Customer Satisfaction with Electronic Service Encounters

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ABSTRACT: Customer relationship management is an integral component of business strategy for on-line service providers. This paper investigates the aspects of on-line transactions in electronic retailing that are most likely to satisfy or dissatisfy customers, thereby increasing or decreasing the likelihood of building and maintaining relationships with them. For this study, 513 respondents reported behaviors, perceptions, beliefs, events, features, characteristics, attributes, and situations that expressed their satisfaction or dissatisfaction with electronic service encounters. Content analysis of these encounters yielded three meta-categories, six categories, and 33 subcategories of customer satisfaction or dissatisfaction with on-line service providers. The findings suggested that three major categories are robust even in the electronic context of the Internet. The antecedents identified were relevant both to product-related services (e.g., books, apparel) and to pure services (e.g., on-line banking, on-line stock trading). The study found that the characteristics and behaviors of customer-contact employees play an important role in on-line service encounters. It also revealed a percentage decrease in satisfactory incidents, a percentage increase in unsatisfactory incidents, and a percentage increase in unsatisfactory incidents involving employee characteristics and behaviors as service encounters move from a bricks-and-mortar environment to an electronic context. This suggests that customer-contact employees may not be well equipped to deal with on-line customers.

KEY WORDS AND PHRASES: Customer satisfaction, electronic customer relationship, electronic service encounter, management.

Building and maintaining customer relationships has long been perceived as an enabler of electronic commerce and thus of electronic retailing [84]. Research has shown the benefits of creating and maintaining customer relationships [e.g., 46, 56, 66, 75]. For instance, on-line service providers lose $20 to $80 on each customer the first year because of the high cost of acquiring customers but can make up for the loss in the long run by retaining loyal customers [66]. On-line service providers spend up to 2.5 times more than their bricks-and-mortar counterparts to acquire new customers [46]. Loyal customers engage in positive word-of-mouth communication and repurchase behaviors, which means more revenue for the service provider in the long run [56, 75].

Customers develop a relationship with a service provider as a result of repeated experiences with the service provider. A customer who has had a series of discrete satisfying experiences with a provider crosses into what is referred to as the loyalty stage [59, 60]. The service provider is considered to have built a relationship with customers who enter into this state. It is important, therefore,

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to understand the individual transactions in electronic retailing that are most likely to satisfy or dissatisfy customers, thereby increasing the likelihood of relationship development.

The present study investigated the antecedents of customer satisfaction or dissatisfaction with business-to-customer transactions in the electronic retailing domain. More specifically, it explored the following research questions:

1. What events and behaviors contributed to customer satisfaction or dissatisfaction with service encounters in electronic retailing?
2. How do the identified events and behaviors differ from those identified in previous studies?

Background

Electronic Customer Relationship Management

Electronic commerce customer relationship management (eCRM) has emerged as a subfield and continues to evolve within the information systems (IS) discipline [69, 70, 71]. After conducting an eCRM meta-analysis, Romano and Fjermestad identified five major non–mutually exclusive research areas within eCRM: eCRM markets, eCRM business models, eCRM knowledge management, eCRM technology, and eCRM human factors [70, 71].

In the eCRM markets area, Romano and Fjermestad identified the need to investigate the role of transactions (i.e., discrete transactions, relational exchanges) between service providers and customers [71]. In the area of eCRM human factors, they identified the need to investigate customers' emotional experiences on-line and how customers think and feel about service providers, their products, and their brand [71]. Romano and Fjermestad also proposed that researchers should consider new instruments and techniques to explore customer attitudes and opinions.

The present study is an attempt to fill this gap in the eCRM research area. It explored customers' attitudes and opinions pertaining to the different aspects of a discrete transaction with an on-line service provider. The service-encounter literature within the marketing field provided a theoretical framework to guide the study, as described in the next section.

Service-Encounter Model

Given that service encounters have been extensively investigated in the bricks-and-mortar context, a purely inductive analysis was unnecessary to study service encounters in an on-line context. Instead, this rich literature was reviewed to develop a preliminary deductive taxonomy that could be used as a guide in analyzing on-line service encounters.

A service encounter is defined as the period of time during which a customer interacts with a service [76]. On the Web, customers engage in service encounters with a business by visiting its Web site, navigating through it,

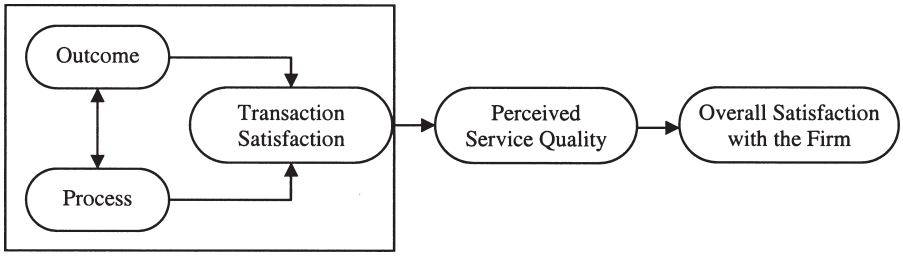

Figure 1. Service Encounter Conceptual Framework
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searching for product and service information, communicating with customer service representatives, and perhaps purchasing a product or service.

The quality of the interaction between customers and service providers during the service encounter is important because it is at this level that customers judge the services provided to them [12, 27, 55]. Figure 1, taken directly from Mohr and Bitner [55], represents the conceptual framework that guided the study:

A service encounter consists of a service outcome (i.e., what the customer receives during the exchange) and the process of service delivery (i.e., the way the outcome is delivered to the customer). Customer satisfaction with service encounters, also known as transaction satisfaction, is therefore a combination of the customer's satisfaction with the service outcome and with the process of service delivery.

A customer who experiences several transactions with the same service provider will develop an overall global judgment of the superiority/inferiority of the quality of the services rendered [8]. This overall global judgment is known as perceived service quality.

A customer may have encounters with different segments of a service provider (e.g., customer-contact personnel, the ordering department, the billing department). The customer's evaluation of the experiences with the different segments of the service provider, along with the repeated discrete transactions, will therefore create an overall customer perception of satisfaction with the service provider [8].

The focus of this study was to investigate the aspects of individual transactions that are most likely to satisfy or dissatisfy customers. The study therefore concentrated on customer transaction satisfaction or dissatisfaction with on-line services on the Web (inside the box in Figure 1), not on perceived service quality and overall satisfaction with the firm.

