Service Recovery in Business-to-Business Exchanges

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Abstract

While several studies have focused service recovery in the business-to-consumer (B2C) context, there are few studies about service recovery from supply failures in B2B (business-to-business) exchanges. In order to explore the impact of service recovery on customer satisfaction in B2B exchanges, we developed multiple case studies to understand perceptions and expectations of this phenomenon by key participants in different buying firms. Our cases cover four US corporations classified by two design factors: industry type (aerospace and electronics) and firm size (large and small). Based on our cross-case analysis and theoretical support, we present a comprehensive set of propositions analyzing service recovery in B2B exchanges. Despite similarities, researching failure and recovery incidents in B2B exchanges is not a matter of just adjusting findings from the B2C studies. By the same token, conventional ideas about B2B exchanges may not take a major role in recovery situations.

INTRODUCTION

Competition has increased for firms in the global market. Despite increasing customer demand for products and services free from deficiencies, firms occasionally deliver faulty products and services to their customers. While several studies in the services management literature have helped firms to design recovery strategies in the business-to-consumer (B2C) context, there are few studies about recovery from supply failures in B2B (business-to-business) exchanges. A few papers have discussed the importance of supplier recovery capabilities from delivery problems in B2B logistics service (Johnston and Hewa, 1997; Daugherty et al., 1998). However, these studies do not provide a theory about the recovery impact on customer satisfaction in buying firms.

While customers in B2B exchanges are still individuals making decisions based on their perceptions and expectations (Cronin and Morris, 1989) and the knowledge about consumer understanding of failure and service recovery experiences is helpful, the relational nature of these exchanges is fundamentally different from the transactional nature of exchanges in B2C (Heide and John, 1992) what may affect significantly recovery requirements to achieve satisfaction in buying firms. To provide a theory about the impact of service recovery on customer satisfaction in B2B exchanges, we developed case studies to explore perceptions and expectations inside buying firms of supply failure and the subsequent service recovery.

LITERATURE REVIEW

A synthesis of the impact of service recovery from a supply failure on customer satisfaction, mainly from the services management literature, reveals the need to address three major research questions:

- What is the impact of a supply failure on customer satisfaction?
- How do customers evaluate a service recovery?
- What is the impact of a service recovery on customer satisfaction?

What is the impact of a supply failure on customer satisfaction?

B2C supply failures have been discussed in terms of failure types: core offering failures such as delivery problems and product defects; failures in responding to customer needs and requests; and failures due to unsolicited employee actions (Bitner et al., 1990; Hoffman et. al.,
In addition to failure types, the impact of supply failures on customer satisfaction has also been proportional to failure magnitude (Miller et al., 2000). In situations of severe failures some customer losses cannot be recouped and, it may not be possible for a recovery to fully satisfy customers (Miller et al., 2000; Mattila, 2001).

Despite the obvious impact of failure magnitude on customer satisfaction, it is not merely the judgment that the product has failed that determines customer dissatisfaction; the way customers attribute causes of a product failure influences what they do (Folkes, 1984; Swanson and Kelley, 2001). These authors suggest three major attributions of product failure causes: locus, stability, and controllability. If the failure locus is perceived as supplier-based rather than customer-based, the exchange is perceived as inequitable. If perceived failure causes are supplier-based and they are recurrent, customers are also dissatisfied. Finally, customers feel anger and desire to hurt supplier’s business when a failure is supplier-based and the supplier could have avoided the problem.

**How do customers evaluate a service recovery?**

Customers use mainly two comparative schemas to evaluate a service recovery. First, customers build expectations of a service recovery based on their predictions about what is likely to happen during an impending transaction (Kelly and Davis, 1994). Zeithaml et al. (1993) suggest that customers who have other service alternatives may have higher expectations of supplier performance than customers who do not. Also, when a failure occurs, the customer expects the supplier to honor explicit or implicit promises made in the form of service guarantees (Hart, 1988; Zeithaml et al., 1993; Goldstein et al., 2002).

Customer perceptions of justice have also been used to explain customer evaluations of a service recovery based on the idea that a recovery is a matter of reestablishing the fairness of the exchange affected by a supply failure. Customers look mainly for fair outcomes in evaluating a recovery. In addition to fair outcomes, the role of justice as a means to evaluate a service recovery has been enlarged to accommodate customer perceptions of recovery procedures in addressing a failure and interpersonal treatment during the recovery process (Tax et al., 1998, Smith et al., 1999; Ruyter and Wetzels, 2000). Perceptions of justice are critical to recovery evaluations since they can explain more variance in customer satisfaction than disconfirmation of customer expectations (Oliver and Swan, 1989; Smith and Bolton, 2002).

