THE EFFECT OF CUSTOMERS' EMOTION ON SERVICE RECOVERY STRATEGY IN IT SERVICE FAILURES

Research-in-Progress

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Abstract

IT service support staff that deals with customer service inquiries online plays a key role in ensuring customer satisfaction and shaping customer experience. In reaction to service failures customers may exhibit some emotions that may influence service support staff's response. Without a face-to-face interaction with customers, service support cannot detect the emotional signals sent out from customers. Instead service providers must rely on the content of email or online form received to detect any emotional cues. Using data from an issues tracking system, we will empirically test (i) the effect of customer's emotion encoded in text content on service support staff's response and (ii) the effect of service recovery strategy on customer's sentiment on service quality when the service is recovered. Thus, the study will enrich our knowledge in the relationship between customer emotion and service recovery strategy in the context of IT service support.

Keywords: IT support, service recovery, customer emotion, customer satisfaction, issue tracking system

Introduction

It is utmost important for service providers to consistently create good customer experience to be able to grow, or at least survive, in today's increasingly competitive business environment. Unfavorable customer experience occurs when a customer perceives a loss due to a failure on the part of service providers. A service failure may arouse a customer's strong negative emotions, and such emotions influence recovery strategy and, in turn, customer satisfaction. If a service failure is not recovered promptly and adequately, it can lead to negative WOM or complaints (Gelbrich 2009). The purpose of service recovery is to return the customer to a state of satisfaction (Danaher and Mattsson 1994) and if recovery is carried out effectively, it can help diffuse customer's anger (Nguyen and McColl-Kennedy 2003). In resolving service failures, frontline employees are the faces of service companies and play a key role in ensuring customer satisfaction and shaping customer experiences and relationships (Bitner et al. 1990; Walter 1999). It is well recognized that service providers that are able to implement an effective service recovery strategy increase customer satisfaction and lovalty. Prior studies have investigated the impact of service recovery efforts, such as compensation, speed of response, acknowledgment of the problem, providing an explanation for the service failure, apologizing, empowering staff to resolve issues on the spot, being courteous and respectful, on post-recovery customer satisfaction. A large portion of the organization's response is carried out by the frontline employees, as they have direct access to customers and thus they are the most visible to customers. Customer satisfaction has also been found to be linked to frontline employees' authenticity, competence, and active listening skills (Gruber 2011).

The growth of Internet, the increase in mobility of workforce, and the development of cloud technologies provide many opportunities for existing and new organizations to deliver IT services, and the support of these services online. The online mode of service delivery and support has unique characteristics, making it different from the traditional ways of serving customers, where face-to-face meetings and phone conversations are the prominent modes of interaction. Without face-to-face interaction with customers, service providers cannot detect the emotional signals sent out from customers; instead service providers must rely on the content of email or online form received to detect any emotion exhibited by senders. Studies show that emotions are likely to be encoded in email communication, and the recipient will be able, to some extent, to detect the sender's emotions (Y. Kato et al. 2007; Riordan and Kreuz 2010).

Service support staff for IT applications (especially Software-as-a-Service) can be viewed as the 'frontline employee' of IT service providers because they are the first line of contact for customers to reach out to service providers online; typically, under certain terms and conditions governed by the service level agreement signed between the two parties. Customers may email service support staff if they encounter bugs or system errors. Such online communications between service support staff and customers may have emotions encoded in email content, which in turn, may influence the selected service recovery strategy and the outcome of the service recovery.

Although prior studies in IS research have investigated the issues related to customer satisfaction relevant to online transactions (Mattila and Mount 2003), and customer responses to different service recovery strategies, we know little about (a) the effect of a customer's emotion encoded email on service provider staff's response, and (b) the effect of service recovery strategy on customer satisfaction when the service is recovered. Thus, the study enriches the existing limited stock of knowledge on the impact of customers' emotions on selection of service recovery strategy, and the impact of selected service response on customer satisfaction, in the context of IT service support management. Before discussing the context, hypotheses development, data collection, and econometric models of the study, we review previous research on customer satisfaction, customer emotions, and customer response and recovery. We conclude our study with a summary of limitations and future research directions.

