University of Wollongong

Research Online

Faculty of Informatics - Papers (Archive)

Faculty of Engineering and Information
Sciences

17-10-2007

Logistics Service Recovery and the role of Technology

A. Brinsmead

University of Wollongong, uow@brinsmead.edu.au

Follow this and additional works at: <https://ro.uow.edu.au/infopapers>

Part of the [Physical Sciences and Mathematics Commons](#)

Recommended Citation

Brinsmead, A.: Logistics Service Recovery and the role of Technology 2007.
<https://ro.uow.edu.au/infopapers/650>

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au

Logistics Service Recovery and the role of Technology

Abstract

The logistics industry is becoming increasingly competitive, and supply chains becoming increasingly complex. Service failures are inevitable and part of the logistics landscape. Service recovery is relevant given the logistic industry's trend toward a proactive approach to service failures. Furthermore, service recovery has the potential to become a source of organisational differentiation. Service failure management needs to be an integral part of the greater customer service program, rather than a reactive ad hoc process. Technology, already underpinning much of the industries capabilities, is seen as a likely enabler of sophisticated service recovery processes. The service recovery process is broken down into components and, subsequently, potential targets for technology led improvements are identified. A literature review of top tier journals has been undertaken to determine the current body of knowledge in this area. Findings show little coverage on service recovery in respect of the logistics industry. Moreover, there is a dearth of material on technology-based service recovery solutions. A case study is outlined as a future research path.

Disciplines

Physical Sciences and Mathematics

Publication Details

This conference paper was originally published as Brinsmead, A, Logistics Service Recovery and the role of Technology, International Symposium on Communications and Information Technologies ISCIT 2007, 17-19 Oct, 1361-1365.

Logistics Service Recovery and the role of Technology

Andrew Brinsmead
Centre for Business Services Science
University of Wollongong, Wollongong NSW 2522 Australia
Tel: +61-438-533840
E-mail: arb12@uow.edu.au

Abstract— The logistics industry is becoming increasingly competitive, and supply chains becoming increasingly complex. Service failures are inevitable and part of the logistics landscape. Service recovery is relevant given the logistic industry's trend toward a proactive approach to service failures. Furthermore, service recovery has the potential to become a source of organisational differentiation. Service failure management needs to be an integral part of the greater customer service program, rather than a reactive ad hoc process. Technology, already underpinning much of the industries capabilities, is seen as a likely enabler of sophisticated service recovery processes. The service recovery process is broken down into components and, subsequently, potential targets for technology led improvements are identified. A literature review of top tier journals has been undertaken to determine the current body of knowledge in this area. Findings show little coverage on service recovery in respect of the logistics industry. Moreover, there is a dearth of material on technology-based service recovery solutions. A case study is outlined as a future research path.

I. INTRODUCTION

Service recovery represents those actions taken by an organisation in response to a service failure for the purpose of restoring customer goodwill. It has added a new maturity to the concept of customer service by acknowledging that service delivery is improbable 100 percent of the time – service failures are inevitable. The logistics industry is particularly susceptible to service failures due to the increasing complexity of supply chain management and associated external (and uncontrollable) factors. Additionally, technology is increasingly underpinning logistics service capabilities. Discussions pertaining to “customer service” and “technology”, therefore, are typically intertwined.

Service recovery, however, is an emerging body of knowledge. The purpose of this paper is to: summarise the literature with a specific emphasis on logistics and technology; and, to propose the steps for future research.

II. METHODOLOGY

A document analysis of top tier journals was conducted where search terms included: “customer service”, “service recovery”, “technology”, “information system”, “logistics”, “supply chain”, and “rfid”. Table 1 is an extract of search findings and highlights the light coverage of the literature in

regard to service recovery when compared to the overarching domain of customer service.

TABLE 1
COMPARISON OF LITERATURE SEARCH RESULTS
“SERVICE RECOVERY” V “CUSTOMER SERVICE”

Search term	Hits*	Search term	Hits*
service recovery	279	customer service	106,618
service recovery, technology	22	customer service, technology	17,663
service recovery, technology, logistic*	0	customer service, technology, logistic*	473
service recovery, rfid, logistic*	0	customer service, rfid, logistic*	15

* Database: Proquest 5000

Additional ad hoc searching was undertaken to determine current role of technology for large logistics organisations.

