

Social Media Engagement in Facebook: The Case of College Students in Thailand

Apiwan Thumsamisorn*

Nattharika Rittippant**

Abstract

This empirical study aims to investigate the engagement in social media use of college students in Thailand. Since the growing popularity of social media in Thailand has drawn great attention from consumers, many businesses have adopted a Facebook page as a marketing tool to communicate with their customers and potential customers. The DeLone and McLean Information Systems success model is used as a theoretical model to investigate how different quality dimensions affect information system usage. Furthermore, online (i.e., social media) engagement is investigated in this study. Online engagement refers to the active relationship with a brand by a website or other computer mediated communications. Consequently, this study explores the key success factors in using social media such as a Facebook page in terms of quality issues regarding users' satisfaction, behavioral intention, and social media engagement. In this study, data were collected from 277 college students using the questionnaire survey method. The results revealed

* Graduate Student, School of Management Technology,
Sirindhorn International Institute of Technology, Thammasat University,
131 Moo 5, Tiwanont Road, Bangkadi, Muang, Pathumthani, 12000, Thailand.

** Faculty Member, School of Management Technology,
Sirindhorn International Institute of Technology, Thammasat University,
131 Moo 5, Tiwanont Road, Bangkadi, Muang, Pathumthani, 12000, Thailand.

that information quality and system quality were crucial factors in determining user satisfaction and behavioral intention, which directly affect social media engagement.

Keywords: D&M IS Success Model, Engagement, Social Media

การศึกษาการมีส่วนร่วมในสื่อสังคมออนไลน์ ของนักศึกษาระดับอุดมศึกษาในประเทศไทย

อภิวรรณ ธรรมสา米สาร*
นภัสสรา ฤกธิกพยัพันธุ์**

บทคัดย่อ

งานวิจัยในครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาการใช้สื่อสังคมออนไลน์ของนักศึกษาในประเทศไทย เนื่องจากการใช้งานของสื่อสังคมออนไลน์ในสังคมไทยปัจจุบันได้รับความสนใจอย่างแพร่หลาย รวมไปจนถึงภาคธุรกิจต่าง ๆ ที่ได้ให้ความสนใจและเลือกใช้สื่อสังคมออนไลน์ เป็นเครื่องมือทางการตลาดในการติดต่อสื่อสารกับลูกค้า การศึกษาในครั้งนี้ได้พัฒนา มาจากตัวแบบความสำเร็จของระบบสารสนเทศของ DeLone และ McLean จากมิติคุณภาพ ในด้านต่าง ๆ ของสื่อสังคมออนไลน์ที่มีผลต่อการใช้งานของระบบ ทั้งนี้การสร้างส่วนร่วมให้กับลูกค้าผ่านสื่อสังคมออนไลน์จึงถือเป็นปัจจัยสำคัญในการศึกษาวิจัย ความหมายโดยทั่วไปของการสร้างส่วนร่วมออนไลน์ คือ ความล้มพันธ์ทึบruk กับตระสินค้าผ่านทางเว็บไซต์หรือการติดต่อสื่อสารผ่านทางคอมพิวเตอร์ในรูปแบบต่าง ๆ ดังนั้น การศึกษาในครั้งนี้มุ่งเน้นการศึกษา หาความล้มพันธ์ทางด้านคุณภาพต่าง ๆ ของสื่อสังคมออนไลน์ เช่น ที่มีต่อความพึงพอใจในการใช้งานของระบบ พฤติกรรมความตั้งใจต่อการใช้งานของระบบ และการสร้างส่วนร่วมของสื่อสังคมออนไลน์ที่มีผลต่อผู้ใช้งาน การวิจัยนี้เป็นการวิจัยเชิงสำรวจโดยใช้แบบสอบถามที่พัฒนา มาจากการทบทวนวรรณกรรม โดยใช้กสุ่มตัวอย่างที่กำลังศึกษาอยู่ระดับชั้นปริญญาตรี จำนวน 277 คน ผลการวิจัย พบว่า คุณภาพของสารสนเทศ และคุณภาพของระบบเป็นปัจจัยสำคัญที่มีอิทธิพลต่อความพึงพอใจในการใช้งานของสื่อสังคมออนไลน์ และพฤติกรรมความตั้งใจต่อการใช้งานของระบบ ซึ่งล้วนก่อเกิดการสร้างส่วนร่วมระหว่างลูกค้ากับภาคธุรกิจ

