A STUDY OF EFFECTIVENESS AND SATISFACTION OF CLOUD CRM USERS IN TAIWAN'S ENTERPRISES

Research-in-Progress

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Abstract

Cloud computing in recent years has become a popular IT application. In Taiwan, enterprises currently using CRM (Customer Relationship Management) applications seek to take advantages of cloud computing features to enhance CRM effectiveness. However, despite international IT service providers' investments in Taiwan's market for establishing a cloud computing environment for CRM users, no statistics are available to reflect experience with actual use. Therefore, the purposes of this study are to understand the satisfaction levels of the current cloud CRM users (i.e., Taiwan's enterprises) and to determine the key factors, which significantly affect enterprises' managerial effectiveness and users' satisfaction with cloud CRM. The basis for the research model is the Information System Success model and the characteristics of SaaS and CRM. This study has obtained contacts with Taiwan's enterprises currently using cloud CRM, and the complete analyses of valid survey responses will occur shortly.

Keywords: Cloud computing, CRM, Information System Success Model, satisfaction

Introduction

Enterprises adopting new IT to enhance performance has become a common phenomenon in recent years. Since enterprises must efficiently deal with enormous amount of data, a new IT concept, "Cloud Computing," has gained prominence recently. Cloud computing technology has several IT characteristics, known as autonomic computing, grid computing, utility computing, and service-oriented architecture, but all have somewhat different technological development (Patel et al. 2011). Cloud computing provides a flexible service to users through the Internet, allowing users to pay for on-demand services only with no need to know the systems' architectures and locations (Marston et al. 2011). Overall, the benefits of adopting cloud-computing technology for enterprises include: improving system's performance, reducing hardware and software implementation costs, and concentration core businesses (Armbrust et al. 2009).

According to IDC (2011), in the next five years, the 46% of capitalization on global IT for the cloud services market is $72.9 billion. This means that cloud computing has a great impact on IT applications in the future. Additionally, the enterprises' performances rely on the development of CRM (Customer Relationship Management) systems, since CRM systems can effectively enhance enterprises' competitiveness, improve customers' loyalty, and revenues (Payne et al. 2005). According to previous investigations, the most widely used SaaS are CRM systems, HR (Human Resource) systems, and PMS (Purchase Management) systems (Grman 2007). In economically emerging countries, specifically in Taiwan, ERP and CRM systems are the two most popular SaaS implemented in Taiwanese enterprises, and CRM systems are Taiwanese enterprises' first choice (Institute for Information Industry 2010).

However, the Institute for Information Industry's annually survey shows that Taiwanese enterprises currently adopting cloud computing technology account for only 4.9% in 2010 (total: 1,302 companies) and with a little increase to only 8% in 2011 (total: 1,357 companies). The report indicates that Taiwanese enterprises continue harbor concerns for adoption of cloud computing technologies. According to the Wu (2011a) survey of Taiwan's HsinchuScience Park managers, who maybe more inclined to adopt SaaS for their enterprises, the influential factors affecting adoption are: perceived usefulness, followed by perceived ease of use, security, and trust. Wu (2011b) determined that security and trust are the most important factors for business owners in Taiwan when considering whether or not to adopt SaaS solutions, especially with respect to data backup. The results indicate that Taiwanese enterprises recognize the benefits of SaaS but still perceive risks are greater than benefits (Catteddu et al. 2009).

Moreover, even though the current literature summarized the factors affecting the propensity of enterprises to adopt SaaS (Benlian et al. 2009, 2010ab; Gartner 2009; Misra et al. 2011; Wu 2011ab), less attention accrued to enterprises already employing cloud computing technologies. What is the performance of the cloud computing services adopted in the enterprises in terms of CRM? Why have enterprises not made good use of the cloud computing services, such as cloud CRM? What are the barriers to adopting cloud CRM? No empirical reports explore the effectiveness of cloud computing services for enterprises in recent years, especially among economically emerging countries, such as Taiwan. Therefore, as more enterprises adopted cloud CRM compared to other types of SaaS, this study investigates the status of current use of cloud CRM in Taiwanese enterprises by accumulating data from employees regarding satisfaction with cloud CRM and by examining the factors, which affect performance of the cloud CRM. In addition, the study establishes a model for implementing cloud CRM implementation among enterprises to offer recommendations to cloud service providers for future IT design.

