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# Improving After-Sales Services of Logistics Providers

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**Abstract:** Several studies have investigated the usage of IT systems for logistics companies but only a few have been looking at after-sales services. Data from 81 European customers of two major logistics companies were analysed to determine perceptions toward e-logistics after-sales services. This research can be used as a conceptual model of how to react to commercial (B2B) customer expectations. Preliminary findings suggest that it will need structural, infra-structural and integrative design decisions to improve after sales services.

**Keywords:** e-logistics, business-to-business, after-sales service

## 1. Logistics

E-logistics has been defined as “applying the concepts of logistics electronically to those aspects of business conducted via the internet. [1]” Gunasekaran and Ngai [2] describe e-logistics applications as internet communication technologies like e-mail, electronic data interchange (EDI) for the transfer of goods and services. A Survey by KPMG [3] found that the transport sector adopts less advanced IT systems such as electronic data interchange (EDI) or XML than others. Above survey focused on the overall usage conditions of e-logistics systems, in contrast, this study analysed the e-logistics systems from the perspective of after-sales services, namely, the perceptions of commercial customers. Table 1 lists the demographics of the two logistics companies whose after-sales services

have been analysed. The real names have been disguised.

Table 1: Company Demographics

Parameter	Group of Companies	
	AB Logistics	Global Logistics
Turnover in US\$	49.6 bn	52.6 bn
Employees	398,300	470,000
Countries	195	220

Both companies run large home base operations (respectively in the United States and in Germany), display extended country coverage through its internal network and provide one-stop services. AB Logistics operates on a SAP ERP platform, whereas Global Logistics operates mainly on an Oracle ERP platform.

## 2. Service Components

The concept of the Service Profit Chain is based on a firm’s service encounter that drives customer satisfaction and loyalty; the components of a service encounter represent the basic value on which a firm is built [4,5]. When the service components are adequately aligned or integrated, they influence customer satisfaction with the product or service and enhance the purchasing experience which in turn positively impacts revenue growth and a firm’s profitability [6]. More recent studies went further qualifying the relation between customer and employee satisfaction and loyalty addressing the notion of ownership quotient. Following Heskett, Sasser and Wheeler [7] the primary driver for customer ownership is the employee ownership quotient. It is measured by determining the proportion of employees who have actively involved

themselves in the past year in, amongst other things, service offering.

Fitzsimmons and Fitzsimmons [8] identified customer variability as main cost drivers in service driven industries. Dealing with customer variability has become central challenge for service driven organizations as they strive to develop and maintain competitive advantage over competition. Yang [9] argued that customer variability is a problem for service providers because it can have significant adverse effect on service quality, hence on customer loyalty. Frei [10] has developed a framework to qualify and overcome the challenge of customer variability in service organizations. Following Frei, the first step in managing the variability is to understand the type that is takes. Frei identified five types of variability (1) Arrival: customers do not want service at the same time or at a time necessarily convenient for the company (2) Request: customer require customization of the service offering depending on their needs (3) Capability: variability in customer owned capabilities (4) Effort: customer effort involved in the service interaction (5) Subjective: variability relating to customer own preferences and opinions on what qualifies excellent services. Yang [9] suggested a sixth type of customer variability: communication variability which derives from the observation customers express their needs in ambiguous ways. Parasuraman et al [11, 12] proposed a model to identify gaps in the continuum of the service consumption process. The model follows the principle that occurrence of those gaps negatively influences customer perception of service quality; its elimination improves service quality:

*Gap 1 Understanding gap:* which occurs when a service provider lacks full understanding of the customer's needs and expectations.

*Gap 2 Design gap:* which occurs when a service quality specifications does not match management perceptions of the customer's requirements and ex-

pectations.

*Gap 3 Service delivery gap:* which occurs when the actual service delivery is not in line with the service gap specifications.

*Gap 4 Communication gap:* which occurs when there is a discrepancy between service delivery and external communications in the form of exaggerated promises and lack of information provided to contact personnel.

*Gap 5 Expectation-perception gap:* which occurs which occurs when there is a discrepancy between the customer's perception of the actual service performed and what the customer expected.