III. LITERATURE REVIEW

The importance of service recovery lies in the financial implications of poor customer retention. There is evidence to suggest that retaining the customer is a more desirable outcome than losing the customer, and then trying to obtain another. Furthermore, the benefit of retaining the customer increases over time, and therefore, the cost of losing a customer represents significant lost potential. One study shows that by reducing customer defections by 5%, profits can be boosted by 25-85% over the average customer life [1]. This lost potential is largely unrecognised because of current measurement inadequacies [1]. A secondary benefit is the avoidance of bad publicity, and lost revenue, following the behaviour of a dissatisfied customer [2].

The service recovery literature has not followed an orderly and sequential path. It has been in part driven by specific industry (indeed organisational) needs [eg 3], and in part driven by the academic endeavour to add to the body of knowledge [eg 4]. Additionally, the context of study has been limited in its scope (ie typically simple B2C scenarios). It is probable that the choice of research method (esp. target industry/organisation) has been influenced by practical considerations. Smith et al [4] declares that “studying service recovery is challenging because recovery is

triggered by a service failure, making systematic empirical research difficult to conduct in either a laboratory or a field environment". Service industries in the B2C domain were probably easy targets because the notion of "service failure" is easy to conceptualise in the survey-respondent's mind. In contrast, determination of service failure may be problematic in the case of complex B2B relationships.

For the purpose of this paper "service recovery" has been summarised by categorising the literature by theme, although it is recognised that the categorisation is arbitrary and cross-over inevitable. The categories follow the key service recovery components, as they are perceived in the literature, and according to the model in Figure 1. The 3rd dimension implied by the "Service Failure" boxes acknowledges the many possible failure scenarios.

Given that IT is integral to the logistics function, and driving many of the industry advances, consideration will also be given to the literature addressing the impact of IT on service recovery.

Figure 1 – Key stages of the service recovery process

IV. SERVICE RECOVERY

A. Service recovery antecedent conditions

The notion of adopting service recovery measures prior to a service failure may appear novel. Many studies provide a reactive-style service recovery process. Other studies, however, point to the "pre-failure" period of the timeline [3, 5, 6, 7]. The findings from these studies present clear challenges for management that represent prevention of, and preparation for service failure.

Studies suggest that rapport [6], loyalty [8] and disconfirmation [4] – an expectation concept – have an impact on customer retention following a service recovery effort. Implicit within this body of work is the potential to maximise the service recovery outcome by optimising antecedent conditions within the power of the organisation.

Employee satisfaction can also be seen as an antecedent condition. Bowen and Lawler have extended Heskett's "service profit chain" [9] as follows:

* Adapted from Heskett et al., "Putting the Service Profit Chain to Work," *Harvard Business Review*, March-April 1994, pp. 164-174.

Figure 2 – The Possible Linkages between Empowerment and the Service Profit Chain [10]

Heskett et al previously asserted that employee satisfaction is a precursor to customer loyalty, and will eventually impact positively on profits and growth. The model extension of Bowen and Lawler [10] suggests that, subject to situational factors, employee empowerment is a precursor to employee satisfaction. Furthermore, they note that "[r]esearch suggests that empowerment exists when companies implement practices that distribute power, information, knowledge, and rewards throughout the organisation" [10].

Employee satisfaction impacts service recovery in three ways:

1. Initially by prevention of the service failure [3];
2. By providing antecedent conditions (eg rapport, loyalty) thereby minimising the negative effects of service failure [5, 8]; and,
3. By providing the empowerment to professionally execute a service recovery process [11].

There is potential to improve employee satisfaction by employing a technology-driven business process in order to:

- Empower the employee with information (technology enabled).
- Improve the customer relationship by communicating information to the customer at key supply chain events (including, but not limited to service failure).

B. Service failure scenario

The value of service recovery findings must be viewed in context of the scenario studied. For example, research at times focuses on service failures and an assessment of the specific reactive processes used when a service failure occurs – essentially a complaint management process. Hoffman et al [12] targets the restaurant industry, Spreng et al [13] target the removalist industry, Lewis and McCann target the hotel industry [7], and Bamford et al [3] target one organisation within the international airline industry. These types of studies will continue to remain an important contribution to the literature given their immediate industry relevance, but are limited in terms of their generalisability.

The literature typically views the service failure/recovery process as a linear event. For example, research has been slow to investigate B2B linkages [14] where the relationships are characterised (potentially) by complex interactions and arrangements, and where the decision to switch to a competitor is not obvious. Numerous service

failure scenarios are conceivable. A thought-provoking scenario might be represented by organisational awareness of the service failure before the customer is aware. It is possible that this would implicate a different "recovery" process. There may even be a definitional anomaly if the organisation is able to remedy the "failure" before the customer becomes aware of it.

