The Influence of the Provider's Service Fairness on the Customer's Service Recovery Satisfaction and on Positive Behavioral Intentions in Cloud Computing

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Abstract: The study shows a statistically significant positive effect between the provider's perceived structural service fairness and the customer's service recovery satisfaction and, in turn, also shows statistically positive regression weights between the customer's service recovery satisfaction and the intension to react positively in three directions: (1) to continue with the software, (2) to propagate a positive word-of-mouth (WOM), (3) to give honest feedback. The influence of the provider's perceived social service fairness on the customer's service recovery satisfaction does not appear to be significant but indicates a positive correlation. The study is based on data collected via a structured questionnaire from qualified users who have subscribed to Business-to-Business customer relationship management software and who use it as Software-as-a-Service in the cloud. Structural Equation Modelling was applied for the data analysis in order to confirm the chosen dependency model. The findings may help service providers to better understand their customers and to stimulate constructive actions to their continual improvement process.

1 INTRODUCTION

Cloud computing has developed to be one of the fastest growing markets with an expected value of approximately US$68 billion by 2018 wherein customer relationship management (CRM) applications used in software-as-a-service mode (SaaS) will capture a market share of about 25% with a compound annual growth rate (CAGR) of about 12% (Buyya et al. 2009; Dhar 2012; Pang 2014). More than 500 major vendors and service providers compete in this arena in which the customer ultimately decides on the provider's business success or failure. Customer satisfaction (CS) plays the role as the main key performance indicator in service management and represents an important control in the continual improvement process of every service provider.

A particular challenge in service management is presented when expected and agreed service levels are – for whatever reason- not met i.e. in the case of service failure. Disappointed customers will not only complain and possibly switch provider, but will also disseminate their bad experiences. Negative word-of-mouth (WOM) may reach up to 20 other (potential-)customers and may thus harm the provider's business significantly (Zemke 1999).

A service provider should be well-equipped for service failure recovery so that he can retain customers and maybe regain CS. This should also occur in cases of painful service failure (Johnston 1995). Some authors claim that after effective service recovery, customers might feel higher levels of satisfaction when compared with previous levels (known as "service recovery paradox") (McCollough & Bhardwaj 1992). Effective service recovery, however, must be part of any service provision concept in order to survive and grow in a highly competitive market.

The main objective of this paper is to design and to test a model which shows the dependencies between the perceived internal structures and processes of a service provider and the service recovery satisfaction (SRS) of the customer and

how, in turn, CS stimulates customer behavioral outcomes in favor of the current and future business of the service provider.

Service recovery, moreover, has been an interesting area for practitioners and marketing scholars for years (Kau & Loh 2006; Zhou et al. 2013).

This study examines the focal determinants of fairness based on Greenberg's (1993) taxonomy of organizational fairness and their influence on SRS. The two distinct fairness dimensions are structural and social fairness. Figure 1 presents the conceptual model and hypothesized relationships in this study.

The service fairness (structural and social) of the provider would then positively impact the SRS of the customer which, in turn, favorably influences the customer behavior intensions in three directions: (1) to continue with the software, (2) to propagate positive word-of-mouth (WOM), (3) to give honest feedback to the provider and external agencies, such as consumer protection organizations. In a previous paper, a similar chain of effects was evident in cases where the service was performed correctly (Lawkobkit & Larpsiri 2014).

2 LITERATURE REVIEW AND HYPOTHESES

2.1 Service Recovery Satisfaction

Levesque and McDougall defined satisfaction as the "overall customer attitude towards a service provider" (Levesque & McDougall 1996, p.14). It means the customer's overall judgment on the service provider (McDougall & Levesque 2000) that a product or service itself, or the product or service feature, is providing a level of under or over fulfilment (Tronvoll 2011). A service failure occurs whenever the service provider fails to deliver his services as expected by the consumer (Kelly & Davis 1994). A service failure is basically a flawed outcome that might indicate a breakdown in reliability (Berry & Parasuraman 1991).