Frei [10] argues that some companies have met the challenge of improving customer service quality without damaging their cost lines and that the tradeoff between efficiency and quality can be optimized using alternative routes. Frei [10] identified strategies to overcome this tradeoff between efficiency and customer service quality beyond the classical reduction and accommodation approach. Those strategies are referenced *uncompromised reduction* and *low-cost accommodation* approaches. Strategies to achieve *uncompromised reduction* involve creating complementary demand to smooth arrivals without requiring customers to change their behavior, limit service breadth, target customers on the basis of their request, target customers on the basis of their capabilities, use a normative approach to get customers to increase their effort, and target customer on the basis for their subjective preferences. Strategies to achieve *low cost accommodation* involve hiring lower-cost labor, automate tasks, outsource customer contacts, and create self-service options that permit customization.

Roth et al. [10] proposed a framework that bridges the operational service landscape with the strategic design choices in an organized system delivery architecture called the Service Delivery System (SDS). SDS is articulated around three main inter-

related and dynamic components: (1) strategic service design choices, (2) service delivery system execution, renewal, and assessment, and (3) customer perceived value of the total service concept.

### 3. Research Questions and Methodology

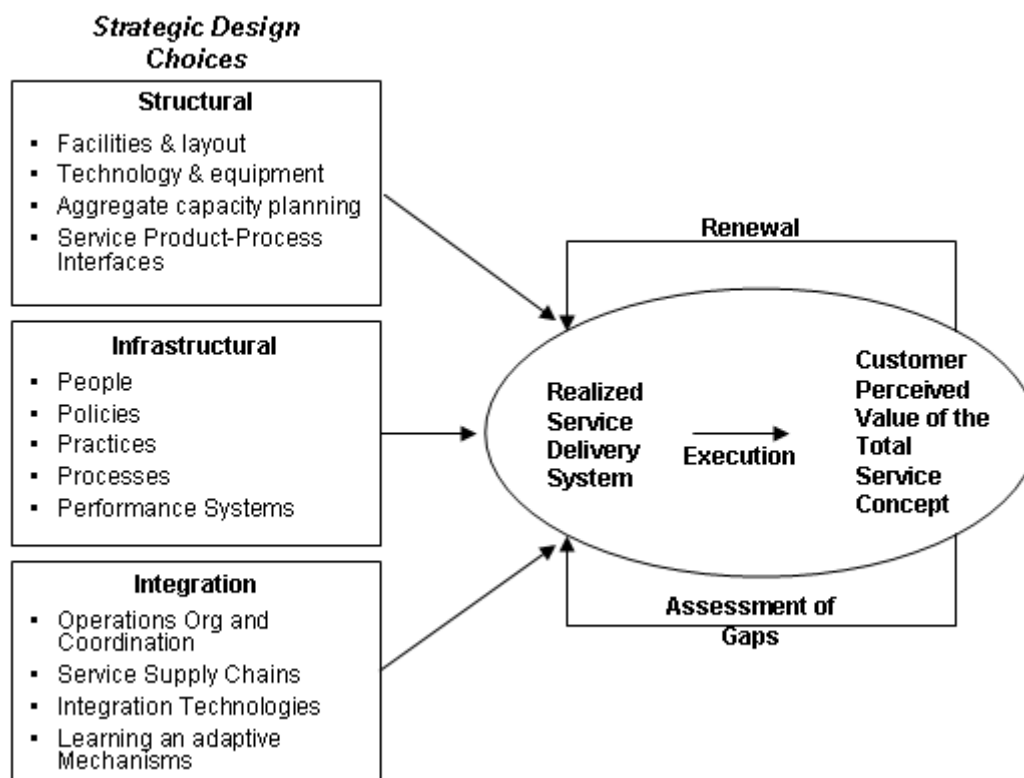


Figure 1: Research Framework (adapted from Roth et al., 2003) [6]

The research questions were:

1. Where are major service gaps?
2. Can customers be grouped and their major service factor perceptions extracted?
3. How can the gaps be minimized?
4. What are the organizational implications?

The study was limited to European customers. Further research should evaluate cultural differences as well as analyzing the strength and direction of the Halo effect as described in this paper.

### 4. Findings

Commercial customers were asked to rank the performance of the logistics provider on a Likert scale

Eighty-One responses from B2B customers were collected. The authors employed a mixed methods research design [13] by analysing quantitative data as well as explicit comments by customers. Figure 1 shows the theoretical framework.

from 1 (very poor) and 5 (excellent).

Overall, the results are positive with all means above 3.5. The top three activities to improve are:

1. The frequency of providing information and updates
2. Services provided by the Accounting department
3. The speed of answering customer's question.