Information systems researchers have extensively investigated the satisfaction construct to measure user information satisfaction, user information satisfaction with an information systems environment as a whole, end-user satisfaction with a specific application, and satisfaction with vendor-provided information services [2, 19, 30, 32, 39].

Information systems researchers have more recently used the perceived service quality construct to measure user evaluations through the SERVQUAL

instrument [61, 62, 63]. SERVQUAL contains 22 items that represent the following five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Based on the SERVQUAL instrument, researchers have developed such instruments as e-SERVQUAL, WebQual, and SITEQUAL [3, 82, 83].

The measure of satisfaction as well as perceived service quality in information systems research has been mostly attitudinal in nature. Like most definitions of attitude, satisfaction and perceived service quality are predispositions to respond favorably or unfavorably to a target. In other words, these constructs are relatively enduring and stable cognitive states. As a learned predisposition, an attitude can be changed, but not easily.

In contrast, the marketing literature views customer satisfaction as a fleeting, post-consumption, evaluative response. The marketing view of satisfaction has been adopted for the present study because it is a conceptualization more appropriate to a context where the user's/customer's interaction with the satisfaction target is intermittent or even a one-time event [58, 78].

Customer Satisfaction/Dissatisfaction with Service Encounters

Bricks-and-Mortar Service Encounters

In one of the earliest studies of service encounters, Bitner and colleagues identified the antecedents of customer satisfaction or dissatisfaction with service encounters in the airline, hotel, and restaurant industries from the customer's perspective [6]. They identified three major categories (service delivery failures, special customer needs and requests, unprompted employee actions) and 12 subcategories of antecedents of customer satisfaction or dissatisfaction.

The service delivery failures category refers to encounters directly related to a breakdown of the core service (e.g., hotel room unavailable, restaurant meal cold, airline flight cancelled). The special customer needs and requests category, on the other hand, refers to encounters where customers required unique needs (e.g., special meals, late checkouts, special hours). The unprompted employee actions category refers to encounters where events and employee actions were not expected by respondents (e.g., special attention, ignoring the customer, treated like royalty, stealing).

The three major categories (service delivery failures, special needs and requests, unprompted employee actions) have been shown to be robust and valid across different industries, such as auto care/repair, financial services, educational services, health care, real estate, retail setting, information technology help desks, and the gaming industry, and across respondents: the employee's perspective as opposed to the customer's perspective [5, 26, 32, 42, 45]. The subcategories, however, have been different and context-dependent.

Heckman and Guskey suggested that the scope of two of the categories developed by Bitner and colleagues should be extended [6, 31]. In their view, customer situation before the encounter is a more general and more inclusive category than customer special needs and requests. They also suggested that

the employee characteristics and behaviors category is a more general and a more inclusive form of the unprompted employee action.

After reviewing the service-encounter literature in the bricks-and-mortar context, it was decided to include all three major categories (core service delivery failures, customer situation before the encounter, employee characteristics and behaviors) in the preliminary taxonomy. Since the subcategories are context-dependent, those that seemed relevant to the electronic context were included (*see Table 1*).

Technology-Mediated Service Encounters

Service-encounter research in the bricks-and-mortar context is considered to be a "low-tech, high-touch" paradigm [7]. According to Bitner and colleagues, this paradigm has focused primarily on the interpersonal dynamics between a customer and a service provider with little attention to the role of technology in the service encounter [7].

Given the pervasiveness of technology in everyday life, researchers have begun to investigate technology-mediated service encounters. Meuter and colleagues, for instance, investigated the antecedents of customer satisfaction or dissatisfaction with service encounters dealing with self-service technologies (e.g., automated teller machines, Internet shopping services, pay-at-the-pump terminals, on-line brokerage services) [53]. They identified three major categories of customer satisfaction with self-service technology encounters (solved an intensified need, better than the alternative, did its job) and three categories of customer dissatisfaction (technology failure, process failure, customer-driven failure).

Van Dolen and de Ruyter, on the other hand, investigated customer satisfaction or dissatisfaction with moderated group-chat service-encounters [79]. They investigated the effects of perceived usefulness, perceived ease of use, and perceived enjoyment on chat session satisfaction. At the individual level of analysis, their results indicated that perceived ease of use and perceived enjoyment were statistically significant, whereas perceived usefulness was not. At the group level of analysis, however, perceived usefulness, perceived ease of use, and perceived enjoyment were statistically significant.

There have also been several studies investigating different aspects of on-line banking. Joseph and colleagues studied the role that technology plays in banking and its impact on the delivery of perceived service quality [43]. The results indicated that customers highly rated Web site ease of use in electronic banking. Similarly, Buy and Brown showed that ease of use, among other factors, was an important factor contributing to customer satisfaction with on-line banking Web sites [11]. Patricio and colleagues, on the other hand, explored customer satisfaction with Internet banking, branch banking, telephone banking, and automated teller machines (ATM) [64]. A high percentage (61%) of their respondents reported ease of use as one of the advantages of Internet banking.

Another stream of research explores on-line shopping. Lee and Overby, for instance, studied the effects of utilitarian shopping values and experiential shopping values on customer satisfaction and loyalty [47]. Their results showed

Category	Subcategory
Core service delivery failures	Unavailable service
	Unreasonably slow service
Customer's situation before encounter	Customer preferences
	Deadline
	Customer error
	Novice
	Past experience with service provider
Employee characteristics and behavior	Competence
	Attitude
	Effective communication
	Extraordinary behavior
Information technology interface	Ease of use
	Visual appeal
	Navigation
	Interaction
Trust	Disposition to trust
	Institution-based trust
	Trusting beliefs
	Trusting intentions

Table 1. Preliminary Taxonomy.

that price savings, service excellence, time savings, and merchandise selection (i.e., utilitarian values) positively affected customer satisfaction and loyalty. Features related to the Web site, including entertainment, visual appeal, escapism, and interaction (i.e., experiential values), had a similarly positive effect on customer satisfaction and loyalty. Customer intentions to continue to use a Web site, in turn, have been shown to be determined by satisfaction with, among other factors, prior use [37]. Similarly, Ribbink and colleagues explored service quality, satisfaction, and trust in an electronic context [67]. The results indicated that ease of use and Web site design (i.e., e-scape) influenced customer loyalty to on-line service providers. Features related to the Web site (e.g., ease of use, navigation, aesthetics) have also been shown to influence customer satisfaction with electronic food retailers, on-line retailers, and e-services [33, 40, 80].

