THE IMPACT OF E-SERVICES FAILURES AND CUSTOMER COMPLAINTS ON ELECTRONIC COMMERCE CUSTOMER RELATIONSHIP MANAGEMENT

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ABSTRACT

Handling customer complaints has become a strategic concern in electronic commerce Customer Relationship Management (e-CRM). The purposes of this study are to (a) explore the major causes of customer complaints, comparing online and in-store environments, and(b) examine how customer complaints are differently perceived based on the types of service failures. The Justice Dimensions with Complaint Handling framework proposed by Tax, Brown, and Chandrashekaran (1998) are applied in this study for the classification of e-service failure types. The data were collected from online customer feedback publicized on Internet websites and the shopping log data reported by selected consumer panels. The research identified that the impact of service failure with the justice dimension affects customers' propensity to complain in the online shopping environment. Further, the study emphasizes that successful service management is the core of e-commerce customer relationship management (e-CRM).

INTRODUCTION

Handling customer complaints and managing customer service have become crucial for Electronic Customer Relationship Management (e-CRM). Previous studies (Cho, Im, Hiltz, and Fjermstad 2002; Julta, Craig, and Bodorik, 2001; Levesque and McDougall 1996) have ascertained that successful e-CRM requires adherence to a stable and consistent strategy that focuses on the goals of maintaining customer loyalty and of using complaint handling data to solve problems and address issues raised by customers. The key e-CRM components proposed in the previous research (Cho et al. 2002) include: (a) maximizing customer satisfaction/minimizing customer dissatisfaction; (b) increasing customer loyalty; and increasing product/service quality; and (c) resolving customer complaints.

What are the major concerns of e-services? Hollowell (2002) stressed the necessity of understanding the different forms (e.g., virtual: either pure information or automated) service takes in organizations that conduct business through the Internet. With the Internet's technological advances, customers enjoy greater convenience, such as Web-based service centers where customers can ask questions regarding product information, payment issues, delivery, product returns, etc. before and after making a purchase. However, customer complaints due to faulty e-commerce transactions or service still exist. We can find such complaints on various customer feedback systems, such as www.epinions.com, www.thirdvoice.com, or www.complaints.com. Customer feedback systems not only provide a service to deliver customer complaints, but also become a source of spreading the reputation of the business, product, or service.

Based on the importance of e-CRM to improve customer satisfaction and resolve customer complaints in the online environment, the purpose of this study is to explore e-service failures that have been the major causes of customer complaints. In particular, we investigate the major causes of customer complaints in the online and in-store environments; explore different types of service failure; and measure the impact of service failure on the customer's propensity to complain. Previous studies (Cho et al. 2002) have researched major causes of customer complaints in the online and in-store environment. However, how the types of service failures that have been the major causes of customer complaints differ in the online and in the

in-store environments has rarely been researched. This study used the framework by Blodgett, Hill and Tax (1997) and Tax, Brown, and Chandrashekaran (1998) to classify the types of e-service failure. This study investigates how the previous framework, called justice dimensions, will work in online environment. While past studies have collected data via surveys, this study used *log* data, which is collected from consumer panels, and customer feedback posted on "customer service centers," which are managed to resolve customer complaints (Cho, Im, Hiltz, and Fjermstad 2002).

CONCEPTUAL BACKGROUND AND HYPOTHESES

Causes of Complaints and Service Failure

A complaint can be defined as a conflict between the customer and the organization in which the fairness of the resolution procedures, the interpersonal communications and behaviors, and the outcome are the principal evaluative criteria of the customer (Tax et al. 1998). Most studies on customer complaints or handling customer complaints about service quality have been done in the context of the physical market place. In the traditional market place, complaints represent an opportunity to remedy product or service related problems and to positively influence subsequent customer behavior (Blodgett, Hill and Tax 1997). How businesses deal effectively with complaints could have a dramatic impact on customers' evaluations of their retail experiences (Blodgett, Hill and Tax 1997; Bitner, Booms, and Tetreault 1990; Kelley, Hoffman, and Davis 1993).