There is a significantly high correlation between these three variables, see Table 3.

The highly positive correlations indicate that a customer who is dissatisfied with let's say the billing process is also unhappy about updates received and the speed of action. In Psychology this is known as Halo Effect: one service trait is influencing other

traits in the customer's perception [14].

Service perceptions depend on many factors; one of them is the country/culture. To determine whether significant differences exist, a t-test was conducted. The test assumes (null-hypothesis) that there are no mean differences between countries i.e. a test result close to zero suggests that there are indeed differences because the null-hypothesis can be rejected. In the analysis, only Quality had a significant (at 0.05% level) difference. The related question was 'how do you rate the quality of the proposed solution?' For example, in Belgium the respondents gave on average a 3.8 whereas in Holland they gave less than 3.5. Since this was the only significant difference and with maximum 0.3 not very large, one can conclude that country differences are neglectable.

Table 2: Means

	N	Mean
Friendliness	81	4.26
Expertise	81	3.99
Understanding	81	3.85
Phone_response	44	3.72
Competence	81	3.69
Quality	81	3.69
Speed	81	3.65
Accounts	81	3.62
Updates	81	3.54

Customers have different perceptions on after-sales services. The aim was to extract major dimensions to reduce the number of responses into a few meaningful dimensions. An appropriate tool for data reduction is factor analysis.

Table 3: Correlations

	Accounts	Updates	Speed
Accounts	Pearson Correlation	1.000	.694**
	Sig. (2-tailed)		.000
	N	81	81
Updates	Pearson Correlation	.694**	1.000
	Sig. (2-tailed)	.000	
	N	81	81
Speed	Pearson Correlation	.779**	.748**
	Sig. (2-tailed)	.000	.000
	N	81	81

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 4: Factor Analysis

	Factor	
	Factual	Human Touch
Understanding	.898	.337
Accounts	.881	.376
Quality	.845	.408
Competence	.829	.434
Expertise	.769	.514
Phone_response	.756	.330
Updates	.721	.386
Speed	.630	.598
Friendliness	.347	.917

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

A factor analysis, see Table 3, resulted in two major dimensions along which customers evaluate after-sales services. First dimension can be described as problem solving or 'Factual.' High factor loadings are marked in *italics*. Friendliness constitutes the

second dimension. It may also be called the ‘Human Touch.’

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Positioning each client on these two dimensions, see Figure 2, shows that most customers are in the top right (positive on both or at least one dimension) quadrant i.e. perceive services as friendly and/or are happy with the factual information they are getting.

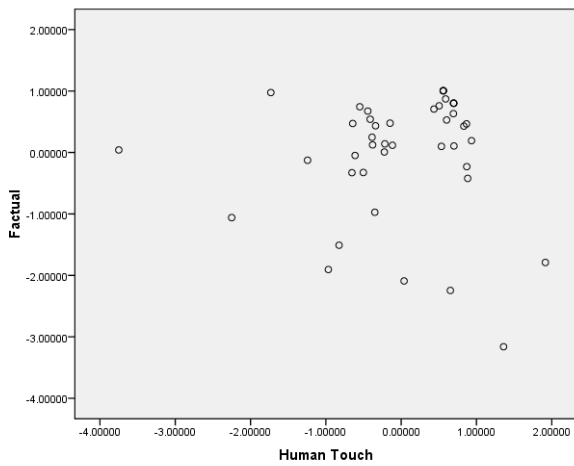


Figure 2: Customer perceptions

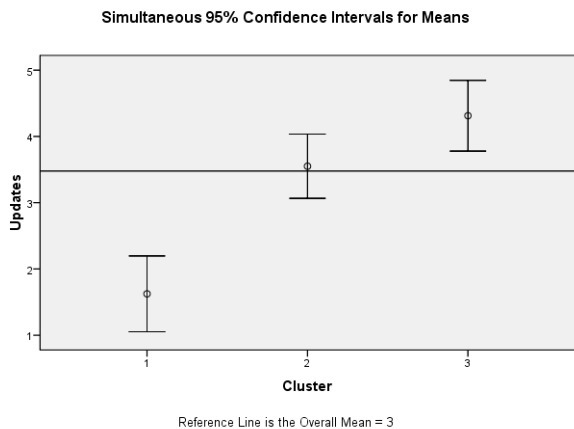


Figure 3: Updates - Group Means and Confidence

Intervals

Initial visual impression suggests that there are two relatively densely populated groups and a few scattered dots/people. A more formal approach to grouping people is cluster analysis which resulted in three distinctively different clusters/groups. Only looking at the three services that need to be improved most, namely, Updates, Accounts and Speed, the means and confidence intervals are shown in Figures 3, 4 and 5.

