

Developing a Social Media Fit Scale

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Abstract. The main function of a social network service (SNS) is to establish an online community for a group of people who share similar interests and activities, and provides various interactive as connection and contact functions. SNS are considered to be the most popular word of mouth marketing tool at present, and research has shown that that more than 60% of companies will be willing to invest their marketing resources in social media in the future.

While traditional social networks emphasize physical face-to-face relationship, SNS shifts physical social activities to virtual online communities. As a result, SNS platform functions will affect willingness to use the platform to engage in social activities and length of visit. This study develops a social media fit (SMF) scale and uses it as a tool to measure the degree of fit between social task and social media. The SMF scale developed in this study can be used to predict the stickiness of social media.

The research findings show that the SMF scale includes six constructs extracted from technical innovation characteristics, users' psychological factors, and social environment factors. The SMF scale can help SNS operators to understand online community users' willingness to spend their time on a SNS, and it also can be used as a basis for improvement of SNS functions and services. Marketers can also employ the SMF scale to understand target customers' willingness to stay at a specific SNS, and use this information as a basis for social media marketing design.

Keywords: Social network services, stickiness, diffusion of innovations

1. Introduction

The main function of a social network service (SNS) is to provide an online community for a group of people who share similar interests and activities, enabling people to establish connections via various interactive functions such as instant messaging, music sharing, photo sharing, social games, and e-mail service. SNS are also known as social media. At present, the most popular social media include Facebook, MySpace, Twitter, and Plurk, etc.

At present, SNS is considered to be the most popular word of mouth marketing tools (Jansen, Zhang, Sobel, & Chowdury, 2009), and estimates that more than 60% of companies will be willing to invest their marketing resource in social media in the future (Moore & McElroy, 2011; Pookulangara & Koesler, 2011). These studies show that social media has become a new marketing tool, and is creating new business models.

The stickiness of a website refers to a user's degree of willingness to visit a website; a high degree of stickiness indicates that a user is willing to spend more time on a website and also has higher satisfaction (Chen, Wu & Chung, 2008; Wu, Chen, & Chung, 2009). When a SNS's stickiness is high, users are more

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inclined to visit the website, generating good marketing effectiveness. Consequently, the stickiness of a social media can be used as an indicator for SNS marketing effectiveness.

Social network theory suggests that social networks are social entities consisting of people and organizations that are connected by many meaningful relationships. While traditional social networks focus on physical face-to-face relationships (Garton, Haythornthwaite & Wellman, 1997), in contrast, SNS shifts physical social activities to virtual networks, and as a result, the functions of a SNS platform will affect users' willingness to use the platform to engage in social activities and length of visit.

In contrast to traditional social activities, the social activities in a SNS take place in an information technology environment. According to the cognitive fit model, a task's degree of difficulty can be effectively reduced when there is a cognitive fit between problem solving aids and problem solving tasks, which can enhance problem-solving efficiency. The task-technology fit theory proposed by Goodhue and Thompson (1995) indicates that before technology can boost performance, apart from the fact that technology has to be accepted and used willingly, the fit between the technology and the task has to be good. For that reason, if we can understand the degree of fit between social tasks and social media, we will be able to predict users' social effectiveness and their willingness to spend large amounts of time on a SNS.

The objective of this study is to develop a social media fit scale capable of measuring the degree of fit between social tasks and social media, and serving as a tool for prediction of the stickiness of social media. The subsequent content of this study is as follows: Chapter Section 2 explains relevant theoretical basis and scale development, section 3 discusses the research method and data analysis results, and the final section presents findings and conclusions.

2. Theoretical basis and scale development

2.1. Social network services

Boyd and Ellison (2007) defines a SNS as a service based on a network in which (1) users can establish a public or semi-public personal profile in a bounded system, (2) a clear list is used to indicate the connection between an individual user and other users, (3) all users can view or connect their own or other users' lists. The development of SNS is based on Milgram's (1967) six degrees of separation, which states that everyone can contact any other person via six other individuals.

