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A study of the social networking website service in digital content industries: The Facebook case in Taiwan

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ABSTRACT

In recent years, a social networking service (SNS) not only thrives in digital content industries but also functions as a platform that focuses on facilitating the building of social interactions among people. Based on the DeLone and McLean model (2003), this study develops a modified model to examine the effect of the three website technology characteristics on user satisfaction, benefits of social interaction, and continuance usage. Based on a survey of 346 participants, the study uses a structural equation modeling (SEM) approach as the research model to investigate the above issues. The results provide an expanded understanding of the factors that measure SNS success. The results also indicate that system quality, information quality and privacy protection service had a significant effect on the continuance usage of a SNS in relation to user satisfaction and benefits of social interaction. In conclusion, implications of the research and practice are discussed, as well as future research directions; furthermore, research finding implies that psychological rather than technical factors are more important in digital content industries. Privacy protection and the increased benefits of social networking can ensure better website services.

1. Introduction

In the era of a digital economy, a social networking service (SNS) has been booming over the past decade. A SNS is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, as well as allow for the creation and exchange of user-generated content (Kaplan & Haenlein, 2010). A SNS includes social software that mediates human interaction and communication, including social networking sites like Facebook, Twitter, Google+ and MySpace. More specifically, a SNS is an online service, platform, or site that focuses on facilitating the building of social networks or social relations among people who share interests, activities, or real-life connections. SNSs allow users to share ideas, activities, events, and interests within their individual networks. Since the boom of SNS popularity during the late 2000s, SNSs have become some of the most powerful sources for news updates via platforms like Twitter and Facebook. Table 1 shows the services stacked up against competitors through the end of 2011 (Eldon, 2011).

HWeb 2.0 is the system that facilitates participatory information sharing and collaboration on the Internet for SNSs like Facebook and MySpace. Despite its positive aspects, the advent of the Web 2.0 has also led to social profiling and growing concern in regards to Internet privacy. Many people are giving out their personal information on the Internet via SNSs. (Dwyer, Hiltz, & Passerini, 2007; Shin, 2010). These SNSs keep track of all interactions on their websites and save them for later use, which can lead to issues such as cyber stalking, location disclosure, social profiling and third-party personal information disclosure.

Today, social networking sites continue to grow in popularity, with the majority of educated youth using these services. For these individuals, these websites have played a crucial role in bridging interpersonal boundaries, encouraging international communication, and enabling communication on a common platform. These websites have become a method for these individuals to stay in contact with existing friends and to expand their social circle. However, the information safety and privacy issues of SNSs remain potential threats that continue to cause concern and raise questions. Therefore, applying a modified D&M model, this study examines how information privacy impacts the benefits of social interaction, user satisfaction and continuance usage. The model of choice here has received much attention among researchers, and it provides a foundation for research in the SNS domain (Joiner, 2004; Lin, 2007; Petter, DeLone, & McLean, 2008).

This study contributes a model of continuance usage of a SNS and applies it to examine the post-usage factors influencing

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Table 1
Market share of social networking service.

Worldwide	Unique visitors	(%)
Facebook.com	792,999,000	55.10
Google+	250,000,000	17.70
Twitter.com	167,903,000	11.70
LinkedIn.com	94,823,000	6.60
MySpace	61,037,000	4.20
Others	255,539,000	17.80
Total	1,438,877,000	100

continuance usage. The proposed model takes into account the distinctions between acceptance and continuance decisions, thus additional explanatory variables are needed beyond the D&M model. The research questions addressed in this paper are:

Q1. What are the salient factors that determine continuance usage of the SNS?
Q2. How do the technology characteristic constructs (i.e., system quality, information quality, and privacy protection service) influence behavior?
Q3. How does user satisfaction and the benefits of social interaction enhance the explanatory power of the D&M model in predicting continuance usage of the SNS?

2. Background and literature review

This paper develops a theoretical model to investigate antecedents of continuance usage of a SNS. The research model is built based on DeLone and McLean's Information Systems (ISs) success model and literature pertaining to factors of private protection service, user satisfaction and benefits of social interaction.