In the computing area, customer SRS can be defined as the end-user's perception when interacting with a specific application, including perception, toward service failures and CS or dissatisfaction with the organization's approach to service recovery (Kwok et al. 2009).

Service failures and recoveries and their determinants have been studied in different contexts such as public and private service delivery (Zhou et

al. 2013) and can enhance service quality and avoid negligence (Kuo et al. 2011).

Previous research studied many factors influencing SRS such as recovery and order (time) (Boshoff 1997), redress and responsiveness (Hocutt et al. 2006), distribution, procedural and interactional justice (Choi & Choi 2014). Past research has used the term 'justice' and 'fairness' interchangeably. Here, the term 'fairness' is used for the purpose of consistency.

Previous research shows that service recovery justice for customers affects their level of satisfaction (Kuenzel & Katsaris 2009). SRS can bring several benefits such as positive WOM and re-purchase intention (Tax & Brown 1998).

The literature suggests that fairness could play a significant role in service failure and recovery (Lawkobkit & Larpsiri 2014; Yang & Peng 2009). In service management, perceptions of fairness are important antecedents of recovery satisfaction and lead to recovery satisfaction (Lawkobkit & Kohsuwan 2012).

The level of SRS results from many factors although these are all grounded in the customer's experience of the application, of the services taken and the interaction with their service providers. Therefore, improving the level of CS would be a very important goal to the service provider.

2.2 The Focal Determinants of Service Fairness and Service Recovery Satisfaction

Organizational fairness is one of the important factors that has been widely studied also in the field of organizational behavior (Colquitt et al. 2001). Organizational fairness has also received attention in the context of employee perceptions of fairness in the workplace with regard to matters such as job satisfaction, complaint handling, and human research management (Folger & Greenberg 1985).

Organizational fairness may be defined as the perception of fairness by an individual in the working environment (Byrne & Cropanzano 2001; Greenberg 1990). Greenberg's (1993) rudimentary taxonomy highlights the distinction between the structural and social determinants of fairness. A taxonomy is formed with two independent dimensions: fairness (procedural and distributive), and focal determinants (structural and social).

One of the major research areas in organizational psychology has been focused on the concept of focal determinants (Cropanzano 1993). Some prior research has discussed focal determinants in the area

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of strategic decision making in leadership and ethics (Tatum & Eberlin 2007).

In addition, prior studies have revealed a relationship between social fairness and both managerial performance (Tatum et al. 2002) as well as employee behaviors (Masterson et al. 2000). Social fairness has become one of the important components of outcome fairness. In a transformational leadership study, social fairness had more impact than structural fairness because the leader cares about the needs and well-being of the followers and wants to be open and responsive (Eberlin & Tatum 2005).

Greenberg's (1993) taxonomy positions the focal determinants of fairness as the immediate focus of a just action relative to existing categories of fairness. The two specific determinants of service fairness can be briefly characterised by the following:

1) Structural Fairness: This type of fairness refers to the structural elements of the organization and focuses on the environmental context within which interaction occurs (Greenberg 1993).

In cloud service, structural fairness refers to the structural elements of the service provider that allow the involvement of their customers in decision-making and provide a fair distribution of outcomes. The customer is convinced that he and the supplier follow the same agenda. When customers perceive high structural fairness, they will believe that an unfair outcome is merely an accident and will expect that structural fairness will still hold.

Satisfied customers will be less likely to terminate their relationship with their service providers. Moreover, the level of satisfaction will increase if their service providers use technological support to track and monitor their services with on-line and off-line customers. Several results from previous studies support the concept of perceived structural fairness that has impacted directly on outcomes (Tatum & Eberlin 2007). This consideration leads to the following hypothesis:

H_1: Perceptions of structural service fairness are positively associated with SRS.

2) Social Fairness: This type of fairness is recognized also as one of the significant sources of fairness perception in Greenberg's study (1993), who proposed a distinguishable fairness in the taxonomy. Social fairness focuses on information exchange on an individual level by "showing concern for individuals regarding the distributive outcomes they receive" (Greenberg 1993, p.85), and "may be sought by providing knowledge about procedures that demonstrate a regard for people's concerns" (Greenberg 1993, p.84).