Literature Review

Cloud Computing

"Cloud," in cloud computing, refers to the Internet. In the history of computing, a great deal of technological development has contributed to the characteristics of cloud computing. Notably, cloud computing is different from other kinds of computing in that it includes: (1)Virtualization, (2)Multi-tenancy, and (3)Web service (Kim 2009; Marston et al. 2011; Vouk 2008). Cloud services implement a metering system that divides the computing resources into appropriate blocks (Marston et al. 2011). Thus,

in cloud computing, users only pay operating expenses and do not incur any significant capital expenditures. Overall, cloud computing is a ubiquitous and on-demand service model, that requires minimum management and interaction with service providers to access resources (NIST 2011).

According to NIST's (2011) classification, SaaS is the most familiar and productive service model for users (Bhardwaj et al. 2010). The upper level of SaaS is IaaS, which offers stable and efficient support for infrastructures. Coupled with open platform features of PaaS, SaaS gains greater flexibility and scalability, allowing information service providers to be more creative and to induce wider ranges for design of different types of software. The SaaS solution, therefore, represents a service model with the most potential. Using SaaS solutions may have a profound impact on enterprises and can improve IT performance (Catteddu et al. 2009). The better-known products include Google Apps, Salesforce.com CRM, and YahooMail. According to the IDC's forecast in 2011, 75% of the value of output in cloud services' market during the next five years will arise from SaaS. Obviously, SaaS is the focus of future IT applications. Recent empirical studies of different types of uses of SaaS considered the factors that affect the propensity of enterprises to adopt SaaS, as summarized in Table 1.

Table 1. The Factors Affecting Enterprises to Use SaaS

Literature	Research and theory	Factors
Gartner (2009)	To investigate the satisfactions and use intentions of SaaS of the enterprises in U.S and UK.	· strategy · security · privacy · data integration · function
Benlian et al. (2009)	To explore the accepted modes of different types of application SaaS based on TCT, RBV, and TPB.	· social influence · uncertainty · strategy value
Benlian et al. (2010b)	Based on ISS model to investigate that if the service quality of SaaS effect on intention to use SaaS.	· features · responsiveness · flexibility · security · privacy · rapport · reliability
Wu (2011a)	Based on TAM to investigate that how to implement the accepted model of SaaS.	· perception the usefulness · ease of use · security · trust
Wu (2011b)	Using data mining and TAM to investigate the factors, which affect the user to use SaaS.	· security · trust
Benlian et al. (2010a)	To explore the opportunities and risks of SaaS to establish an opportunity for risk framework.	· cost · flexibility · system quality · efficiency · security
Misra et al. (2011)	To propose a suitability index to determine if the enterprise has to adopt SaaS and establish a ROI model.	· cost · resource

The scope of this study is, therefore, exploration of SaaS. In this study, cloud computing is a service model wherein back-end service providers use flexible sharing techniques to support different users and enable them to access system resources quickly, anytime, and anywhere through the Internet and pay for services on the basis of actual measured use, thereby reducing manpower and resources.

Cloud CRM system

CRM is a combination of strategic management processes and information technology that focus on providing better customer service (Chan 2005), developing long-term relationships between businesses and their customers, and generating profit or shareholder value (Payne et al. 2005). In the era, customer data, demands, and transaction data are at the center of business allowing CRM systems to create tailor-made services for different customers. CRM systems not only promote integration of business and

information, but also allow sharing of information and facilitating the analysis of customer information, so that companies and customers can interact more effectively (Day 2003; Singh 2011). This makes it easier to retain existing customers, forecast demand, and propose new customer services (Jayachandran et al. 2005; Keith A. Richards 2008). Several prior studies showed whether or not CRM systems directly or indirectly aided improvement of performance in business operations (Chang et al. 2010; Jayachandran et al. 2005; Reinartz et al. 2004; Wu et al. 2011).

For large enterprises, implementation of the CRM system can occur by independently construction, purchasing necessary software since often sufficient resources exist to allow considering individual positions and strategies (Harrigan et al. 2010). For SMEs, however, the CRM system is too large and complex to create independently. If SMEs wish to obtain benefit from adopting CRM systems, the only choice is eCRM (electronic CRM) or cloud CRM (Harrigan et al. 2010; Singh 2011).