**What is the impact of a service recovery on customer satisfaction?**

A well-handled service recovery may create an immediate impact of mitigating customer dissatisfaction after a failure incident (Tax et al., 1998; Johnston, 2001; Smith and Bolton, 2002). However, the effects of a recovery on customer satisfaction beyond that incident are more controversial. On the one hand, customers may end up very satisfied and recall positively failure incidents that were well solved (Bittner et al., 1990; Kelley et al., 1993). On the other hand, Brown et al. (1996) found that despite the positive immediate effect, a service recovery has a small impact on measures of customer satisfaction that go beyond the incident in which the failure occurred.

Some authors (Heskett et al., 1997) suggest that a recovery is an opportunity to please customers in a way that these customers could be even more loyal to a supplier than customers who have not faced problems (recovery paradox). However, Zeithaml et al. (1996) and McCollough et al. (2000) found that customers experiencing no service problems generally have more favorable supplier evaluations than customers experiencing service problems that were well solved, and Maxham III and Netemeyer (2002) found that a recovery paradox may occur just after the first incident.
The impact of an overall poorly handled recovery on customer satisfaction is affected by prior customer experiences with the supplier. On the one hand, loyal customers and customers who have high perceptions of supplier service quality heighten their expectations of supplier recovery when a failure occurs what may decrease the likelihood of a successful recovery (Kelley and Davis, 1994; Smith et al., 1999). On the other hand, high levels of customer commitment may also counteract the negative effects on customer satisfaction of a poorly handled recovery indicating customer expectations of future benefits grounded on past encounters (Oliva et al., 1992; Tax et al., 1998).

Recovery outcomes and processes differentiate a good from a bad recovery. Failure correction and compensation proportional to customer losses using in kind resources are critical outcomes to a successful recovery (Kelley et al., 1993; Smith et al., 1999). Letting customers establish their side and reach a joint agreement about outcomes rather than force to them an undesirable solution is the basic condition for a fair recovery (Oliva et al., 1992; Kelley et al., 1993). Also, suppliers should provide additional compensation to make up for the failure inconveniences failure (Boshoff, 1997; Hoffman et al., 1995).

In addition to outcomes, bad and good recoveries also differ by the process these outcomes are delivered. Supplier recognition of the failure situation has a positive effect on customers, while blaming the customer for the failure increases customer dissatisfaction (Kelley et al., 1993). Supplier initiative in recovering without a formal complaint may affect customer satisfaction (Smith et al., 1999; Duffy, 2000). Also, recovery speed, employee involvement and managerial intervention appear to be positive factors, while hassles and delays are negative factors during the recovery process (Kelley et al., 1993; Smith et al., 1999; Miller et al., 2000). Finally, psychological activities such as apology and supplier employees’ empathy and courtesy in recovering affect positively customer satisfaction or enhance the impact of other recovery activities (Smith et al., 1999; Bitner et al., 1990; Miller et al., 2000).

Supply Failure and Recovery in B2B Exchanges

There are a few studies discussing the importance of a service recovery in B2B exchanges. Effective service recovery increases customer loyalty to logistics service providers (Johnston and Hewa, 1997). Mentzer et al. (2001) found that supplier order discrepancy handling has a significant impact on customer satisfaction of individuals in buying firms. However, these studies do not show how customer satisfaction inside buying firms is affected by a service recovery.

Differences between B2B and B2C exchanges (Jackson and Cooper, 1988; Morris et al., 2001) may affect customer recovery evaluations. From the supply chain perspective a supply failure may also affect the buying firm’s customers (Parasuraman, 1998). For instance, Dion and Banting (1995) found that buying firms experiencing lost sales due to stock-outs of supplies are more likely to move orders out of the faulty supplier. Another unique B2B characteristic is the involvement of multiple customers inside the buying firm that may react differently to a recovery (Cooper et al., 1991).

B2B exchanges work in a spectrum ranging from discrete to relational. Despite detailed contracts have been used as protection against opportunistic behavior, they present significant limitations to foresee discrepancies in the supply process (Williamson 1985). Under uncertain supply conditions, buying firms have relied on relational norms that are different from the ones as in B2C exchanges (Heide and John, 1992).

