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Abstract

Micro-group is a commonly used function provided by most of China micro-blog platforms though which friends or people with common interests can share conversations like an online community. In this study, we draw from established socio-technical theory in Information Systems to develop an integrated model of customers' adherence to micro-groups from the view of switching cost. The results of the empirical analysis confirmed that switching cost increases when the user perceived that the system was secure, full-functional or when there is a high level of network size, information value and network status. In the same way, greater switching cost was also found to have a positive influence on user adherence to micro-groups. Based on the findings, strategies to help micro-group site develop an enhanced "lock-in" effect are proposed.

Keywords: micro-group, switching costs, socio-technical theory, adherence

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1. INTRODUCTION

Micro-group is a relatively new concept in micro-blog sites, implemented by most China micro-blog service providers (Agritoglio et al., 2010; Ebner et al., 2010; Günther et al., 2009). Micro-blog sites allow users to open up to several micro-groups, in which friends or people with common interests can share conversations like an online community (Agritoglio et al., 2010; Ebner et al., 2010). Micro-groups are also very useful in spreading news and knowledge (Günther et al., 2009). According to the data released by CNNIC, the number of micro-blog user reaches 280 million by the end of 2013 and micro-group has become one of the most commonly used functions over micro-blog sites. In order to be sustainable, micro-groups need to attract new members and keeping the users in them, previous research on the success factors for attracting members of micro-blogs swayed to either technical or network aspects (Teo et al., 2003; Trist, 1963; Wu et al., 2007; Yoo, 2010). However, in the micro-group context, the value is created by members themselves, and the platform is in turn enabled by the technologies. Micro-groups emphasize user's interaction and involvement (Cheung and Lee, 2010; Ebner et al., 2010; Trist, 1963). Users are the key to a successful micro-group platform. Without users' usage, micro-groups would be a cyberspace filled with empty pages (Günther et al., 2009). There has been a significant proliferation in the number of micro-group and micro-blog research (Agrifoglio et al., 2010; Cheung and Lee, 2010; Ebner et al., 2010; Günther et al., 2009; Zhang et al., 2011). However, most studies proposed their research models from technical aspects (Teo et al., 2003; Trist, 1963; Wu et al., 2007; Yoo, 2010). Thus, we need an integrated view by combing the technical and network resource views to develop strategies to attract members and lock-in existing members for a sustainable growth (Trist, 1963). Understanding the determinants of switching cost and its influence on adherence to micro-group platforms are important because such efforts will not only contribute to the advancement of information systems literature but also shed light on developing effective strategies to promote the success possibility of micro-groups.

2. RESEARCH BACKGROUND

2.1 Socio-technical Theory

Origin of socio-technical theory can be traced back to the work of the Tavistock Institute in London during the 1950s and 1960s (Trist, 1963). The theory asserts the need for a fit between the technical sub-system and the social sub-system which together make up an organization, and emphasizes that successful systems require the simultaneous configuration of technical, organizational, and social aspects of the system (Trist, 1963). The term "socio-technical" was initially introduced by Trist (1963) to emphasize the interrelationship between social factors and technological factors in understanding an organization. A micro-group platform is identified as a socio-technical system which connects people socially, thus, it's imperative to take an integrative view in promoting usage of micro-group services by considering socio-technical factors reflecting interaction among users, technology, and network community (Agritoglio et al., 2010; Cheung and Lee, 2010; Ebner et al., 2010;

Günther et al., 2009). In this paper, interaction between user and technology is visible to the user through technology interface, which allows the user to evaluate the technology (Teo et al., 2003). Social interaction between user and network is the key to generate value of a social network (Zhang et al., 2011). Based on this relationship, social influence exerts an impact on the usage of technology (Cheung and Lee, 2010). The relationship between technology and network is hidden from the user's point of view. For example, the extent and the delivery of news feeds among users of a micro-group are supported by the underlying network and database technologies. Thus, according to socio-technical theory, we delineate the antecedents of switching costs by focusing on two dimensions: namely, technical resources (technical aspect) and network resources (social aspect).