Based on the literature traditional CRM and cloud CRM systems have significant differences from a variety of aspects, and the major differences between eCRM and cloud CRM systems are in the aspects of data maintenance strategies, system architect, and pay mode. These aspects imply the special IT characteristics of cloud computing technology. Compared to traditional CRM systems, eCRM is more conducive to customer service by facilitating enhanced customers' information management and customers' communication. A web-based eCRM can also run on the Internet as an interactive platform through in-use collaborative information technology (e.g., website, e-mail, instant messaging, chat rooms, etc.) to ease enterprises' doing business with customers and partners (Harrigan et al. 2011; Racherla et al. 2008). For example, enterprises can use chat rooms to accept orders, negotiate prices with partners, or directly reply to email requests from customers.

However, eCRM is more likely to have inherent resource constraints for enterprises (Harrigan et al., 2010), compared to recently popular cloud CRM, which is flexible and supports large amounts of data to enhance effectiveness of queries and responses compared to original CRM systems. Cloud CRM can provide sales and management information immediately, and analyze data quickly and correctly (Marston et al. 2011). In addition, cloud CRM allows enterprises to reduce costs by avoiding payments for installing extra IT equipment, since the options for paying cloud service fees charged by cloud service providers can be monthly rental or pay per use (Aggarwal et al. 2010). Either option enables enterprises to request changes to cloud CRM service programs whenever needed, such as adding more feature modules and enlarging storage spaces. In addition, despite to location of service providers, adjustments to cloud CRM service programs provided to enterprises are easy and quick. As a result, the reason to adopt cloud CRM is apparent since this service allows SMEs' reducing the time and costs of IT implementation, and focus on managing customer relationships. Expectedly, SMEs' advantages for competitiveness increase. Certainly, large enterprises can use cloud CRM to reduce administrative burdens and focus on core businesses (Singh 2011).

Success Factors of Cloud CRM

Traditional measures of success from CRM systems usually refer to revenue, customers' satisfaction, customers' loyalty, employees' satisfaction, and staffs' loyalty, and other indicators that generally show whether or not enterprises provide value to customers or obtain value from customers (Chang et al. 2010; Day 2003; Peelen et al. 2009; Jayachandran et al. 2005; Payne et al. 2005; Reinartz et al. 2004). According to prior studies, even though CRM systems benefit enterprises, implementation of traditional or eCRM systems tended to have an opposite effect on performance of enterprises (Chang et al., 2010). As Reinartz et al. (2004) indicated, 70% of the CRM systems implemented do not obtain expected results.

Other than increasing an organization's technological capability, implementing CRM systems requires information processes compatible with an organization's strategies (Jayachandran et al. 2005; Payne et al. 2005; Reinartz et al. 2004). Jayachandran et al.'s (2005) study shows that the use of the CRM system does not have direct effect on the organizational performance but indirectly influences the performance through relationship information processes and performance in customers' relationships. Management systems, such as CRM system, determine organizational structure, business processes, and incentives (Jayachandran et al. 2005). Peelen et al. (2009) also conclude that a comprehensive customer-oriented and cross-functional strategy has a significant impact on the success of implementing a CRM system, which can stimulate cooperation between businesses and customers. In addition, Chang et al. (2010) find

that the organization's customer-centric culture positively affects the use of the CRM system, and the use of the CRM system enhances organizations' marketing ability and organizational performance. Overall, the success of CRM systems must include technologies, processes, and management strategies, and the purposes for implementing the CRM system for enterprises are to improve customers' satisfaction, customers' loyalty, and revenue.

Consistently, the success of cloud CRM requires alignment of technologies, strategies, and processes in the organization. The better-known cloud CRM systems on the market include Oracle CRM on Demand, Microsoft Dynamic CRM, and Salesforces.com CRM. To market CRM cloud services, SaaS vendors need to provide different types and sizes of CRM solutions to meet the specific goals of a variety of enterprises (Singh, 2011; Sun et al., 2008). Accordingly,, although providers determine the functions of CRM cloud services, through the web and batch processing, functions have three classes of customization: (1) Data level - enterprises or customers can access the latest synchronized information. (2) User interface level - customers can match with different systems, such as embedded custom HTML and third-party interfaces to improve systems' availability and productivity. (3) Business process level - customers can change the processes of a system to match requirements without changing terms of the contract (Singh 2011). Thus, for CRM cloud services whether or not SaaS vendors can fill the gap when enterprises need to change their organizational strategies and processes for implementation of CRM systems remains undetermined.

