

THE ENGAGEMENT OF SOCIAL MEDIA IN FACEBOOK: THE CASE OF COLLEGE STUDENTS IN THAILAND

Apiwan Thumsamisorn¹ and Nattharika Rittippant²

Abstract

Online engagement refers to an active relationship with the brand by website or other computer mediated environments. Furthermore, the growing popularity of social media in Thailand has drawn the great attention for consumers. This study explores the success factors for using social media in terms of quality issues. The DeLone and McLean information systems success model is used as a theoretical model to investigate how the different quality dimensions affect the social network users' satisfaction, behavioral intention, and social media engagement. In this study, data have been collected from 277 college students by survey method. The results revealed that information quality and system quality are crucial factors to determine user satisfaction and behavioral intention which directly affect the online engagement. The findings are important for businesses to implement Facebook as their social media's tools.

Keywords: D&M IS success model, facebook, social media, Thailand

Introduction

Social networks have changed the way people access and interact with internet-based information. In commerce activities and economic development, social networks play a crucial role to increase the popularity of products and services by augmenting transaction between business and communities via social networking sites. One of the most popularity social networking sites is Facebook (Alexa, 2010). The intensity of usage and popularity of Facebook in Thailand has formed the new way of collaboration and communications. Facebook provides advantages such as ubiquity, immediacy, convenience, and social interaction in real time manner (Zhou et al., 2010).

The ability to align technology with business strategies is the critical issues for companies. They can evaluate the employment of social networking sites as their social media with the purpose of satisfying their customers' needs and keep them visiting to their social media regularly. Thus, DeLone and McLean Information System (D&M IS) success model has been used for measuring the IS effectiveness (DeLone and McLean, 2003). Facebook usage as social media for business has the magnificent impact toward company in order to encourage users to adopt and continue to use the particular system (Zhou et al., 2010).

To identify the factors of successful social networking sites, the factors such as information quality, service quality and system quality are the key determinant for success of social networking sites adopted by DeLone and McLean model which can be used to

¹ School of Management Technology, Thammasat University, 131 Moo 5, Tiwanont Road, Bangkok, Muang, Pathumthani, 12000, Thailand, Tel: +66-2-5013505 Extension 2103, Fax: +66-2-5013505 Extension 2101.

² Lecturer, School of Management Technology, Thammasat University, 131 Moo 5, Tiwanont Road, Bangkok, Muang, Pathumthani, 12000, Thailand, Tel: +66-2-5013505 Extension 2103, Fax: +66-2-5013505 Extension 2101, E-mail: natthari@siit.tu.ac.th.

determine behavioral intention to use and user satisfaction resulted as the antecedents of the effectiveness. In this context, the factor such as engagement has been our focal study in order to measure the effectiveness of using Facebook as social media. With respect to the definition of online engagement, it refers as “a cognitive and affective commitment to an active relationship with the brand by website or other computer mediated environments designed to communicate the brand value resulted in satisfying instrumental value and emotional value (Mollen and Wilson, 2010)”.

Hence, there has been a little or no research on Facebook upon D&M IS success model. The objective of this study is to explore how the different quality dimensions affect the social network users’ satisfaction, intention to use, and social media engagement. The survey method is used to evaluate the six determinant factors; service quality, information quality, system quality, user satisfaction, behavioral intention. The target group will focus on college students.

Our research proceeds as follows. Section Two comprises of a review of past studies. Our proposed hypotheses and model in Section Three focus on the relationships between dimensions represented the key success of social media. Section Four explains our research methodology. The results of each model are provided in Section Five. The paper concludes with discussion and conclusion in Section Six and Seven.