2.2   Switching Cost

User's behavior is influenced by switching costs, and the costs are defined as any perceived disutility a customer would experience from switching service providers (Burnham et al., 2003; Yen, 2010). Also Porter (2008) defined the costs as a one-time opportunity cost which arises from changing from the incumbent product or service to another. The costs may come from the required learning of how to adapt to the new one or the uncertainty utilized in intended ways. A main focus of customer relationship management program is to build up a higher switching barrier. Switching barrier may be derived from different judgmental states such as user's affection to the service, inherent inertia of users, or slavery to the current service (Burnham et al., 2003; Yen, 2010). Regardless of the sources of the switching barrier, if the barrier is higher, then a user may be more adhere to the current service (Yen, 2010).

Switching costs are incurred when a customer switches from one system or product to another. The costs include time, money, or efforts (Burnham et al., 2003). If the costs are high, it leads to higher adherence. Three antecedents to service adherence such as satisfaction, switching costs, and interpersonal bonds were proposed by Gremler et al., (1996). On the other hand, as antecedents of switching costs, Burnham et al. (2003) identified three components such as procedural, relational, and financial switching costs. Besides, regarding the antecedents of switching cost, other researchers also conducted this type of studies in other contexts. For example, Chen and Hitt (2002) identified factors affecting switching costs in online trading companies. The main factors include web site usage, product breadth, transaction cost, personalization, and ease of use, etc.

2.3   Technology Adherence

Technology adherence is a similar concept as e-loyalty, which refers to the degree of willingness to stay with current product, service, or system (Chen and Hitt, 2002; Gremler and Brown, 1996; Srinivasana et al., 2002; Zhou and Lu, 2011). Srinivasan et al. (2002) determined the antecedents and consequences of user adherence to B2C platforms. The antecedents of adherence can be categorized in terms of three components, namely: contact interactivity, convenience, choice. These variables can be grouped under technical characteristics. Pan et al. (2006) conducted a meta-analysis of empirical findings on the predictors of customer loyalty. They found that customer-related factors (satisfaction, trust, psychological commitment) and product-related factors (value, product quality, fairness,

switching costs and brand reputation) were significantly related to technology adherence. In this study, we focus on examining the role of switching cost in explaining users' adherence to micro-groups in consideration of the unique characteristics of micro-groups. Like online community, micro-group can be considered as network through which the exchange of opinions and information regarding offered services is facilitated, but most of researchers did not take into account the network resources in their model (Ebner et al., 2010; Trist, 1963; Zhang et al., 2011). Switching cost is typically believed to an appropriate mediation factor in explaining users' adherence in the context of micro-group when compared to other factors such as product quality or brand reputation etc. (Yen, 2010).

3. RESEARCH MODEL AND HYPOTHESES

Based on prior discussions on socio-technical theory and switching costs, we divide antecedents of switching costs into two dimensions, namely: technological resources and network resources.
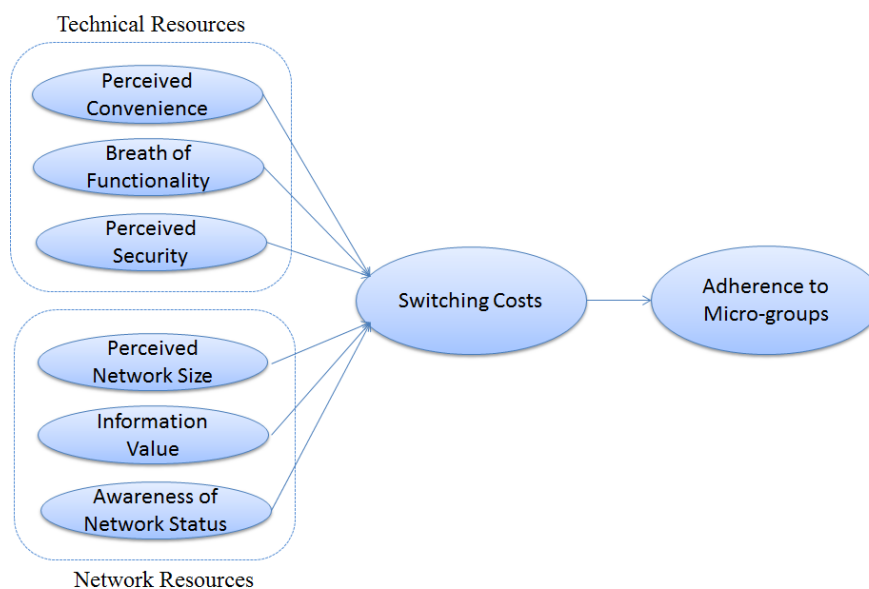