Theoretical Foundation

Customer Satisfaction

Drawing on justice theory, social exchange theorists suggest that customer satisfaction depends on customers continually assessing and updating their justice perceptions regarding the relationship between them and an organization. The concept of perceived justice provides a valuable framework to understand customers' reactions to service failures, as it is consistent with the service marketing literature that recognizes the important role of process and interpersonal communications in service recovery. It is well recognized that justice perception has three dimensions: distributive, interactional, and procedural, proposed by different scholars (Bies, R.J., Moag 1986; Homans 1974; Thibaut and Walker 1976).

Homans' (1961) theory of *distributive justice* concerns the nature of social allocation of goods and the perceived outcome of exchange. In retail context, distributive justice deals with the quality of the core product/service itself. In service management context, it is concerned with what the service provider does to calm a customer who encountered a service failure, and whether the consequent outcomes more than offset the costs incurred by the customer (Greenberg 1990). Prior studies support a quasi "brand equity" perspective – a customer assesses the fairness of compensation differently on the basis of his or her (1) prior experience with the firm in question and other firms, (2) awareness of other customers' resolutions, and (3) perceptions of his or her own loss (Tax et al. 1998:62). Distributive justice has a significant effect on customers' re-patronage and negative word-of-mouth intentions (Blodgett et al. 1997). Contrary, another study finds no significant relationship between distributive justice and re-patronage intentions; however, it finds distributive justice is the most important predictor of satisfaction (Teo and Lim 2001).

Thibaut and Walker's (1975) procedural justice theory falls into the category of reactive process theories it involves the means by which decisions are made and conflicts are resolved. Originated from the legal research context, procedural justice concerns 4 aspects of service delivery: the process control, decision control, accessibility, timing or speed and flexibility (Tax et al. 1998). The significance of procedural justice is often underestimated as it is regarded simply as a means to an end, using an outcome-driven perspective; however, the means itself is found to be important as it encourages the continuation of a productive relationship between the parties in exchange (Folger and Konovsky 1989). It has also been shown that procedural justice is important in service recovery as consumers who might be satisfied with the type of recovery strategy offered but still could be unhappy if the process endured to seek redress were unsatisfactory (Kelley et al. 1993). Interactional justice, on the other hand, refers to people's sensitivity to the quality of interpersonal treatment they receive during the enactment of organizational procedures (Bies and Shapiro 1987). The interpersonal treatment encompasses manners such as courtesy, politeness, empathy, willingness to provide explanation in which an individual is treated throughout the process (Sparks and McColl-Kennedy 2001). Apparently, it is insufficient to use interactional justice only to make customers feel better about a service failure, as customers are focusing on distributive gains, so recovery efforts must focus on improving the outcome from the customer's viewpoint (Smith and Bolton 2002).

Customer Emotion

Justice is a cognitive concept that has effects on both emotions and behaviors. However, studies in service literature on emotional effects of justice came much later (Chebat and Slusarczyk 2005; Tronvoll 2011). Emotion is too broad as a concept to be a single scientific category. For instance, prototypical emotional episode refers to a complex process that involves causally connected "sub-events (antecedent; appraisal; physiological, affective, and cognitive changes; behavioral response; self-categorization)" under a fuzzy hierarchy of structure involving categories such as anger and fear (Russell and Barrett 1999:805). Appraisal theorists define emotions as "mental states of readiness caused by the evaluation of events" (Gelbrich 2009:568). English words such as "anger", "sadness" and "fear" constitute the building blocks of emotional life; but there are no clear biological or behavioral marker for each category, and thus may not be the best categories to support scientific induction about emotion (Barrett 2006).

Valence has been proposed as the basic building block of emotion (Barrett 2006). However, in the management and marketing context, it has been suggested that one should look at the descriptive characteristics of emotions rather than their essential nature (Tronvoll 2011). *Valence* dimension indicates how an event is perceived by customers, ranging from positive (pleasure) to negative (displeasure). It has been suggested that the link between negative emotions and customer satisfaction is influenced by the nature of a service failure, as its cause may be perceived as self-responsibility, other-responsibility and situational-responsibility (Dubé and Menon 2000).