Literature Review

Social Media, Social Networking and Facebook,

Mangold and Faulds (2009) have defined the term of social media, consumer-generated media, as a new sources of online information that were created by consumers intent about products, brands, services, personalities and issues, blogs, company-sponsored discussion boards, chat rooms, podcasts, social bookmarking sites and social networking sites are the application for social media (Mangold and Faulds, 2009). According to the meaning of social networking sites refers as “website that encourages social interaction though profile-based user accounts” (Keenan and Shiri, 2009). Another meaning of social networking websites can be described by Boyd and Ellison (2007) whose indicated that “social network sites can be defined as web-based services that allow individual to (1) construct a public or semi-public profile within a bounded system (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system”. According to Alexa.com (February, 2010), Facebook is the most popular social networking sites in Thailand. Therefore, this study has been heavily focused on Facebook. Because the cost of acquiring new customer is five times compared with retaining the existing customer. Thus, it emphasizes that customer relationship management has played important role. Generally speaking, customer relationship management (CRM) has been introduced and significantly become vital for business (Greenberg, 2009). Theoretically, CRM is defined as attracting, maintaining and enhancing customer relationships by communicating with customers individually (Berry, 1983). Thus, many companies adopt Facebook as their business tools.

DeLone and McLean Information System Success Model

The DeLone and McLean Information System success model (D&M IS success model) has been explored by DeLone and McLean (1992) to illustrate the comprehensive causal-relationship model for information systems which can be used to identify the antecedents of IS success and their impacts. D&M IS success model has proposed six dimensions:

system quality, information quality, IS use, individual impact and organizational impact. Based on the past studies, Shannon and Weaver (1949) have studied three level of success communication which are technical level, semantic level and effectiveness level. Consequently, The D&M model can be used to explain the relationship of determinant for the success communication by Shannon and Weaver (1949). System quality measures technical success, information quality measures semantic success and user satisfaction, IS use, individual impact and organizational impact measures the effectiveness. Consequently, the updated model from DeLone and McLean's (2003) has been called "the updated D&M IS success model". In 2003, the new factors "Service Quality" and "Net Benefit" have been added to the model. The updated D&M IS success model has been contributed to the context of e-commerce in order to evaluate the success of their e-commerce systems. However, there are past researches about the updated D&M IS Success Model in several IS fields (Lin and Lee, 2006; Lee and Chung, 2009). In online communities, Lin and Lee (2006) have been investigated the key success in online community. "Member loyalty" has been included as key success factor instead of "net benefit" which is used to measure the involvement in an online community regarding to the perception in quality. Lee and Chung (2009) has been researched the D&M IS Success model for users' interface design for mobile banking industry in Korea. Lee and Chung (2009) explored how interface design quality measures have direct impacted toward their customers' trust in and satisfaction which are their key success factors. Hence, this study builds upon the social media context. Therefore, quality dimensions of social networking sites, which are one of the reasons why people use social media, are needed to be addressed as factors that would increase the engagement toward social media.

Engagement

Prior to O'Brien (2010), engagement is the users' perceptions of the experiences as worthwhile, successful and users will certainly do it in the future. Moreover, the result shown that individual's experience has been viewed as the value added element in economic sense. In order to strengthen the relationship with customer, social media is the mechanisms that can gain the competitive advantages for online marketing. Engagement should be related with the satisfaction of instrumental value (e.g. utility and relevance) which may consequently turn to emotional bonding or impact (Mollen and Wilson, 2010). Additionally, Engagement can be described as "loyalty beyond reason". Prior to past studies, the impact of engagement has been investigated by level of customer's use and the likelihood to share their experience online (Karakaya and Barnes, 2010). In this study, Facebook is considered as a tool for marketing in order to communicate with their customers. Hence, engagement is selected to be the factor that use for determining the effectiveness of using Facebook as a tool for social media.

Service Quality

Service quality is the key determinant factor of online retailer success (Lin and Lee, 2006; Kim et al., 2008). Based on computer-mediated environments, like online communities, service quality has deemed as company's core service infrastructure for company to interact with their customers (Nambison and Watt, 2010). In general, the use of Facebook such as reading on news feed, commenting on wall post, viewing photographs or videos, commenting on photographs or videos are recognized as service quality. Service quality could be measured by interface design, confident in service, prompt service, and

interesting service. Because service quality is referred as the point of contact represented the image for the company (Lee and Chung, 2009). In social media context, service quality is considered as key determinant for online success.