* นักศึกษาปริญญาโท ภาควิชาเทคโนโลยีการจัดการ สถาบันเทคโนโลยีนานาชาติสิรินธร มหาวิทยาลัยธรรมศาสตร์ 131 หมู่ 5 ถนนติวานันท์ สวนอุตสาหกรรมบางกะดี ตำบลบางกะดี อำเภอเมือง จังหวัดปทุมธานี 12000 ประเทศไทย

** อาจารย์ประจำ ภาควิชาเทคโนโลยีการจัดการ สถาบันเทคโนโลยีนานาชาติสิรินธร มหาวิทยาลัยธรรมศาสตร์ 131 หมู่ 5 ถนนติวานันท์ สวนอุตสาหกรรมบางกะดี ตำบลบางกะดี อำเภอเมือง จังหวัดปทุมธานี 12000 ประเทศไทย

การวิจัยครั้งนี้จะเป็นแนวทางในการปฏิบัติหรือนำไปประยุกต์ใช้ในการนำสื่อสังคมออนไลน์ให้ประสบความสำเร็จต่อธุรกิจ

คำสำคัญ: การสร้างส่วนร่วม ตัวแบบความสำเร็จของระบบสารสนเทศของ DeLone และ McLean สื่อสังคมออนไลน์

Introduction

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

The ability to align technology with business strategies is a critical issue for companies. They can evaluate the employment of social networking sites as social media with the purpose of satisfying their customers' needs and encouraging them to continue to visit their social media regularly. Thus, the DeLone and McLean Information System success model (D&M IS success model) has been used for measuring information system effectiveness (DeLone and McLean, 2003). Facebook usage as a social medium for business has had an impact on companies in terms of encouraging users to adopt and continue to use a particular system (Zhou et al., 2010).

In order to identify the factors of successful social networking sites, the factors such as information quality, service quality, and system quality can be seen as the key determinants for the success of social networking sites. By adopting the D&M IS success model, these quality factors can be used to determine the behavioral intention to use social media and user satisfaction. This behavioral intention and user satisfaction, in turn, are the antecedents of the social media engagement. In this study, the online engagement factor is used as a proxy to measure the effectiveness of using Facebook as a social medium. Online engagement refers to "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).

The objective of this study is to explore how different quality dimensions affect the social network users' satisfaction, intention to use social media, and social media engagement. The survey method is used to evaluate the six determinant factors: service quality, information quality, system quality, user satisfaction, intention to use social media, and social media engagement. The survey respondents are college students in Thailand.

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

Literature Review

Social Media, Social Networking, and Facebook

Mangold and Faulds (2009) have defined term social media as a new source of online information created by consumers about products, brands, services, personalities and issues. Blogs, company-sponsored discussion boards, chat rooms, podcasts, social bookmarking sites, and social networking sites are the examples of social media (Mangold and Faulds, 2009). Social networking sites refer to "websites that encourage social interaction through profile-based user accounts" (Keenan and Shiri, 2009). Another definition of social networking websites has been offered by Boyd and Ellison (2007) 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 the statistics, Facebook is the most popular social networking site in Thailand (Alexa, 2010). Because the cost of acquiring new customers is five times more expensive than retaining existing customers, it should be emphasized that customer relationship management has an important role. Generally speaking, customer relationship management (CRM) has been introduced to and has become vital for businesses (Greenberg, 2010). Theoretically, CRM is defined as the attracting,

maintaining and enhancing of customer relationships by communicating with customers individually (Berry, 1983). Thus, many companies have adopted Facebook as a CRM-related business tool.