Related Cloud CRM Studies Based on Information System Success Model

In 1992, DeLone and McLean proposed the ISS model (Information System Success model), based on extensive empirical research. The ISS model includes six dimensions: System quality, information quality, use, user satisfaction, individual impact, and organizational impact. After abundant research proved the validity of the ISS model through empirical study, the results verify a relationship among the dimensions. Then, in 2003, based on more than 100 success-related studies of systems since 1992, DeLone and McLean modified part of the ISS model. They deferred to Pitt (1995) and considered the need to add the dimension of service, since various studies showed users' satisfaction derives from the service quality of system providers or information systems' departments. To take service into account, Delone and McLean added "service quality" to the original ISS model and then combined "individual impact" with "organizational impact" in a dimension called "net benefits," which assess the impact on organizational performance, cost savings, market expansion, increased productivity, improved image of the organization, reduced operating time, increased decision-making success rate, and increased revenue. Also, other than the "use" dimension, referring to an action in the original ISS model, the added "intention to use" dimension is a type of attitude for taking action. Moreover, Petter et al. (2008) cited 180 papers, published from 1992 to 2007 relating to the ISS model. The study found those systems related to organization include KMS, E-commerce, and DSS, mostly fit many hypotheses of the ISS model. Prior studies indicated that the ISS model is indeed applicable to all types of systems, and ISS is definitely an appropriate model to measure an information system, such as cloud CRM.

Currently, only a few scholars applied the ISS model to cloud computing studies. Braithwaite et al. (2011) examined the cloud success model applicable to SMEs. System quality and service quality in the ISS model are from the cloud service provider. Measurement of system quality should be according to availability, reliability, response time, and data transfer speed, while measurements of service quality should be according to support from cloud service providers. Expected results and the convenience of use are the measures for users' satisfaction. Net benefit emphasizes the utility of the data rather than the overall capital investment. Information quality control within the enterprise may also affect users' satisfaction as a factor. Benlian et al. (2010) proposed a SaaS success model using the SERVQUAL scale (Parasuraman et al. 1988) and other empirical research. The model focuses on six factors, confirmed by 172 CIOs and represent SaaS-QUAL: features, responsiveness, flexibility, security and privacy, rapport, and reliability. Benlian et al. proved that service quality affects usefulness and satisfaction as well as intentions toward use SaaS. Overall, past studies indicated the dimension of service quality is a necessary consideration in the ISS model.

Based on the purposes of this study and the definition of cloud computing a research model developed from the ISS model analyzes service quality of cloud service vendors and the effectiveness brought by cloud CRM. The dimension of user satisfaction included in the research model is the relatively easily measured (Petter et al. 2008). However, only users' satisfaction cannot measure system success due to

different purposes among studies, differences among people, organizations and environmental factors, and differences in definitions of net benefit or the methods for measuring net benefit. As a result, even though each study yielded different results, effectiveness, (or performance) in terms of ease of use, cost reductions, timesaving, together, instead by "net benefit" alone in the ISS model. This study, therefore, considers "user satisfaction" and "system effectiveness" for cloud CRM as "net benefit."

Additionally, TAM, TRA, and TPB all mention that attitude is a main determinant of behavioral intention. Subjective norms, facilitating conditions, societal influence, and personal experience may affect attitude. Accordingly, the unified theory of acceptance and use of technology (UTAUT) proposes that innovative technology affect users' attitude positively (Ajzen 1991; Davis 1989; Venkatesh et al. 2003). Benlian et al. (2009) found that if users hold a positive attitude toward SaaS, they readily incline toward using SaaS. Wu (2011a, 2011b) also found that if managers have positive attitudes toward innovative technology, they readily incline toward using SaaS and have positive perceptions for its usefulness. Thus, in addition to the dimension of "intention to use cloud CRM," this study considers the moderating effect of "attitude toward cloud computing" between system quality of cloud CRM and the intention to use cloud CRM, and the service quality of cloud CRM and the intention to use cloud CRM. Notably, differing from the dimension of "intention to use," which refers to the attitude of adopting a certain action (i.e., adopting cloud CRM), the moderator, "attitude toward cloud computing" refers to users' feelings, thoughts and understanding of the concepts of cloud computing, including cloud CRM and other information systems.