A study finds that perceived justice evaluations are predictive of the type of emotion elicited, following complaint-handling experiences (Schoefer and Ennew 2005). Customers' emotion influences service satisfaction directly or indirectly (via interaction effects) or both, after accounting for the effects of cognitive antecedents (Smith and Bolton 2002). Smith and Bolton (2002) grouped words that represent

customers' negative emotions into five categories: anger, discontent, disappointment, self-pity and anxiety.

Customer's Response and Service Recovery

Hirschman hypothesized a simple three-level model of customer response to service failure: at level I, actual customer actions such as voice, exit or negative WOM; at level II, individual consumer characteristics such as cognitive evaluation, perceived worthwhileness and sophistication; and at level III, the nature of industry as a major source of variation; for example, the concentration of and competition in the industry (Hirschman 1974). Singh (1990) investigates three different service categories based on Hirschman's framework and finds that level II predictors have differential relationships with customer complaint behavior (Singh 1990); and although the behavior processes are similar but the complaint rates are different significantly across different service categories. In a business-to-business framework, four customer response behaviors to dissatisfaction were identified: voice, exist, negative WOM, and loyalty (Ferguson and Johnston 2011). When customers exit, they terminate their relationship with the service providers; when they voice, they express their desire to change the undesirable situation and to seek satisfaction; when they select the loyalty option, they strengthen their relationship with the current service provider; and when they activate negative WOM, they communicate to others but not the service provider about the dissatisfactory experience.

The service recovery paradox theory contends that an effective recovery cannot only make up for the service failure, but it also propels the satisfaction to a higher level than before (Hocutt et al. 2006; Magnini et al. 2007). However studies show inconsistent results on the recovery paradox effect (Kau and Loh 2006). The recovery paradox effect may be possible only when the recovery effort can completely mitigate the harm caused by failure (McCollough et al. 2000). A study finds that a failure to respond with proper levels of redress, responsiveness, and courtesy can be just as bad as when a problem occurs but is not recognized by the service provider (Hocutt et al. 2006). Gelbrich (2009) examines two types of recovery strategy (retrospective and prospective) and their likelihood of receiving two types of customer's coping responses (confrontative and support-seeking) to service failure; the study also links the two recovery strategies to customer emotions: retrospective (anger, frustration) and prospective emotions (helplessness) (Gelbrich 2009).

Synthesizing findings in today's service marketing literature, we realize that IT service recovery strategy using the justice perception as the main approach is insufficient to enrich the knowledge in implementing an effective service recovery management. It has to be linked with customer emotion, detection of opportunistic complaints, handling of customer conflict frames, and frontline employee's emotion.

Context: IT Service Support

The context of our study is technical support or helpdesk professionals that are the frontline to support clients and employees who are having technical issues. We refer them as "*IT Service Support*" to be consistent with service failure and recovery management literature. Examples of support can be problems (bugs or missing features) with software, forgotten password, virus or email issues, or it could be problems with the hardware equipment itself. In our study, we only consider IT Service Support activities that offer online support via emails, or an online issue tracking system, through which customers can report issues online.

Online Issue Tracking System

An issue tracking system is a specialized web-based application that tracks and manages issues that emerge during software development, testing and support (Johnson and Dubois 2003; Prause et al. 2008). The issue tracking system acts as a repository for knowledge accumulated from these processes, and serves as a communication facilitator among customers, IT service supports, IT developers, and management. The issue tracking system where we obtained our data from is JIRA, a popular issue tracking system developed by Atlassian Software Systems (www.atlassian.com). JIRA includes programming interfaces and a plug-in architecture, allowing extension of functionality such as version control and workflows. Reporting and data exporting functions allow administrators to retrieve and download data in the system in a structured manner. Related records and events are also linked to ease the analysis of the sequence of events. Either client or vendor organization may setup JIRA as both organizations have IT support functions to their own customers (or end-users). In our case, JIRA is setup at the client side, and Figure 1 shows the workflow in our study. The sequence of events, from an issue reported by customer until the issue is resolved by the vendor, is labeled with numbers.



A customer reports an issue by submitting an online form. The form requires the customer to enter the application name, module name, description of the problem, priority and urgency of the issues, version number, and other details that help support team understand and diagnose the problem.