2.2. Use of innovative services

According to Roger (1983), users encounter the five stages of cognition, persuasion, decision, implementation, and confirmation when encountering and accepting a new product or service. During the cognition stage, the five major factors of an innovation's relative advantage, compatibility, complexity, trialability, and observability are the five key factors that will affect acceptance of the innovation. Research has shown that these five characteristics can also be used to predict users' acceptance of innovative services (Taylor & Todd, 1995; Crum et al., 1996; Chen et al., 2002; Bradford & Florin, 2003). Because current SNS platforms business models involve free service and generate their revenue via advertising income, this study eliminates trialability and only uses the four constructs of relative advantage, compatibility, complexity, and observability as the content of its innovative service scale. These constructs' operational definitions are explained as follows:

1. Relative advantage: Compared with the traditional face-to-face social model, the degree of users' perception toward SNS facilitation of social activities.
2. Compatibility: The degree of users' perceived consistency between SNS and traditional social value and needs.
3. Complexity: The degree of users' perceived SNS use difficulty.
4. Observability: The degree to which users perceive that their SNS use results will be observed by others.

2.3. Factors influencing network use behavior

According to Wallace (2001), humans are social animals, and will still have a psychological need for self-affirmation when using virtual networks. Relevant studies have shown that real life behavioral patterns also occur during network use (Sun, Hsieh, & Chen, 2007; Wu, Chen, & Chung, 2008). Table 1 summarizes

the results of recent studies concerning the effect of users' psychological factors and social environment factors on use behavior in a network environment. We found eight major factors that affect network use behavior in Table 1. Among those, achievement, entertainment, sense of existence, and self-efficacy are internal personal psychological factors, while subjective norms, critical mass, social influence, and privacy are external social environment factors. This study therefore divides these eight factors among the scale's psychological factors and social factors.

The operational definitions for the four psychological constructs are as follows:

1. Achievement: The degree of achievement and enjoyment of using a SNS.
2. Entertainment: The degree of happiness and satisfaction of using a SNS.
3. Sense of existence: The degree of self-esteem in a SNS while immersed in the SNS environment and subjective consciousness.
4. Self-efficacy: The degree to which one believes that one is able to attain a certain goal via a series of social activities in a SNS.

The operational definitions for the four social environment constructs are as follows:

1. Subjective norms: The degree to which a user perceives other important related parties' acceptance of his/her behavior when using a SNS.
2. Critical mass: The degree to which a user perceives that users in a SNS have reached a certain number and the SNS will expand successfully.
3. Social influence: The degree to which a user perceives that the individual's SNS use behavior is affected by other people.
4. Privacy: The degree to which a user perceives that he or she has the right and ability to control and manage his/her personal information.

3. Research method and analysis results

This study employed an online questionnaire survey to collect data, and this survey was aimed at SNS users. A total of 342 valid respondents were obtained. Among those, 180 were males and 162 were females, which can be considered a roughly equal gender ratio. The majority of users were between age 21 and 25 (67.25% of the total sample), followed by between 26 and 30 (22.22% of the total sample). As for educational level, 94.74% of respondents possessed a college degree.

3.1. Reliability and validity analysis

The factor loading of all observed variables in this study was greater than 0.5, and the Cronbach's α coefficient of all constructs was greater than 0.7. The average AVE of each construct was between 0.71 and 0.96, and AVE square root was between 0.84 and 0.98, which was greater than the shared variance among constructs. Because of this, this study scale possesses very high reliability and validity.

3.2. Nomological validity testing

The effect of the constructs on each level of the SMF scale on SNS stickiness was used to test nomological validity. The sub-constructs of technical innovation characteristics, users' psychological factors, and social environment factors were applied to stickiness to conduct regression analysis, and the results showed that only subjective norms, critical mass, entertainment, sense of existence, relative advantage, and compatibility had significant influence on stickiness.

Maximum likelihood (ML) was used to analyze the goodness of fit of the above six constructs. The goodness of fit indexes were GFI=0.993, AGFI=0.991, NFI=0.992, CFI=0.997, RMSEA=0.043 and SRMR=0.038. The ratio of chi-square and degree of freedom was 2.84, which indicates that this study's model possessed outstanding goodness of fit.