In summary, the aforementioned discussion shows that peculiar characteristics of B2B exchanges, not discussed at all in the failure and recovery related literature (predominantly focusing the B2C context), may affect significantly customer reactions to failure and recovery in B2B. Consequently, there is a need to develop empirical generalizations to explain supply failure and recovery inside buying firms. In order to do that, we developed case studies to
explore perceptions and expectations of different customers in the buying firm about supply failure and recovery situations.

RESEARCH DESIGN

In order to gain insights into perceptions and expectations of participants in failure and recovery incidents, we developed multiple case studies in different buying firms. To maximize the variance within cases we interviewed individuals in different functions inside each firm. We decided for the case study method because it is the best strategy for exploring a new area and for developing propositions (Miles and Huberman, 1994).

Due to the exploratory nature of this study, the case studies were based on a semi-structured versus rigidly structured data collection protocol. Raw data about failure and recovery incidents collected from key informants were reduced from the transcriptions into useful information using content analysis. Archival information inside the buying firm, such as formal corrective reports issued to suppliers, supplemented information about the failure and recovery process.

Our cases cover four US corporations located in the Phoenix metropolitan targeting two industries (aerospace & electronics). Each industry was represented by one large and by one small-to-middle size firm. By choosing case studies from more than one industry type and different firm sizes, we could reduce the risk of developing theoretical insights that are bound to a specific industry or company (Eisenhardt, 1989; Yin, 1994).

The higher competition and technological innovation levels in the electronic industry compared to the ones in the aerospace industry may result in more supplier alternatives and lower supplier switching costs (Fine, 1998). As a result, one can speculate that customers’ levels of adequate recovery may be higher in this industry. Also, one would expect informants in large firms to have higher recovery expectations than informants in small firms since large firms generally have more power in the supply chain (Fine 1998).

In each company, we analyzed recovery incidents for at least one critical part supplied to the firm to maximize the chances to capture very important failure and recovery incidents and minimize the chances of getting trivial information. In focusing critical supply failures, we address high-involvement events for B2B customers (Patterson et al., 1997) and for purchase evaluation (McQuinston, 1989). Within each firm, we interviewed key people dealing with these parts: the purchasing manager, the production manager, and at least one senior buyer.

CASE STUDIES

In order to maintain anonymity, our firms are referred as MacroAero (large firm in the aerospace industry), MicroAero (small firm in the aerospace industry), MacroElec (large firm in the electronics industry), and MicroElec (small firm in the electronics industry). We sprinkled quotes through the within-case reports in support to evidences found in the same buying company. The design grid is shown in Table 1.

**MacroAero Within-Case**

*What is the impact of a supply failure on customer satisfaction inside the buying firm?*

There is a negative impact of a supply failure when the firm has to change production plans and schedule personnel to work overtime. Interesting, informants are more tolerant to failures in cheaper parts because the firm is willing to take the risk of getting a few defects when buying lower-priced parts. Customer dissatisfaction is very high when a supply failure affects deliveries to external customers: “If the supplier can’t deliver on time this has a high visibility especially because this affects our customers.”
Informants accept late deliveries caused by weather problems or unavailability of raw materials in the market. They may tolerate a sporadic failure if the supplier avoids the problem repetition, but they are less tolerant of recurring failures: “When the problem comes back again we want to show them (supplier) the problem. We want to scream at them.” Informants are more tolerant when the firm changes requirements not allowing enough time for supplier reaction. However, failures linked to a supplier poor planning (forecast and training issues) in accommodating these changes are negatively perceived.

Table 1 - Research Design Grid

<table>
<thead>
<tr>
<th>Design factors</th>
<th>Firm size (large)</th>
<th>Firm size (small/medium)</th>
</tr>
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<tbody>
<tr>
<td><strong>Industry Type</strong>&lt;br&gt;(Electronics)</td>
<td>Sales - $ 26.8 billion (2002); number of employees - 78,000</td>
<td>Sales - $ 22.274 billion (2002); number of employees - 115,000</td>
</tr>
<tr>
<td></td>
<td><strong>MacroElec</strong>&lt;br&gt;Critical Supplies&lt;br&gt;Trays and cover tapes – test/transport chips&lt;br&gt;Informants&lt;br&gt;One Purchasing Manager; Two Buyers (one buyer dealing with commercial issues; other buyer dealing with technical issues); One Production Manager</td>
<td><strong>MicroElec</strong>&lt;br&gt;Critical Supplies&lt;br&gt;Mother Boards (10% all purchases); electronic components (value added)&lt;br&gt;Informants&lt;br&gt;One Purchasing Manager; Two Buyers (one for each critical supply); One Production Manager</td>
</tr>
<tr>
<td><strong>Industry Type</strong>&lt;br&gt;(Aerospace)</td>
<td>Sales - $ 22.3 billion (2002); number of employees - 115,000</td>
<td>Sales - $ 780 million (2002); number of employees – 4,300</td>
</tr>
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<td></td>
<td><strong>MacroAero</strong>&lt;br&gt;Critical Supplies&lt;br&gt;Gear Boxes – major components for Auxiliary Power Units (APU)&lt;br&gt;Informants&lt;br&gt;One Purchasing Manager; One Buyer; One Production Manager</td>
<td><strong>MicroAero</strong>&lt;br&gt;Critical Supplies&lt;br&gt;Castings (90% of the firm material purchases)&lt;br&gt;Informants&lt;br&gt;One Purchasing Manager; One Buyer; One Production Manager</td>
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How do customers inside the buying firm evaluate a service recovery?