Customer complaints are often considered as a response to a service failure (Bateson and Hoffman 1999). Previous research (e.g., Bateson and Hoffman 1999) stressed that in the in-store environment, service failure will cause a lower satisfaction with the service employee and/or the firm if the problem is attributed to the firm. Previous studies also found that a major cause of customer dissatisfaction arises from the way their complaints are resolved (e.g., Tax and Brown 1998). Therefore, it is no doubt that in the in-store environment, increased service quality and minimized customer complaints will enhance a customer's general expectations and diminish customer dissatisfaction with the firm. A prior study by Cho et al. (2001) stressed that the perceived quality of customer service centers affected customers' propensity to complain in both the online and in-store environment. As described in Cho et al. (2001), differences in degree of dissatisfaction and complaints sometimes occur between online and offline customers for many reasons. The most important are (a) problems associated with different customer service center approaches (e.g., lack of an information or help desk during the order process, slow feedback response time, poor after-sales support), (b) general terms and conditions (e.g., guarantees, guidelines for returning products), (c) delivery issues (e.g., late or no delivery, product damage during delivery), (d) security and privacy issues, (e) failure of information quality, and (f) system performance (e.g., slow web sites, broken links to other pages). Particularly in the online environment, the development of technology has been closely linked to the issues of service quality. Various researchers have addressed the importance of technology that enhances service quality. For example, Bitner, Booms, and Tetreault (1990) found that technology is incorporated into the service-marketing triangle, both supporting and facilitating service delivery. The study by Bitner et al. (2000) also discussed the role of technology in implementing effective service recoveries and encouraging customer complaining (see also Brown 1997 and Shaffer 1999). Most online firms manage *Web-based customer service centers* to deal with customer comments and complaints, utilizing sophisticated technology (Cho et al. 2002). This study posits that a major cause of customer complaints could be generated from unsatisfactory responses by customer service centers. Using a different data collection methodology, called log data, this study extends the previous study by Cho et al. (2002), which found that major online customer complaints are generated more from service failure than other problems. This study posits that,

considering effective technologies for online customer services have yet to be implemented, customer complaints due to unsatisfactory customer service centers occur more often in the online environment.

Hypothesis I: Consumer complaints are more often caused by service failure in the online shopping environment than in the in-store environment.

The Impact of Different types of Complaints on Propensity to Complain

Past studies developed a theoretical understanding of how consumers evaluate retailers' responses to their complaints (Blodgett Hill and Tax 1997 and Tax et al. 1998). A study by Tax, et al. (1998; see also Gilliland 1993; and Goodwin and Ross 1992) addressed the concept of *justice*, as a comprehensive framework to explain people's reactions to conflict situations. Complaint handling incidents, which are rated favorably, include compensation in line with the perceived costs experienced by the customer (Kelley, Hoffman, and Davis 1993), thus supporting an equity-based evaluation of complaint outcomes (Blodgett, Hill and 1997). How individuals involved in conflicts or disputes perceive justice has been explained by *equity theory* (Blodgett, Granbois, and Walters 1993). Three justice dimensions were discussed to explain complaint handling when customers encounter service failure (Blodgett, Hill and Tax 1997; and Tax et al. 1998). Dimensions include *distributive justice*, *procedural justice*, and *interactional justice*.

This study focuses on how the different types of e-service failure with three dimensions of justice affects the customer's propensity to complain in the online environment and also what types of service failure significantly affect actual customer complaints. First, the study measures the impact of online customers' expectations about the benefits and costs of dealing with the three dimensions of justice on their willingness to complain. The study applied propensity to complain to measure the perceived impact of the service failure with three justice dimensions. *Propensity to complain* is defined as an individual's demonstrated inclination and intention to complain in the face of any unsatisfactory purchase experience (Bearden, Crockett, and Graham 1979). *Propensity to complain* was applied in this study because it is operationally linked to past complaint actions as a proxy for the inclination of customers to complain (Gronhaug 1977; Zaltman, Srivastava, and Deshpande 1978; Bearden et al. 1979). Previous studies described propensity to complain as an effort to summarize the personality, attitudinal, and lifestyle variables that influence whether a person will seek redress or complain when dissatisfied and also have an effect on the nature of the action to be taken (Day and Landon 1977; Day 1977; and Bearden et al. 1979). Previous studies found that the propensity to complain has been operationally linked to past complaint actions as a proxy for the inclination of consumers to complain (Gronhaug 1977; Zaltman et al. 1978; and Bearden et al. 1979). The study hypothesized how the impact of service failure with three justice dimensions affects propensity to complain in the online shopping environment.