DeLone and McLean Information System Success Model

The D&M IS success model has been explored by DeLone and McLean (1992) to illustrate a comprehensive causal-relationship model for information systems which can be used to identify the antecedents of IS success and their impacts. According to the past literature, the D&M IS success model has proposed six dimensions: system quality, information quality, user satisfaction, IS use, individual impact, and organizational impact (DeLone and McLean, 1992). Based on Shannon and Weaver's (1949) study, three hierarchical levels in the communication system are the technical level, the semantic level, and the effectiveness level. Consequently, the D&M IS success model can be used to explain the relationships among the six dimensions within the information system. System quality measures technical success, and information quality measures semantic success and user satisfaction. Further, IS use, individual impact, and organizational impact measure effectiveness. Therefore, the D&M IS success model has been revised and has been called the updated D&M IS success model (DeLone and McLean, 2003). Service quality and net benefit were added as new factors to the model. The updated D&M IS success model has contributed to the context of e-commerce in terms of evaluating the success of e-commerce systems. Many researchers have utilized the updated D&M IS success model in several IS research studies (e.g., Lin and Lee, 2006; Lee and Chung, 2009). Lin and Lee (2006) have investigated the key success factors in the online community. Member loyalty was included as a key success factor instead of net benefit, which is used to measure the involvement in an online community regarding the perception in quality. Lee and Chung (2009) have researched the D&M IS success model for the design of the users' interface in Korea's mobile banking industry. They also explored how the interface design quality measures have a direct impact on customers' trust and satisfaction.

Service Quality

Service quality is one of the key factors of online retailer success (Lin and Lee, 2006; Kim et al., 2008). Based on computer-mediated environments, (e.g., online communities), service quality is deemed as a company's core service infrastructure for a company to interact with the customers (Nambisan and Watt, 2010). In general, the use of Facebook, such as reading news feeds, commenting on wall posts, viewing and commenting on photographs or videos, is recognized as service quality. Service quality could be evaluated in terms of interface design, confidence in service, service promptness, and service attractiveness. Service quality refers to the point of contact which represents the image of the company (Lee and Chung, 2009).

Information Quality

According to DeLone and McLean (2003), information quality is a factor involved with e-commerce content that can attract users to visit the site on a regular basis. The quality of information or media content on Face book page must be able to draw the customers' attention in order to visit the page (Keenan and Shiri, 2009). Literally, the information quality is the information of products or services that the system provides (Lee and Chung, 2009). In addition, information quality is the quality of the system outputs, which is important for customers' decision making process (Gorla et al., 2010). Thus, higher-quality information that is accurate, timely, useful, complete, and customized can increase the chance of customers returning to the site regularly.

System Quality

System quality refers to the desired characteristics of a system (DeLone and McLean, 2003). The system's quality is a measure of its overall performance (Lee and Chung, 2009). Gorla et al. (2010) defined system quality as the quality of information processing which comprises two major components. First, the information system excellence is characterized by the state-of-the-art technology, for instance, functions and features of the system. Second, the information system value is represented by the user-friendly interface, and the easy-to-use and easy-to-maintain system. In terms of the Facebook system, Facebook always develops

the system based on key functions, features, and user-friendly interfaces to facilitate user's lifestyle. In order to measure system quality, variables such as reliability, convenient access, ease of use, and flexibility must be used in order to determine the key success factors for Facebook use.

User Satisfaction

User satisfaction is defined as "a customer's judgment that consumption of a particular product or service is providing a pleasurable level of fulfillment of the customers' needs, desires and goals" (Johnson et al., 2008). According to Lee and Chung (2009), 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 a relationship with the service provider could be fostered in order to increase the satisfaction. Such a prolonged relationship can create long-term, satisfying business-to-customer relationships (Kinard and Capella, 2006) and improve customers' needs and expectations (Lin and Lee, 2006).