Information Quality

Regarding to DeLone and McLean (2003), information quality is factor that involved with e-commerce content that can keep user to visit the site on a regular basis. The quality of information or media content that contained on Facebook's page are favorable to customer in order to visit (Keenan and Shiri, 2009). Literally, the information quality is the information of products or services that system provides (Lee and Chung, 2009). In additions, information quality is the quality of system outputs which is important for customers for making the decisions (Gorla et al., 2010). Thus, the higher quality in information can satisfy customer by increasing the chance for keeping customer to return to the site regularly by providing accurate, timely, useful, completed, and customized information.

System Quality

The meaning of system quality is referred as the desired characteristics of a system (DeLone and McLean, 2003). The system quality represents the system's overall performance (Lee and Chung, 2009). Facebook's system also encourages the ease of use for users (Keenan and Shiri, 2009). According to Gorla et al. (2010), system quality also refers to the quality of information processing which comprises 2 major components. First, the information system excellence is characterized by the state-of-the-art technology for instance, functions and features of the system. Secondly, the information system value which is represented by the user-friendly interface, easy-to-use system and easy-to-maintain system. Regarding to the Facebook system, Facebook always develops the system in terms of key functions, features, and user-friendly interface to facilitate user's lifestyle. Thus, to measure system quality, the variable such as reliability, convenient to access, easy to use and flexibility have been used in order to determine the key success for Facebook use.

Satisfaction

User satisfaction is regarded as "a customer's judgment that consumption of a particular products or services is providing a pleasurable level of fulfillment of the customers' needs, desires and goals" (Johnson et al., 2008). According to Lee and Chung (2008), they have found that user satisfaction is a common measure of IS success because it can be used for measuring the effectiveness of the system. As a result, the development of relationship with service provider could be evolved as the satisfaction such as the prolonged relationship which creates the long-term relationship (Kinard and Capella, 2006) and customer's needs, customer's expectation (Lin and Lee, 2006).

Intention to Use

Intention to use is directly affected by actual behavior represented the intention toward the use of online communities (Lin and Lee, 2006). Moreover, behavioral intention to use is

positively influenced by the perception of quality to engage with Facebook. Since behavioral intention is the factor that affects the success of IS success.

Research Model and Hypothesis

Based on our literature review, we proposed the following hypotheses:

Hypothesis 1: Quality dimensions will positively relate to user satisfaction

Hypothesis 1a: Service quality will positively relate to user satisfaction

Hypothesis 1b: Information quality will positively relate to user satisfaction

Hypothesis 1c: System quality will positively relate to user satisfaction

Hypothesis 2: Quality dimensions will positively relate to intention to use

Hypothesis 2a: Service quality will positively relate to intention to use

Hypothesis 2b: Information quality will positively relate to intention to use

Hypothesis 2c: System quality will positively relate to intention to use

Hypothesis 3: User satisfaction will positively relate to intention to use

Hypothesis 4: User satisfaction will positively relate to engagement

Hypothesis 5: Intention to use will positively relate to engagement

Methodology

The study was recruited for 1-month time frame from February 1st, 2011 until February 28th 2011 in a convenience sample. A sample of 300 questionnaires was distributed to university in Bangkok area. A total of 277 usable questionnaires were returned at 92.3 percent response rate. Since, Greenberg (2009) said that the change was mainly driven by young generations. In Thailand, university students were the group that occupied the highest consumption of the internet. Thereby, this study utilizes survey method with data collected from college students in Thailand.