Distributive justice involves a) a provision of outcomes proportional to inputs in an exchange of an unsatisfactory product (equity); b) equal outcomes; and c) outcome based on requirements regardless of contributions (Tax et al. 1998; Goodwin and Ross 1992; Greenberg 1990; and Deutsch 1985]). The concept of distributive justice was supported by *social exchange theory*, which emphasizes the role of distributive or exchange considerations in shaping interpersonal relations (Tax et al. 1998).

This study proposes that a service failure with distributive justice would greatly affect propensity to complain in the online business. Particularly, when online customers exchange or return an unsatisfactory product, they often encounter unfairness and/or perceived financial loss, because in most cases delivery costs are not refunded. It is addressed in the traditional environment, as Tax and Brown (1998) stressed that most customers surveyed judged the outcomes they received to be unfair, believing the companies had failed to compensate them adequately for the harm done or

to recognize the costs incurred in getting their complaint resolved. While there are few studies regarding service failure with distribute justice in the online environment, Cho et al. (2002) found that online customers frequently complained about having to pay high delivery costs or not being refunded for delivery costs when returning purchased items.

Therefore, in order to meet distributive justice, e-businesses should provide exchange equitably and also develop strategies that resolve conflict with delivery costs. Some online businesses provide credits for delivery costs if the reason for the return is the company's fault, while other businesses provide pick up service for products being returned. When companies put forth such effort, customers' perceived fairness increases. However, customers often pay the delivery costs for both purchasing and returning the products on the Internet. Most e-businesses provide options to return the product, but do not take responsibility by providing credits for delivery costs unless the reason to return the product is entirely the businesses' fault. Clearly, customer service centers must improve if they want to achieve greater customer satisfaction in resolving complaints. This study proposes that online service failure that does not meet distributive justice affects customers' propensity to complain.

Hypothesis II: In the online environment, as customers perceive the higher degree of service failure with the distributive justice dimension, their propensity to complain will be increased.

Procedural justice includes a) the extent to which a person is free to accept or reject a decision outcome; b) the ease of engaging a process; c) the perceived amount of time taken to complete a procedure; and d) the adaptability of procedures to reflect individual circumstances (Tax et al. 1998; Brett 1986; Bitner et al. 1990; and Fisk and Coney 1982]). Research in the traditional shopping environment found that delays negatively affect one or more service attributes, which in turn affect the overall evaluation (Taylor 1994 and Parasuraman, Zeithaml, and Berry 1985).

In the online shopping environment, procedural fairness could be enhanced using technological support. Tax and Brown (1998) noted that some firms are now using Internet websites to facilitate service recovery. Search engines and advanced database systems help to minimize customers' waiting time and to resolve their dissatisfaction. Bitner et al. (2000) also proposed that the customers' expectation regarding e-businesses' customer service centers is higher through the effective use of technology in service encounters. According to Kasper (1997), advances of information technology affect the extent of contribution of service in creating value or excellent service quality. This study posits that online customer satisfaction will increase and complaints regarding procedural justice will decrease if e-businesses provide technologically advanced services.

Thus, customers' expectations of procedural justice, particularly with the perceived amount of time taken to complete a procedure, will be elevated in the e-business environment. Time and speed taken to resolve complaints and the ability to engage complaints can be updated as e-businesses acquire advanced technology systems. Cho et al. (2001) showed that the response time significantly affected customers' propensity to complain. While technology positively affects the resolving of customer complaints, customers who purchased the product online encounter inconvenience in exchanging or returning the product. In most cases, online customers require a special trip to the post office or store to return or exchange the product. Based on the study by Cho et al. (2002), it is one of the main causes of online customers' dissatisfaction. Thus, customers' dissatisfaction with Internet transactions increases in proportion to the perceived amount of time taken to complete a procedure. In some cases, customers who purchase a product online require an additional special trip to the physical store, if face-to-face service is needed to fix their problems. Therefore, the following hypothesis is derived.