Figure 1.   *Theoretical Research Model*

3.1   Lock in Through Technical Resources

Technical prowess in terms of interface design and functionality of an IS has been demonstrated as significant factors to system acceptance by users, especially in information systems success models (Delone et al., 2003; Teo et al., 2003; Trist, 1963; Wu et al., 2007; Yoo, 2010). In the framework presented by Delone et al. (2003), the factors include ease of use, functionality, reliability, flexibility, data quality, portability, integration, and importance. To utilize any information systems, users need to invest time and effort to learn the information systems. If they abandon the current systems, they should relearn a new system, which makes the previous investment useless. Therefore, individual user's investment becomes a barrier for switching (Burnham et al., 2003; Yen, 2010).

Convenience has been extensively examined in technology adoption literature. When a user perceives that an information system is easy to use, there is low sunk cost of learning, and thus lower switching costs involved (Teo et al., 2003; Wu et al., 2007). They showed that if an online brokerage system is perceived to be easier for the users to fulfill required transaction, the switching and attrition rates were higher.

Meanwhile, compared to other online community, the micro-group platform is publicly accessible and the accessibility is nearly ubiquitous, this feature arouses the difference in the frequency of update, meanwhile, micro-group allow users to insert rich media like images, videos, music, emoticons, and even polls (Agritoglio et al., 2010; Ebner et al., 2010; Gunther et al., 2009). This feature has proved very valuable for marketers. From this, we can conjecture that inventive applications provided by a micro-group is a factor leading to user's adherence to micro-group services. In this study, we adopt convenience and breadth of functionality to capture the characteristics of technology competitiveness provided by micro-group platforms. Based on previous findings, we establish the following hypotheses:

H1. *Convenience of micro-groups is negatively related to switching costs.*
H2. *Breadth of functionality of micro-groups is positively related to switching costs.*

Security concerns come from the uncertainty of how a user's personal data are treated by micro-group platforms (Kirkpatrick, 2010; Lin and Lu, 2011; Poerter, 2008; Panand Zinkhan, 2006). When the micro-group service provider provides a clear set of technical controls to its users and the users perceive that their privacy level of their personal data in micro-group is under their control, the uncertainty should be abated. If in that case, users might safely adhere to current micro-group (Lin and Lu, 2011). Thus, we incorporate security controllability in our model. Based on above arguments, the following hypothesis is derived:

H3. *The level of user's perceived security in micro-groups is positively related to switching costs.*

3.2 Lock in Through Network Resources

According to Butler (2001), network resources can be grouped into two dimensions, namely: stock and flow resources. These resources are created by users. Stock resources refer to the potential availability of resources in a micro-group (Butler, 2001). Flow resources mean the capability of actually engaging online social activities (Butler, 2001). The two resources reinforce each other. The level of stock resource in terms of network members or the contents available in a micro-group directly influences the flow activities, and vice versa (Butler, 2001).

3.2.1 Stock Network Resources

A micro-group platform depends heavily on the number of users (Lin and Lu, 2011; Wu et al., 2007). In this paper, network size are employed as important characteristic of micro-group platforms, micro-group services obtaining a large group of users are expected provide subsequent users with more social connections and information, which in turn enhance switching costs and increase their continued adherence to micro-groups (Wu et al., 2007). A number of researchers have pointed out that the degree to which users perceive network size

influences their attitude and behaviors towards the information technology (Lin and Lu, 2011; Wu et al., 2007; Zhou and Lu, 2011). Thus, we hypothesize that:

H4. *Perceived network size of micro-groups is positively related to switching costs.*

Another type of stock resource is investment in network (Butler, 2001). The lock in effect comes from the investment, in terms of time and effort, for building the current network. A reasonable conjecture is that the more investment in network, the more likely the user adheres to current network (Butler, 2001). For example, if one stored their friend contact information in a micro-group server, he may find himself difficult to switch into another online community. Based on above argument, we have the following hypothesis:

H5. *Perceived information value in micro-groups is positively related to switching costs.*

3.2.2 Flow Network Resources

Network activities contribute to both increase stock resources and help keep the recency of the network resources (Butler, 2001). If users visit micro-groups frequently and posts comments within the platforms, they are considered to be active in the network (Butler, 2001). Here, we adopt perceived awareness of network status to describe the degree of network activity.