Informants expect suppliers to honor redelivery dates passed to the buying firm. When there is a significant supplier failure the buying firm establishes a recovery plan, in which expectations are formally established. In emergency situations, the buying firm expects a recovery from suppliers no matter who is responsible for the failure. However, the firm also works jointly with suppliers to solve these problems. Recovery expectations are very high for suppliers the firm has more business with: “Our firm is about half of their business. So we have a lot of clout. When our firm speaks, the supplier listens.” However, informants agree the high supplier switching costs (retooling time is 6 months for this part) work in favor of suppliers. Supplier commitment in recovering appears as a qualifier in the firm evaluations: “If I see that the supplier expedited hardware and absolutely did, tried their best and still didn’t succeed, maybe I debit them, maybe I don’t. If I see a supplier that is not giving me 100%, then I don’t cut them any breaks”.

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What is the impact of a service recovery on satisfaction of customers within MacroAero?

Early supplier communication of a problem mitigates dissatisfaction with a failure because the firm can plan in advance and also call its external customers. Informants consider recoveries a success when suppliers are able to find the failure’s root cause and prevent it from happening again. They are really satisfied when suppliers launch a recovery before questioning the failure responsibility: “Their attitude, their willingness to get involved in a problem that might not be their problem. I might just need their help. That could go a long way differentiating between a good supplier and a bad one.”

Informants become very angry when the supplier refuses to take responsibility for a failure, blames MacroAero for a problem or refuses the firm viewpoint: “I told them (supplier) what they did wrong and they wouldn’t believe me. Until I did a metallurgical review and shipped all 200 parts back to them they wouldn’t even start a new batch of parts. You want to kill somebody. That person is not the kind of supplier that we want.”

MicroAero Within-Case

What is the impact of a supply failure on customer satisfaction inside the buying firm?

The negative impact of a supply failure tends to be small when MicroAero has parts in stock. In these situations, failure costs are limited to overhead costs for expediting late orders or replacing bad parts. However, customers are very dissatisfied when a supply failure shuts machine down. In these situations, MicroAero charges suppliers for defective parts as well as for labor costs involved in machining them. Customer dissatisfaction increases when supply failures affect deliveries to MicroAero’s customers.

MicroAero is more tolerant of a supply delivery failure when there are order inaccuracies, when purchasing order changes do not allow suppliers enough time to deliver, and when the firm has not followed up supplier confirmation for order changes: MicroAero is more tolerant of failures associated with complexity of part production processes such as porosities. However, informants are less tolerant with recurring supply failures: “The first time and maybe even the second time that it happens you’re relatively tolerant. But if it becomes a reoccurring problem you get less and less tolerant.”

How do customers inside the buying firm evaluate a service recovery?

When it is not clear whether a quality problem lies in the supplier’s or in the firm’s side, the buying firm personnel expect that suppliers will support a joint investigation of potential factors that might have caused that failure. In case of a significant failure, the buying firm issues a corrective report expecting a formal recovery response according to the document requests. MicroAero may ask help from external customers to recover: “We’re stuck in the middle, firm A being the supplier, firm B being the customer. They may be buying from us, but firm B may be buying directly from firm A as well. So, usually they have better contacts sometimes than we do because we’re a small fish.” Informants also tend to lower their recovery expectations when there are high supplier switching costs: “They (supplier) don’t react as fast as you would like them to. But they hold that big stick of I have the only tool that can produce this product.”

What is the impact of a service recovery on satisfaction of customers within MicroAero?

