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PROACTIVE PRIVACY PRACTICES IN THE TREND OF UBIQUITOUS SERVICES: AN INTEGRATIVE SOCIAL CONTRACTS PERSPECTIVE

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Abstract

Privacy is a strategic issue that deserves great attention from enterprises because the convergence of customer information and advanced technologies that they engage in diverse business processes in response to competitive pressure, particularly when businesses promote their traditional e-services to ubiquitous services (u-services). The underlying vision of u-services is to overcome spatial and temporal boundaries in traditional services, such as m-services and e-services. U-services will be the next wave and can be recognized as a logical extension of traditional e-services because u-services are initiated by e-services based on current potential customer pool and further propagated by m-services. In the context of u-services, customers are always connected seamlessly in context-awareness networks so that a higher degree of customized and personalized services can be timely provided. While people are served with more convenience and efficiency, they may also well be aware of privacy threats behind that. Hence, privacy concerns have been recognized as a critical impediment for boosting u-services. Drawing upon integrative social contracts theory, this study undertakes to explore a proactive privacy practices framework that embraces technical and non-technical elements such as human, legal, and economic relevant perspectives. The results of this study are expected to shed light on privacy practices.

Keywords: Electronic services, Mobile services, Ubiquitous services, Proactive privacy governance, Competitive strategies, Perceived value, Disclosure willingness, Integrative social contracts theory

1 INTRODUCTION

Privacy is a strategic issue that deserves great attention from enterprises because customer information touches a variety of business processes. As businesses make increased use of emerging technology and personal information in response to competitive pressures in the marketplace, information management has risen as an increasingly important issue (Kim et al. 2009). For instance, reliable and relevant customer information is usually employed for various business purposes such as the modern surge of loyalty programs because gaining new customers is more expensive than retaining valuable ones (Lindsey-Mullikin & Petty 2011). While the Internet paved the way for e-business, ubiquitous services (u-services) will be the next wave in a new e-era, i.e. after e- and m-services because e-services will be a channel to advance u-services on the basis of current potential customer pool. These new services take advantage of diverse technologies such as unique and verifiable identity detection, advanced wireless communications, automatic location detections (sensors) and context-awareness technologies. Hence, u-services support various customer activities so that they can interact and transact anywhere, at anytime, with anything and anyone (Kim et al. 2009; Sheng et al. 2008).

However, the nature of u-services may also raise serious concerns about privacy because customers' personal information not only can be constantly approached and continuously traced, but also can be easily disseminated and possibly utilized in ways unaware to them. Therefore, in spite of the promising future of u-services and the enormous advantages they can deliver to customers, privacy concerns are a serious impediment to the advancement of u-services (Sheng et al. 2008). This issue can be inferred from e-service context because privacy concerns keep some people from registering, shopping, and consuming online and prevent them from enjoying the convenience, diversity, and flexibility of e-services. In contrast, while some people value privacy, some will sell it because they are willing to trade off their privacy for some benefits such as discounts or rewards. Due to this, effective solutions for privacy issues are appealing to enterprises, government, and the public at most (Antón et al. 2007; Tsai et al. in press).

While e-services providers (ESPs) specify their privacy practices in online privacy policies, most customers seldom read and comprehend those policies because privacy statements are too complicated to realize and are rarely read as a consequence (Kobsa 2007; Tsai et al. in press). Although most ESPs tend to show their privacy practices online in response to consumers' concerns, ESPs can also take action to proactively interact with customers to clarify the privacy concerns and ensure against privacy invasion. While numerous prior studies (Angst & Agarwal 2009; Chellappa & Shivendu 2007/2008; Jøsang et al. 2007) focus on trust and risk relevant issues and their impact on disclosure willingness, this study tends to explore what kind of privacy mechanisms ESPs can initiate to interact with customers. Being so, a key question of interest to merchants and managers is: What are the implications of an ESP initiating privacy practice interactions with customers? To answer this pressing question, this study addresses the following research questions: (1) What are the different ways an ESP can initiate privacy practice interactions with customers? (2) How is customers' disclosure willingness impacted when an ESP initiates privacy practice interactions with u-services relevant strategies? (3) What are the associated interactions among an ESP's proactive privacy governance and u-services relevant strategies in relation to customer disclosure willingness?

In response to those questions, privacy-related consumer behavior and relevant strategies services providers offered were explored and also contributed to a long-term debate: whether ESPs can use customer personal information in a strategic way and leverage the privacy protection mechanisms to enhance their competitive advantage. Such information can help ESPs identify the strengths and weaknesses of their current privacy mechanisms, guiding them to develop more prominent privacy governance mechanisms to extend their businesses to future u-services or u-businesses. With this in mind, using integrative social contracts theory (ISCT) as a basis, this study empirically examines the theoretical privacy practices model and explores its relative impact. It is believed that this model provides a stronger comprehensive theoretical framework not only for investigating the underlying

factors affecting customers' willingness to disclose personal information, but also for bridging the gaps when enterprises are thinking of expanding their current businesses to u-businesses.