Hypothesis III: In the online environment, as

customers perceive the higher degree of service failure with the procedural justice dimension, their propensity to complain will be increased.

Interactional justice includes a) a provision of reason for a failure; b) well-mannered, courteous behavior; and c) individual attention (Tax and Brown 1998). According to Bitner et al. (1990), the human interaction component of service delivery is essential to the determination of satisfaction/dissatisfaction. Thus, in the in-store environment, customer complaints throughout face-to-face communication between customers and salespersons could be increased or decreased depending on how customer problems are treated through interactional justice. The online shopping condition differs from in-store shopping because there is a significant lack of face-to-face communication. In the in-store market place, customer satisfaction increases through face-to-face communication if the salesperson manages interpersonal communication successfully, while dissatisfaction increases if it is not successfully done. Online businesses don't have the opportunity to enhance customer satisfaction from face-to-face communication, while conflicts from face-to-face communication are not a factor in e-service failure.

Instead of face-to-face communication, online customers might encounter interactional justice from salespersons' efforts via telephone calls and email responses. Therefore, interactional justice could also be sustained even in an online environment. Online customers' conflict can be reduced through the tone of voice or positive effort via email responses from the salesperson. The tone of voice in an email response might represent individual characteristics and attitudes, just like one's voice in a telephone response. Emoticons and Avatars frequently been used by online portals improve personal relationships during communication on the Internet. Therefore, how online businesses manage email messages regarding customer complaints are an important factor for successful e-service. On the other hand, complaints increase when online customers are not treated well in terms of interactional justice. This study hypothesized that service failure with the interactional justice dimension affects customers' propensity to complain in the online shopping environment.

Hypothesis IV: In the online environment, as customers perceive a higher degree of service failure with the interactional justice dimension, their propensity to complain will be increased.

METHODOLOGY

The above hypotheses were tested using two different methods, called 1) *log* data, in this study and 2) customer complaints data, posted on websites.

Data Collection Method #1

First, *log data* from subjects are reported in this study. The *log data* collected in this study have been based on the sources of data, called *consumer purchase panels*, which are useful in traditional marketing research. The nature of log data has been rooted in the idea of the *home audit* approach of consumer purchase panels, where the panel member agrees to permit an auditor to check the household stocks of certain product categories at regular intervals. While *consumer purchase panels* have been frequently used to reflect consumer buying behavior in the traditional market environment, this study has used the consumer purchase panels to track their complaints about buying activities from their online transaction. We have called this data *log data* in this study.

Log data were collected from self-reported buying behavior record forms filled out by subjects selected from two major universities on the East Coast. Three hundred twenty nine subjects were asked to fill out a buying behavior record form. Subjects reported their unsatisfactory shopping behavior, both online and in-store, including the major reasons for dissatisfaction and the degree of propensity to complain. Every week in a four-week period, the subjects were asked to record their unsatisfactory shopping experience, if

they had any, in both online and in-store shopping environments. One hundred twenty respondents recorded their unsatisfactory online and in-store shopping experiences each week for the four-week period.

The response rate for the log data collected by record forms was about 45.2%. The study found that subjects spent an average of $85.66 on reported dissatisfied products online and $84.37 in in-store. About 19% of subjects reported their dissatisfaction in the online environment based on books; 15% on computers and peripherals; 13% on CDs, Videos or DVDs; 10% on apparel; 6% on flowers; 5% on electronics; and 4% on toys, etc. About 26% of subjects reported their dissatisfaction in the in-store environment based on apparel; 17% based on electronics; 12% based on computers and peripherals; 11% on groceries; and 6% on CDs, Videos, or DVDs, etc. The overall means reveal that in-store customers (4.63 from week 1 to 6) exhibited a higher degree of dissatisfaction than online customers (4.00 from week 1 to 6). On a weekly basis, self-reported data were analyzed and coded qualitatively and quantitatively. Qualitative data, which were collected from open-ended questions, provided opinions and comments on customers' overall negative shopping experiences. The information gathered from the interview with volunteers was recorded and coded as data. About five to ten subjects per week who reported unsatisfactory purchase experiences participated in the interviews. Coded data obtained from the interviews were compared to the self-report data. Subjects' thoughts and opinions were grouped by categories, such as types of complaints and types of service failure among the complaints about the problems with service.