These studies point to the importance of the information technology interface in customers' evaluation of service encounters. In consequence, an additional category (i.e., information technology interface) was added to the preliminary taxonomy of the present study, because the Web site is the first point of contact between a customer and a service provider in an on-line transaction. Ease of use, visual appeal, navigation, and interaction were also added as subcategories.

Customer Trust in Electronic Commerce

Given the electronic context of the study, several categories and subcategories were added to the preliminary taxonomy. Trust, for instance, is known to be

crucial in e-commerce [24, 52]. In the bricks-and-mortar environment, the physical presence of a service provider, including customer-contact personnel, the physical space, and the available products all inspire customer trust [66].

Transacting with an on-line service provider, however, involves a certain degree of risk and uncertainty because the behaviors of a service provider are less guaranteed on-line than in a bricks-and-mortar setting [24, 25]. Trust is a way to reduce the perceived risk and uncertainty of dealing with an on-line service provider [23, 41].

In their meta-analysis, McKnight and Chervany developed a definition of trust that integrates the diverse perspectives embedded in the various definitions in the electronic commerce literature [52]. They defined trust as a willingness to become vulnerable to a trustee, whether a person, an institution, or people generally, after having taken the trustee's characteristics into consideration. They identified four different types of trust constructs: disposition to trust, institution-based trust, trusting beliefs, and trusting intentions.

These four trust constructs were deemed useful for the present study and were therefore included in the preliminary taxonomy.

Preliminary Deductive Taxonomy

Table 1 presents the preliminary taxonomy of the antecedents of customer satisfaction or dissatisfaction with on-line service encounters drawn from the service-encounter and electronic commerce literatures.

Method and Procedure

A self-administered Web questionnaire using the critical incident technique (CIT) was used to collect data. CIT is frequently used in the marketing literature to investigate service encounters [5, 6, 31]. It is a systematic procedure for collecting events and behaviors that lead to the success or failure of a specific task [6, 21, 28, 72]. The aim of the critical incident technique is to collect very detailed descriptions or stories from respondents about a memorable experience.

The questionnaire asked the respondents to think of a time when they had what they believed to be a particularly satisfying or unsatisfying experience in the last three months with on-line book purchasing, on-line banking, on-line stock trading, and the like. The respondents were then prompted with several follow-up questions to ensure a richly detailed description of the incident:

1. How did you evaluate the incident? (i.e., satisfying or unsatisfying)
2. When did the incident occur?
3. Describe the circumstances leading to the incident.
4. What happened exactly?
5. Who was involved?
6. How did the incident end?
7. Why did you believe the incident to be satisfying or unsatisfying?

The purpose of these questions was to get the respondent to provide a rich description of the incident. The respondents focused on describing the events and details of the incidents, leaving the inferences, abstractions, and conclusions to the researchers [6, 44].

A pilot study was conducted with respondents representative of the population, a process that is highly recommended [1, 15, 22]. All told, 75 incidents were collected from respondents who had made a purchase on the Web. The pilot data showed that the respondents provided detailed descriptions of their purchasing experiences and that collecting incidents through the Web was satisfactory for this research. Analysis of the pilot study data indicated that the preliminary taxonomy was not comprehensive enough to account for the antecedents of customer satisfaction or dissatisfaction with service encounters on the Web.

A purposive sampling technique was used to select respondents who best met the purpose of the study. Respondents were solicited through a number of listservs and newsgroups on the Web (e.g., liszt.com, Yahoo.com, Google.com, Tile.net), and students from several universities and on-line research panelists were also polled to participate. Given the nonprobabilistic sampling technique, the study strongly depended on the willingness to volunteer of the respondents and had little control over who in the target population participated in the study. Most research studies that rely on a sampling technique are vulnerable to the problem of nonresponse bias and sometimes self-selection bias. The present study was no different. The negative effects of nonresponse bias and self-selection bias were reduced, however, in that the study sample represented the U.S. on-line shopping population fairly well in terms of age, gender, and education (as discussed below).

The effect of nonresponse bias was further reduced by the large sample size, which increased the odds of capturing the variance in the target population. In addition, the design of the Web questionnaire was optimized to prevent respondents from prematurely abandoning the survey. This goal was accomplished by following the recommendations of the tailored design method [16, 17, 18] as well as the practices generally adopted in the implementation of surveys [4, 10, 13, 29, 74]. The recommendations included:

- A motivational welcome page that emphasized the ease of responding and explained how to proceed to the actual questionnaire.
- The first question in the questionnaire was fully visible on the first screen and easy to answer.
- The format of the questionnaire followed the format of paper-and-pencil self-administered questionnaires (e.g., question numbering, left-justified, proper spacing between questions and answer spaces).
- The format allowed respondents to scroll up and down through the questionnaire.
- A graphical symbol was provided to show respondents where they were in the questionnaire.
- Respondents were not forced to answer a question before proceeding to the next one.

- A table format was used to decrease the likelihood of a long line extending across the screen when the respondent's browser was tiled.
- Respondents were provided with computer operation instructions at the points where needed to fill out the questionnaire.

The data-elicitation procedure resulted in 513 usable incidents. Of these incidents, 270 were satisfactory and 243 incidents were unsatisfactory (*see Table 2*).

The study used the analytical framework for data analysis outlined by Miles and Huberman [54]. The framework identifies the data to be analyzed, codes or tags the data, and identifies patterns in order to provide an explanatory framework. A similar process to aid researchers in the analysis of Web-based qualitative data was recently described by other researchers [68]. The preliminary taxonomy derived from the literature (*see Table 1*) was used as a guide in analyzing the data. A deductive/inductive iterative process generated and refined categories and subcategories in the taxonomy.

The process consisted of the following overlapping phases:

- An initial deductive approach to determine whether each behavior, feature, event, situation, and perception described in each critical incident fit into a category of the preliminary taxonomy identified from the literatures.
- An inductive approach to add new categories and discard unused categories from the taxonomy as critical incidents were collected and analyzed.
- The deductive/inductive iterations continued until saturation of categories was reached.

Coding Reliability Testing

Three reliability tests were conducted with different coders to ensure the integrity of the data analysis and the robustness of the taxonomy. Two of the coders were Ph.D. candidates, and the third was an assistant research professor in a research university. The first test was conducted to check the reliability of identifying usable incidents. One researcher, considered to be a coder, and another coder independently classified 20 incidents selected from the first 100 incidents.

The researcher explained the general purpose of the study and instructed the coder to label an incident as usable if it met all of the following criteria [6, 57]:

1. The incident must be extremely satisfactory or extremely unsatisfactory from the respondent's perspective.
2. The incident must involve a transaction between a customer and a service provider.
3. The incident must be a discrete episode.
4. The incident must contain sufficient details for the researcher to visualize it.