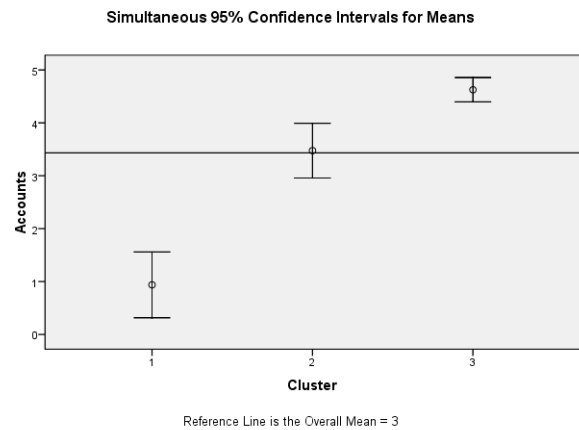


Figure 4: Accounting Department - Group Means and Confidence Intervals

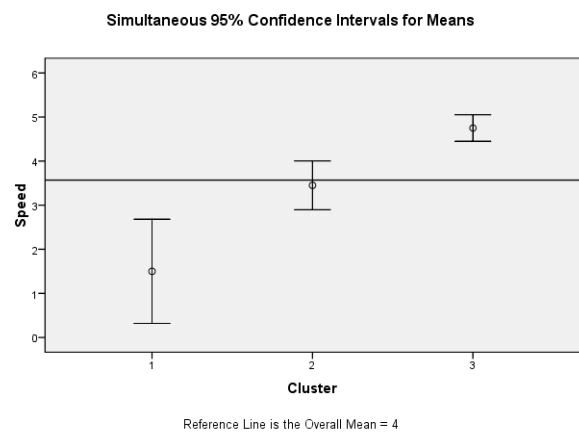


Figure 5: Speed - Group Means and Confidence Intervals

All three clusters show a common pattern. Cluster 1 (18.2% of respondents) see the performance as

insufficient. Cluster 2 (45.5% of respondents) as average and cluster 3 (36.4%) as extremely good being very close to the top score of 5.

## 5. Conclusions and Recommendations

The analysis has shown that on average the after-sales service of logistics provider is generally perceived as good. Customers tend to think two-dimensional. Firstly, factual or task- and solution-oriented, expecting prompt and proper answers from the service providers. Secondly, the human touch in form of friendliness. The three areas to improve are speed, accounting department / billing and information updates. There seems to be a spill-over or Halo effect. Customers rank the logistics company either very high on all these three dimensions or very low. The weakest link in the chain has an impact on the perception of the other two. These three areas should be improved by structural, infrastructural and integrative design. The objective is to determine the strategic choices that will support the organization in its value proposition.

Structural design aims at achieving harmonization of the service delivery features through the promotion of e-logistic applications for self-service and automation (EDI). The objective is to reach the point of parity and meet desire quality standards at most optimum efficiency factor while developing a competitive advantage and shaping the service offering across market segments. ERP systems such as SAP and Oracle are widely used in B2B market segments and constitute opportunities to develop network marketing capabilities and further enhance effectiveness of company supply chain solutions.

Whilst structural design mainly concerns IT capabilities, infrastructural decisions involve policies, reporting and organizational aspects of the service strategy. Specific issues dealing with those infrastructural choices constitute complex set of decisions and are generally long term in nature. Structural

alignment of IT solutions is however a prerequisite in optimizing the infrastructure of the service delivery system (e.g. in order to reach centralization and/or outsourcing of non-core business processes).

Integration issues deal with internal and external integration and adaptive mechanisms. Network marketing is an opportunity that logistics companies should investigate to further enhance cross functional cooperation and reduce indirect cost factors. This is especially the case in the logistic sector that reports low margin and acts as a middle man. Management of customer perceived value is preliminary an operational management concern and involve adaptive and absorptive mechanism that corporate leadership must endeavor and promote amongst line functions.

Logistics organizations shall be cautious to integrate structural, infrastructural and integrative design choices to their service delivery system definition. It is a crucial process element to enhance customer experience and achieve competitive advantage beyond the point of simply servicing the customer.

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