2 CONCEPTUAL DEVELOPMENT AND RESEARCH HYPOTHESES

2.1 E-services vs. U-services

There are a variety of definitions for e-services. For instance, while Zhang et al. (2006) indicate that e-services is an integration of business processes, policies, procedures, tools, technologies, and human efforts to facilitate customer services via the Internet and other networks, Featherman and Pavlou (2003) regard e-services as interactive information systems and as a kind of asset (i.e. information, business processes, computing resources, and applications) made available via the Internet to develop new revenue streams and improve efficiency. The concept of e-services in this study is recognized in a traditional B2C e-services (including m-services) context and its definition adapted from prior studies (Rowley 2006; Rust & Kannan 2003) refers to the provision of services whose delivery is mediated via electronic networks and information technology such as the Internet, wireless networks, mobile devices and information kiosks etc. Prominent examples of e-services include integrated trip planning, online banking and financial portfolio management (Featherman & Pavlou 2003), e-tailing, customer support and service, and service delivery (Rowley 2006). Generally, traditional e-services context lacks the ability of automatic location detections, unique and verifiable identity, and context-awareness from physical environment. However, as e-services are widely applied for both customers/users and merchants/providers, they have been regarded as the driving force for u-services, and in particular for the advanced utilization of current potential customer pool based on accessible, reliable, and relevant customer information.

As businesses strive to achieve ever more intimate customer relationships, u-services will be one of the most efficient ways to reach this goal and potentially convey innovation or open up new opportunities to market and businesses. U-services are a convergence of intelligent applications which can be embedded in mobile communication devices to establish a unique and verifiable identity, collect observations and sense changes from the physical surroundings, including people, objects, events, and conditions. Customers are always connected seamlessly in these context-awareness networks so that personalized services can also be timely supported as well (Sheng et al. 2008; Kim et al. 2009). Consequently, u-services will be utilized to compensate for shortages of e-services and help improve customer relationships and support customer related activities. However, as people are served with more convenient and efficient services, they may also become increasing aware of the privacy threats, and this will become more salient because privacy invasion may occur and stop customers from adopting and enjoying u-services.

2.2 Privacy Issues

Typically, customer privacy concerns mostly focus on personal information in four aspects including collection, errors, unauthorized secondary use, and improper access (Angst & Agarwal 2009; Smith et al. 1996; Stewart & Segars 2002; Tsai et al. in press). What customers are concerned about is how businesses use their personal information. Despite the fact that ESPs address relevant privacy concerns by posting privacy policies or presenting privacy seals to express their information practices, numerous prior studies indicated that the privacy information is too complicated to be consequently rarely read. This may make customers stop engaging in some online activities such as registering online, and making online transactions, etc. (Antón et al. 2007; Kobsa 2007; Tsai et al. in press). In contrast, some people are willing to trade off their privacy for some benefits such as rewards, discounts, or personalized services etc. (Chellappa & Shivendu 2007/2008; Tsai et al. in press). Due to this, people can generally be classified into three clusters (i.e. privacy fundamentalists, privacy pragmatists, and privacy unconcerned) based on their privacy values, and the majority are privacy

pragmatists who will estimate the potential benefits and privacy risks of data collection or use them before making decision on information disclosure (Angst & Agarwal 2009; Kobsa 2007).

This infers enormous potential opportunities for booming u-services if ESPs could offer superior mechanisms for privacy protection to diminish an individual's concern or anxiety and showcase the valuable benefits of u-services. In the future, the challenges of obtaining customer personal information are likely to emerge as businesses or industries attempt to extend their businesses or marketing strategies from traditional e-services to u-services. This implies that ESPs' privacy mechanisms are particularly pressing in this infant stage of u-services and will be a critical means to persuade customers to disclose personal information. This being so, integrative social contracts theory (ISCT) could be applied as a guideline for developing a theoretical privacy practices model.

2.3 Integrative Social Contracts Theory

ISCT is derived from classical and social contracts theory (SCT). SCT has been widely applied to exchange relationships in marketing and business ethic domain and has been regarded as a moral guidance for business based on foundational principles such as impartiality or consent. For instance, SCT was applied in Spaulding's (2010) study to explore how virtual communities create value for business. Generally, most social contracts theories involve three major components: (1) the individual's consent; (2) agreement among moral agents; (3) a device or method whereby an agreement is obtained (Dunfee et al. 1999).

ISCT is particularly suitable for ethic-related issues caused from different communities because businesses mostly involve boundary-spanning relationships and cross-cultural activities. The concept of "integrative" aims to cover two different types of social contracts: a hypothetical macrosocial contract employed as a heuristic approach and actual microsocial contracts based in living communities (Dunfee et al. 1999). The plural term "contracts" embraces the two kinds of contracts and numerous community-based microsocial contracts whose norms are essential in rendering normative judgments concerning business ethics. Therefore, ISCT is rooted in the social norms serving as the cornerstone of behavioral rules within communities (Donaldson & Dunfee 1994; Dunfee et al. 1999). A community is defined as "a self-defined, self-circumscribed group of people who interact in the context of shared tasks, values, or goals and who are capable of establishing norms of ethical behavior for themselves (Donaldson & Dunfee 1994, p.262)." Corporations, subsidiaries, and even departments or informal units in an organization, along with partnerships, professional groups, trade associations, industries, and nation states could be regarded as a community in accordance with the definition (Donaldson & Dunfee 1994; Dunfee et al. 1999).