Client's IT support will review the issue and update additional info for internal use (e.g. cost code), and then assign the issue to the vendor that is responsible for the application. The vendor can then see the entire content of the issue ('First Customer Response', labeled as flow 1 in figure 1). The IT service support at the vendor side have to respond to the client ('First Support Response', labeled as 2 flow in figure 1), within the minimal response time (says, 2 hours) stated in the service level agreement. The vendor assigns the issue to developer(s) to work on the problem. For each issue, there may be multiple exchanges (labeled as flow 3 in figure 1) between the IT service support and the customer while the developer is still working on the case. For example, the customer may contact IT service support to (i) find out the status of the issue, (ii) provide further information (e.g. error reports) on the same issue, and (iii) pressure the service support to resolve the issue faster. After the vendor organization updates JIRA that the issue has been fixed, the customer may send a final message ('Last Customer Response', labeled as flow 4 in figure 1) expressing its level of satisfaction.

Hypotheses Development

Reporter's Power Status

Service provider's promptness to respond to a service failure is an act of procedural justice (Blodgett et al. 1997). Past empirical studies mainly focused on customer responses to the promptness of service failure response; but not on the factors that influence the promptness of the service provider. We presume an effective service recovery management, to some extent, controls and standardizes how an individual IT service support person behaves in term of promptness. An analysis of the effects of specific facets of job satisfaction suggests that satisfaction with customers (e.g. "I like my customers") has significant effects on customer perceptions of service quality (Snipes et al. 2005). Patterson et al. (2006) find that customer evaluations of recovery efforts are influenced by interplay between consumers' value orientation and service recovery, and that cultural values, such as individual power distance, do interact with recovery strategies. If the person who reports a service failure is from high power status, the power difference between the reporter and IT service support gets higher. We predict that such power difference will influence the recovery process, starting with the first response from the frontline service support. Any action taken by the service company to recover from a service failure will be more pronounced in those cultures with high power distance (Orsingher et al. 2009), like Asian culture, our study context. Thus, we hypothesize that IT service support takes into account the status of the person making the service failure report and responds faster to the reports received from people with high status.

Hypothesis H1A: The service provider's time taken to <u>first response</u> to a service failure gets shorter (longer) with the high (low) power distance with the person who reports the issue.

After the initial response, the IT service support has to follow up with the developer to monitor the progress and status of the issue. The customer's power distance may continue to have an influence on the entire process of service recovery as the customer can easily follow up on the status of the issue via the issue support system. Thus, it is reasonable to predict these factors continue to take effect on the overall recovery duration, although it is unclear the relative magnitude of these influences on the duration of the first response, and on the duration of the overall recovery. Similar to H1A, we predict the effect of these influences carry throughout the process:

Hypothesis H1B: The service provider's time taken to <u>recover</u> from a service failure gets shorter (longer) with the high (low) power distance with the person who reports the issue.

Customer-Provider Relationship

There is a significant relationship between the number of years of the customer-provider relationship, customer satisfaction, and voice; and the number of years of the relationship may not have a direct effect on voice behavior, but the length of time the customer and provider have worked together may moderate the dissatisfaction–response behavior relationship (Ping 1997). The longer the tenure of the customer-provider relationship, the more likely the customer will engage in voicing (i.e. complaining), yet remain loyal, but the less likely that the customer will exit and engage in negative WOM behavior (Ferguson and Johnston 2011). Since customers with more years of relationship are less likely to exit or facilitate negative WOM, the need for IT service support to respond to their service inquiries more promptly may not be higher than those customers with shorter relationships. In other words, IT service support can leverage on the longer relationship to respond even slower than to other customers. Thus, we predict that the durations for the first response and completion of a service recovery are longer if the customer-provider relationship is strong.

Hypothesis H2A: The service provider's time taken to <u>first response</u> is positively associated with tenure of the relationship with the customer.

Hypothesis H2B: The service provider's time taken to <u>recover</u> from a service failure is positively associated with the tenure of the relationship with the customer.