2.1. Applicability of the modified D&M model

In order to provide a general and comprehensive definition of IS success that covers different perspectives of evaluating information systems, DeLone and McLean (2002) reviewed the existing definitions of IS success and their corresponding measures and classified them into six major categories. Thus, they created a multidimensional measuring model with interdependencies between the different success categories. DeLone and McLean (2003) later proposed an updated IS success model including these new dimensions. This updated model consists of six interrelated dimensions of IS success: information, system and service quality, intention to use, user satisfaction, and net benefits. Motivated by DeLone and McLean's call for further development and validation of their model, many researchers have attempted to extend or modify the original model (Chen & Cheng, 2009; Lin, 2007; Wu & Wang, 2006).

According to DeLone and McLean (2002), user satisfaction is a key measure of computer system success. User satisfaction concerns user attitudes to computer systems in the context of their environments. User satisfaction is defined as the opinion of the user about a specific computer application or information system available to them that meets their information requirements (Doll & Torkzadeh, 1988; Ives, Olson, & Baroudi, 1983). Other terms for user satisfaction are "user information satisfaction", "system acceptance", "management information systems (MIS) appreciation" and "feelings about information system". Recently, user information satisfaction is often used as a surrogate measure of MIS success/effectiveness (DeLone & McLean, 2003; Doll & Torkzadeh, 1988; Ong & Lai, 2007; Wang & Liao, 2007). This study defined user satisfaction as a key measure of information system success. User satisfaction in the D&M model can be extended to any web-based service that provides the means for users to interact over the Internet, such as e-mail, an Internet bulletin board, or instant messaging.

The D&M model was intended to be both complete and parsimonious (Petter et al., 2008). In addition to the modifications proposed here, there have been other calls to revise or extend the model (Seddon, 1997). Some researchers have modified it to evaluate the success of specific information systems such as online learning systems (Lin, 2007), knowledge management systems (Kulkarni, Ravindran, & Freeze, 2007; Wu & Wang, 2006), e-Government systems (Wang & Liao, 2008) and e-commerce (DeLone & McLean, 2004; Wang, 2008). Ideally, the D&M model is applicable in a variety of contexts. However, the limits of the model are not well-known or understood. This study modified the D&M IS success model and accepted the recommendation of Fogel and Nehmad (2009), as well as Malhotra, Kim, and Agarwal (2004) to include privacy protection service as a construct. After using a SNS, certain benefits of social interaction will be achieved and the benefits will influence the further use of the online service.

2.2. System quality and information quality

To measure the success of a single system, "information quality" or "system quality" is one of the most important quality components (DeLone & McLean, 2003). A higher system quality is expected to lead to higher user satisfaction and use, thus leading to positive impacts on individual productivity. System quality was measured in terms of ease-of-use, functionality, reliability, flexibility, accessibility, integration, and importance.

The content that a website or information system has, the more successful it will be due to more recurrent visits. This is especially true if an information system constantly adds content on a regular basis, be it articles, news, or opinion pieces. A high degree of information quality increases a website or information system's objectivity or at least the intersubjectivity. Furthermore, information quality was measured in terms of accuracy, context, relevancy, timeliness, completeness, and accessibility (Wang & Strong, 1996).

2.3. Information privacy concern and privacy protection service

Privacy within a SNS is often not expected or goes undefined (Dwyer et al., 2007). Millions of SNS users are subject to privacy threats. Studies have indicated that users express very strong concerns about the privacy of their personal information, but are less than vigilant about safeguarding it (Awad & Krishnan, 2006; Buchanan, Paine, Joinson, & Reips, 2006). Companies are hired not only to watch what individuals visit online, but to infiltrate the information and send advertising to users based on their browsing history.

Social network websites allow users to upload information to a public profile, create a list of online friends, and browse the profiles of other users. Users disclose identity-relevant information via their profile to others. Therefore, the aggregation of large amounts of attributive information on SNS profiles poses new privacy risks.

PPrivacy protection services are provided by several online services that serve to protect a user's personal information (Shin, 2010). For example, privacy settings on Facebook are available for all registered users. The settings available on Facebook include the ability to block certain individuals from seeing their profile, the ability to choose friends, and the ability to limit who accesses pictures and videos. Privacy settings are also available on other SNSs, such as Google+ and Twitter. It is the prerogative of the user to apply such settings when providing personal information on the Internet.