Methodologies

Research Model and Hypotheses

Previous ISS literature confirmed system quality's positive effect on users' behavior and intentions (Cao et al., 2005; Chien & Tsaur, 2007; Delone & McLean, 2003; Petter et al., 2008; Rai et al., 2002; Peter B. Seddon, 1997). Specifically, "usefulness" is the dimension, which demonstrates a system's real benefits for users, and the "ease of use" dimension shows that the system is easy to learn and use. Wu (2011a, 2011b) also confirmed to be considered these two dimensions for enterprises adopting the SaaS. Lee et al. (2009) mentioned that a good design for web-based systems can promote users' finding convenience in use, and can strengthen communication capabilities with customers when using eCRM (Harrigan et al. 2010). In addition, "usefulness" and "ease of use" are two important dimensions for the system's users' behavioral intentions toward accepting a new IT as addressed in the Technology Acceptance Model (Davis, 1989). Therefore, this study proposes the following hypotheses:

H1: System quality of cloud CRM positively affects user's intention to use cloud CRM.

H1a: Usefulness of cloud CRM positively affects user's intention to use cloud CRM.

H1b: Ease of use of cloud CRM positively affects user's intention to use cloud CRM.

Pitt (1995) suggested adding a service quality dimension whenever measuring the effectiveness of information systems. Many other researchers also added service quality in their studies (Chien et al. 2007; Delone et al. 2003; Petter et al. 2008). Service quality has consideration as a key factor influencing users' intentions to employ e-commerce and web-based systems (Chien et al. 2007; DeLone et al. 2004). In addition, the cloud-computing environment, including cloud CRM, should be considered a service. Benlian et al. (2010b) indicates that the service quality of SaaS has a positive effect on users' acceptance of the system, so SaaS vendors must understand users' current service quality perceptions and consequently improve system quality. Higher evaluation of the current services by the user, results in higher probability for users' intentions to continue employing the system.

In the construct of service quality, the reliability (Benlian et al. 2010a), responsiveness (Benlian et al. 2010b), security and trust (Paquette et al. 2010; Patel et al. 2011; Wu 2011b), and flexibility (Bhardwaj et al. 2010; Kim 2009; Marston et al. 2011) are important dimensions for enterprises when adopting cloud computing technology, such as cloud CRM. Once the enterprises learn the benefits from SaaS, they are likely to increase the frequency of use. Contrarily, if enterprises detect more risks from using SaaS, the chances of using SaaS decrease (Benlian et al. 2010a). Based on the previous literature, this study proposes hypotheses:

H2: Service quality of cloud CRM positively affects users' intentions to use cloud CRM.

H2a: Reliability of cloud CRM positively affects users' intentions to use cloud CRM.

H2b: Responsiveness of cloud CRM positively affects users' intentions to use cloud CRM.

H2c: Security of, and trust in cloud CRM positively affects users' intentions to use cloud CRM.

H2d: Flexibility of cloud CRM positively affects users' intentions to use cloud CRM.

To implement CRM successfully, prior studies have pointed out that, besides technology, enterprises' customer management processes and customer management strategies require clear definition (Peelen et al. 2009; Jayachandran et al. 2005; Reinartz et al. 2004). Chang et al. (2010) also mentioned that organizational management methods and customer-centered cultures are antecedents of successful adoption of CRM systems. Organizational management methods relate to the organization's structure, business processes, and incentives (Day 2003), and customer-centered culture, refer to values and norms enacted in the organizations (Jayachandran et al. 2005). Jayachandran et al. (2005) further suggested that without an appropriate customer relationship management processes in the CRM system, the organizational performance cannot achieve its expectations. Overall, the users in the enterprises must be willing to use the system in order seek benefit from better occupational performance. Thus, this study proposes the hypotheses:

H3: Organizational factors positively affect users' intentions to use cloud CRM.

H3a: Customer management strategies positively affect users' intentions to use cloud CRM.

H3b: Customer management processes positively affect users' intentions to use cloud CRM.

Many empirical studies confirmed the relationship between intentions to use systems and net benefits (Chien et al. 2007; Petter et al. 2011). However, the net benefits arise from different aspects, such as system effectiveness (Ernst et al. 2011; Reinartz et al. 2004) and organizational performance (Chang et al. (2010). Jayachandran et al. (2005) identified that CRM technology can improve performance for customer relationships. Harrigan et al. (2010) indicated that due to the flexibility of eCRM management customer relationships performance and customer communication performance can improve. Thus, this study proposes the hypotheses:

H4: Intention to use cloud CRM positively affects users' perceptions of system effectiveness.

H4a：Intention to use cloud CRM positively affects users' perceptions of management of customer relationship performance.