C. Service recovery – organisational response

Generalisability arises when authors categorise service recovery methods. Nonetheless, it remains prudent to consider the context of the study before rigorous application of the findings. For example, Schweikhart et al [2] propose that recovery efforts can be categorised by method (psychological or tangible) and timing (ie before, during or after the service failure). This study needs to be viewed in the context of the industry studied (health services), however, which is characterised by high customer contact, centralised decision-making, litigation, immediacy, and sensitivity [2].

Davidow's [15] study draws on the literature to further develop an existing model that endeavours to establish a link between organisational response and customer behaviour. Although couched as "complaint management" strategies, Davidow [15] has grouped what could be termed recovery actions into six dimensions: timeliness, facilitation, redress, apology, credibility, and attentiveness, and delivers important clarity in regard to the usefulness of these strategies. Most importantly, Davidow [15] has extended the service recovery timeline by bringing attention to "postcomplaint customer behaviour", such as the intention to repurchase. This challenges the notion that customer satisfaction per se is the preferred test of success. The value of this work is dependant on the 57 empirical studies upon which it relies.

Smith et al describes a model where "failure context" (type and magnitude of failure) in combination with "recovery attributes" (compensation, response speed, apology, recovery initiation) affects the customer's evaluation. The outcome of this leads to either a state of satisfaction or dissatisfaction. The development of a customer satisfaction model underpinned by existing theory is impressive, however, this study is limited to the restaurant and hotel industries, which are characterised once again by non-complex B2C relationships.

D. Service recovery – customer evaluation and resultant customer behaviour

Customer satisfaction has typically been the benchmark for a successful engagement, whether it is the service delivery or the service recovery, but it is the pathway to satisfaction that is of interest to scholars and business. Understanding the customer's evaluation process may highlight the potential to improve an organisation's response to service failure, but determination of the evaluation process is problematic. Wirtz and Mattila [16] declare that "consumers' post-recovery

satisfaction judgements and behaviors are a highly complex phenomenon".

Behaviours, it would appear, are not only complex, but also contextual. The findings of Wirtz and Mattila [16] show "that compensation is a poor substitute for a good recovery process". It must be noted, however, that their study required the participants to respond to a service failure context (restaurant) that "does not involve monetary costs to the consumer". Smith et al (1999) previously found that recovery attributes should match the type of failure. Therefore, if there is a cost to the customer, one would expect compensation to play a significant role in the recovery process.

Some studies look further than customer satisfaction (or the evaluation process which leads to it), and investigate post failure customer behaviour, either as a function of, or distinct to customer satisfaction. Wirtz and Mattila [16] also "found that service recovery satisfaction acted as a full mediator between service recovery attributes (compensation, recovery speed and apology) and behavioural intentions (repurchase intent and negative WOM [word of mouth])". Interestingly, a study by Colgate and Norris [8] found that bank customers can be satisfied with service recovery efforts, but still switch to the opposition. Additionally, following a study encompassing numerous service providers, Colgate et al (2007) found that the reasons to "stay" are varied and complex, and do not necessarily require customer satisfaction.

It is clear that customer evaluation and behavioural models are inseparable from their contextual derivation. Furthermore, any value to industry should include a pre-requisite step of ensuring alignment of the research and industry context.

E. Organisational service recovery evaluation

Parasuraman [17] offers insightful comments by building on the work of Rust and Chung [18]. In doing so, he opens a new agenda – the organisational perspective:

Past empirical research offers insights for providing effective service recovery. However, "effectiveness" in such research typically takes the customer's perspective (e.g., customer satisfaction) and rarely considers companies' costs of service recovery.

This leads Parasuraman to suggest hitherto unexplored directions of research into service recovery including cost-benefit analyses, optimal service recovery strategies, customisation of service recovery capabilities, and balancing recovery versus reliability spend.

Parasuraman's questions become particularly relevant for an organisation considering the move from a reactive to a

proactive approach. A review of the leading logistic provider's web sites reveals a common theme of "track and trace". This implies a customer responsibility to "track", and to take action if delivery is not on schedule. This process is reactive and absorbs the customer's time rather than the provider's. DHL [19] has taken the step to be proactive by implementing a system (QSMS) that informs of delays in service provision. Under this system, it is the provider that is monitoring performance, not the customer. Given that processes are in place to support the information flows, DHL is now able to take the initiative by adopting a timely and appropriate response.