H6. *User's perceived awareness of network status is positively related to switching costs.*

Switching cost is considered a key factor for fostering adherence to information systems (Burnham et al., 2003; Yen, 2010). The effect of switching costs on adherence or loyalty has been confirmed in many previous studies (Chen and Hitt, 2002; Gremler and Brown, 1996; Teo et al., 2003; Zhou and Lu, 2011), Thus, we hypothesize that:

H7. *Switching costs are positively related to user adherence to micro-groups.*

4. RESEARCH DESIGN AND METHODOLOGY

4.1 Measurement Development

All measurement items were adapted from previous literature, with minor modifications in wording to make them relevant in the context of micro-blogs. A five-point Likert scale was used for all ratings. To enhance the validity of the proposed model's measurement items, a pilot study was performed with bachelor's degree students (n=17) in a MIS program who were frequent micro-blog or micro-group users to reduce possible ambiguity in the questions. Respondents were asked about any difficulty they may have encountered in the survey. Comments and suggestions on the item contents and structure of the instrument were solicited. Several revisions of questionnaire items were made.

4.2 Survey Procedure

This research takes China as the site of the empirical investigation because the supporting infrastructure required for micro-blog developments has been put in place. China has aggressively pursued the development of IT and has created a rapidly growing IT

infrastructure. According to CNNIC's report, up to December, 2011, the number of net citizens in China has reached 457 million, the number of mobile net citizens in China has reached 303 million. A Total of 620 questionnaires were distributed in the formal survey between March, 2013 and June, 2013. The questionnaires were distributed through the mail, personal visits to people who were working in diverse industries and social institutions, including schools, universities, offices, companies that were drawn at random in the three cities in China. Altogether, 338 questionnaires were collected. After reviewing, 42 questionnaires were eliminated due to invalid answers, leaving 296 questionnaires for the empirical analysis. Our sample comprised 43.2% male and 56.8% female respondents. The respondents are relatively young and generally well educated.

5. DATA ANALYSIS AND RESULTS

5.1 Measurement Model Development

Both of validity and reliability were determined to evaluate the measurement model. Hair et al. (1998) indicates that Cronbach's α value of 0.7 is the minimum acceptable value for reliability. The α value of each construct is over 0.7, which represents good reliability. Content validity and construct validity are often used to measure validity. The variables in this study were derived from existing literature, thus exhibiting strong content validity. Construct validity was examined by investigating discriminant validity and convergent validity. The convergent validity of the scales was verified by using the criteria suggested by Fornell and Larcker (1981). All the factor loadings for all items exceed the acceptable level of 0.6, and all factor loadings are significantly related, via t-tests at $p < 0.001$, to their respective constructs, the composite reliability of the constructs ranged from 0.74 to 0.87, and thus all exceeded the generally accepted value of 0.70. In addition, the AVE ranged from 0.52 to 0.69. Hence, all three conditions for convergent validity were met. Discriminant validity was examined using criteria suggested by Fornell and Larcker (1981). The shared variance between each pair of constructs was less than the average variances extracted, providing evidence of discriminant validity.

Constructs	Items	Factor loading	CR	AVE	Cronbach's α
Convenience	CONV1	0.722	0.835	0.645	0.806
	CONV2	0.814			
	CONV3	0.835			
	CONV4	0.721			
Breath of Functionality	FUNC1	0.853	0.867	0.632	0.832
	FUNC 2	0.721			
	FUNC 3	0.712			
Security	SECU1	0.824	0.841	0.635	0.800
	SECU 2	0.801			
	SECU 3	0.732			
Network Size	NETS1	0.798	0.743	0.522	0.745
	NETS 2	0.709			
	NETS 3	0.625			

Information Value	INFO2	0.844	0.832	0.631	0.838
	INFO 3	0.821			
	INFO 1	0.687			
Awareness of Network Status	STAT1	0.815	0.812	0.615	0.757
	STAT 2	0.787			
	STAT 3	0.779			
Switching Costs	SWIT1	0.785	0.807	0.638	0.798
	SWIT 2	0.828			
	SWIT 3	0.767			
Adherence	ADHE1	0.865	0.823	0.614	0.789
	ADHE 2	0.842			
	ADHE 3	0.725			

Table 1.   Construct reliability and convergent validity.