The term "contracts" are on the basis of the global contractors' rational reaction to two core assumptions. First, the contractors are presumed to acknowledge and show concern about bounded moral rationality which is an extension of the bounded economic rationality in the moral sphere. It is presumed that relative information, time, and emotional strength may be insufficient for people to make perfect judgments corresponding to their moral preferences. The bounded moral rationality assumption also recognizes that global contractors may not be able to reach a consensus on an omnipotent comprehensive moral theory. ISCT presumes that people would wish to preserve their right to choose their own values to the maximum extent possible and would desire to be involved in economic communities in response to their personal and cultural values. Second, according to bounded moral rationality, it is also presumed that the global contractors would be aware of the need for a community-based moral fabric for the maintenance of wealth and productive living environment (Donaldson & Dunfee 1994, 1995; Dunfee et al. 1999).

2.4 ISCT and Proactive Privacy Governance (PPG)

Based on the core assumptions, Donaldson and Dunfee not only hypothesize that the contractors would reach a consensus on the creation of a binding macrosocial contract but also argue that this global macrosocial contract is the only rational access to the need for a moral fabric concerning bounded moral rationality. As it is supposed to be logically compelling, all rational individuals are

presumed to agree to its terms (Donaldson & Dunfee 1994, Dunfee et al. 1999). The first two terms of the macrosocial contract in ISCT are as follows:

1. Local economic communities may specify ethical norms for their members through microsocial contracts (i.e., the “moral free space” term).
2. Norm-generating microsocial contracts must be grounded in informed consent, buttressed by rights of exit and voice (i.e., the “protected informed consent” term).

Thus, drawing upon the spirit of ISCT, an ESP should be responsible to provide privacy protection mechanisms corresponding to procedural justice which can be regarded as the community-based moral fabric in a B2C commercial context. Online privacy practices can be derived from the ISCT perspective, and ESPs have the responsibility and obligation to handle customers’ information in a responsible manner. Certainly, when ESPs collect customers’ information without their awareness, an implied social contract is breached (Culnan 1995). This will result in lower consumer trust, and, thus, less likelihood of future patronage (Miyazaki 2008). If privacy was an issue customers really value when consuming online, an ESP who are privacy friendly would achieve a competitive advantage over their counterparts (Tsai et al. in press).

Therefore, in the current e-services context, privacy policies must be delivered to customers, enabling them to make meaningful decisions about whether to provide personal information online (Antón et al. 2007). ESPs not only need to be responsible to inform and buttress consumers’ privacy protections and use their personal information only with their informed consent, but also need to find efficient solutions to proactively convey the information to customers regarding privacy practices and the value of reliable personal data used for promise u-services. In this study, these relevant activities are named “proactive privacy governance (PPG).” Governance means activities supported by the same goals as purposive behavior, oriented activities, and economic systems of rule. It may or may not originate from legal and formally prescribed responsibilities and does not need to depend on police powers to conquer defiance and attain compliance. Furthermore, it is the extent of enforcement of those laws, rules and regulations (Chadwick 2006). Accordingly, proactive privacy governance will be defined for present study as an ESP takes the initiative activities to interact with customers for the set of laws, rules, regulations, and value that govern the functioning of privacy protection in economic communities (Daouk et al. 2006). The proactive privacy governance measures are aimed at capturing different facets of the interactions between customers and ESPs in the B2C e-services context.

From the perspective of consumer behavior, rational consumers generally need related information to eliminate their privacy concerns before making decisions online. Therefore, an ESP’s proactive privacy governance should be able to fill the information gap and compensate for a finite human capacity to assess facts by proactively providing a complete picture of the privacy practices to their customers. Drawing upon the ISCT and considering the procedural justice when an individual makes decisions online, the initiative activities of proactive privacy governance should include three dimensions: proactive provision and protection (PPP), proactive education (PE), and proactive monitoring and feedback seeking (PMFS). The definitions for each one are spelled out subsequently.

Proactive provision and protection refers to an ESP proactively initiating efforts to inform customers and respect their rights and values with precise and understandable expressions to enhance customers’ comprehensions. This dimension captures ideas from the first two terms of the macrosocial contract in the ISCT and employs the principles of fair information practices (FIP) as guidance for professional conducting related policies. This is the rationale behind the proactive provision and protection proposed by this study.

Proactive education refers to an ESP proactively initiating efforts to educate customers about their assigned responsibilities, preventing from and obtaining redress for privacy invasions. This dimension captures ideas from the assumptions of bounded moral rationality in ISCT. ESPs need to educate customers to recognize their own responsibilities and obligations, the options or setup for security and privacy mechanisms, and redress information. These are particularly important for those who lack knowledge about information technology and privacy protection. This is the rationale behind the proactive education proposed here.

Proactive monitoring and feedback seeking refers to an ESP initiating efforts to monitor privacy and security management mechanism, send alert message in case customers' preferences are breached, and solicit or respond to their feedback in order to ensure customers' rights and preferences. This dimension captures ideas from the assumptions of ISCT that individual contractors would desire to join economic communities based on their personal values. Numerous ESPs now place privacy policies online but not guarantee compliance with privacy practices (Antón et al. 2007). Although social norms and laws serve as the fundamental guidelines for ESPs to regulate their privacy practices and for users to establish necessary information disclosure principles, they should monitor the dynamic privacy systems and ensure customers' benefits and rights. Proactively monitoring and seeking feedback enables an ESP to send an alert message to customers in the case of irregularities or receive information from customers regarding experience of e-services usage; thus customers give the ESP a "voice". Customers are likely to feel better and this mechanism allows them to have a strong voice (Challagalla et al. 2009). Hence, ESPs need to take action to monitor the system to prevent invasions and proactively collect feedback in order to rapidly respond to customers. This is the rationale behind the proactive monitoring and feedback proposed by the authors.