Data Collection Method #2

Secondly, this study collected the *consumer feedback data* from bulletin boards in online customer service centers. Actual customer complaints from publicized online customer service centers were collected and used as another data source for this analysis. This study extends the previous study (Cho et al. 2002) by analyzing customer complaints based on product categories and by increasing sample size. A total of 3,000 complaints were taken from online customer service centers of four major retail companies whose anonymity will be preserved in this report – ABC.com, XYZ.com, PQR.com, and LMN.com. These companies are popular companies that sell diverse product categories online. A total of 3,000 selected complaints have been analyzed qualitatively. An equal amount of complaints (about 760 for each company) were randomly selected from the four websites during a similar time period (September 2000 – May 2002). Complaints were gathered from diverse product categories, such as computers, printers, clothes, electronics, etc. The 3,000 collected complaints were classified according to the major reason for complaints. If the complaint was about service failure, the type of service was classified based on the dimensions of justice with handling complaints by Tax and Brown (1998).

Content analysis was conducted to analyze the log data and the complaints from customer service centers. The framework by Tax and Brown (1998) was also used for analyzing the log data and complaints. Such issues as responsibility, flexibility, timing/speed, convenience (number of people/times), and knowledge of process, (Tax and Brown 1998) were coded as the *procedural justice dimension*. Issues about fairness of the refund, repair, or replacement were coded as the *distributive justice dimension*. Issues such as politeness, empathy, effort, explanation/ information, honesty, and attitude were included as the *interactional justice dimension*. This study counted consumer complaints with one major reason that caused the complaints. However, complaints with more than one major reason were not counted in this analysis. Coding was independently done by two persons with proficient knowledge in e-commerce. Inter-coder reliability was measured based on the degree of agreement between coders (Kappa = .89).

RESULTS

Of the Eighty-six respondents of the log data, 51.2% were male and 48.8% were female. About

28.2% were between the ages 18-24; 57.5% were between the ages 25-30; 12.7% were in the 31-40 age group; 1.5% were in the age group 41-50; and 0.1% were age 51 or older. Approximately 10.2% reported that their highest educational level was high school graduate, while 8.1% had an associate degree, 66.8% were college graduates, and 14.9% had done graduate work. More than 67.5% had an annual average income between $20,000 and $59,999 and major respondents were Asian/Asian-American, and White-American.

The following scripts from log data are examples of problems with service failure. Script 1 presents an example of service failure regarding *interactional justice*, while Script 2 presents an example of service failure regarding *procedural justice*.

> "I bought a digital camera from an online company and received sports utility equipment instead of the camera. I complained about it. Although I was not happy with it, I wasn't so much upset because of the wrong product delivery. However, I felt upset when a salesperson rudely told me that there is no evidence supporting my claim. Even worse is that she was not willing to trust me and never apologized. I eventually got refunded, but I was so upset about the salesperson's attitude."

> "I ordered clothes from an online store, but I haven't received any response after I ordered the product. I emailed the salesperson there, but I received a response after 3-4 days. I also called the customer service center, but it took a long time to be connected. Then, I realized that the product was out of stock and would be shipped later. If I had known this earlier, I would have canceled it and gotten it from another store."

Table 1 shows the causes of complaints from online and in-store shopping based on the analysis of log data. As shown in the table, the problem with customer service failure was the major cause of complaints in the online environment. As the table indicates, hypothesis I is accepted because the percentage of complaints with customer service failure was higher (43.4% vs. 34.6%) in online than in the in-store case. Overall, the data show that there is a significant difference in the distribution of the causes of complaints between online and in-store (*Chi-squared* = 51.16; $p <= .001$). Problems with the product itself, such as quality or performance, were significant in both cases, but it was much higher in the in-store case than in the online case. Problems with misleading information were pretty low in the online shopping case, while they were high in the in-store case. In other words, online customers tend to have clearer information. Unlike the case of in-store, delivery problems were significant in the online shopping environment, but security and trust issues did not impact online shopping.