Informants appreciate when the supplier not just fixes the current failure but also when it removes failure causes to avoid failure repetition. This is especially important when the firm issues a corrective action request. Informants evaluate very positively supplier commitment in doing their best to solve a potential supply failure situation caused by customer demand changes. This extra effort may work in favor even of a supplier with a poor reputation with
the firm: “Because I’ve had so many bad experiences with this supplier to begin with and for them to come and go above and beyond and help me out, it sticks in my mind. It stayed with me.”

Supplier responsiveness in communicating problems mitigates the failure impact. By the same token, informants are very dissatisfied when a supplier does answer a compliant or does not present a reasonable recovery alternative. This dissatisfaction increases even more when suppliers initially deny responsibility for causing a failure: “It took about four or five trips down to our supplier plant to convince them that they had a problem with their process and then found out that their gauges were wrong.” Customer dissatisfaction is very high when suppliers fail to deliver and also, make recovery mistakes (redelivery of parts takes longer, quality problems in redelivered parts, etc).

**MacroElec Within-Case**

*What impact does a supply failure on customer satisfaction inside the buying firm?*

The very tight specifications of parts and availability of safety stock in MacroElec minimizes the impact of supply failures. If the defect type does not allow the immediate use of the supplied lot, MacroElec may conduct a tighter inspection to screen any defective items in that lot. A failure is perceived very negatively when suppliers ship a defective part that is used in the firm production lines (logistics costs to isolate products already manufactured, costs of labor and machine time wasted in bad parts). A failure is considered very serious when it affects MacroElec’s external customers: “If an External Customer comes to our company and says: we used your product on our package and it didn’t work; that is a very, very bad thing and it requires instant addressing.”

Some failures are less negatively perceived because they indicate, to some extent, the firm’s responsibility for creating the failure incidents: “We didn’t issue a SCAR (supplier corrective action report) because we felt like we had also dropped the ball. In the end we found out that it was just probably, more of an issue where we should have done more extensive testing.” When supply problems characterize a recurring failure, MacroElec’s informants are very dissatisfied: “The worst thing it can have is a reoccurring problem.”

*How do customers inside the buying firm evaluate a service recovery?*

Informants agree that the strong firm quality focus increases their expectations in case of supplier problems. In case of significant failures, such as supplier inability to trace of defective parts delivered to the firm to the firm, MacroElec issues a formal recovery process called SCAR. In these situations, suppliers are expected to demonstrate that the problem has been eliminated. Despite expensive tooling costs for sourcing critical parts, MacroElec has the capability of moving business between suppliers in a short time. As a result of a multi-sourcing policy, informants expect great supplier attention to problems.

MacroElec keeps a precise account of supply failure costs (replacement costs, rework and scrapping of internal parts, etc) charging the faulty supplier for them. When causes of quality problems are unclear, MacroElec expects immediate cooperation from suppliers in providing production data that exonerate their own production and delivery systems. However, MacroElec demands a recovery only when the failure cause is clearly in the supplier side: “With a lot of manufacturing is easiest to blame materials and the suppliers, we go through great lengths to be able to demonstrate that it was not process induced and that it was in fact a material who produced the problem.”
What is the impact of a service recovery on satisfaction of customers within MacroElec?

A recovery is considered successful when the failure is quickly resolved within one of the escalation paths in the supplier organization and failure causes are removed from the supplier system. When suppliers use a failure incident as an opportunity to improve their systems, MacroElec may recall that incident in a very positive way: “They (supplier) could have just gone in and fixed that problem, but they took it a step further and they looked at their overall process and they found several other contributors that could have resulted in the same type of error.” Suppliers are highly ranked when they are able to help the buying firm to solve supply failures whose causes might be due to internal problems in the buying firm processes.

MacroElec finds acceptable when suppliers ask for more information to address a SCAR. However, informants are dissatisfied when the recovery takes several iterations to be completed and firm resources. MacroElec is very displeased when suppliers blame their suppliers for a failure or when they keep silence about problems in their systems. Dissatisfaction increases when a supplier simply is not willing to recover: “What’s not viewed positively is when a supplier immediately pushes back and isn’t willing to listen or address issues and that’s very damaging to the suppliers.”

MicroElec Within-Case

What impact does a supply failure on customer satisfaction inside the buying firm?