The statistical package SPSS 18.0 and AMOS 18.0 were used for all data analysis. Firstly, we performed factor analysis which can be used to identify items in construct whether to include or to exclude from the scale (Green and Salkind, 2008). Secondly, the more complex procedures, hypotheses testing were conducted using confirmatory factor analysis in order to predict the overall strength and significant level of engagement and other variables from user satisfaction and behavioral intention which were impacted by service quality, system quality and information quality.

Service quality, information quality, system quality, user satisfaction, behavioral intention, and engagement were the six dimensions that have been used to investigate in this study. We developed 24 items from existing measures based on the work of DeLone and McLean, 2003; Lin and Lee, 2006; Kinard and capella, 2006; Chang and Wang, 2008; Shen and Chiou, 2009, and Karakaya and Barnes, 2010. Three quality dimensions are measured by seven-point likert scale developed from Lin and Lee, 2006 and DeLone and McLean, 2003. Items that have been asked about satisfaction and intention to use were adopted from Kinard and capella, 2006, Chang and Wang, 2008, Shen and Chiou, 2009, and Karakaya and Barnes, 2010. The engagement measure was developed from Karakaya and Branes (2006) by asking the respondents whether they have been “sharing of social media experience toward Facebook” and their “frequency of using Facebook for Social Media to learn about products/services”.

Analysis and Results

Preliminary Analysis

The finding for profile of respondents has summarized as follows. The sample consists of 53.1 percent for female and 46.9 percent for male. The average age was in the range of 18 – 22 years. In education level, there is a great representation from undergraduate students (92.8 %). Over 90 percent of respondents were experienced with the internet more than 3 years. The average experience for Facebook was at 1 – 2 years (39.0%).

For the use of social networking sites, the percentage of using Facebook is accounted for 100 percent. About 79.1 percent were said that they use Facebook every day. Time spent was explained by hour of using Facebook (per day) indicated that 52.7 percent had used Facebook more than 1-5 hours per day. In addition, the average number of friends were 101 – 300 friends (33.9%) and 74.4 percent was demonstrated the average of Fan Pages at the range of 1 – 50 pages.

Instrument Validity and Reliability

To validate the model, factor analysis has been used to summarize the data and identify the underlying relationship (Hair et. al, 1998). As shown in Table 1, it illustrates the results of principle component analysis with varimax rotation and construct reliability.

Table 1. Result of factor analysis and reliability analysis

Constructs	Factor Loading	Cronbach's Alpha
Service Quality		
The features of Facebook has a well-organized appearance	0.817	0.848
Using Facebook for social media is visually appealing	0.806	
Using Facebook for social media instills confidence in customers	0.636	
Using Facebook for social media gives prompt service	0.599	
Information Quality		
Using Facebook for social media provides completed information	0.835	0.881
Using Facebook for social media provides accurate information	0.767	
Using Facebook for social media provides timely information	0.761	
Using Facebook for social media provides useful information	0.724	
Using Facebook for social media is reliability	0.675	
System Quality		
Using Facebook for social media is convenient to access	0.872	0.878
Using Facebook for social media is easy to use	0.847	
Using Facebook for social media has flexibility	0.790	
Using Facebook for social media provides customized information	0.570	
Satisfaction		
Services provided by Facebook can satisfy me	0.858	0.870
Social media via Facebook meets my expectation	0.831	
Overall, I am satisfied with Social Media via Facebook	0.733	
Social media via Facebook try very hard to establish long term relationship	0.574	
Behavioral Intention		
I will spend more time to use Facebook for social media	0.834	0.877
Based on my experience, I am very likely to use Facebook for social media	0.765	
I will recommend that other people use Facebook for Social media	0.655	
I believe it is worthwhile for using Facebook for social media	0.594	
Engagement		
Likelihood of sharing my social experiences toward Facebook	0.884	0.651
Level of using Facebook for Social Media	0.699	
Determinant of using Facebook for social media		0.953