V. TECHNOLOGY AND SERVICE RECOVERY

Auramo et al [20] undertook an explorative study to determine how IT improved supply chain management. The case study method was used, generating qualitative data (interviews). Five propositions are put forward, one of which relates to customer service. Specific company examples of customer service improvement are discussed in a narrative style. The improvements discussed are in an operational context and relate to achieved supply chain efficiencies. The question of managing the supply chain, however, is subtly different from managing a service failure. By definition, a service failure is an exception to normal process, as is the service recovery process. Unless the failure falls within an existing contingency plan for which processes automatically initiate, service recovery entails "stepping outside" normality. In any event, it is likely that customer relationship management will provide extra challenges irrespective of the completeness of contingency processes. Additionally, Auramo et al [20] limited IT to "those technologies that can be used for managing and controlling supply chain related data, activities and information exchange between organizations". It is possible that technology enabling service recovery will fall outside this range of IT (eg RFID).

In their article, Bourlakis and Bourlakis [21] suggest that IT positively influences operational performance, although there may be questions regarding the measurement method (reported financial ratios). It is possible that any number of non-IT-related events will also affect the ratios. Before arriving at their conclusions, however, Bourlakis and Bourlakis [21] make a significant comment:

"In general, most studies consider the overall influence of IT upon the firm's corporate strategy (Atkins, 1994; Baets, 1992; Lucas and Turner, 1987), and limited work has been devoted to its influence upon specific firm functions such as logistics and upon supply chains in general (Lewis and Talalayevsky, 2004)"

They suggest management recognise, as a matter of strategy, that "IT operations should be formulated alongside their logistics operations". Following on from the quote

above, and in the current context, it could be also added that IT operations should be formulated alongside customer service and service recovery strategies. There is ample precedence to show that not only process, but software also, has evolved alongside the functions that it supports, eg MRP, MRPII, ERP, CPFR, and CRM.

Studies such as those just cited investigate technology as it exists in the workplace (eg EDI, ERP, web-based). Emerging technologies, such as RFID, are not considered. Largely due to the maturation stage of RFID technology, studies in the logistics domain are typically aimed at validating the technology by investigating opportunities for efficiencies [22, 23, 24]. Similarly, studies in the logistics domain are typically pursuing a predominantly quantitative approach [25] toward supply chain management improvements, but not with explicit implications for service recovery.

VI. SIGNIFICANCE

A scenario not covered thoroughly by the service recovery literature is the logistics environment, one that represents a complex supply chain driven by process and technology with modest customer – provider interaction. The transactions (probably invisible to the customer) could entail several transport nodes, a complex web of sub-contractors, intricate load, despatch and capacity calculations, and countless unpredictable external factors. This provides ample opportunity for service failure, and implicates service recovery as an integral part of the customer service landscape. Evidence is the failure tolerance commonly built into supply contracts. Furthermore, the customer relationship could entail contractual arrangements incorporating service level standards and explicit responsibilities for both the customer and supplier. It is likely that the customer evaluation process in this context will produce a profile idiosyncratic to this environment and perhaps dissimilar to previous findings. Additionally, the literature does not address technology as an enabler of service recovery processes.

Next steps:

1. Qualitatively investigate a single organisation, using the case study method, operating within the logistics industry where B2B relationships are characterised by complex switch decisions. The aim is to conduct an explorative study into those elements of the existing business environment that impact on customer service and service recovery performance. The data collection methods will include archival data, semi-structured interviews, and observations.
2. Use these findings to propose a technology-enabled business process that will assist operations to achieve service recovery gains. It is proposed that a technology-enabled process will provide information-led benefits, and will assist at more than one point in the service recovery chain. Figure 1 is restated below

(see Figure 3), suggesting specific areas that could be targeted for improvement.

Figure 3 – Suggested impact of technology on the Service Recovery process.

VII. CONCLUSION

The service recovery literature contains significant findings but few that are focused on the logistics industry in particular. The logistics industry is highly competitive and contains complex processes. It has become increasingly dependant on information technology to enable capabilities such as tracking, and high rates of delivery-on-time. Because of the increasingly global nature of the industry, complexity naturally follows: complex supply channels, national borders, subcontractors, and a multitude of uncontrollable external factors. Service failures are inevitable. The industry challenge is to embrace customer service in respect of service failures. That is, to refrain from expecting the customer to manage elements of the supply chain – something for which the service provider is being paid for. Technology enabled service recovery processes remain an area ripe for research.