All above concepts are established based on the consumer perspective and elicited from ISCT (Donaldson & Dunfee 1994, 1995; Dunfee et al. 1999). As stated previously, consumers may ignore some important information from the related privacy policies due to time consumptions or difficulties in realizing it. The above mentioned three proactive governance activities will be a kind of promise, which means to mitigate possible concerns and risks caused by information asymmetry. Prior studies (Tsai et al. in press; Kobsa 2007) have recognized that online customers value insight into how their personal information is being used and how they can control its usage. The presence of privacy practices online has clear effects on customers, particularly on their perception of trust in ESPs, their perception of the privacy policies, and their stated willingness to disclose data. The pragmatic conclusion at this point for ESPs is to initiate communication with customers about their privacy governance which is likely to counterbalance their concerns and foster their data disclosure. The definition of disclosure willingness is derived from prior work conducted by Awad and Krishnan (2006) and means that consumers are willing to provide personal information for some activities of u-services, such as shopping and personalized services. Drawing upon ISCT, the proactive privacy governance will provide a more comprehensive picture for ESPs' privacy practices and it is also expected to have a positive effect on information sharing. Hence, the hypothesis is proposed as follows.

H1: An ESP's proactive privacy governance mechanism will positively influence customers' disclosure willingness for u-services.

2.5 ISCT, Perceived Value, Competitive Strategies and Moderating Effects

On the assertion of ISCT, people would wish to retain the right to choose their own values, and desire to participate in economic communities that reflect their personal and cultural values (Donaldson & Dunfee 1994; Dunfee et al. 1999). In this study, both e-services and u-services can be regarded as economic communities. Services providers should be responsible to proactively convey privacy practices to customers and confirm their understanding. Meanwhile, from the economic perspective, an individual perceived value of goods or services is essential in an economy, particularly, when they consider partaking in a community. The personal/cultural values or perceived value are relevant to individual differences and preferences and also pertain to marketing strategies. This prospect is exactly in accordance with the suggestion by Antón et al. (2007) that privacy management practice should involve broad discipline including human, economic, legal and technical perspectives. When an ESP endeavors to extend e-services to the frontiers of u-services, PPG may be merely a community-based moral fabric to maintain the procedural justice and privacy protection assurance to enhance customer disclosure willingness. Some progressive and attractive strategies may also need to be applied to captivate customers besides the perceptions of value on the u-services themselves.

From the perspective of competitive advantages proposed by Porter (1996, 1980), an organization's competitive advantage results from the way its activities fit and reinforce one another. Based on ISCT

and economic perspective, as an ESP is striving to pioneer in the early stage of u-services, proactive privacy governance, delivering u-services value to customers (that is perceived value), and competitive strategies for u-services will be recognized as the three most significant activities for persuading customers to disclose real and relevant information. Accordingly, these three activities must fit and strengthen one another. Drawing upon Venkatraman's (1989) moderation perspective of fit, it is conceptualized as interactions among those previously mentioned three constructs. This conceptualization is proper as fit is in theory anchored to a certain criterion variable (i.e. customer disclosure willingness for u-services), the perspective has affirmative theoretical specificity, and the interactions between the predictors and moderators are the major factor of the criterion variable. Consequently, fit is examined as the interaction effect of the predictors and moderators on the criterion variable and can also be theoretically linked to the concept of complementarities as a positive interaction effect, in which more of one variable would lead to more of the other more valuable (Tiwana 2008, 2009). Thus, the present work examines not only the main effects of those three antecedents on customer disclosure willingness but also the interactions among them.

2.5.1 *Perceived Value and Its Moderating Effects*

Customer perceived value is the benefits perceived from the customer's standpoint, which is the subjective preference and estimation of a product/service features and performance, and the results of the use of that product/services. Perceived value can, generally, be conceptualized as a multidimensional construct including emotional, social, quality/performance and price/value for money and also has been recognized as an antecedent to satisfaction and behavioral intentions (Helkkula & Kelleher 2010; Sweeney & Soutar 2001; Turel et al. 2007). In the present work, the perceived u-service value is adapted from prior studies (Sweeney & Soutar 2001; Zeithaml 1988). It refers to "the consumer's overall assessment of the utility and benefits of u-services based on perceptions of what is received and what is given" and three dimensions (i.e. emotional, social, and functional) are assessed for perceived u-services value. The definitions for each one are adopted from the previous work conducted by Sweeney and Soutar (2001) that are spelled out as follows. As the definition of emotional value is the utility derived from the feelings or affective states that u-services generate, social value refers to the utility derived from the ability of u-services to enhance social self-concept. The functional value is defined as the utility derived from the perceived quality and expected performance of the u-services. Hence, guided by the ISCT perspective and the above statement, the following hypothesis is proposed.

H2a: Customers' perceived u-services value will positively influence their disclosure willingness for u-services.

As mentioned previously, the majority are privacy pragmatists who are concerned about their privacy but will also evaluate the benefits and potential risks as well when making decision for information disclosure. Despite the fact that the assurance of PPG may foster customers' information disclosure, they will also assess them for their own sake on the basis of how much value they can obtain from the u-services adoptions. Furthermore, despite the fact that the assurance of PPG may foster customers' information disclosure, their perception of u-services value may also interact with the relationship based on Porter (1996, 1980) and Venkatraman's (1989) perspectives. This leads to the next hypothesis.