	Type of incident					
	Satisfactory incident		Unsatisfactory incident		Total	
Type of services	***n***	**%**	***n***	**%**	***n***	**%**
Product-related services	141	27.49	125	24.36	266	51.85
Pure services	129	25.15	118	23.00	247	48.15
Totals	270	52.64	243	47.36	513	100

Table 2. Incident and ServiceTypes.

Before discussion of disagreements, the inter-coder agreement was 97 percent, suggesting that incidents were being appropriately selected for use in data analysis.

The second test was conducted to ensure that the researchers were reliably coding the relevant utterances described in respondents' incidents. The preliminary taxonomy was refined by content analysis of 100 usable incidents. Ten of these incidents were randomly selected and given to another coder. The researcher explained the general purpose of the study and then instructed the coder to label all the utterances in the 10 incidents that expressed respondents' perceptions of satisfaction or dissatisfaction. Using the developing coding scheme, the coder was then instructed to see whether the identified utterance had a predefined code in the coding scheme. If there was, the coder was to replace the label by the predefined code.

The second reliability test resulted in an 88 percent inter-coder agreement. Even though inter-coder agreement above 85 percent is deemed acceptable in the service-encounter literature [5, 6, 31, 44, 53], an effort was made to achieve a higher percentage of inter-coder agreement. After discussing the disagreements, the researchers revised and clarified the definitions of the categories and subcategories. The test was conducted again and this time achieved 93 percent inter-coder agreement.

A final reliability test checked the robustness of the final taxonomy generated after the content analysis of 513 critical incidents. A random sample of 100 coded utterances was given to another coder. Recall that an incident contained more than one utterance reported by the respondent as contributing to satisfaction or dissatisfaction with a service encounter.

The researcher explained the general purpose of the study and instructed the coder to code each utterance according to the final coding scheme. After discussions of disagreements, the inter-coder agreement was 94 percent.

Results and Discussion

The main purpose of the study was to develop a taxonomy of antecedents of customer satisfaction or dissatisfaction with service encounters in electronic retailing. This section describes the study sample and the taxonomy that resulted from the content analysis of customer-reported service-encounter incidents.

Description of Study Sample

The data-collection effort rendered 513 usable customer-reported service-encounter incidents. Table 2 presents a description of the data in terms of the type of incidents and the type of services.

As can be seen, the sample collected for the study was more or less equally distributed in respect to type of services (i.e., product-related services and pure services) and type of incidents (i.e., satisfactory incidents and unsatisfactory incidents). According to the service-classification literature,

Age			Education		
	n	%		*n*	%
18-29	201	39.18	High school	50	9.75
30-39	171	33.34	Some college	183	38.21
40-49	94	18.32	Associate degree	43	6.24
50+	47	9.16	Bachelor's degree	142	27.68
			Graduate degree	85	16.18
			Other	10	1.94
Total	513	100	Total	513	100

Table 3. Demographics of Respondents.

product-related services and pure services differ in several dimensions, including degree of tangibility (tangible/intangible), recipient of service (people/things), and method of service delivery (entirely on the Web/not entirely on the Web) [51, 65, 73, 81].

Approximately equal representation was purposely achieved to avoid biasing the results and to increase their generalizability. In order to achieve approximately equal representation, the data were inspected at different times during the data-collection effort. If the data yielded a disproportionate amount of satisfactory incidents, the hyperlink that allowed the respondents to report satisfactory incidents was removed. This prompted respondents who had experienced an unsatisfactory as well as a satisfactory incident to report the unsatisfactory incident. Use of this procedure prevented the reporting of oversampled incidents and encouraged the reporting of those that were undersampled. It is worth emphasizing that saturation or coverage of the antecedents of customer satisfaction or dissatisfaction superseded the need for a balanced representation across the types of critical incidents or the types of services.

Of the 513 respondents who participated in the study, 50.49 percent (n = 259) were female and 49.51 percent (n = 254) were male. Table 3 summarizes other demographic information about the respondents.

A chi-square test of independence between gender and satisfaction was statistically insignificant at an alpha level of 0.05, χ^2 (1, N = 513) = 0.69, $p >$ 0.05. Similarly, a chi-square test of independence between age and satisfaction was statistically insignificant at an alpha level of 0.05, χ^2 (3, N = 513) = 1.02, $p > 0.05$. Finally, a chi-square test of independence between education and satisfaction was statistically insignificant at an alpha level of 0.05, χ^2 (5, N = 513) = 6.41, $p > 0.05$.

Of the respondents in the sample, 93 percent (478 of 513) reported the United States as their place of residence. In order to determine representativeness, the sample was compared with the U.S. on-line shopping population (*see Table 4*).

The U.S. on-line shopping population had a higher percentage of females than males [20], whereas the respondents in the study were more balanced. Thirty five percent of U.S. on-line shoppers had a four-year degree [20] compared with 28 percent of the respondents in the study. Sixteen percent of the respondents in the study, however, earned a graduate degree, making 44 per-

	Study sample	U.S. on-line shoppers [20]
Gender	49.51% (male)	40% (male)
	50.49% (female)	60% (female)
Education	27.68% (bachelor deg.)	35% (4-year college)
Average age	34 (approx.)	42

Table 4. Respondents Compared with U.S. On-Line Shoppers.

cent of the study respondents highly educated. Furthermore, 72 percent of the respondents in the study were between the ages of 18 and 39, making the average age of the respondents somewhat younger than the U.S. on-line shopping population [20]. While not an exact match, the characteristics of the respondents for this study represented the U.S. on-line shopping population fairly well.

Antecedents of Customer Satisfaction or Dissatisfaction

The final taxonomy comprised three meta-categories and six categories. Figure 2 shows a graphical summary of the taxonomy. The labels in bold were the result of inductive data analysis, whereas the remaining labels were deductively included in the preliminary taxonomy.

It is worth noting that the coders were unable to reliably identify two of the four trust constructs originally included in the preliminary taxonomy (i.e., disposition to trust, trusting intentions). They mostly agreed, however, on the coding of descriptions about the security of transactions (i.e., institution-based trust) and the integrity of service providers (i.e., trusting beliefs). Two subcategories were therefore created within the trust category and were described by respondents as being either positive or negative (i.e., perceived integrity of service provider, perceived transactional security). Respondents did not mention information technology interface subcategories (i.e., visual appeal, interaction) when describing encounters with on-line service providers. They did, however, describe Web site ease of use in the context of finding products/services, finding information about products/services, or navigating through the Web site. These Web site features were combined under ease of navigation.