REFERENCES

- [1] Reichheld, F.F. and W.E. Sasser, Jr., *Zero defections: quality comes to services*. Harvard Business Review, 1990. **68**(5): p. 105-111.
- [2] Schweikhart, S.B., S. Strasser, and M.R. Kennedy, *Service recovery in health services organizations*. Hospital & Health Services Administration, 1993. **38**(1): p. 3.
- [3] Bamford, D. and T. Xystouri, *A case study of service failure and recovery within an international airline*. Managing Service Quality, 2005. **15**(3): p. 306.
- [4] Smith, A., K., R. Bolton, N., and J. Wagner, *A model of customer satisfaction with service encounters involving failure and recovery*. JMR, Journal of Marketing Research, 1999. **36**(3): p. 356.
- [5] Colgate, M., et al., *Back From the Brink: Why Customers Stay*. Journal of Service Research : JSR, 2007. **9**(3): p. 211.
- [6] DeWitt, T. and M. Brady, K., *Rethinking service recovery strategies*. Journal of Service Research : JSR, 2003. **6**(2): p. 193.
- [7] Lewis, B., R. and P. McCann, *Service failure and recovery: evidence from the hotel industry*. International Journal of Contemporary Hospitality Management, 2004. **16**(1): p. 6.
- [8] Colgate, M. and M. Norris, *Developing a comprehensive picture of service failure*. International Journal of Service Industry Management, 2001. **12**(3/4): p. 215.
- [9] Heskett, J.L., et al., *Putting the service-profit chain to work*. Harvard Business Review, 1994. **72**(2): p. 164.
- [10] Bowen, D.E. and E.E. Lawler, III, *Empowering Service Employees*. Sloan Management Review, 1995. **36**(4): p. 73.
- [11] Bowen, D., E. and R. Johnston, *Internal service recovery: developing a new construct*. International Journal of Service Industry Management, 1999. **10**(2): p. 118.
- [12] Hoffman, K.D., S.W. Kelley, and H.M. Rotalsky, *Tracking service failures and employee recovery efforts*. The Journal of Services Marketing, 1995. **9**(2): p. 49.
- [13] Spreng, R.A., G.D. Harrell, and R.D. Mackoy, *Service recovery: Impact on satisfaction and intentions*. The Journal of Services Marketing, 1995. **9**(1): p. 15.
- [14] Johnston, R., *Service operations management: from the roots up*. International Journal of Operations & Production Management, 2005. **25**(12): p. 1298.
- [15] Davidow, M., *Organizational responses to customer complaints: What works and what doesn't*. Journal of Service Research : JSR, 2003. **5**(3): p. 225.
- [16] Wirtz, J. and A. Mattila, S., *Consumer responses to compensation, speed of recovery and apology after a service failure*. International Journal of Service Industry Management, 2004. **15**(2): p. 150.
- [17] Parasuraman, A., *Modeling Opportunities in Service Recovery and Customer-Managed Interactions*. Marketing Science, 2006. **25**(6): p. 590.
- [18] Rust, R., T. and T.S. Chung, *Marketing Models of Service and Relationships*. Marketing Science, 2006. **25**(6): p. 560.
- [19] n.d., *DHL Launches Tracking System in Traffic World*. 2006.
- [20] Auramo, J., J. Kauremaa, and K. Tanskanen, *Benefits of IT in supply chain management: an explorative study of progressive companies*. International Journal of Physical Distribution & Logistics Management, 2005. **35**(2): p. 82.
- [21] Bourlakis, M. and C. Bourlakis, *Integrating logistics and information technology strategies for sustainable competitive advantage*. Journal of Enterprise Information Management, 2006. **19**(4): p. 389.
- [22] Lee, Y.M., F. Cheng, and Y.T. Leung, *Exploring the Impact of RFID on Supply Chain Dynamics*. in *Winter Simulation Conference*. 2004.
- [23] Joshi, Y.V. *Information Visibility And Its Effect On Supply Chain Dynamics*. 2000 [cited 2007 28 March]; Available from: <http://www.autoidlabs.org/uploads/media/YVJ-THESIS.pdf>.
- [24] Swoyer, S., *BI Case Study: RFID Keeps Customer Service Stellar, ROI Strong*. Business Intelligence Journal, 2005. **10**(4): p. 35.
- [25] Mangan, J., C. Lalwani, and B. Gardner, *Combining quantitative and qualitative methodologies in logistics research*. International Journal of Physical Distribution & Logistics Management, 2004. **34**(7/8): p. 565.