H2b: Customers' perceived u-services value will positively moderate the relationship between the PPG and their disclosure willingness for u-services.

2.5.2 *Competitive Strategies and Its Moderating Effects*

Following the assertions taken from the ISCT, customers would wish to take part in economic communities for their own sakes or compatible with their own value belief. In addition to customer perceived value on u-services themselves, services providers may also propose some attractive strategies (i.e. activities) to intensify customers' disclosure willingness. The perspective of competitive strategy (Porter 1996, 1980) emphasizes difference and refers to deliberately selecting of a diverse set of activities to convey a unique mix of value. After synthesizing prior studies in

consumer behavior domain, some crucial elements regarding an individual’s intentional behavior have started to immerge. These include reputation (Challagalla et al. 2009; Culnan & Carlin 2009; Jøsang 2007; Kobsa 2007), personalized services (Awad & Krishnan 2006; Chiu et al. 2010; Kobsa 2007; Lavie et al. 2010; Piccoli et al. 2008), alliance-based services (Chellappa & Saraf in press; Fano & Gershman 2002; Ratsimor et al. 2002), and incentives such as gifts, rewards or discounts (Granados et al. 2010; Hui et al. 2007; Tsai et al. in press; Turow et al. 2008). Hence, the competitive strategies in this study are defined as a varied set of activities employed to convey a unique mix of value to customers, and the above mentioned four elements are included (i.e. reputation, personalization, alliance-based services, and incentives). Based on the above statement, competitive strategies have not only an impact on a customer’s disclosure willingness but also interactions on the relationships among PPG, perceived value, and disclosure willingness. This leads to the following hypotheses.

- H3a: The service provider’s competitive strategies will positively influence customers’ disclosure willingness for u-services.
- H3b: The service provider’s competitive strategies will positively moderate the relationship between customers’ perceived u-services value and their disclosure willingness for u-services.
- H3c: The service provider’s competitive strategies will positively moderate the relationship between the PPG and customers’ disclosure willingness for u-services.

Drawing upon ISCT, this study is prone to present a comprehensive framework that supports a better privacy practices in need. The conceptual framework identifies the relevant technical, legal, human, and economic perspectives required to support the proactive privacy practices, showing the relationships between these important constructs. This conceptual framework is depicted in Figure 2.

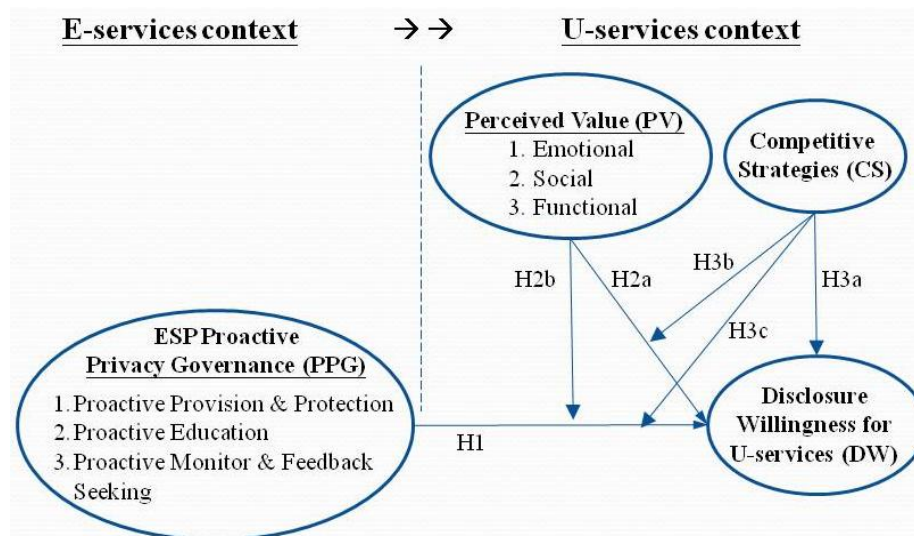


Figure 1. Conceptual model for proactive privacy practices from traditional e-services extending to the u-services context. Note: PPG and PV were tested as 2nd order constructs.

3 RESEARCH METHODOLOGY

3.1 Instrument Development

Various relevant studies were reviewed to ensure that a comprehensive list of measures were included. Except for proactive privacy governance, the majority of the scale items are adopted from the existing literature but adapted to privacy context. Those items for proactive privacy governance (proactive provision and protection, proactive education, and proactive monitor and feedback seeking) were new

developed and the concepts were derived from ISCT, FIP and previous studies were conducted by Challagalla et al. (2009) and Culnan and Carlin (2009). Those measures for perceived u-services value (i.e. emotional, social, and functional) were derived from previous studies (Sweeney & Geoffery 2001; Turel et al. 2007; Yang & Jolly 2009). While the concept of competitive strategies were derived from Porter (1996, 1980) and those measures were elicited from prior studies (Chellappa & Saraf in press; Hui et al. 2007; Sheng et al. 2008), the items for disclosure willingness were tailored from Dinev and Hart (2006) and Van Slyke et al. (2006). All scales were slightly modified for the privacy governance in e-services and u-services context.