Content analysis of 513 customer-reported service-encounter incidents yielded 2,547 utterances that were classified into the subcategories of the taxonomy (*see Table 5*). The inter-coder reliability coefficient for the taxonomy was 94 percent.

Core Service Delivery Success/Failure

Table 5 reveals that receipt of products/services requested was the most frequently reported subcategory within the core service delivery success/failure category. Approximately 94 percent of the respondents (218 of 233) reported

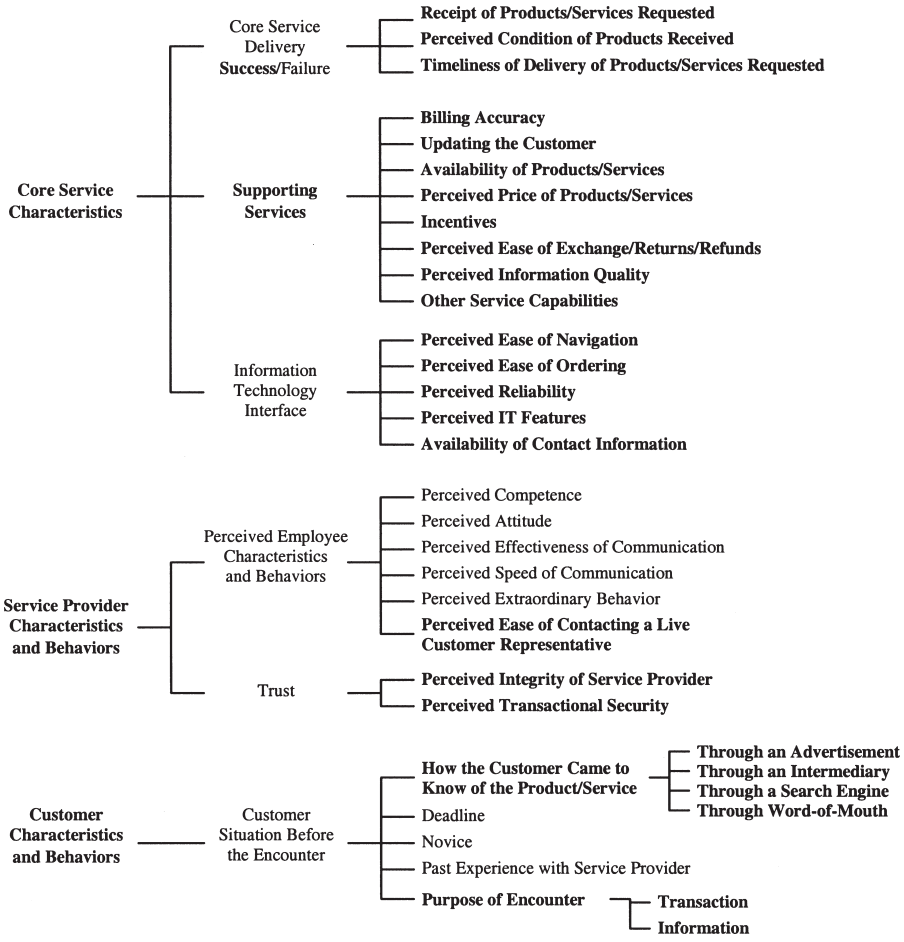

Figure 2. Antecedents of Customer Satisfaction with Electronic Service Encounters

being satisfied when they received the products/services requested, while an overwhelming 64 percent of respondents (147 of 230) reported being unsatisfied when they did not receive the products/services requested.

Furthermore, 35 percent of respondents (82 out of 233) were satisfied when the delivery of the products/services was timely, while 18 percent of respondents (41 of 230) were unsatisfied when the delivery of the products/services was untimely. In other words, respondents were approximately twice as likely to report an incident as satisfactory when they received the products/services on time as when they did not receive the products/services on time.

Supporting Services Category

The supporting services category was represented in 78 percent of satisfactory incidents (211 of 270) and 70 percent of unsatisfactory incidents (170 of

	Type of service					
	Satisfactory incidents (*n* = 270)		Unsatisfactory incidents (*n* = 243)		Totals	
Category	**Frequency (+)**	**Frequency (–)**	**Frequency (+)**	**Frequency (–)**	**Frequency (+)**	**Frequency (–)**
Core service delivery success/failure category						
Receipt of products/services requested	218	15	83	147	301	162
Perceived condition of products received	31	7	1	18	32	25
Timeliness of delivery of products/services requested	82	3	5	41	87	44
Column subtotal	331	25	89	206	420	231
Unique incidents *	233		230		463	
Supporting services category						
Billing accuracy	7	0	1	44	8	44
Updating the customer	74	1	16	30	90	31
Availability of products/services	38	6	2	14	40	20
Perceived price of products/services	50	0	5	4	55	4
Incentives	30	1	14	6	44	7
Perceived ease of exchange/returns/refunds	14	0	16	51	30	51
Perceived information quality	24	4	0	37	24	41
Other service capabilities	75	3	3	14	78	17
Column subtotal	312	15	57	200	369	215
Unique incidents*	211		170		381	

(continues)

Table 5. Service-Encounter Incidents Categorized into Subcategories of Taxonomy.

Table 5. (continued)

	Type of service					
	Satisfactory incidents (*n* = 270)		Unsatisfactory incidents (*n* = 243)		Totals	
Category	**Frequency (+)**	**Frequency (–)**	**Frequency (+)**	**Frequency (–)**	**Frequency (+)**	**Frequency (–)**
Information technology interface category						
Perceived ease of navigation	68	2	0	10	68	12
Perceived ease of ordering	35	0	2	1	37	1
Perceived reliability	3	3	0	15	3	18
Perceived IT features	5	2	0	11	5	13
Availability of contact information	1	1	2	9	3	10
Column subtotal	112	8	4	46	116	54
Unique incidents*	102		43		145	
Perceived employee characteristics and behaviors category						
Perceived competence	4	0	0	14	4	14
Perceived attitude	32	3	1	49	33	52
Ease of contacting live customer rep.	22	0	58	26	80	26
Perceived effectiveness of communication	13	0	0	56	13	56
Perceived speed of communication	20	0	1	12	21	12
Perceived extraordinary behavior	9	0	0	7	9	7
Column subtotal	100	3	60	164	160	167
Unique incidents *	64		149		213	
Trust category						
Perceived integrity of service provider	5	0	0	35	5	35
Perceived transactional security	21	7	0	2	21	9
Column subtotal	26	7	0	37	26	44
Unique incidents *	233		230		463	

Customer's situation before the encounter category			
How respondent came to know of the product/service			
Advertisement	17	18	35
Search engine	13	6	19
Intermediary	10	20	30
Word-of-mouth	7	7	14
Deadline	28	37	65
Novice	8	9	17
Past experience with service provider	(+) 31 / (-) 0	(+) 15 / (-) 6	(+) 46 / (-) 6
Purpose of encounter			
Transaction	233	230	463
Information	37	13	50
Column subtotal	384	361	745
Unique incidents *	105	102	207
Column total	1323	1224	2547
Total incidents	270	243	513

Notes: Based on 2,547 utterances extracted from 513 customer reports. [a] Number of incidents that included at least one subcategory.