Customer's Emotion on Service Responses

Past empirical studies on customer's emotion mainly focused on customer responses to the service provider in handling a service failure; but not on how customer's emotion impacts the service response itself, specifically the way the IT service support reacts to customer's emotion. Although an effective service recovery management controls how individual IT service support person behaves according to the nature of the issue on hand, and the contractual obligation of service level between the service provider and the customer, there might be a room for non standard treatment of customers based on the emotional cues inherent in their service failure reports. Two possible explanations for why IT service support may react to customers with negative emotion differently from customers with positive or 'no' (means not observed) emotion are the following: (a) the activation dimension of customer negative emotion has the likelihood to grow from sleepy to excited (strong) (Russell and Barrett 1999), and the stress introduced to the IT service support can be avoided, and (b) it takes more effort for service providers to offset the loss incurred by customers who exhibit negative emotion than those customers who do not. Given these reasons, it is reasonable to predict that different treatments will be given to different levels of activation dimension of a customer's negative emotion; and such effect can be seen not only at first response, but throughout the service recovery process.

Hypothesis H3A: The service provider's time taken to <u>first response</u> is shorter when a customer exhibits negative emotion.

Hypothesis H3B: The service provider's time taken to <u>recover</u> from a service failure is shorter when a customer exhibits negative emotion.

Service Recovery Strategy on Changing Customer's Emotion

The first reaction of the customer's emotion upon a service failure signals the severity of the issue, and the level of dissatisfaction. Relatively few theoretical research or managerial attention has focused on organizational responses to complaint behavior (Davidow 2003). One immediate response that the service provider can take is to provide immediate retrospective explanation containing causal information on why a failure occurred and why the organization could not avoid it (Gelbrich 2009). Retrospective explanation is an action that falls under the definition of procedural justice. However, retrospective explanation can be effective when the customer's emotions are retrospective emotions - anger and frustration (Gelbrich 2009). We predict that such procedural justice action will increase the probability of changing the customer's emotional state from retrospective emotion to positive emotion, compared to the case where such procedural justice action is absent.

Hypothesis H4A: The service provider's response with <u>procedural justice</u> to a customer with retrospective emotion (anger or frustration) in his/her first response increases the probability of customer having positive emotion after service is recovered.

An apology can be thought of as psychological compensation (Davidow 2003) – the service provider's acknowledgement of the customer's distress. It is an action that falls under the definition of interactional justice. We predict that such interactional justice action will increase the probability of changing the customer's emotional state from retrospective emotion to positive emotion, compared to the case where such interactional justice action is absent.

Hypothesis H4B: The service provider's response with <u>interactional justice</u> to a customer with retrospective emotion (anger or frustration) in his/her first response increases the probability of customer having positive emotion after service recovered.

Data Collection

The primary source of data will be transaction records retrieved from JIRA, an issue tracking system used by a tertiary education institution. The institution has six schools and two centers offering 39 courses in Infocomm, Engineering, Applied Science, and Technology for the Arts, Sports, Health & Leisure, Events and Hospitality, Enterprise, and Communication; and has a student population of 14,000. The department of Office of Information Services currently has 23 staff, managing more than 100 systems, ranging from academic records, admission systems, human resource and course-specific applications. To support a population of 14,000 students and hundreds of academic and supporting staff, many of the software projects and supports are outsourced to local vendors. However, the main IT support center is located inside the campus, and there are dedicated IT supports staff to manage all reported issues with the help of JIRA.

We have collected 16 months of issues reported to a particular vendor that supports 10 systems, between Nov 2010 and May 2012. There were 1,046 issues reported to JIRA, where the vendor has to response and resolve within a timeframe based on the severity of the issue. The fields for an issue include project name, problem description, issue type (e.g. bug, enhancement, enquiry), progress status ('Open', 'In Progress', 'Resolved', 'Close'), priority (high, medium, low), reporter, date of creation, date of resolution, due date; and all comments exchanged among all parties (vendor, end-user, IT support staff, and managers such as system owners) related to an issue. In order to decode the emotions in email/form contents, we will use a crowdsourcing service from Amazon Mechanical Turk (AMT) to hire workers to tag emotions in three exchanges: service request (first response) from customers, first response from the service provider, and last response from customers.