Customers are dissatisfied when the supplier is not able to fulfill an order and MicroElec needs to pay a premium price or risk to acquiring refurbished parts from other distributors. The negative impact of a supply failure also increases when MicroElec has to increase inspection efforts to identify defects in supplied parts and when delivery failures cause machine downtime and set the firm production schedule back. Customer dissatisfaction is very high when defects on boards are found in the final inspection conducted by external customers. Informants tend to be more tolerant to supply failures related to a short time for supplier order processing, and to inaccuracies in MicroElec’s order placement process.

MicroElec is frustrated when it requests parts from suppliers, gets a quote back, and is subsequently informed that these parts are not in stock or, that the part price was not correct. A recurring failure increases the firm inspection efforts and decreases customer confidence in a supplier: “When we have repetitive failures with the same supplier then we’re going to take a look at that supplier as a source.”

How do customers inside the buying firm evaluate a service recovery?

Since the firm works as a subcontractor for other manufacturer sites, suppliers are expected to be involved in efforts to support a joint solution for failures detected in these sites. When a supply failure is of a significant magnitude, MicroElec issues a corrective preventive action report (CPAR) that formally describes the firm’s expectations for supplier recovery especially the ones related to the removal of failure causes. In case of printed boards, the availability of suppliers and the low tooling costs for these parts, lead informants to raise their recovery expectations. MicroElec may move business from a faulty supplier to other supply sources willing to take the retooling cost just. Conversely, informants may set expectations of receiving late orders for less due to smaller firm size compared to other competitors: “But there are times where I feel that if maybe some of the bigger guys ... they get parts. Manufacturers sell to direct customers first. We get pretty much an allocation days because we’re smaller guys; the crumbs in lots of cases.”
What is the impact of a service recovery on satisfaction of customers within MicroElec?

Informants consider a recovery incomplete when the supplier is not able to remove failure causes from its system. When suppliers give MicroElec early notice about delivery problems, customer dissatisfaction decreases because the firm may still have time to adjust production plans and avoid major failure costs. Informants appreciate when suppliers do whatever they can (working overtime and coming to the firm’s facility to rework parts) to deliver orders placed at the last minute. On the other hand, informants are disappointed when suppliers aren’t willing to go the extra step to recover.

Informants are satisfied when suppliers recover from problems created by engineering changes made by the buying firm customers and, despite not being solely responsible for the failure, act to minimize failure costs to MicroElec. Informants are satisfied when suppliers, in situations of unclear failure causes, are able to demonstrate that their parts work properly. Conversely, informants are upset when suppliers are reluctant to admit a problem: “They (supplier) use a stalling technique, would you send me more samples? It doesn’t solve the problem and eventually six months later the problem is still there and they finally take ownership but its short term thinking.”

Cross-Case Analysis

In the following cross-case analysis, we summarize findings that are common across all four cases or just in the two firms representing the same design factor. Based on these findings and support from other studies and logical rationale, we derive a set of propositions addressing our research questions (Eisenhardt, 1989).

What impact does a supply failure of a critical part have on customer satisfaction?

Informants are very dissatisfied when supply failures create reschedules and delays in assembly, increase overtime and inspection costs, and waste machine time producing bad parts. By the same token, they do not react so badly to a supply failure when they have parts in stock to cope with the problem. Thus, informants react to failure impacts to the buying firm rather than to the failure type as posed in the major part of the consumer-related literature. Also, when a supply failure affects the buying firm’s external customers, in addition to costs the firm is liable for (returns, penalties, etc), there are damages to the firm image. This finding is not present in the B2C-related literature, but it is consistent with quality management research showing that the impact on customer satisfaction of external quality failures tends to be higher than the impact of internal failures (Juran and Gryna, 1993). Also, Dion et al. (1991) and Dion and Banting (1995) found that when external customers of buying firms are inconvenienced due to stock-outs, there are more supplier switching decisions for these companies than when stock-outs create productions losses only inside the buying firm operations. Therefore:

Proposition 1a – To the extent that a supply failure affects a buying firm’s internal operations, the more dissatisfied customers in the buying firm would be.

Proposition 1b – To the extent that a supply failure negatively affects a buying firm’s external customers, the more dissatisfied customers in the buying firm would be.