243). Besides the core service delivery success/failure category, the supporting services category was represented in more unique incidents than any other category in the taxonomy (74%, 381 of 513).

Approximately 26 percent of respondents (44 of 170) reported an incident as unsatisfactory when they were incorrectly billed, billed twice, or billed for products/services not delivered. In the bricks-and-mortar context, billing is less of a concern because customers are able to verify whether they have been correctly charged for the products/services bought. If there is an incorrect billing, customers can return to the service provider to rectify the problem. Conversely, in an on-line context, customers must solely rely on on-line service providers not only for delivery of the requested products/services but also for correct billing. Respondents complained about the effort and time it took to resolve billing problems when they occurred.

Furthermore, 24 percent of respondents (50 of 211) reported an incident as satisfactory when they perceived the price of a product or service to be low, fair, or inexpensive. This suggests that even though price was not the most important factor in the supporting services category, some respondents still enjoy and look for bargains on the Web.

Information Technology Category

As can be seen in Table 5, perceived ease of navigation and perceived ease of ordering were the most frequently reported subcategories for satisfactory incidents. In other words, customers enjoyed finding products or services quickly and easily. Similarly, customers reported enjoying the encounter when they were clearly and quickly guided through the actual purchasing of products/services. Some customers liked the use of profiles, whereby service providers keep their personal information and address information on file. This saves repeat customers from the need to input the information again and thus makes the purchasing process more convenient.

As also shown in Table 5, perceived reliability was the most frequently reported subcategory in the IT interface category in unsatisfactory incidents. Customers expected the Web site to function properly and be up-and-running when they engaged the service provider. They reported unreliable Web sites as a problem, especially when they had an impending deadline (e.g., paying a bill, birthday gift).

These results support previous research regarding the importance of ease of navigation [14, 38, 48, 49], ease of ordering [50], and reliability [48] when customers evaluate the Web site of an on-line service provider.

Perceived Employee Characteristics and Behaviors

The data in Table 5 reveal that 11 percent of the respondents (26 of 243) reporting unsatisfactory incidents complained that they could not easily contact a live customer representative. Some respondents (n = 58) reported that it was easy to contact a live customer representative, but more than half of them com-

plained that the customer-contact employees were rude, unfriendly, uncaring, and unprofessional. Ease of contacting a live customer representative did not guarantee a satisfactory interaction between respondents and employees.

Trust

Table 5 shows perceived transactional security as the subcategory most frequently reported in satisfactory incidents. Due to the physical separation between customers and service providers, customers must be confident that submitting personal or credit card information is secure and safe. Customers felt comfortable about submitting personal information when service providers displayed third-party certificates of security (e.g., SSL Certificates) and provided relevant security information about the Web site (e.g., most frequently asked questions about security). These measures led to a sense of security during the transaction as well as a belief that personal information was safe from hacking.

As is also indicated in Table 5, respondents most frequently reported perceived integrity of service provider in unsatisfactory incidents. Some respondents complained about hidden charges, lies, and misleading advertisements.

These findings confirm previous studies that customers are concerned about transactional security [9, 48, 49, 77] and integrity [23, 40, 41, 67] when dealing with an on-line service provider.

Customer's Situation Before the Encounter

A little more than twice as many respondents reported satisfactory incidents (n = 13) than unsatisfactory incidents (n = 6) when they found the products/services through a search engine (*see Table 5*). On the other hand, twice as many respondents reported unsatisfactory incidents (n = 20) than satisfactory incidents (n = 10) when they found the products/services through a third party.

Ten percent of the respondents mentioned past experience with the service provider in their incidents (*see Table 5*). Overall, 60 percent (31 of 52) of respondents (52 of 513) reported a current satisfactory incident when they had experienced a previous satisfactory incident with the service provider. In contrast, 28 percent of respondents (15 of 52) reported a current unsatisfactory incident when they had experienced a previous satisfactory incident with the service provider. In other words, it is twice as likely that respondents will report a satisfactory incident rather than an unsatisfactory incident when they have experienced a previous satisfactory incident. This suggests that respondents' attitudes toward a service provider are relatively difficult to change.

Antecedents of Satisfaction and Dissatisfaction

The findings of this study also shed light on the antecedents of satisfaction and dissatisfaction. Most of these antecedents had a positive valence and a

negative valence. For example, receipt of products/services requested had a positive valence (i.e., received products/services requested) and a negative valence (i.e., did not receive products/services requested).

The study indicated that a confluence of identified antecedents contributed to customer satisfaction or dissatisfaction with service encounters in electronic retailing. If a single antecedent was considered, however, the positive valence of such an antecedent would more likely contribute to satisfaction than the negative valence of the same antecedent. Alternatively, the negative valence of an antecedent would more likely contribute to dissatisfaction than the positive valence of the same antecedent.

Accordingly, some antecedents with a positive valence were reported more frequently in satisfactory incidents than the same antecedent with a negative valence in unsatisfactory incidents. These antecedents were labeled as satisfiers and were conceptually similar to Herzberg's motivators [34, 35, 36]. Some antecedents with a negative valence were reported more frequently in unsatisfactory incidents than the same antecedent with a positive valence in satisfactory incidents. These antecedents were labeled as dissatisfiers and were conceptually similar to Herzberg's hygiene factors. Other antecedents with a positive valence were reported in satisfactory incidents with about the same frequency as the same antecedent with a negative valence in unsatisfactory incidents. These antecedents were labeled as bipolar and were conceptually similar to some antecedents reported by Herzberg.