H4b: Intention to use cloud CRM affects users' perceptions of customer communication performance.

H4c: Intention to use cloud CRM affects users' perceptions of marketing performance.

Seddon et al. (1996) mentioned that if users less voluntarily use information system, the systems must be less useful, or the users do not find satisfaction from using them (Wu et al. 2006). In other words, if a user has a strong intention to use a system, the user likely gains higher satisfaction from the system (Halawi et al. 2007). Thus, this study proposes the hypothesis:

H5: Intention to use cloud CRM positively affects the levels of users' satisfaction.

Prior studies strongly supported that net benefits can positively influence users' satisfaction, although net benefits defined in each vary. For example, system usefulness has a positive effect on users' satisfaction (Kulkarni et al. 2007; Landrum et al. 2004; Lin et al. 2011; Wu et al. 2006). Benlian et al. (2010b) also claimed that if users in the enterprises perceive usefulness from SaaS, they are satisfied with the SaaS. Wu et al. (2006) study verified that increasing KMS efficiency and reducing time to acquire information has a positive impact on users' satisfaction. Therefore, this study proposes the hypotheses:

H6: System effectiveness of cloud CRM positively affects the levels of users' satisfaction.

H6a: Customer relationship management performance of cloud CRM positively affects the levels of users' satisfaction.

H6b: Customer communication performance of cloud CRM positively affects the levels of users'

satisfaction.

H6c: Marketing performance of cloud CRM positively affects the levels of users' satisfaction.

Benlian et al. (2009) and Wu (2011a, 2011b) found that if the systems' users have positive attitudes toward SaaS, they are more able to accept to employment of SaaS and perceive usefulness. Therefore, this study explores the moderating effect of use's' attitudes toward cloud computing on system quality and service quality, respectively. The hypotheses proposed are:

H7: Attitudes toward cloud computing moderate the effects between system quality of cloud CRM and intentions to use cloud CRM.

H8: Attitudes toward cloud computing moderate the effects between service quality of cloud CRM and intentions to use cloud CRM.

The proposed research model appears in Figure 1:

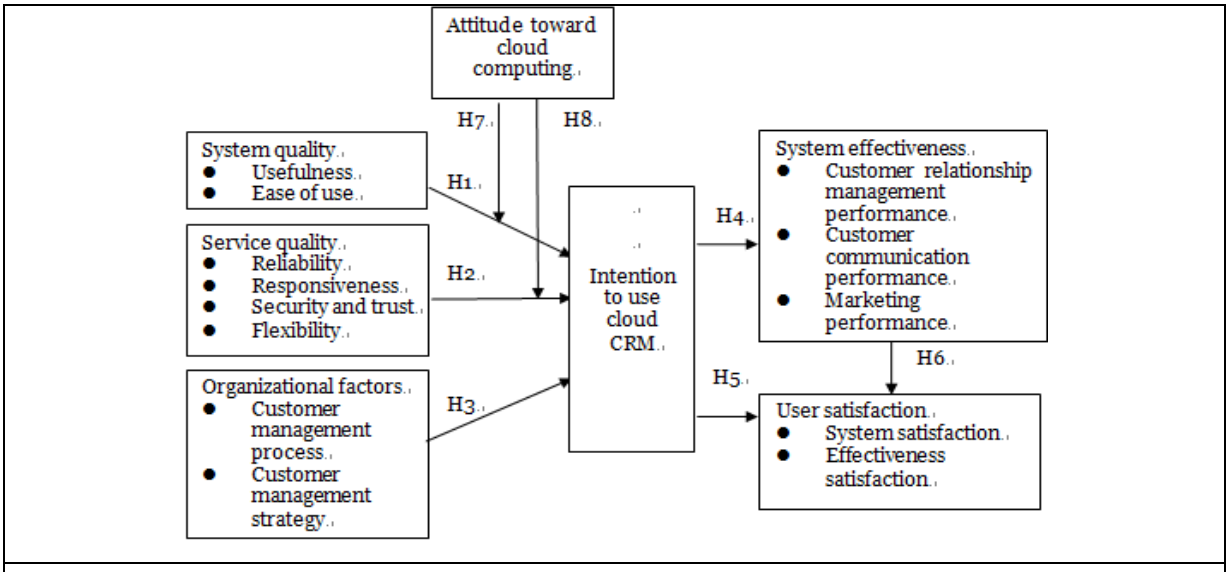

Figure 1. Research model

Research Tool, Data Collection and Participants

This study uses responses to a questionnaire to validate the hypotheses. The basis for the draft of questionnaire for this study is the research's purposes and hypotheses. The questionnaire consists of seven parts; each part contains questions examining one construct as illustrated in the research model. The result is forty-eight measurement items in the draft questionnaire with responses on a seven-point Likert scale ranging from "a great deal" to "not at all." Then, the literature and this study's purposes provide guidelines to development measures for the items of each dimension (i.e., research variables). Releasing the study's questionnaire occurred after modification according to recommendations from nine MIS field experts to confirm descriptions of measurement items are feasible for high validity, and after a pretest to ensure the measurement items are consistent and stable. The pretest's Cronbach's α for each e item in the questionnaire achieved a value higher than 0.7 (Kannan et al. 2005), and the item-to-total correlation was greater than 0.3. Thus, all measurement items of the draft questionnaire are able to maintain in the formal version of the questionnaire.

This study's participants are recruited from Taiwanese employees who are aware of their using CRM, specifically provided by Salesforce.com. In order to improve reliability during data collection, participants recorded the name of the cloud CRM system provided by Salesforce.com and currently used in their organizations. Before distribution of the formal questionnaire to participants whose occupations relate to CRM, most stated their being unaware of idea whether or not their companies had switched cloud-

computing technologies when managing customer-related data, but were aware of the possibility. As a consequence of these responses, direct contacts with IT departments of Taiwanese companies, determined the companies' status as clients of Salesforce.com, and are certain to adopt cloud CRM without persuading employees. The companies provided recommendations for appropriate participants who are cloud CRM users to complete the questionnaire. Study participants could choose between a paper or online questionnaire. Since, Reinartz et al. (2004) and Chang et al. (2010) mentioned complexities and difficulties for implementing CRM systems throughout all industrial sectors, when extending invitations to participants, imposing a limitation to specific industrial sectors was necessary.

Initial Findings

The questionnaires, distributed during the fall semester 2012, invited participants in complete either an online or paper form. The dataset included 61 paper and 79 online returned responses. After eliminating responses with missing values and invalid questionnaires, 121 valid responses, a return rate of 19.23%, constituted the dataset. Conducting an independent sample T-test for each dimension detected whether or not the 121 responses collected from two types of questionnaires were different. The result shows no significant differences for any dimension. Analyses used SPSS 17.0 and SmartPLS 2.0 to examine the data collected from the formal questionnaire. The reason for employing PLS is to obtain a better estimate in non-normally distributed data, and have a more relaxed limitation for the sample size. Moreover, PLS can overcome collinearity problems, and it can handle both reflective indicators and formative indicators (Chiu, 2010a).

Analysis of participants' descriptive data shows that 48.8% of the respondents are female, and 51.2% are male. A majority (60.4%) of the respondents' ages span 26 and 35 years. Most of the respondents, 98.3%, have undergraduate or above degrees, and 36.4% of respondents have tenures of 1 to 3 years with their companies. Notably, when questionnaire was distributed, most respondents have been used cloud CRM for 6 month to 1 year (33.1%), but less than 1 year accounted for 64.5%. Obviously, cloud CRM remains new to many Taiwanese enterprises. In addition, the mean value for each construct of this study's research model is between 4.937 and 5.755, showing that most respondents hold positive toward, and useful expectations for, cloud computing. Each mean value of measurement items is mostly close to 5, indicating that users have positive attitudes toward to each item. Applying Harman's one-factor test ensures correct analysis. After testing, the first principal component cumulative explained the variance in this study to be 46.93% (<50%), which means no significant CMV exists.

For reliability analysis, measurement used Cronbach's α for each construct and each measurement item. As a result, the Cronbach's α value for each construct is between 0.682 and 0.944, except one dimension was slightly lower than 0.7. Thus, this study can confirm that each measurement item of the constructs have high degrees of consistency. Other than content validity, which aligns with the literature, nine MIS experts' suggestions, and the pre-test, conducting CFA, which includes testing convergent validity and discriminant validity of this study's research model, establishes construct validity. Finally, the factor loadings of each measurement item are between 0.720 and 0.964. The CR of each construct is between 0.822 and 0.965. The AVE of each construct is between 0.607 and 0.902. The square root of the AVEs of the constructs is also greater than the correlation coefficients of the other constructs (Hair et al. 2010). Overall, this study's research model has good convergent and discriminant validity.

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