Theoretically, the value of the factor loading that did not pass the recommended suppress level of 0.4 should be removed from the scale (Hair et. al, 1998). The item was asked about “the likelihood to switch to other types of social networking sites for social media” has low loading coefficient. Consequently, it has been suppressed during factor analysis. Moreover some factors have been relocated. One item from information quality that has been asked about the customization in information has been relocated and viewed as system quality. The item, reliability of the system, has been categorized as the characteristics of information instead of system quality. The next step was a reliability analysis. Reliability was tested by the Cronbach’s alpha coefficient. The overall coefficient alpha for the scale is 0.953 which is higher than the recommended cut-off level of 0.6. The value of Cronbach’s alpha coefficient for each scale has high reliability which is above 0.6. Therefore, all constructs passed the test of construct reliability.

Hypotheses Testing

A structural equation modeling (SEM) approach was adopted in our data analysis in order to provide the comprehensive analysis for inter-relationship model (Fornell and Lacker, 1981). We adopted AMOS 18.0 to perform the confirmatory factor analysis to estimate the structural model and the hypotheses. The analysis of SEM to validate the hypothesized model is same as multiple regression analysis. The hypothesized relationships were tested using maximum likelihood estimation. Table 2 has shown the recommended value and actual value of fit indices. The result of structural model analysis has been judged by the

goodness-of-fit indices. The fit indices were as follows: $\chi^2/df = 2.02$, GFI of 0.89, AGFI

of 0.85, CFI of 0.96, NFI of 0.91, RMSEA of 0.06. The fit indices revealed the model has good fitness except for GFI of 0.89 which is slightly low but still acceptable (Gefen et al., 2000).

Table 2. The recommended and the actual values of the fit indices

Fit indices	χ^2/df	GFI	AGFI	CFI	NFI	RMSEA
Recommended values	< 3	> 0.90	> 0.80	> 0.90	> 0.90	< 0.08
Actual values	2.02	0.89	0.85	0.96	0.91	0.06

The hypothesized relationships of constructs based on DeLone and McLean IS model in social media context revealed the result as Figure 2. For measurement perspective, Hair et. al (1998) has been found that the squared multiple correlation show how well an item measures a construct. Note that constructs are unobservable factors that were affected by multiple variables (Hair et at., 1998). To validate the causal model, the degree of fit is reflected by the squared multiple correlations representing the measured variable’s variance that is explained by latent factor regarded as R^2 . The explained variance of satisfaction, intention to use and engagement is 73, 79 and 55 percent respectively. The first hypothesis has predicted the positive relationship between quality dimension, which is service quality (H1a), information quality (H1b), and system quality (H1c), toward

satisfaction. The positive relationship between service quality and satisfaction (H1a) was not supported. Because, the standardized regression coefficient was not significant ($r = 0.083$, $t = 1.28$). The information quality ($r = 0.393$, $t = 6.48$) and system quality ($r = 0.500$, $t = 8.05$) had a positive effect on satisfaction. So, H1b and H1c were supported. A positive relationship between service quality (H2a), Information quality (H2b) and System quality (H2c) and intention to use were not supported regarding to the standardized regression coefficient is not statistically significant as follows: $r = 0.220$, $t = 3.28$; $r = 0.083$, $t = 1.17$ and $r = -0.156$, $t = -1.91$ respectively. The hypothesis predicting a positive relationship between satisfaction and intention to use is the significant paths. The satisfaction was found to be the most significant factor that affects intention to use Facebook for social media ($r = 0.782$, $t = 7.27$), supporting H3. No significant relationship was found between satisfaction and engagement (H4), no supporting H4. Finally, the hypothesis 5 indicates a significant and positive relationship. Intention to use had positive effect on engagement ($r = 0.659$, $t = 3.55$). Thus, H5 was supported.