Table 2 presents the analysis of actual customer complaints collected from the publicized online customer service centers. The table shows that the problem with the service failure is also a major cause of customer complaints in online customer service centers. Dissatisfaction with the customer service centers was ranked as the most significant problem affecting online customer complaints. Problems with product quality and performance ranked second and delivery issues and information failure ranked third and fourth.

The survey data were collected from shopping record forms, as a part of the log data, and were used to analyze the test hypotheses II, III, and IV. Various items were used to measure each of the seven constructs that served as the basis for the questionnaire items (Table 3).

Regression analysis and ANOVA were conducted to test the effects of the three service failure dimensions on customers' propensity to complain. The measurement variables for the three justice dimensions were grouped using factor analysis method (Table 4). The factor scores were used in ANOVA and regression analysis. As shown in Table 5, the impact of the service failure with three justice dimensions (distributive, procedural, and interactional) significantly affects propensity to complain (hypothesis II-IV). Customers' perception of the benefits/costs from the service quality affects their willingness to complain. The magnitude of the impact of the

Table 1
Analysis of Cause of Complaints from "Log Data" (Online vs. In-Store)

Causes of Complaints	Example of Actual Responses*	Number of Complaints (%)	
		Online	In-Store
Service Failure	Unresponsive to requests for assistance; longer than average waiting time; contact possibilities, poor after-sale service, unfriendly.	37 (43.0%)	31 (36.1%)
Delivery Problems	Long delivery time; shipping contributes a lot to the cost.	17 (19.8%)	-
Unsatisfactory Product quality or performance	Product damaged/poor quality; under whelming performance; speakers stop working periodically.	10 (11.6%)	24 (27.9%)
Price	Expensive; pricey; be wary of their financing program; interest rates are insanely high.	8 (9.3%)	12 (13.9%)
Security and Trust Issues	Believe that this company rips people off.	8 (9.3%)	-
Incorrect Information	Websites did not provide exact information about the product.	3 (3.5%)	10 (11.6%)
Tracking and Tracing	The site didn't provide the order status.	2 (2.3%)	-
Promotion	Very few "buy computer-get printer" offers.	2 (2.3%)	9 (10.8%)

Table 2
Analysis of Causes of Complaints from Customer Feedback Data

Causes of Complaints	Example of Actual Responses*	Number of Complaints (%)
Service Failure	Customer service contact is confusing/inefficient, no stores rely on Web, phone, and shipping services, too much for waiting time and slow process, unresponsive to requests for assistance, salespersons' rude behavior.	1014 (33.8%)
Unsatisfactory Product quality or product performance	Poor product performance, poor video acceleration, under whelming performance, the speed of the computer does not work as advertised.	786 (26.2%)
Problems with delivery	Long delivery time, wait, shipping contributes a lot to the cost.	534 (17.8%)
Price Issues	Expensive, pricey, be wary of their financing program, interest rates are insanely high.	450 (15.0%)
Information Failure	Cannot judge the quality of the products online, online store did not provide enough information about the shoes I was interested in.	48 (3.3%)
Unsatisfactory Business Rules or Generic Services	Limited payment options, possibility for returning the products, problems with guarantees.	60 (2.0%)
Security, Trust	Cannot trust online payment system, yellow lock symbols did not appear when I checked out.	57 (1.9%)

* Source: publicized complaints taken from the Customer Service Center Websites of anonymous online retail companies, called ABC.com, XYZ.com, PQR.com, and LMN.com reported from September, 2000 to May, 2002.