Finally, the survey questionnaire comprised three sections. The first section gave concise instructions and a definition of proactive privacy governance, e-services and u-services. The second section consisted of 14 questions capturing the demographic information of the subjects such as gender, age, highest educational level achieved, and related experiences on e-services. The last section recorded the subject's perception of each variable in the model. All constructs were measured on seven-point Likert scales with anchors from 1 being "strongly disagree" to 7 being "strongly agree".

The preliminary survey instrument was pretested with an iterative panel discussion and personal interview process (including faculty, doctoral and graduate students) to verify the completeness, wording, and appropriateness of the instruments as well as to confirm the content validity. These discussion and interviews enabled the researchers to gauge the clarity of the tasks, assess whether the instrument was capturing the desired phenomena, and verify the important aspects that had not been omitted. Changes were made and several iterations were conducted; the review process was continued until no further modifications to the questionnaire were needed. Some questions were eliminated because they were found to represent essentially the same aspects as other questions with only slight wording differences. Some questions were modified because the semantics appeared ambiguous or irrelevant to proactive privacy governance characteristics. Finally, the self-administered questionnaire consisted of 36 items measuring eight latent variables.

3.2 Data Collection

Data for present study were collected from the B2C e-service sector and only considered those who had experience on receiving promotion advertisements via mobile communication devices (i.e. cellular phone, PDA, etc.) as representatives because those users may be more aware of some of the benefits from u-services and its potential at this infant stage. Hence, questionnaires were randomly distributed to those students who took information or management related courses in universities in the south of Taiwan due to the nature of both e-services and Internet users such as most of online users are young students. Considering the u-services are still in the infant stage so that participants may have no comprehensive picture about u-services, an example of shopping scenario was, hence, given to all participants before having their answers. Finally, two hundred and sixty-six questionnaires were returned. Data were excluded to ensure the construct validity when some respondents gave incomplete or invalid answers. In Total, 52 questionnaires were dropped and left 213 valid questionnaires for the statistical analysis. The potential non-response bias was assessed by comparing the early versus late respondents that were weighed on several demographic characteristics. The t-test and χ^2 analysis were used to examine the distributions between these two data sets. The results indicated that there are no statistically significant differences, and demonstrated that non-response bias was not a serious concern in this study.

The data show that 62.9% respondents' age was from 19 to 30 and more than half respondents had experiences on e-services exceeding 4 years. Whereas 22% of the participants indicated that they usually ignore privacy relevant statements on web sites and 68.5% ones only roughly or partially read it, approximately four-fifths of the respondents provided false personal information online. Moreover, about three-fourth participants have consumed in the past one year.

3.3 Analysis Methods

The empirical data collected were analyzed using the partial least squares (PLS) method in view of its ability to handle formative constructs and highly complex predictive models. This approach was

chosen since PLS uses component-based estimation, maximizing the variance explained in the dependent variable and does not require multivariate normality of the data. Furthermore it is less demanding on sample size, whereas Linear Structural Relationships (LISREL) is recommended for confirmatory analysis and requires a more stringent adherence to distributional assumptions (Chin 1998). In order to operationalize the second order factors, a repeated indicators approach (i.e., the hierarchical component model) was used. This is suitable for PLS estimations, and as such, each second order factor (i.e. proactive privacy governance and perceived u-services value) was measured by all the indicators of the each first-order factor.

For these reasons, PLS-Graph 3.0 was used for the data analysis. The evaluation of the model fit was conducted in a two-phase approach, i.e. a measurement model and a structural model. In the measurement model, the psychometric properties of all the scales were first assessed through a confirmatory factor analysis (CFA). This step was used to assess the reliability and validity of the measurement model and test if the empirical data conformed to the presumed model. Then, the structural relationships were validated using bootstrap analysis (Chin 1998).

4 DATA ANALYSIS AND RESULTS

4.1 Measurement Model Assessment

To validate the measurement model, the acceptability of the measurement model was assessed by the reliability of individual items, internal consistency between items, and the model’s convergent and discriminant validity. Those items that shared a high degree of residual variance with other items in the instrument were eliminated from further analysis (Gerbing & Anderson 1988). After the initial analysis, all the items were higher than the threshold value of 0.7 and reached a high level of reliability and validity (Hair et al. 2005). As shown in Table 1, the loadings for all the constructs with reflective measures were well above the recommended cutoff and statistically significant at the 0.001 level, indicating satisfactory item reliability for the reflective measures. Thus, the measurement model exhibited sound reliability and validity necessary for further testing of the theoretical hypotheses.

Sub-construct		Indicators	Loadings
Proactive Privacy Governance (PPG)	Proactive provision & protection (PPP)	PPP1 ~ 5	0.73 ~ 0.89
	Proactive Education (PE)	PE1 ~ 5	0.81 ~ 0.88
	Proactive monitor & feedback seeking (PMFS)	PMFS1 ~ 5	0.74 ~ 0.89
Perceived U-Services Value	Emotional	Emo1 ~ 5	0.79 ~ 0.89
	Social	So1 ~ 4	0.81 ~ 0.90
	Functional	Fun1 ~ 3	0.84 ~ 0.87
Competitive Strategies		PV1 ~ 4	0.76 ~ 0.86
Disclosure willingness		DW1 ~ 5	0.79 ~ 0.82

Table 1. Confirmatory factor loadings

Table 2 shows the composite reliability, average variance extracted (AVE), and square root of the AVE, as well as the correlations between the constructs. The composite reliability values of all the constructs were above the recommended level of 0.70, indicating adequate internal consistency (Hair et al. 2005). Convergent validity is demonstrated as the AVE values for all constructs and was higher than the suggested threshold value of 0.50. Comparing the square root of the AVE (bold figures on the diagonal) with the correlations among the constructs, the result indicates that each construct shares a larger variance with its own measures than with other constructs, and discriminant validity was therefore supported (Chin 1998; Hair et al. 2005). In addition, multicollinearity was also checked due to the relatively high correlations among some variables. The resultant variance inflation factor (VIF)

values (i.e. between 1.23 and 1.65) and tolerance values (i.e. between 0.61 and 0.82) for all of the constructs are acceptable, ruling out potential multicollinearity problems.