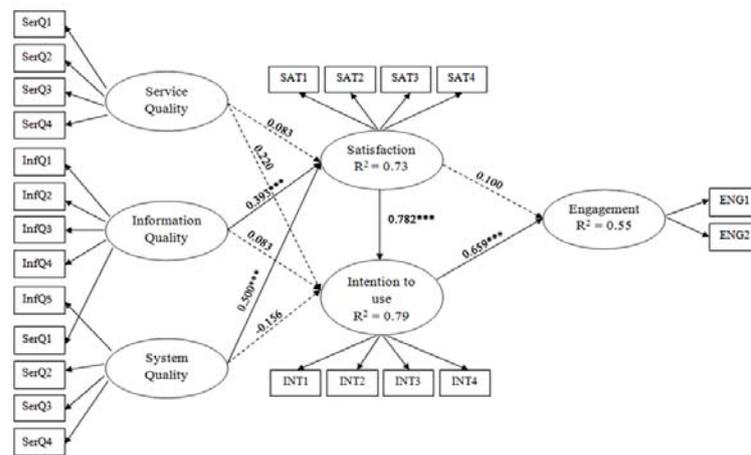


Figure 2. The research model based on DeLone and McLean IS success model

Discussion

The importance of this finding is to see how Facebook as social media tool can engage customer according to the service quality, system quality or information quality through user satisfaction and intention to use IS. Subsequently, DeLone and McLean IS success model has been used in this empirical study to identify the key success in social media context.

Based on DeLone and McLean IS success model, our research model was successfully applied in social media context. The results supported the model and proved the hypotheses. Four out of nine hypothesized relationships were significant. The analysis provided the significant relationships between information quality and satisfaction, system quality and satisfaction, satisfaction and intention to use, and intention to use and engagement. In order to provide satisfaction to customers, the result revealed two folds; information quality and system quality. Information quality is crucial due to the strong relationship to user satisfaction. Information quality is the most interesting determinants from the D&M IS success model. By providing timely information, it would be regarded as the key determinant in order to increase the satisfaction toward the quality of information. In addition, usefulness, accuracy and completeness of information would be the important

terms to be concerned. Compared to information quality, System quality has greater effect on satisfaction. By having a simple, user-generated content environment is important for promoting user to engage. The perception of easy-to-use is the most valued characteristic, especially in social networking sites that affect on user satisfaction. However, problems that might occur with Facebook's system will reduce the quality of the system which, in turn, reduces on satisfaction for users. It appears that the quality dimension has no significant relationship with intended use. The analysis of the structural model revealed that the impact of intended use is mediated via satisfaction. As we hypothesized the relationship of engagement, it was reflected by satisfaction and intention to use. However, the statistical result indicated that the satisfaction has no significant relationship toward engagement. Apparently, the intention to use seems to be the major influence toward engagement.

This research faced multiple limitations. Firstly, the sample was only drawn from college students in Bangkok area in a convenience sample which influenced the pattern of responses. Even though, college students intensively use Facebook for their daily life but this finding may not represent the entire population. Secondly, this study provides the broad perspective of using Facebook for social media. Thus, the scope of the research should be narrowed down (e.g. choosing the interested industry to study). Thirdly, The sample size and model complexity are the important terms to realize in accessing fit of the model. For further study, regarding to D&M IS Success model to other type of social networking sites for social media will be our direction for future research.

Conclusion

In sum, this research which was conducted followed the D&M IS success model was significant statistically using structural equation modeling techniques. The main objective of Facebook or other type of social networking is the connection and relationship between people. The finding addresses the relationship toward three dimension quality that influenced the user satisfaction and behavioral intention which indicated the more chance for consumer to engage by using and spreading their experience through the medium like Facebook. However, it showed that using D&M IS success model as a framework of the study is fitted in determining the quality perceptions toward Facebook in terms of engagement. The major contribution of this study is the benefit toward company in customer relationship management in order to manage the social networking sites such as Facebook as social media applications effectively. Once customers have been engaged with social media via Facebook, it will integrate to consumer's lifestyle. Therefore, the engagement can be viewed as the value added elements in an economic sense.

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