Perceptions of failure causes may affect buying firm evaluations of a failure. The existence of buying firm actions that contributed to a supply failure may decrease informant dissatisfaction with that problem. Informants tend to be tolerant to a supply failure when they perceive their firm did not allow enough time to a supplier to attend an order change, did not follow up last minute order changes placed, did not conduct enough test with supplier parts or did not follow up part specifications update with a supplier. While this finding is consistent
with market equity reactions of consumers in product failures (Folkes, 1984) it also shows that locus of failure causes is a more complex issue than the immediate attribution of failure causes as described in B2C. Informants also show big dissatisfaction with recurring problems. This finding is consistent with consumer expectancy reactions of failure repetition (Folkes, 1984). However, since B2B supply transactions are repetitive, customers in buying firms see this problem as lack of supplier capability in delivering parts. In fact, Dion and Banting (1995) found that supplier switching decisions in buying firms increase significantly after the second stock-out of parts in a year when compared to just one stock-out of parts in a year. Therefore:

**Proposition 2a** – To the extent that buying firm actions are perceived to contribute to a supply failure, the less dissatisfied customers in the buying firm would be.  
**Proposition 2b** - To the extent that a supply failure is recurring, the more dissatisfied customers in the buying firm would be.

_**How do customers in the buying firms evaluate recovery activities?**_

When supply failure causes are not clearly identified, there are divergences on product specifications and order placement, or more information is needed to allow a recovery, informants expect a joint recovery effort between their firm, the supplier, and sometimes the firm’s external customer. Also, when a supply failure is perceived as being significant, the buying firm demands a formal recovery process. In these situations, the firm wants more control of the recovery process in the extent that suppliers must follow the firm’s recommendations to address the problem. Despite consumer involvement in the recovery process has been discussed in the B2C literature (Tax et al. 1998), recovery activities are actions typically performed and controlled by suppliers. We found that buying firms may work closely to suppliers in unclear failure situations as well as ask formal requests for the recovery process. In the buyer-supplier literature, monitoring of supplier and joint problem solving have been pointed as important relational governance elements to improve the buying firm performance (Noordewier et al., 1990). Therefore:

**Proposition 3a** – When a supply failure is not clearly characterized, customers in the buying firm expect joint recovery efforts with the supplier to resolve the problem.  
**Proposition 3b** – When the buying firm demands a formal corrective action, customers expect more control of the recovery process.

We found generally higher recovery expectations in the two firms in the electronic industry. Informants in these firms emphasized plenty of alternatives for switching faulty suppliers in a relatively short time. For the firms in the aerospace industry, informants evaluation of supply problems are affected in some extent by the low competition in that industry represented by very high tooling costs making a supplier switching decision very rare. Zeithaml et al. (1993) found that if consumers in B2C exchanges have several service providers to choose from, their service expectations may be higher than the ones who believe they have no options. Therefore:

**Proposition 4** – Customers in the buying firm have higher recovery expectations in industries with many supplier alternatives and low supplier switching costs (electronic industry) than customers in industries with few supply alternatives and high switching costs (aerospace industry).
We found the buying firm size plays a role in our interviews but in relative rather than absolute terms. Some informants showed that the firm size compared to other buying firms may be a factor in getting preference for scarce parts. Other informants showed that the firm might represent major part of the supplier’s business suggesting high internal recovery expectations. This relative firm size may be a proxy of the firm’s power in its supply chain. This finding is consistent to the buyer-supplier studies showing that power of buying firms in the supply chain influence supplier decisions (Fine 1998). Therefore:

**Proposition 5** – The higher is the buying firm power in its supply chain the higher are customer recovery expectations in the buying firm.

What is the impact of a service recovery on satisfaction of customers within buying firms?

Several informants had a hard time in recalling successful recoveries. They generally describe a positive experience as part of supplier job in providing good customer service. When failure causes are in the supplier side, a recovery just mitigates dissatisfaction with a failure. Informants recalled a recovery as very satisfactory when suppliers went above and beyond their regular duties to recovery from failures they have little or no ownership (solving delivery problems caused by order changes and improving product/processes to cope with problems internal to the buying firm production). This finding is consistent to studies in the buyer-supplier literature showing that customers have favorable evaluations when suppliers show flexibility and solidarity to the buying firm (Noordeweir et al., 1990). Conversely, informants recalled unsuccessful recoveries very easily, indicating dissatisfaction not only with failures suppliers are responsible for, but with the way these failures were handled. Our findings suggest a service recovery is a strategy for avoiding customer defection rather than a strategy to increase customer satisfaction as suggested by the recovery paradox discussed in the B2C literature. In fact, the repetitive nature of B2B exchanges, where customer expectations are routinely updated, does not favor pleasant recovery surprises. Thus, in situations suppliers are responsible for failures, buying firms see a recovery more as a qualifier rather than a winner service characteristic. However, in situations suppliers have little or no ownership for a supply failure, service recovery can be the difference between suppliers. Therefore:

**Proposition 6a** – When the supplier is responsible for a supply failure, customers in buying firms see a recovery as a qualifier for supplier customer service.  
**Proposition 6b** – When the supplier has little or no ownership for a supply failure, customers in buying firms see a recovery as a qualifier for supplier customer service.

