS. They evaluated the effectiveness of SNS based upon uses and gratifications of having a friend-networking account. Ancu, et al.(2009) employed the U&G theory to investigate political candidate profiles in SNS. Quan-Haase, et al.(2011) examined the gratifications obtained by instant messaging on Facebook.

## 2) Social Capital Theory

Social capital refers to connections within and between social networks. The concept of social capital highlights the value of social relations and the role of cooperation and confidence in obtaining collective or economic results. Social capital provides members with the benefits of social support, integration, and social cohesion(Requena,

2003). Pfeil, et al.(2009) investigated similarities and differences in the way that older people and teenagers represent themselves and build social capital in SNS. Ellison, et al.(2007) examined the relationship between use of Facebook and the formation/maintenance of social capital. In particular, they explored dimensions of social capital on Facebook and introduced the concept of ‘maintained social capital,’ or the ability to stay connected with members of a community. They found a strong association between Facebook use and dimensions of social capital. Wang, et al.(2009) investigated the intentions of online auction participants by applying the social capital theory, and found that the diverse dimensions of social capital embedded in auction participants significantly influence their behaviors. Mandarano, et al.(2010) investigated how the Internet influences participation by people in social interactions and suggested implications for building social capital in SNS. Since SNS provide opportunities to create or maintain new social capital, the social capital theory can serve as a basis for more rigorous research.

## V. Conclusions

Through a review of recent research contributions about SNS, we have identified topical trends and theories related to SNS. In addition, insights are offered into possibilities for future research directions in this area.



For this purpose, we have applied the New Media Evolutionary Model(NMEM) developed for media research. The NMEM divides new media research into four phases, which we have adapted by focusing on SNS itself, usage and users of SNS, SNS effects, and improvement of SNS.

SNS research can be found in all four phases of the NMEM. This finding is consistent with the argument of Wimmer and Dominick(2000) that research developments in the field of new media are not linear: research can be categorized simultaneously in all four phases. Our findings indicate that although SNS studies cover all four phases, the majority of current research concentrates on the first two phases. There is far more research on SNS itself and on the uses and users of SNS than on its effects or improvement. In particular, much research is focused on the motivations and characteristics of SNS users. There is also a lack of theory testing and theory building effort associated with SNS. Some researchers have attempted to examine SNS using certain theories, such as the U&G theory and social capital theory, but their findings are not comprehensive enough to allow generalization about SNS.

We propose that researchers conduct more studies in the last two phases of the NMEM framework. Because SNS influences every aspect of life, there are ample opportunities to investigate its effects in diverse ways. Researchers also need to pay more attention to technical developments and new

applications that may improve the current forms of SNS. Most current SNS studies are not theory-based, but exploratory or explanatory. Thus, more rigorous approaches are needed, especially focusing on theory building and testing in the SNS field.

This research is not without limitations. We have investigated SNS studies conducted in diverse fields such as information systems, communications, and marketing. Although this broad perspective helps to provide a bird's-eye view of SNS research, it may lack in-depth analysis of the research from a specific perspective. In addition, micro-blogging services(such as Twitter), which have significant effects on individual lives, also warrant investigation in addition to SNS. Future SNS research will overcome these limitations.

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