In cloud service, social service fairness indicates to customers that the service provider cares about their well-being and keeps customers informed before and during changes to the service process.

Information about services is given to customers who have been involved. The CS resp. SRS level will increase when they feel the service provider has treated them with respect, politeness, sincerity and fairness throughout the service process. Once the service providers are truthful in all communication and tailor their explanations to match customer needs, the level of information fairness will always be high. The customers perceive a fair information exchange before, during and after the service process from the perspective of social fairness, and a positive customer outcome can occur. From this, the following hypothesis is developed:

H_2: Perceptions of social service fairness are positively associated with SRS.

These two service fairness factors should have an impact on SRS, and H_1 & H_2 address the question of whether an individual's perception of structural and social fairness is strong enough to influence satisfaction, thus indirectly contributing to continued usage and behavioral intention.

2.3 Service Recovery Satisfaction and IS Continuance Intention

SRS is one of the key factors for IS service scholars (Kassim et al. 2012; Sun et al. 2014; Wu 2013). Several IS researchers have also found that satisfaction is a strong predictor of system usage, IS success, service recovery and continuance behavior (Kim et al. 2012).

Satisfaction is an influential factor in the re-consumption intention of customers. In accord with the study of Bhattacherjee (2001), the post-acceptance model of IS continuance (PAM) views relationship satisfaction as a basis for the continued intention to use IS; satisfaction with prior use has a strong positive impact on customer intentions to continue using the system. The more an individual customer is satisfied with prior usage experience, the greater the chance that the customer will continue to use the system.

Continuance behavior may be defined as explaining user intentions to continue or discontinue using an IS, where a continuance decision follows an initial acceptance decision. Therefore, satisfaction is a main determinant influencing continuance intention as revealed in various research (Zhou 2013) in previous continuance study contexts such as shopping (Chen & Chou 2012), e-learning (Cheng

2014).

This research employs the concept of IS continuance intention and applies the measurement approach from Bhattacherjee (2001). This dimension has three scale items to measure the continued usage of the SaaS application rather than discontinuing its use or using an alternative. Thus, the relationship between satisfaction and continuance intention can be hypothesized as:

H_3: Service recovery satisfaction with IS usage is positively associated with IS continuance intention.

2.4 Service Recovery Satisfaction and Behavioral Intentions

Fishbein and Martin (1975) and Ajzen and Fishbein (1980) developed the Theory of Reasoned Action, which is a model to predict behavioral intention. Behavioral intention measures a person's relative strength of intention to perform a behavior. In this regard, two customer behaviors are WOM and feedback to the service provider, both of which are related to customer retention and the customer's long-term relationship with their providers.

WOM refers to "informal communication between private parties concerning evaluations of goods and services" (Anderson 1998, p.6), which is about valence (positive, negative or neutral). A key motivation for this behavior is a customer's experience with the service. This service experience produces "a tension which is not eased by the use of the product alone, but must be channeled by ways of talk, recommendation, and enthusiasm to restore the balance" (Dichter 1966, p.148). Additionally, WOM reflects a sense of loyalty (Zhang et al. 2010).

WOM behavior is defined in this study to refer to the customer's intention to share favorable information about the service provider and its service among peers. We believe that any positive WOM activity contributes to the viability of a technology with support services (CRM-SaaS) because it influences service fairness and can be exploited by the service provider.

Several previous studies discussed the relationship between recovery satisfaction and WOM (Seawright et al. 2008). Many scholars have revealed the positive relationship between recovery satisfaction and WOM (Wen & Geng-qing Chi 2013); therefore, this study proposes the following hypothesis:

H_4: Service recovery satisfaction related to positive word-of-mouth is positive and strong.