The study followed Herzberg's criterion for classifying factors as satisfiers or dissatisfiers. The criterion was based on the frequency of incidents coded with that particular antecedent. Herzberg did not explicitly specify a cut-off frequency for classifying an antecedent as a motivator or a hygiene factor. His results, however, reveal that a factor was categorized as a motivator or hygiene factor when it met a minimum threshold frequency of 10 percent. A factor was also categorized as a motivator when its frequency was approximately double the frequency of the corresponding hygiene factor, and vice versa. The same criteria were adopted in the present study: To be considered for classification, the antecedent had to be reported in approximately 10 percent of the incidents and had to be approximately double the percentage of its counterpart.

Due to rounding errors, some percentages may not be represented accurately. Figure 3 presents a graphical summary of the antecedents with a positive valence in satisfactory incidents and the same antecedents with a negative valence in unsatisfactory incidents identified in this study.

Implications

Initial Framework for Electronic Service Encounters

Inspired by the well-established service-encounter literature in the bricks-and-mortar context and by the electronic commerce literature, three meta-categories and six categories were identified as antecedents of customer satisfaction or dissatisfaction with electronic service encounters (*see Figure 2*). This study

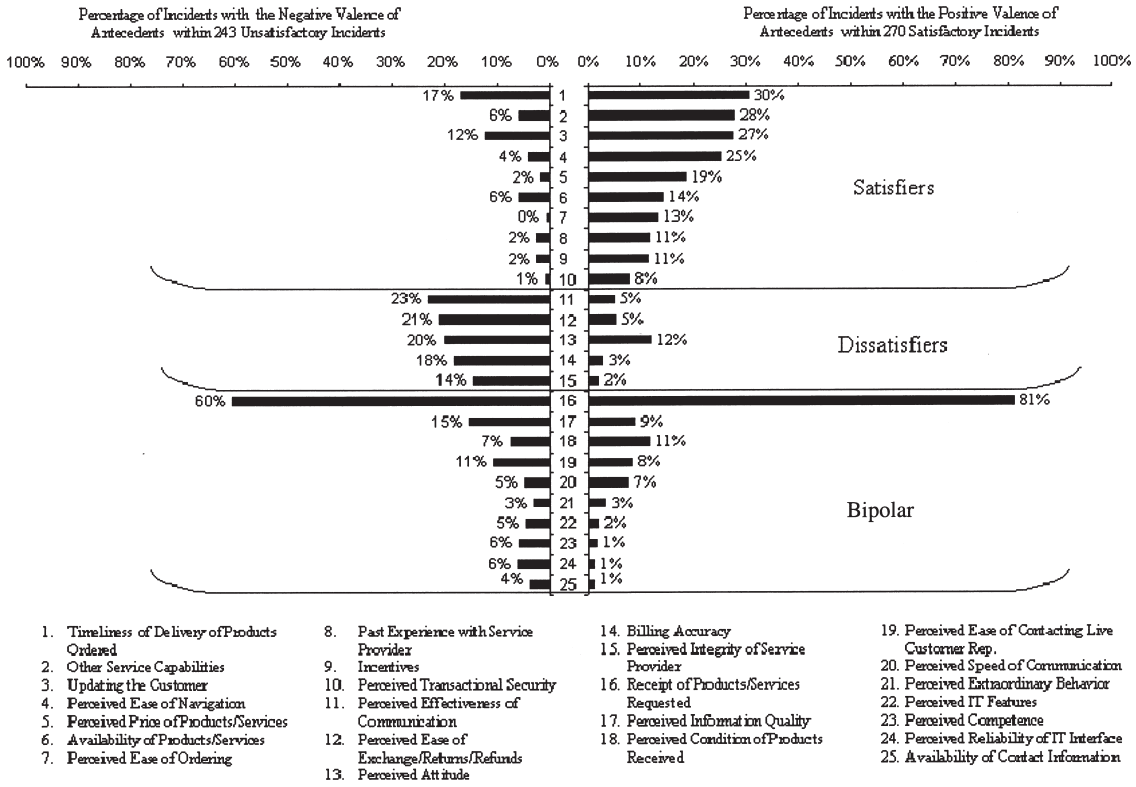

Figure 3. Antecedents with Positive Valence in Satisfactory Incidents and Its Negative Counterpart in Unsatisfactory Incident

therefore offers an insight into specific events that contributed to satisfaction or dissatisfaction when customers engaged in transactions with on-line service providers, providing a deeper understanding of the complexity of conducting business on the Internet. The taxonomy developed in this study can be used as an initial framework in future research investigating electronic service encounters.

Antecedents of Customer Satisfaction or Dissatisfaction

The study elicited respondents' experiences with on-line purchasing of product-related services (e.g., books, apparel, electronics, office supplies) and pure services (e.g., on-line banking, on-line stock trading, hotel/airline/restaurant reservation services).

Exploring the antecedents of satisfaction or dissatisfaction with product-related services and pure services broadened the applicability of the findings. It also made it possible to identify antecedents of satisfaction or dissatisfaction for product-related services that might be different from the antecedents of customer satisfaction or dissatisfaction for pure services. The results, however, indicated that the antecedents identified in the study were relevant to both product-related services and pure services. This provided a broader applicability of the taxonomy for different services in the electronic context.

Implications for the Original Taxonomy

The original taxonomy comprised three main concepts: core service failures, customization, and employee behaviors [6]. This taxonomy has proven to be robust and valid across different industries and across respondents. The findings of the study suggest that three major categories identified by Bitner and colleagues are robust even in the electronic context of the Internet [6].

The taxonomy developed in this study was compared with taxonomies developed in previous service-encounter studies [6, 31]. Table 6 provides the percentages of the main categories for three different types of service encounters: bricks-and-mortar service encounters [6], information technology help-desk service encounters [31], and on-line service encounters (i.e., the present study).

The table shows that in the core service delivery failure category, there has been a percentage decrease in satisfactory incidents as service encounters move from a bricks-and-mortar environment (23%) to an electronic context (6%). Similarly, there has been a percentage increase of unsatisfactory incidents as service encounters move from a bricks-and-mortar environment (43%) to an electronic context (60%). Similarly, in the perceived employee characteristics and behaviors category, there has been a percentage increase in unsatisfactory incidents as service encounters move from a bricks-and-mortar environment (42%) to an electronic context (61%).