5.2   Test of Structural Model

To assess how well the model represents the data, this research employed AMOS 6.0 to evaluate "goodness of fit" indices. $\chi2/df=1.87$, RMSEA=0.05, GFI=0.86, AGFI=0.84, CFI =0.92, NFI=0.85 and IFI=0.91 are all within the commonly accepted thresholds suggested in the literature. The fit indices indicate that the model provides a reasonably good fit.

Hypothesized paths	Estimate	S.E.	C.R.	p-Value
Convenience → Switching costs	.109	.062	2.192	.105
Breath of functionality→ Switching costs	.244	.061	4.012	.000***
Security → Switching costs	.253	.056	3.814	.004**
Network size → Switching costs	.334	.068	4.176	.000***
Information value → Switching costs	.214	.063	3.265	.001***
Awareness of network status → Switching costs	.196	.078	1.067	.005**
Switching costs → Adherence to micro-groups	.315	.072	4.253	.001***

*: $p<0.05$; **: $p<0.01$; ***: $p<0.001$

Table 2. Hypothesis testing for respondents (n=296).

The standardized path coefficients for the research model are discussed as follows: Contrary to expectation, present study found no evidence of a statistically significant relationship between convenience and switching costs (H1), the effects of convenience on switching cost is non-significant ($\beta=0.109$, t=2.192, p=0.105), showing that it does not act as an antecedent of switching costs. A possible explanation is that the most respondents have many years of online experience and should be acquainted with online operations. Therefore, the ability to use micro-group is not a major concern to raise switching costs. The effect of breadth of functionality on switching costs is significant ($\beta=0.244$, t=4.012, p<0.001). Hence, the second hypothesis (H2) is supported. This result is consistent with previous research. This result means that a pervasively accessible and rich media − featured system is helpful in building higher switching costs. The effect of perceived security ($\beta=0.253$, t=3.814, p<0.005) is confirmed to be positively related to switching costs. Therefore, the more a user perceives to control his information and communication data, the higher the level of switching costs will be formed.

The effects of perceived network size, perceived information value and perceived awareness of network status on switching costs are also significant (β=0.334, t=4.176, p<0.001, β=0.214, t=3.265, p<0.001 and β=0.196, t=1.067, p<0.005). Hence, the fourth hypothesis (H4), fifth hypothesis (H5) and sixth hypothesis (H6) receive strong support by the study's results. These findings are consistent with previous research. According to these findings, users find that both network stock resources and flow resources are important for switching decision. Finally, switching costs are confirmed to be positively related to adherence to micro-groups as expected. According to this finding, we can conclude that switching costs constitute a "lock-in" strategy to retain customers. Therefore, it's important to realize that to build a high switching cost, there has to be a prior development of technology adherence.

6.   DISCUSSIONS AND IMPLICATIONS

This research drew from established socio-technical theory in Information Systems to develop an integrated model of customers' adherence to micro-groups from the view of switching cost. A total of six hypotheses were statistically supported. The findings indicated that convenience, breath of functionality, network size, information value, and awareness of network status were direct predictors of switching costs. Besides, switching costs were further found to be significantly related to customers' adherence to micro-group platforms. Theoretical implications and practical implications are discussed as follows.

6.1   Theoretical and Practical Implications

From a theoretical perspective, this study contributes to theoretical development regarding technology adherence in the context of micro-groups and micro-blogs. This study is among the first to test empirically the determinants of switching costs from both of technical and social aspects. The findings contribute to theoretical development of technology adherence regarding in the context of micro-groups. Results indicate that both factors of technical and social factors constitute a "lock-in" strategy to retain customers.

From a practical perspective, the findings will give useful insights and guidelines for micro-group service providers to improve and perfect their design and service to meet users' requirements. Specifically, software designers can improve their micro-blog products by paying more attention to functionality, security. They could develop more personalized and valued-added services that will better meet users' needs and improve their security. Regarding network resources, it would be difficult for service providers to control the network size, information value, and network status, but they can affect these resources by adopting some strategies. For example, connecting their micro-group platforms with other platforms with a huge number of users would be a very useful tool to expand the network size, they can also take other incentive strategies to achieve the goal of high level of information value and network status.

6.2   Limitations and Suggestions for Future Research

This study has several inherent limitations due to the sampling methods and measurement instruments used. These limitations indicate avenues for further research.