Customer feedback with regard to the second behavior indicates that positive feedback is always driven by satisfaction (Saha & Theingi 2009). A very interesting finding from Söderlund (1998) was that negative feedback is more likely to be provided by dissatisfied customers because of the compensation involved. However, customers always provide positive feedback without expecting a reward. In the digitized era, customers can provide their feedback in various forms of online feedback mechanism based on the specific category (Liu & Zhang 2010).

In this study of cloud service, feedback refers to the communication from customers as service receivers to their service providers and external agencies (e.g., consumer protection organizations). Customers might use satisfaction as a proxy for the level of service fairness that they should receive. Previous research revealed a positive relationship between feedback and satisfaction (Saha & Theingi 2009; Söderlund 1998). On the basis of the above discussion, the following hypothesis is therefore proposed:

H_5: Service recovery satisfaction related to positive feedback is positive and strong.

This study applies a conceptual model in which the perceptions of the focal determinants of service fairness and satisfaction result from the use of a technology with support services. This then leads to continuance intention and customer behavioral intention including WOM and feedback to their service provider.

3 METHODS, SAMPLE AND DATA COLLECTION

A quantitative study was conducted to assess the relationships between two dimensions of service fairness and SRS and their further propagation on IS continuance intention, WOM and feedback to the service provider.

Previously developed methods have been chosen as guides in this study for their merit and overall utility. However, they have been modified in order to reflect the specific cloud service context, as well as the targeted users. The service fairness items were adapted from a number of works but generally follow (Bies & Moag 1986; Leventhal 1980; Maxham & Netemeyer 2003; Shapiro et al. 1994). Other items were adopted from Maxham & Netemeyer (2002) for SRS. Bhattacherjee (2001) for IS continuance intention, and finally Zeithaml, Berry & Parasuranman (1996) for WOM and feedback.

All items were reworded to relate specifically to

CRM-SaaS. A 7-point Likert-scale was employed for each survey item, ranging from 1 = "strongly disagree" to 7 = "strongly agree".

In order to acquire and develop the most appropriate pilot version for the questionnaire, an expert panel reviewed the initial draft. These are professionals from both sides of service management: the academics and the industry. The pilot test (n = 60) showed good results for all variables on the service fairness concepts, satisfaction, IS continued usage, WOM, and feedback. After the various changes were incorporated and considered, the final version of the survey was then carried out.

SaaS providers in cloud service providing a service together with an application is the context of this study. Individuals from small and medium-sized enterprises (SMEs) were tapped. Those who use business-to-business (B2B) CRM-SaaS formed the population of the study. The pilot and main study focused on respondents who were B2B SRM SaaS-users.

Company databases of full-time employees working in organizations provided the source for prospective panel members. In all, 30,899 recruitment emails were sent. The first response rate was 11.62% (3,589). Four stringent screening questions constraints reduced them to 475 questionnaires, which gives a response rate of 1.54%.

There were 475 sample respondents, and among them, sixty percent were male while the other forty were female. The majority of the respondents were within the age range from thirty to fifty years old, and nearly ninety percent (88.84%) had over five years working experience. As shown in the data, the most common positions were operating staff (17.24%), supervisors (17.05%) and sales representatives (14.54%). Half of the respondents (52.20%) were from organizations employing between fifty and five hundred employees. The business service industry covered the highest percentage of respondents (58.52%).

The sample thus exhibited the following significant characteristics: they are from an experienced working-age group, have responsibility at their present company requiring frequent use of CRM-SaaS software, and interact with the software service provider.

4 RESULTS

The analysis results of the descriptive statistics for

internal reliability of the measures ranged from .961 (structural fairness) to .993 (Social fairness) for the two service fairness dimensions. The other four measures are .909 for satisfaction, .896 for continuance intention, .914 for WOM and .751 for feedback. All the measures included in the questionnaire showed adequate levels of initial internal reliability (> .70) (Hair et al. 2009).

Figure 1 and Table 1 present the standardized estimates and standardized regression weights, with all five hypotheses supported. The structural model was accepted and the chi-square was significant (chi-square = 1532.601; df = 399, p = .000, relative chi-square = 3.841; NFI = .888; GFI = .808; CFI = .907; TLI = .907; RMSEA = .077). The path coefficients for the structural model are shown in Table 1. The relative effect (standardized regression weights) between independent and dependent variables shows a statistical significance for all hypothesized relationships.