Intention to Use Social Media

The term "intention to use" can be defined as members' intention to use online communities (Lin and Lee, 2006). "Intention to use" is one of the constructs in the D&M IS success model. Therefore, the intention to use social media is positively influenced by the perception of quality (Lin and Lee, 2006) and will be the antecedent of the engagement with the social media (Karakaya and Barnes, 2010).

Social Media Engagement

Prior to O'Brien (2010), "engagement" was considered to be the users' perceptions of the experiences as worthwhile and that users would certainly engage in that experience again in the future. Moreover, it has been shown that an individual's experience has been viewed as the value added element in an economic sense. In order to strengthen the relationship with customers, social media are a mechanism to increase competitive advantages for online marketing. Engagement should be related to the satisfaction of instrumental value (e.g. utility

and relevance), which may consequently turn into emotional bonding or impact, such as “loyalty beyond reason” (Mollen and Wilson, 2010). In past studies, the impact of engagement has been measured by the level of customers’ use and the likelihood to share their experience online (Karakaya and Barnes, 2010).

Research Model and Hypothesis

In this study, Facebook is considered as a social media tool for marketing in order to communicate with customers. Hence, social media engagement is used as a proxy for determining the effectiveness of social media usage. This study utilizes the D&M IS success model in the social media context. Figure 1 shows the framework of the relationships, consisting of service quality, information quality, system quality, user satisfaction, intention to use social media, and social media engagement which are acquired from the D&M IS model’s framework. Beginning with the first tier, service quality, information quality, and information quality together will influence the user’s satisfaction. Likewise, all three factors of quality will determine the intention to use social media. Furthermore, in the second tier, user satisfaction will affect the intention to use social media. The engagement with social media is, therefore, affected by user satisfaction and intention to use social media in the last tier. Based on our literature review, hypotheses were developed as follows:

Hypothesis 1: Quality dimensions are positively related to user satisfaction.

Hypothesis 1a: Service quality is positively related to user satisfaction.

Hypothesis 1b: Information quality is positively related to user satisfaction.

Hypothesis 1c: System quality is positively related to user satisfaction.

Hypothesis 2: Quality dimensions are positively related to the intention to use social media.

Hypothesis 2a: Service quality is positively related to the intention to use social media.

Hypothesis 2b: Information quality is positively related to the intention to use social media.

Hypothesis 2c: System quality is positively related to the intention to use social media.

Hypothesis 3: User satisfaction will positively relate to the intention to use social media.

Hypothesis 4: User satisfaction is positively related to social media engagement.

Hypothesis 5: Intention to use social media is positively related to social media engagement.

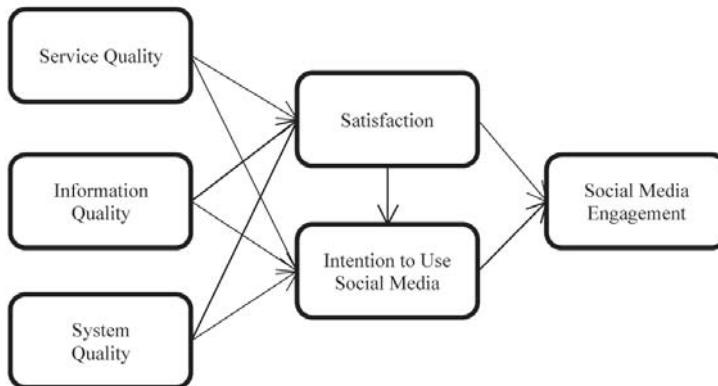


Figure 1: The Research Model

Methodology

The study was conducted during a 1-month time frame from February 1st, 2011 until February 28th, 2011 using a convenience sample. A sample of 300 questionnaires was distributed to college students in the Bangkok metropolitan area. A total of 277 usable questionnaires were returned at a 92.3 percent response rate. We focused on college students based on Greenberg's paper (2010), which stated that change was mainly driven by the young generation. In Thailand, college students are the group that has the highest consumption of the Internet. Therefore, this study utilizes a survey method with data collected from college students in Thailand.