Table 3
Cronbach's Alphas for Each Construct

Constructs & Items	Cronbach Alpha
Distributive Justice Paid extra costs to return the product Delivered product was required to repair A condition of delivered product was no good Unsatisfactory delivery cost Took a long time to get credit back	0.87
Interactional Justice Unsatisfactory respond manner Sales person did not provide enough explanation Sales person did not respond kindly	0.74
Procedural Justice Disappointing timing/speed of delivery Difficulties of engaging a process Adaptability of procedures to reflect individual circumstances Online customer service did not respond promptly	0.78

Table 4
Component Matrix for Predictors

Items	Component		
	1	2	3
Distributive Justice 4 (unsatisfactory delivery cost)	.824		
Distributive Justice 1 (paid extra costs to return the product)	.789		
Distributive Justice 7 (took a long time to get credit back)	.721		
Distributive Justice 3 (a condition of delivered product was no good)	.702		
Distributive Justice 2 (delivered product was required to repair)	.678		
Interactional Justice 5 (unsatisfactory respond manner)		.811	
Interactional Justice 2 (sales person did not provide enough explanation)		.788	
Interactional Justice 3 (sales person did not respond kindly)		.730	
Procedural Justice 4 (disappointing timing/speed of delivery)			.865
Procedural Justice 3 (difficulties of engaging a process)			.810
Procedural Justice 2 (adaptability of procedures to reflect individual circumstances)			.715
Procedural Justice 6 (online customer service did not respond promptly)			.624
Eigen Value	5.781	2.982	1.311

Table 5
The Effect of the Service Failure with Justice Dimension on Customers' Propensity to Complain

Justice Dimension	Standard Coefficient	*t*-value (sig)
Distributive Justice	.278	3.954 (.000)**
Procedural Justice	.342	5.161 (.000)**
Interactional Justice	.212	3.300 (.001)**
F	14.295**	
R-Square	.311	

**Significant at 0.01 level (2-tailed).

Table 6
Analysis of E-Service Failure

Justice Dimension & Types of Justice Concept*	Definition*	% of Complaints	
		From Log Data	From Customer Feedback Data**
Distributive Justice		**24%*** **	**27.8%*** **
1. Equality	Equal outcomes regardless of contributions to an exchange (i.e., regarding a refund or exchange).	14.6%	16.7%
2. Equity	Provision of outcomes proportional to inputs to an exchange (e.g., regarding adequate compensation).	7.1%	9.4%
3. Need	Outcome based on requirements regardless of contributions.	2.3%	1.7%
Procedural Justice		**34.1%*** **	**26.7%*** **
1. Time/Speed	Perceived amount of time taken to complete a procedure.	18.7%	17.4%
2. Flexibility	Adaptability of procedures to reflect individual circumstances.	10.5%	5.1%
3. Accessibility	Ease of engaging a process.	4.9%	4.2%
Interactional Justice		**18.6%*** **	**20.6%*** **
1. Politeness	Well-mannered, courteous behavior.	12.0%	15.4%
2. Effort	Amount of positive energy put into resolving a problem.	4.5%	3.0%
3. Empathy	Provision of caring, individual attention.	2.1%	2.2%

*Types of justice concept and definition were adapted from the previous study by Tax and Brown (1998) and Blodgett, Hill and Tax (1997).
** Source: publicized complaints taken from the Customer Service Center Websites of anonymous online retail companies, called ABC.com, XYZ.com, PQR.com, and LMN.com reported from September, 2000 to May, 2002.
***Total percentages complaints of sub-categories, distributive, procedural, and interactional justice from log data and customer service center.

service failure with procedural justice was higher than distributive or interactional justice. This implies that the customers' expectation regarding high speed of response or short waiting time has a greater impact than other expectations. Therefore, when the service quality with procedural justice does not meet customer expectation, customers are more likely to complain than when other justice dimensions fail.

Table 6 presents the analysis of types of service failure from two sources of data, the log data and the complaints from the customer feedback data. Both data analyses showed what types of service failure affect customer complaints in online shopping. Both results showed that the major factor of service failure that causes online customer complaints is the timing/speed issue. Customer complaints were also caused if they encounter a salesperson's impolite behavior. Furthermore, 14.1% of online customers who complained did not perceive that the outcomes were equal even if they received a refund or exchange.