First, one limitation of this study is its limited sampling frame. A convenience sampling method was used to select the sample. The subjects used in the survey were drawn from three cities located in China. There is no evidence that the sample is representative of the whole population of Chinese micro-group users. Future studies should investigate and compare different samples to increase representativeness. Second, the survey data used in this research were gathered at a single time point and the survey process was not longitudinal. A longitudinal investigation would be more convincing in explaining how user switching behavior changes over time. Third, the survey was conducted in China. The research model and constructs can also be applied to other countries and other social software. However, cultural differences between countries should be considered further. An interesting extension to this study would be to compare the use of micro-group services in different countries to examine whether the determinants predicting the switching cost differ.

Acknowledgement

References

Agrifoglio, R. Black, S. and Metallo, C. (2010). Twitter acceptance: The role of intrinsic motivation. *Proceedings of ALPIS itAIS*, 10(9), 2-5.

Burnham, T., Frels, J. and Mahajan, V. (2003). Consumer switching costs: A typology, antecedents, and consequences. *Journal of the Academy of Marketing Science*, 31(2), 109-126.

Butler, B. (2001). Memvership size, communication activity, and sustainability: A resource-based model of online social structures. *Information Systems Research*, 12(4), 346-362.

Chen, P. and Hitt, L. (2002). Determinants of customer retention in Internet-enabled business: A study of the online brokerage industry. *Information Systems Research*, 13(3), 255-274.

Cheung, G. and Lee, M. (2010). A theoretical model of intentional social action in online social networks. Decision Support Systems, 49, 24-30.

Delone, W. and McLean, E. (2003). The Delone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9-30.

Ebner, M. Lienhardt, C. and Rohs, M. et al. (2010). Microblogs in higher education - A chance to facilitate informal and process-oriented learning? *Computers & Education*, 55,

92-100.

Fornell, C. and Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.

Gremler, D. and Brown, S. (1996). *Service Loyalty: Its Nature, Importance and Implications*. in Edcardsson, QUIS V: Advancing Service Quality: A Global Perspective, ISQA, New York, NY, 171-181.

Günther, O. Krasnova, H. Riehle, D. et al. (2009). Modeling microblogging adoption in the enterprise. *Proceedings of the 5th Americas Conference on Information Systems*, San Francisco, 1-9.

Hair, J.F. Anderson, R.E. Tatham, R.L. et al. (1998). *Multivariate Data Analysis*. 5th edition, New Jersey: Prentice-Hall.

Kirkpatrick, D. (2010). *The Facebook Effect: The Inside Story of the Company That is Connecting the Word*. Simon & Schuster, New York, 128-148.

Lin, K.Y. and Lu, H.P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152-1161.

Pan, Y. and Zinkhan, G. (2006). Determinants of retail patronage: a meta-analytical perspective. *Journal of Retailing*, 82(3), 229-243.

Poerter, M. (2008). The five competitive forces that shape strategy. *Harvard Business Review*. 86(1), 78-93.

Srinivasana, S., Andersona, R., and Ponnavolub, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, 78, 41-50.

Teo, H.H., Chan, H.C. and Wei, K.K. et al. (2003). Evaluating information accessibility and community adaptively features for sustaining virtual learning communities. *International Journal of Human-Computer Studies*, 59(1), 671-697.

Trist, E.L. *Organizational Choice*. London: Tavistock, 1963.

Vannoy, S. and Palvia, P. (2010). The social influence model of technology acceptance. Communication of the ACM, 53(6), 149-153.

Wu, J.H., Chen, Y.C. and Lin, L.M. (2007). Empirical evaluation of the revised end user computing acceptance model. *Computers in Human Behavior*, 23(3), 162-174.

Yen, Y. (2010). Can perceived risks affect the relationship of switching costs and customer loyalty in e-commerce? *Internet Research*, 20(2), 210-224.

Yoo, Y. (2010), Computing in everyday life: A call for research on experiential computing. *MIS Quarterly*, 34(2), 213-231.

Zhang, Z., Sun, H. and Du, H. (2011). An empirical research of effects of realness on microblogging intention model. *Advances in Intelligent and Soft Computing*, 128, 515-520.

Zhou, T. and Lu, Y. (2011). Examining mobile instant messaging user loyalty from the perspectives of network externalities and flow experience. *Computers in Human Behavior*, 27(3), 883-889.