The statistical package SPSS 18.0 and AMOS 18.0 were used for data analysis. Descriptive statistical analysis was used to summarize the profile of the respondents. We performed confirmatory factor analysis to analyze the validity and reliability of the factors which could be used to confirm the items in our constructs (Green and Salkind, 2008). The hypothesis testing was conducted using a Structural Equation Modeling (SEM) technique in order to predict the overall strength and significance level of the proposed relationships.

Service quality, information quality, system quality, user satisfaction, behavioral intention, and social media engagement are the six dimensions that we investigated in this study. We developed twenty-four items from the 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 (2010) and Karakaya and Barnes (2010). Three quality dimensions were measured using a seven-point likert scale developed from Lin and Lee (2006) and DeLone and McLean (2003). Items that focused on user satisfaction and intention to use social media were adopted from Kinard and Capella (2006), Chang and Wang (2008), Shen and Chiou (2010), and Karakaya and Barnes (2010). The social media engagement measure was developed from Karakaya and Branes (2010) by asking the respondents whether they have been “sharing their Facebook social media experience” and about their “frequency of using Facebook as a social medium to learn about products/services.”

Analysis and Results

Preliminary Analysis

The profile of the respondents can be summarized as follows. The sample consists of 53.1 percent females and 46.9 percent males. The average age was in the range of 18-22 years. There was a great representation from undergraduate students (92.8%). Over 90 percent of the respondents had more than 3 years' experience with the Internet. The average experience with Facebook was at 1 to 2 years (39.0%). In terms of the use of social networking sites, the percentage of respondents using Facebook accounted for 100 percent. Approximately 79.1 percent of the respondents answered that they use Facebook every day. Regarding the time spent using Facebook, 52.7 percent of the respondents had used Facebook more than 1-5 hours per day. In addition, the average number of friends were 101 to 300 (33.9%), and 74.4 percent followed Facebook pages in the range of 1-50 pages.

Confirmatory Factor Analysis

Table 1 illustrates the results of the principle component analysis with varimax rotation and construct reliability. Theoretically, to measure the validity of the constructs, the value of the factor loading that did not pass the recommended suppress level of 0.40 should be removed from the scale (Hair et al., 1998). The item which asked about “the likelihood to switch to other types of social networking sites for social media” had a low loading coefficient. Consequently, it was suppressed during social media factor analysis. One item from social media information quality construct that asked about the customization of information was relocated and included in social media system quality construct. The reliability of the system was categorized as an item in the information quality construct instead of the system quality construct. The next step was the reliability analysis.

Reliability was tested using Cronbach's alpha coefficient. The overall coefficient alpha for the scale was 0.953, which is higher than the recommended cut-off level of 0.60. The value of Cronbach's alpha coefficient for each scale had a high reliability, above 0.60. Therefore, all constructs passed the test of construct reliability.

Table 1: Results of Factor Analysis and Reliability Analysis

Constructs	Factor Loading	Cronbach's Alpha
Service Quality		
Facebook features have 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 complete 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 reliable.	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	
User Satisfaction		
The services provided by Facebook satisfy me.	0.858	0.870
The social media via Facebook meet my expectations.	0.831	
Overall, I am satisfied with the social media via Facebook.	0.733	
The social media via Facebook try very hard to establish a long-term relationship with me.	0.574	
Intention to Use Social Media		
I will spend more time using Facebook as a social medium.	0.834	0.877
Based on my experience, I am very likely to use Facebook as a social medium.	0.765	
I will recommend other people to use Facebook as a social medium.	0.655	
I believe it is worthwhile to use Facebook as a social medium.	0.594	
Social Media Engagement		
Likelihood of sharing my social experiences on Facebook	0.884	0.651
Level of using Facebook as a social medium	0.699	
Determinant of using Facebook as a social medium		0.953