DISCUSSION

How online businesses exert service quality is often judged by how effectively they handle customer complaints. By examining actual customer complaints from log data and customer service centers, this study shows that major online customer complaints and dissatisfaction are generated from unsatisfactory service quality, such as a conflict with Web customer service centers. From the comparison analysis of the causes of complaints in online and in-store shopping environments, it was found that major causes of complaints are significantly different in these two markets. For example, the major cause of customer complaints both in online and in-store shopping environments was a service failure, and the incidence was higher in the online than in-store environment. This study also determined implications to business by analyzing the types of service failure on complaints. Based on the log data analysis, a major issue of online customers' complaints is procedural justice, such as delivery and response time, while analysis of customer feedback data showed that customer complaints due to both distributive and procedural justice are almost equal. Another finding from regression analysis indicates that the impact of service failure with the justice dimension affects customers' propensity to complain in the online shopping environment. Particularly, the magnitude of the impact of service failure with the procedural justice dimension was higher than distributive and interactional justice.

By investigating online customers' perceived service quality from their complaints, this study provides implications for how e-businesses' customer service centers should manage customer complaints effectively. The findings imply that online customer complaints are generated more from e-service failure regarding procedural justice than other justice dimensions. Thus, this study suggests that e-businesses should pay more attention to procedural justice by providing faster feedback and responses. Practitioners should put more emphasis on the importance of rapid feedback on complaints and also improvement of the advanced system. For example, online customer service centers (also referred to as *Web-enabled customer contact centers*: http://www.iir-ny.com) could provide online chat services to their customers, more efficient customer self-help centers, or a combination of several customer communication channels (http://www.rightnow.com). A synchronous feedback system, of course, is the fastest means of communication online. On the other hand, delayed response frustrates customers, hindering them from becoming loyal. Another example of offering real-time customer service is http://www.neimanmarcus.com. The online customer center at *Neiman Marcus* operates a real-time service that enables customers to solve their problems/questions without having a delay. *Rightnow technologies* (www.rightnow.com) also focuses on live chat and collaboration to improve relationships with their customers. Moreover, the company also offers personalized service to customers through a service portal as a consideration of *eService solution* (www.rightnow.com). Thus, this study suggests that technology-oriented service systems or well-

designed e-service customer centers would be an important key to reduce online customer complaints regarding service failure.

The study also suggests that online businesses should build up strategies concerning service failure with justice dimensions. Online businesses should consider such strategies as offering adequate compensation to customers for unsatisfactory transactions and also delivering messages more efficiently to minimize conflicts with customers. If the major cause of the purchase failure was not the customer, the e-business should take responsibility, e.g., by refunding delivery cost and also product cost to the customer. Well-mannered interpersonal communication between customers and salespersons throughout email or call centers could decrease customer complaints. Special training of service representatives will be required to learn how to handle customer complaints. Service representatives dealing with customer complaints should recognize the customer's viewpoint, specifically understanding what is valued by the customer, knowing the customer's problem, and listening to their voice (Gardial, Clemons, Woodruff, Schumann and Burns 1994). In addition, using enhanced communication tools, such as emoticons or avatars that are personal icons representing you and your feelings (Hanson 2000), or imaginary symbols for representatives, will help to improve closeness to the customers. AT&T uses "Ask Allie" on their Web customer service center (www.customer service.att.com) to convey an image of closeness to the customer. It is believed that those contributions to complaint management will enhance e-businesses' overall market effectiveness.

Further, this study will be extended by considering customer complaints caused by different dimensions of service failure based on different types of businesses and product categories. There are some limitations of the study. This study applied constructs to classify the different types of services, proposed for the traditional store environment. For future study, constructs should be more conceptually established in the online situation. Interaction effects between constructs should be considered in the future study. Also, an extended number of samples for log data analysis will enhance the reliability of the paper.

CONCLUSIONS

This study demonstrates that the problems with e-business customer service centers are the critical causes of online customer complaints. In turn, this article argues that customers' dissatisfaction and complaints in e-businesses increase if they encounter a problem with customer service. This study recommends that e-businesses should consider a) fairness dealing with customer complaints; b) improvement of response time; and c) polite and courteous interpersonal communication. Such efforts to improve the e-service quality will be vital in enhancing customer satisfaction, leading to more successful customer relationship management (CRM).

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