Construct	Composite Reliability	AVE	CS	DW	Emo	Fun	PE	PMFS	PPP	So
CS	0.88	0.65	0.81^b							
DW	0.90	0.65	0.52	0.81						
Emo	0.92	0.70	0.53	0.44	0.84					
Fun	0.89	0.72	0.53	0.33	0.60	0.85				
PE	0.93	0.73	0.41	0.37	0.28	0.21	0.86			
PMFS	0.92	0.71	0.44	0.35	0.25	0.27	0.79	0.84		
PPP	0.91	0.66	0.29	0.17	0.26	0.23	0.66	0.65	0.82	
So	0.91	0.73	0.39	0.36	0.57	0.55	0.20	0.17	0.18	0.85

^a Average variance extracted.

^b Diagonal elements are the square roots of AVE. Off-diagonal elements are correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements.

Table 2. Inter-Construct Correlations: Consistency and Reliability Tests

4.2 Structural Model Assessment and Hypothesis Testing

The structural model was examined by the SEM technique so the effects among those four latent constructs were tested. Figure 2 presents a graphical depiction of the PLS results, which shows the standardized path coefficients among the constructs using the bootstrap resampling method and the explained construct variances (R^2 value) for the conceptual model. Before testing the moderating effects among those three independent variables (PPG, PV, and CS), the direct effects of each one on customers' disclosure willingness were tested as model 1 and the results were illustrated in Table 3. As hypothesized, the paths from proactive privacy governance (H1), perceived u-services value (H2a) and competitive strategies (H3a) to disclosure willingness were found to be positive and significant, respectively. Hypotheses H1, H2a and H3a were all supported, and the model 1 explained 31.5% of the variance in customers' disclosure willingness.

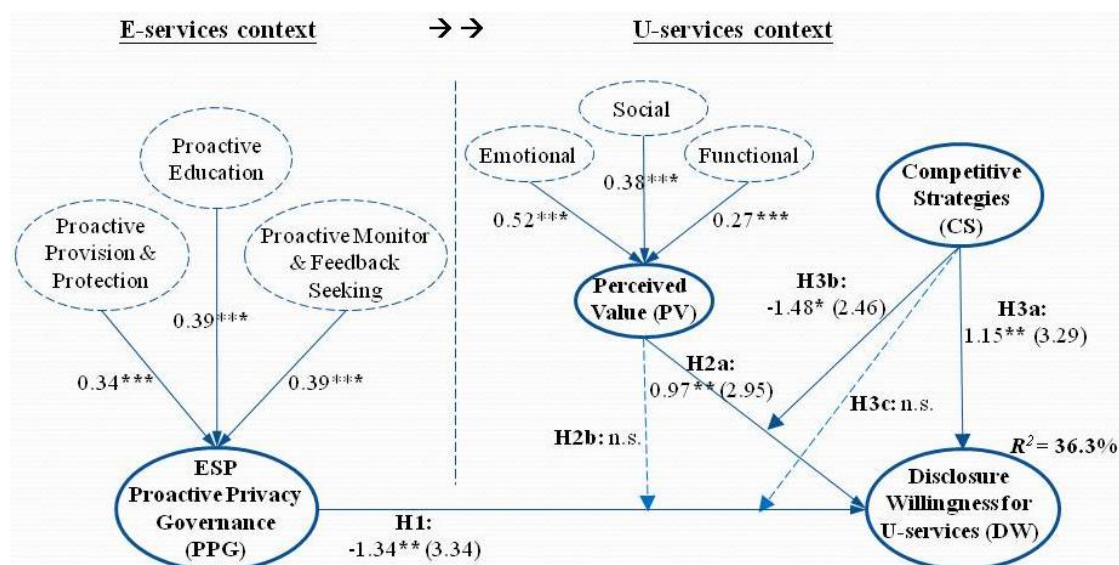


Figure 2. The empirical results. Note: PPG and PV were tested as 2nd order constructs. * Significant at .05 level; ** Significant at .01 level; *** Significant at .001 level; n.s. insignificant at .05 level. Path coefficients with t-value in parentheses.

Following Porter’s (1996, 1980) description of competitive advantage which comes from the way an organization’s activities fit and strengthen one another, and Venkatraman’s (1989) guidelines to ensure correspondence between theory and tests for fit, the hypotheses among those three independent variables (PPG, PV, and CS) on disclosure willingness were assessed using moderation analysis in the structural model by creating three interaction terms namely PPG × PV, PV × CS, and PPG × CS, and examined in model 2. The results are also demonstrated in Table 3. Evidently, against expectation, two interactions (i.e. PPG × PV, and PPG × CS) had no significant effects on customers’ disclosure willingness as shown by the dotted line in Figure 2, so H2b and H3c were not supported in this study. Furthermore, hypothesis 3b states that CS will positively moderate the relationship between PV and DW. Yet, the interaction had significant but negative effect on disclosure willingness. Thus, H3b was partially confirmed. The full model, namely, model 2, explained 36.3% of the variance in customers’ disclosure willingness.