Hypothesis Testing

A structural equation modeling (SEM) approach was adopted in order to provide an comprehensive analysis of the causal relationship model (Fornell and Lacker, 1981). We adopted AMOS 18.0 to perform the hypothesis testing. The hypothesized relationships were tested using maximum likelihood estimation. Table 2 shows the recommended value and actual value of the fit indices. The results of the structural model analysis were judged by the goodness-of-fit indices. The fit indices are shown 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 that the model had good fitness except for GFI of 0.89, which was slightly below the acceptable range but still indicated a good fit (Gefen et al., 2000).

Table 2: The Recommended and 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 the constructs were based on the D&M IS success model in the social media context (Figure 2), where the significant relationships are represented with bold lines and the insignificant relationships are represented with dash lines. The values of explained variance (R^2) for user satisfaction, intention to use social media, and social media engagement were 73, 79 and 55 percent, respectively. The first hypothesis predicted that there is a positive relationship between quality dimensions and user satisfaction. Since the value of the critical ratio (t-value) for service quality was less than 1.96, it was not statistically significant ($\beta = 0.083$, t -values = 1.28). Therefore, H1a was not supported. The information quality ($\beta = 0.393$, t -values = 6.48) and system quality ($\beta = 0.500$, t -values = 8.05) were statistically significant ($p < 0.001$), which resulted in positive effects on user satisfaction. Therefore, H1b and H1c were supported. The second hypothesis proposed that there is a positive relationship between service quality (H2a), information quality (H2b), system quality (H2c), and intention to use social media. Only service quality ($\beta = 0.220$, t -values = 3.28) was statistically significant at the 0.01 level, supporting H2a. The information quality and system

quality had no relationship with intention to use social media. Due to the fact that the values of critical ratios or *t*-values were not statistically significant (*t*-value < 1.96) as follows: $\beta = 0.083$, *t*-values = 1.17 and $\beta = -0.156$, *t*-values = -1.91, H2b and H2c were rejected. The third hypothesis, which predicted the relationship of user satisfaction and intention in using social media, was positive and significant at the 0.001 level ($\beta = 0.782$, *t*-values = 7.27), supporting H3. Furthermore, no significant relationship was found between user satisfaction and social media engagement ($\beta = 0.1$, *t*-values = 0.59), rejecting H4. Finally, the relationship between social media engagement and intention to use social media was at a significant level ($\beta = 0.659$, *t*-values = 3.55, *p* < 0.001), supporting H5.