AMT automates the execution of micro-tasks that require human intervention (human intelligence tasks), and it provides our research to control over the task execution. In our study, we will assign the same task to multiple workers, and only if the tagging from different workers gives consistent assessment, the tagging outcome will be accepted as validated values. AMT also ensures the proper randomization of the assignments of tasks to workers within a single task type, and users are motivated by a small monetary compensation for completing the task (Archak et al. 2011). The emotional state of a response is decoded by human interpretation of the email content. Workers will be asked to indicate (a) whether a customer shows any sign of anger, frustration and helplessness when the customer made a service request; (b)

whether a server provider shows any sign of standard politeness (e.g. merely "thank you"), high politeness (e.g. "we will definitely come back to you very soon."), apology and explanation of the service failure; and (c) whether the customer shows positive, negative or no emotion when a service failure is fully recovered.

Econometrics Models

We will conduct two sets of estimations to test the hypotheses H1, H2 and H3. Basically, we look at two variables of interests: (a) FIRST_RESPONSE_ELAPSED - the length of time elapsed from the time an issue is reported till the first response from the service provider, and (b) RESOLVE_ ELAPSED - the length of time elapsed from the time an issue is reported till the issue is completely resolved. Right centering is pervasive and unavoidable as some of the service failures are still not resolved at the last date of our data collection. Hazard models estimate the probability hazard functions measuring the probabilities that (a) service provider will make first response at time *t* given that first response has not yet occurred, and (b) the issue will be resolved at time *t* given that it has not yet been resolved. The Cox proportional hazard model assumes that the hazard rate, which is conditional probability of response, is proportional to the covariates, where **X** is a vector of covariates that affect FIRST_RESPONSE_ELAPSED and RESOLVE_ ELAPSED, **B** is a vector of coefficients, and h₀(t) is the baseline hazard function.

$$h(t, \boldsymbol{X}, \boldsymbol{\beta}) = h_o(t) \exp(-\boldsymbol{X}\boldsymbol{\beta}))$$

(1)

where covariates include focal variables: (i) reporter's rank, (ii) age of relationship, (iii) customers' initial emotional states (anger, frustration, helplessness); and control variables: (iv) type of issue, (v) problem severity, (vi) type of system/application, and (vii) number of exchanges. Different emotions such as anger, frustration and helplessness will be analyzed together along with their interaction terms to gain insights on the effect of these emotions on the variables of interest.

To test hypotheses H1, we will examine the estimates of the coefficient of reporter's rank; to test hypotheses H2, we will examine the estimates of the coefficient of age of relationship; to test hypotheses H3, we will look at estimates of the coefficient of dummy indicators representing anger, frustration and helplessness emotions.

We will construct a binary response model to test H4. Specifically, we will use a logit model for the probability that a customer's final emotion is positive.

$$Pr(final\ emotion = positive \ |\ \mathbf{X}, \mathbf{\theta}) = G(\mathbf{X}\mathbf{\theta}) = exp(\mathbf{X}\mathbf{\theta})/[1 + exp(\mathbf{X}\mathbf{\theta})]$$
(2)

We expect to conduct empirical analysis soon and have the initial sets of results ready by ICIS 2012.

Conclusion and Limitations

Although this study potentially will contribute to our knowledge in the understanding of (a) the effect of customer's emotion encoded email on service provider staff's responses, and (b) the effect of different service recovery strategy on customer's emotion when the service is recovered, it has several limitations that suggest future research: (a) First, the study does not take into account of differences in individual IT service support staff, as we notice the service support staff is working on a rotation basis, and they are a relatively stable workforce during the period; (b) Second, the emotion tagging basically focuses on whether a displayed content is positive, negative or no emotion; however, the activation dimension (i.e. the intensity) of the emotion is not captured. To do that, the design and measure of activation dimension needs more work, leveraging the findings from the marketing and psychology literature; and (c) Third, we analyze only the initial and final customer emotions of each recovery process; however, our model may be extended to gain insights on the dynamic of customer emotions.

Despite these limitations, we believe that our study extends our understanding of service recovery effectiveness, primarily investigated by studying face-to-face customer services, to online customer services, where both customers and IT support staff engage via emails. The findings will guide how organizations should embed text mining technology into support systems so that customer's emotions can be detected automatically and incorporated into the workflow of online IT service support when dealing with incoming complaints.

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