A summary of standardized path coefficients and the square multiple correlations (R^2), of the best-fit measurement model are shown in Table 1. The significance of four of five path coefficients to the model is amplified, even though they are positive and statistically significant at $p > 0.05$. Moreover, most of the R^2 values of the observed variables were greater than 0.50, indicating the reasonably good convergent validity of the model.
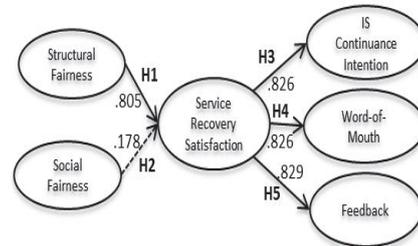

Figure 1: Result of Structural Equation Modelling (SEM).

Table 1: Results of standardized coefficients.

Outcome (R^2)	Determinant (Hypothesis)	Coefficients (*P*-value)
SRS (.950)	Structural fairness (H₁)	0.805 (***)
	Social fairness (H₂)	0.178 (.049)
Contin. .682)	SRS (H₃)	0.826 (***)
WOM (.682)	SRS (H₄)	0.826 (***)
Feedback (.688)	SRS (H₅)	0.829 (***)

Coefficients - Standardized regression weights (*** P-Value < .001)

The analysis of path coefficients indicates that four hypotheses are supported. The influence of

structural fairness (coefficient = 0.805) on SRS was significant. Unfortunately, social fairness (coefficient = 0.178) on SRS was only nearly significant (p = 0.49). Moreover, the influence of SRS on IS continuance intention was significant (coefficient = 0.826). Similarly the influences of SRS on WOM (coefficient = 0.826) and on feedback (coefficient = 0.829) were significant (see Table 1). The impact of the endogenous variables is indicated by the R^2 values. The highest R^2 appeared in satisfaction (95%) and the next R^2 was shown in feedback (68.8%), and continuance intention and WOM that had the same values (68.2%). (See Table 1) The results of the research model (H1 – H5) show that all five hypotheses are supported, so the model does work well in this context.

5 CONCLUSIONS

One of the key success factors for service management is related to successful service recovery when there has been service failure. The service providers' actions during service failure can influence their customer perceptions and the providers can have lessons to learn in order to be able to manage more effectively in success and failure areas in the future (La & Kandampully 2004).

The analytical results of this study showed that SRS is significantly influenced by the provider's structural service fairness. In other words, CS can be regained by fair and equal treatment of customers. This SRS in turn furthers the customer's intention to continue the service under consideration, to disseminate favourable information about this service (WOM), and to enter into a feedback process with the provider. Other factors that could influences the co-operation between customer and provider after a service failure is trust in the service provider and the commitment of the provider to resolve the failure.

The findings are consistent with previous research which placed greater importance on the information and contact for service recovery in a Korean context (e.g., Park & Kim 2011) and a positive relationship between satisfaction and feedback (e.g., Saha & Theingi 2009).

This study contributes to both academia and practice. In academia, the study builds on previous research on the relationships of service recovery attributes and CS enhancing continuance as well as behavioral intentions. For practitioners, especially for managers, the study provides an insight into the usefulness of service recovery measures to enhance

effectively CS, continued usage, WOM and feedback to the respective service providers.

In summary, this paper suggests that cloud service fairness promises to be a fruitful arena for additional research into the area of customer satisfaction, continued usage and behavioral intentions. Practitioners in the service support area would find additional practices to improve the level of CS during service recovery after a failure. Service support management should consider and must account for these areas.

In regard to the research background, CRM-SaaS was studied. It is suggested to expand the study to other cloud service applications in order to generalize the study by understanding the characteristics of cloud computing and possible deviations from the results of this study. Greater diversity in service recovery would be suggested for further research.

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