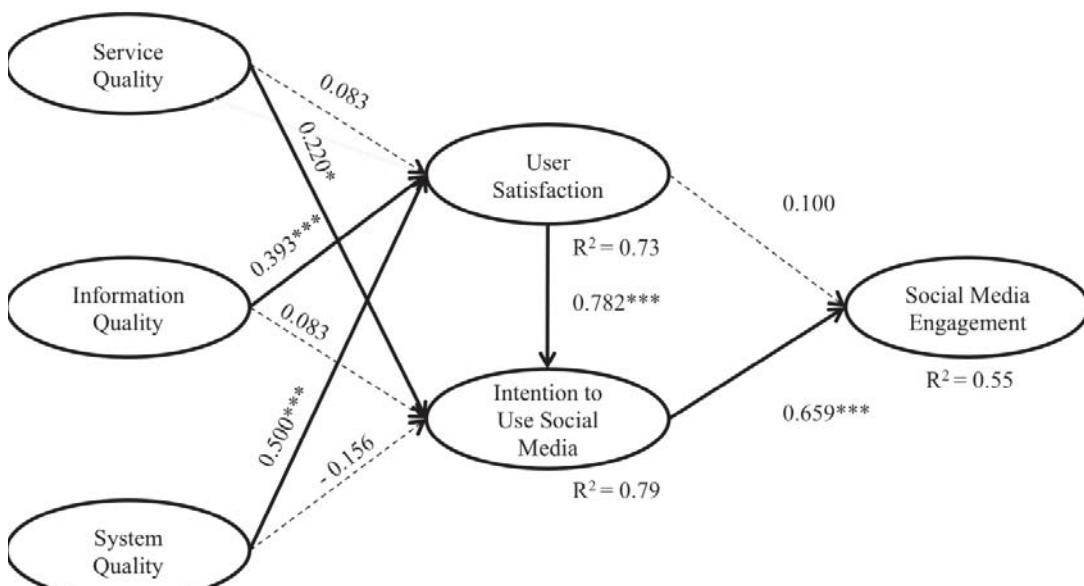


Figure 2: The Research Model based on the DeLone and McLean IS Success Model

Discussion

Based on the D&M IS success model, our research model was successfully applied in the social media context. The results supported the model and proved the hypotheses. Five out of nine hypothesized relationships were significant. The main objective of this study was to investigate whether system quality, service quality, and information quality impact key success measures, which were user satisfaction, intention to use social media, and social media engagement.

For user satisfaction, the results revealed that information quality and system quality have positive effects on user satisfaction. This is consistent with previous study by Lin and Lee in 2006. Information quality is crucial due to its strong relationship with customer satisfaction. Providing informative, useful, and accurate information can increase the level of user satisfaction. The quality of the system in the social media environment is also important in terms of satisfying users' needs. The system should be easy-to-use, convenient to access, flexible, and also contain customized features. However, any problems that might occur will reduce the quality of the system which, in turn, reduces the satisfaction of users. Apparently, there is no direct relationship of service quality with user satisfaction. Although information quality and system quality had no direct relationship with the intention to use social media, the analysis of the structural model revealed that the impact of information quality and system quality on intention to use social media was mediated via user satisfaction.

Based on our results, it was seen that there is a positive relationship between service quality and intention to use social media. In fact, service quality is the only factor among the three quality dimensions that directly affected the intention to use social media. In other words, to promote the users' intention to use social media, service quality is crucial. In the social media context, the customer services should be visually appealing, responsive to the online community, and have well-organized structure and prompt service. The use of Facebook, such as reading news feeds, commenting on wall posts, viewing and commenting on photographs or videos, is recognized as service quality. Therefore, service quality is an important factor in increasing the level of intention to use social media directly. Furthermore, the empirical results also indicated that user satisfaction had a significant influence on the intention to use social media. This is consistent with previous study by Petter et al. (2008), which found that a greater level of user satisfaction resulted in greater use of the system. Therefore, it is reasonable to conclude that satisfied customers will have greater intention to use Facebook as a social medium.

Regarding social media engagement, the findings of this study demonstrated that the intention to use social media was the only factor that has directly affected

the social media engagement. Even though there was no significant relationship between user satisfaction and social media engagement, user satisfaction had an indirect effect on the engagement with social media, mediated by the intention to use social media. Hence, engagement in social media encourages the development of brand value and relationship building with customers more effectively than the traditional marketing model (Harris and Rae, 2009).

Conclusion

In summary, this research, which utilized the D&M IS success model, has shown statistically-significant structural equation modeling results. The findings address the three dimensions of quality that influence user satisfaction and behavioral intention. Higher quality increases the chance of customers becoming more engaged by using and spreading their experience through a medium such as Facebook. It also showed that adopting the D&M IS success model as a framework was suitable in determining the quality of perceptions toward Facebook in terms of social media engagement. The major contribution of this study is the benefit for a company in customer relationship management so that they can manage the social networking sites, such as Facebook, effectively. Once customers have been engaged with a social medium such as Facebook, it becomes a part of their lifestyle. For this reason, social media engagement can be viewed as the value added element for a more effective CRM.

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