4. Conclusion

This study developed an SMF scale consisting of the six constructs of technical innovation characteristics, users' psychological factors, and social environment factors, etc. These constructs can be used to measure the degree of fit between users and SNS, and predict users' stickiness toward a SNS. A SMF scale

can help SNS operators to understand network users' willingness to use and spend time on a SNS, and it also can be used as a basis for improving SNS functions and services. As for marketers, a SMF Scale can be used to understand target customers' willingness to stay at a specific SNS, and can also be used as a basis for social media marketing design.

Table 1: Summary of network use behavior research

Author	Theoretical basis	Major constructs	Major conclusions
Schunk (1989)	Motivation	Achievement, self-efficacy, motivation	When an environment can provide a better self-efficacy and sense of achievement, users will have greater motivation to stay in this environment.
Novak, Hoffman and Yung (2000)	Flow	Flow, existence, time distortion, entertainment, participation, interaction	The easier it is for users to perceive a sense of existence from a website, the easier they will flow in the website. These two have a very close correlation.
Jung et al. (2002)	Computer-Mediated Communication	Achievement, social interaction, perceived learning effectiveness, learning experience, attitude	When a student receives a greater sense of achievement, his/her willingness to participate in social interaction will be more active and so will be his/her willingness to share personal experiences on a website.
Hsu and Chiu (2004)	Theory Of Planned Behavior	Self-efficacy, subjective norm, entertainment, perceived risk, intention, use	Users will have better use attitude when the service of a website can provide greater entertainment. Furthermore, the more subjective norms a user receives, the more positive the user's attitude toward the website service will be.
Hsu and Lu (2004)	Technology Acceptance Model and Flow	Flow, perceived critical mass, social influence, social norm, attitude, perceived usefulness, perceived ease of use, intention	When a player experiences perceived critical mass toward an online game, the player will have a more positive attitude and intention toward the game. Furthermore, the more a player experiences flow toward an online game, the more the player will have a positive attitude toward the game.
Sun, Hsieh and Chen (2007)	Meta Analysis	Personality traits, behavior, environment	A player has the tendency to pursue sense of achievement through intense online game play.
Wu, Chen, and Chung (2008)	Trust Building Model	Privacy, stickiness, society sense of existence, trust belief, word of mouth effect	A website's privacy policy and sense of existence of virtual network members can affect the members' degree of trust toward the network.
Lopez-Nicolas et al. (2008)	Technology Acceptance Model	Social influence, media influence, perceived flexibility benefit, perceived status benefit	The social influences received by people will induce an accepting attitude toward innovative mobile services. Social influence can give people's mobile service flexibility and status benefit.
Lee and Chen (2010)	Theory Of Planned Behavior	Self-efficacy, entertainment, sense of existence, purchase, intention, sense of control, time distortion, perceived usefulness	Factors such as self-efficacy, sense of entertainment, sense of existence, subjective norms, and time distortion all positively affect attitude toward online purchases, and perceptions of online shopping websites will affect the customer's intention to visit next time.
Baturay and Bay (2010)	Problem-Based Learning	Self-efficacy, self-adjustment	Students who have higher self-efficacy will have higher learning effectiveness, a greater sense of connection among themselves, and will be less likely to reject the instructional system.
Wu, Wang and Tsai (2010)	The Uses And Gratifications Theory	Gratification, sense of existence, service mechanism, motivation of continuous use, active stickiness	The initial gratifying experiences a player receives in an online game will affect his/her motivation to continue to play this game. The greater a player's motivation to continue, the greater the tendency for the

			player to develop active stickiness toward this game.
Teng (2010)	Immersion Satisfaction	Immersion of gratification, individualization, degree of loyalty	Immersion and sense of existence share the same correlations. The more a player experiences sense of existence in an online game, the greater the immersion the player will feel in the game.
Zhu, Benbasat and Jiang, (2010)	Media Richness Theory	Sense of existence in a society, guidance support, communication support, cooperation efficiency	Customers will receive a greater sense of existence via voice support, and a greater sense of existence can increase customers' willingness to engage in online shopping.

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