The meta-category characteristics of the core service included core service delivery success/failure, a category conceptually similar to the core service delivery failures category. This meta-category also included a supporting services

Main category	Bitner and colleagues [6]		Heckman and Guskey [31][a]		Present study[b]	
	Satisfactory incidents (*n* = 347)	Unsatisfactory incidents (*n* = 347)	Satisfactory incidents (*n* = 210)	Unsatisfactory incidents (*n* = 206)	Satisfactory incidents (*n* = 270)	Unsatisfactory incidents (*n* = 243)
Core service delivery failure	23	43	10	53	6	60
Perceived employee characteristics and behaviors	44	42	58	50	24	61
Customer situation before encounter	33	16	15	14	39	42

Table 6. Main Category Percentages of Three Types of Service Encounters (in percent).

Notes: [a] Approximate percentages; unique incidents for each category were not reported. [b] Core service delivery successes were not considered for the core service delivery failure category.

category and an IT interface category, both of which assist the core service. The traditional service-encounter literature has only investigated core service delivery failures. Considering core service delivery failures enables service providers to learn how to prevent such failures from occurring. Avoiding core service failures may ensure that customers are not dissatisfied but not that they are satisfied.

The present study, however, has evaluated not only core service delivery failures but also core service delivery successes. By considering core service delivery successes, it gives service providers the opportunity to learn about the critical success factors that contribute to customer satisfaction in an electronic service encounter. This meta-category may therefore be more inclusive than the core service delivery failures category and may motivate future research on other characteristics of the core service that contribute to customer satisfaction or dissatisfaction with electronic service encounters.

Similarly, the service provider characteristics and behaviors meta-category included perceived employee characteristics and behaviors, a category conceptually similar to the employee behaviors category. This meta-category also includes a trust category that refers to characteristics of the service provider as well as the customer-contact employees. This meta-category is more inclusive than the employee behaviors category and may motivate future research on other characteristics of the service provider that contribute to customer satisfaction or dissatisfaction with on-line service encounters.

The customer's characteristics and behaviors meta-category included customer's situation before the encounter, a category conceptually similar to the customization category. This more inclusive meta-category may motivate future research on inherent characteristics of customers that may contribute to satisfaction or dissatisfaction with on-line service encounters.

Customer-Contact Employees

As compared with previous service-encounter studies, this study found an increase in unsatisfactory incidents related to the characteristics and behaviors of customer-contact employees. Bitner and colleagues, for instance, reported that 42 percent of unsatisfactory incidents in the retail setting involved customer-contact employee characteristics and behaviors [6]. Heckman and Guskey reported that 50 percent of unsatisfactory incidents in the information technology help desk involved customer-contact employee characteristics and behaviors [31]. This study indicated that 61 percent of unsatisfactory incidents involved customer-contact employee characteristics and behaviors.

The increase in the number of unsatisfactory incidents involving customer-contact employee characteristics and behaviors suggests that customer-contact employees are not well equipped to deal with customers in an on-line context. It also suggests that the greater the physical separation between customer and customer-contact employee, the better must be the customer-contact employee's communication skills and disposition.

The results of the study indicate that the characteristics and behaviors of customer-contact employees played an important role in on-line service en-

counters. Heckman and Guskey suggested that the characteristics of customer-contact employees (e.g., attitude, communication) might be generic to all types of service encounters [31]. In other words, employee characteristics, be they positive or negative, have an influence on customers' experiences with the service provider. The findings of the present study support this assertion in the electronic context.

Training Programs and Policies

On-line service providers may use the findings of the study to improve the way their customer-contact employees respond to realistic situations. This could be done, for example, by providing employees with hypothetical situations based on the taxonomy developed in the study. Employees will be able to build the skills and knowledge necessary to deal with realistic scenarios and to take the necessary actions to satisfy customers.

The findings of the study might also help on-line service providers implement procedures and policies that allow customer-contact employees to deal with a variety of specific situations. Customer-contact employees might therefore have the "freedom" to transform unsatisfactory encounters into satisfactory ones.

Limitations of the Study

The study has a number of limitations. It was susceptible to self-selection bias because incidents were collected using a purposive sampling. The critical incident technique was used to solicit retrospective accounts of respondents' experiences with on-line purchases. CIT is designed to make respondents focus on describing the events and details of the incidents. Some respondents may have rationalized their descriptions of unsatisfactory incidents in order to show themselves in a more positive light.

The types of on-line services studied were restricted to the commercial domain. The study did not consider service encounters where respondents did not purchase products and services. Consequently, the findings might not apply to on-line services in the noncommercial domain. Since only on-line B2C service encounters were investigated, the findings of the study may not be applicable to on-line B2B service encounters.

Conclusion and Suggestions for Future Research

Despite its limitations, the study contributes to a deeper understanding of the complexities of conducting business on the Internet. It identifies the antecedents of customer satisfaction or dissatisfaction with electronic service encounters. Its taxonomy of antecedents should be tested in future studies for robustness, validity, and generalizability.

The study fills a gap in the eCRM literature by eliciting respondents' opinions and beliefs regarding individual on-line transactions. An understanding of the aspects of individual transactions that are most likely to satisfy or dissatisfy customers will enable on-line service providers to increase the likelihood of relationship development in electronic retailing.

The study relied on respondents to voluntarily provide additional information about their purchasing experiences, such as the type of on-line business they were dealing with, whether they would buy again at the mentioned on-line business, and so forth. Since there were not enough data, it was not possible to meaningfully analyze the effects of the type of on-line business (e.g., click-and-click, clicks-and-bricks) on customer transaction satisfaction. Similarly, it was not possible to analyze the effects of customer transaction satisfaction on outcome variables (e.g., re-patronage, word-of-mouth). Future studies should explicitly collect information about the type of on-line business and outcome variables to explore the effects on the results of this study.

Since the present study focused mostly on on-line business-to-customer service encounters, future research should also investigate on-line B2B service encounters. It would then be possible to compare the antecedents identified in this study with those identified in a B2B context.

The on-line environment has introduced other forms of business models (e.g., C2C, C2B). These business models raise the possibility of new forms of service encounters that must be explored. Customer auction services like eBay, for instance, offer the possibility of investigating a different form of service encounter in an on-line context: brokered customer-to-customer service encounters.

The notion of brokered service encounters introduces the possibility of brokered B2C service encounters and brokered B2B service encounters. These forms of service encounters and the role of the brokers or intermediaries should be investigated in future studies. The role of the intermediary, especially when failures occur between sellers and buyers, must also be explored.

Internet users currently share music and video files using peer-to-peer technologies. In the future, Internet users may use this technology to buy and sell products and services, enabling pure unbrokered C2C service encounters. This may create a unique situation that deserves empirical investigation.

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