In relation to the set of activities leading to a successful/unsuccesful recovery, customers in buying firms rate a recovery highly when suppliers are able not only to resolve the current failure in a fast way but also, to remove associated failure causes from their systems to avoid failure repetition. In these situations, informants perceive supplier ability in recovering through well-conducted procedures and competent personnel. The impact of failure cause removal is not discussed in B2C-related research that focus single transactions in which the goal is to correct instances of failure at ensuring to achieve customer satisfaction at moments of truth rather than improve the service delivery for future exchanges. Also, customers in buying firms rate a recovery poorly when suppliers are able to act but refuse to do it (reluctance in taking responsibility for the failure, hassle in solving the failure, no action, etc). Informants perceive the supplier refusal as lack of willingness in recovering. Our result is supported by studies showing that failures to comply with the terms of psychological
contracts are evaluated based on both ability and willingness of parties (Rousseau 1995). Therefore:

*Proposition 7a – The more able the supplier is in fixing a failure fast and remove its causes, the more favorable are customer recovery evaluations in the buying firm. Proposition 7a – The more willing the supplier is in responding to a supply failure and avoiding additional inconveniences for its customers during the recovery process, the more favorable are customer recovery evaluations in the buying firm.*

**CONCLUSIONS**

This article presents a comprehensive framework for analyzing recoveries in B2B exchanges. Our propositions are important in the extent they provide insights concerning customer expectations and perceptions of failure and recovery incidents in buying firms. Despite similarities, researching failure and recovery incidents in B2B exchanges is not a matter of just adjusting findings from the B2C studies. Several results of this study are unique to B2B exchanges. Conversely, conventional ideas about B2B exchanges may not take a major role in recovery situations. For instance, contract enforcement is pointed as a major difference between B2B and B2C environments (Morris et al., 2001), but it does not play a significant role in all our cases.

Some widely accepted components of service recovery in B2B transactions do not appear to play a major role in B2B exchanges. First, differently from results in B2C transactions, perceptions of equity or fairness do not play a significant role in our interviews. Some informants even wanted the supplier to assume recovery costs for failures it was little or not responsible for indicating customer preference for inequitable solutions that benefit them (Oliver and Swan, 1989). Maybe evaluations of fairness in B2B exchanges are different from the ones in B2C transactions and more research may be needed to clarify this point. Also, despite being widely suggested as a recovery technique, additional compensation or atonement did not show up as an important factor in our study. Our interpretation is that atonement would make sense in a transactional recovery perspective because consumers deal with the same supplier in a relatively small number of transactions and atonement would decrease the chances of consumer defection. However, under a relationship perspective in which customers deal with a supplier in a repetitive basis, atonement would not be a reasonable business practice in the B2B context.

Some managerial implications of this study deserve special attention. This study shows that a recovery cannot be decoupled from the failure incident. Our interviews show that the nature of a failure affects customer expectations and perceptions of the following recovery. Thus, suppliers must tailor a recovery to the failure characteristics. Just starting a recovery without understanding perceived failure costs and causes might result in unsatisfactory recovery incidents. Suppliers must provide special recovery efforts in case of failures affecting the buying firm’s production and the firm external customers to minimize failure costs and damages. Special care should be given to recurring failures and to buying firm recommendations in case of formal corrective reports.

Suppliers should pay special attention to failures in supplying parts to their major customers. Also, suppliers in the electronics industry should be aware that the many buying firm’s supply alternatives and its favorable transaction costs in sourcing parts may increase recovery expectations for firms in this industry. Due to the relational nature of B2B exchanges, suppliers must work to remove failure causes and avoid similar failure incidents in the future. Finally, suppliers must take advantage in helping customers to solve failures they have little or no ownership, because in these situations customers in buying firms perceive a high supplier commitment to the relationship.
As suggestions for future research, it would be important to clarify different evaluations for failure and recovery incidents inside buying firms. Our research designed assumed that different functions might bring different perspectives for evaluating the failure and subsequent supplier recovery, but our results were inconclusive. Another research avenue is to analyze recoveries from the supplier perspective especially studies show that perceptions of failure incidents may be different between buyers and suppliers (Folkes and Kotsos; 1986).

LIST OF REFERENCES