Independent Variable (Path/Beta Coefficient)	Direct Effect		Moderating Effect	
	Model 1		Model 2	
H1: PPG → DW	0.123*	(2.03)	-1.341**	(3.34)
H2a: PV → DW	0.222**	(3.12)	0.965**	(2.95)
H3a: CS → DW	0.337***	(4.39)	1.146**	(3.29)
Interactions				
H2b: PPG × PV → DW			0.980	(1.72)
H3b: PV × CS → DW			-1.480*	(2.46)
H3c: PPG × CS → DW			0.569	(1.26)
R ²	0.315		0.363	

Table 3. Model Tested and Results

5 DISCUSSIONS AND CONCLUSIONS

Considering the serious privacy concerns connected with the nature of u-services at this infant stage, the motivation behind this study was to better understand what ways an e-services provider can initiate more comprehensive privacy practices (i.e. proactive privacy governance, perceived u-services value, and relevant competitive strategies) to customers and facilitate their disclosure willingness for further u-services adoptions. Effective use of customer information is a critical success factor for businesses extending their e-services to, and fostering better customer relationship in the u-services context. While privacy has been recognized as an ethical and strategic issue in response to competitive pressures in the business sector, this study seeks to provide a theoretical framework that embraces technical and non-technical elements such as human, legal, and economic perspectives relevant to privacy practices guided by the integrative social contracts theory.

Structure model tests, namely model 1 in Table 4, indicate that all proposed predictors (i.e. proactive privacy governance, perceived u-services value, and relevant strategies) have positive and significant direct effects on customers’ disclosure willingness. Particularly, competitive strategies have extremely strong impact on disclosure willingness. Evidently, the service providers’ reputation, incentives, as well as both personalized and alliance-based services are crucial concerns when making decisions on personal information disclosure. This finding is consistent with numerous prior studies (Challagalla et al. 2009; Chellappa & Saraf in press; Chiu et al. 2010; Culnan & Carlin 2009; Granados et al. 2010; Kobsa 2007; Lavie et al. 2010; Tsai et al. in press). Furthermore, as depicted in Figure 2, noticeably, all PPP, PE, and PMFS have tremendously great contributions to PPG. This suggests that services providers can initiate their privacy governance mechanisms through these three ways. Similarly, the conceptualizations of emotional, social, and functional perceptions of u-services all significantly contribute to customer perceived value.

As presented in the results, the tricky and puzzling finding was a significant but negative interaction of competitive strategies on the relationship between customers’ perceived u-service value and

disclosure willingness. This is a significant departure from prior study (Porter 1996, 1980), which has asserted that an organization's activities should reinforce one another based on the perspective of competitive advantage. The reasons for this finding are not clear, but several possible reasons might exist. For example, in respect to customers' perceptions of u-services value, it was employed to assess the benefits brought from generic u-services themselves rather than services providers. Hence, from customers' standpoints, it seems to make no big difference among various providers although the perceived u-services value significantly influences customers' disclosure willingness (H2a). In contrast, referring to prior work (Porter 1996, 1980), the competitive strategies here could be viewed as kinds of strategic positioning, which perform different activities from those of their competitors' or perform similar activities in different ways. Differences in operational effectiveness among providers are pervasive. Considering what benefits and assurances services providers can offer, customers will choose one from them. Thus, while a service provider takes actions to convey more attractive and different competitive strategies from rivals' to customers, the effect of customers' perceived u-services value may correspondingly decline on customers' disclosure willingness. In other words, this may imply that the impact of competitive strategies outweigh perceived value's.

Contrary to our expectations, the striking findings are the absence of significant interactions for both perceived value and competitive strategies on the relationship between proactive privacy governance and customer disclosure willingness. This indicates that the impact of proactive privacy governance on customer disclosure willingness is extremely substantial. Apparently, from customers' perspective, ESPs should take actions to initiate interactions with customers to convey their own privacy governance mechanisms to enhance customers' disclosure willingness rather than just post privacy relevant policies and information on the web sites. The proposed three forms (i.e. proactive provision and protection, proactive education, and proactive monitor and feedback seeking) could be an effective solution to reach the goal.

The overarching contribution of this study is to an emerging research stream on proactive privacy practices, to which it contributes an original theoretical explanation for how an ESP's proactive privacy governance mechanisms and relevant competitive strategies interact with customers' perceptions of u-services value, and then influence their disclosure willingness. With the high proportion (78.3% in this study, and 63% in Kobsa's work (2007)) of respondents providing counterfeit information for web sites, an effective solution for privacy practices is particularly pressing in this infant stage.

This study started with the integrative social contracts theory and proposed a concept model to probe the rather sophisticated causal relationships between the services providers' proactive privacy practices and customer behaviors. In addressing the issues, the study suffered from certain limitations which also represent opportunities for further research. Based on a single sector, it is not clear to what extent the results can be generalized. Moreover, the proposed model variables explained 36.3% of the variance in customers' disclosure willingness, further study might need to explore extra significant antecedents and expand the boundaries of the analysis to other sectors as well.

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