Interactive service quality in service encounters: empirical illustration and models

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Abstract
Although the performance of services is done at an operative level, service is an important issue for the strategic, tactical, and operative business activities of companies. This paper examines the construct of interactive service quality in service encounters. This is a complex approach that goes beyond the current exploration of the service-quality construct. Interactive service quality requires the simultaneous consideration of the service provider’s perspective and the service receiver’s perspective. The study was conducted in the Swedish automotive industry and focused on the issues of interactive service quality between a vehicle manufacturer and a selection of its most important suppliers. The major contributions of the research provide an on-the-spot account of interactive service quality. The paper provides theoretical and managerial implications of the construct of interactive service quality in service encounters.

Introduction
Since the 1970s, marketing researchers have acknowledged the importance of service quality in developing business relationships and in managing their product offers to the market (Brown et al., 1994). Service quality can be described in terms of seven perceived criteria (Grönroos, 2000):
(1) professionalism and skills;
(2) attitudes and behaviour;
(3) accessibility and flexibility;
(4) reliability and trustworthiness;
(5) service recovery;
(6) serviscape; and
(7) reputation credibility.

The construct of service quality has received increased scrutiny during the last few decades (Kotler, 2000). Earlier to this, Converse (1930) had emphasised the importance of services in the field of marketing. In the contemporary marketplace service quality is recognised as one of the most important factors in developing and maintaining successful relationships (Svensson, 2002).

Services differ from physical goods in several characteristics (Grönroos, 2000):
• services are intangible and heterogeneous;
• the production, distribution, and consumption of services are simultaneous processes;
• service is an activity or process;
• service is a core value created in buyer-seller interactions;
• customers participate in the production of services;
• services cannot be kept in stock; and
• there is no transfer of ownership in service transactions.

Services are thus produced, distributed, and consumed in the interaction between the service provider and the service receiver. Accordingly, services must be viewed from an interactive perspective. Svensson (2001a) noted that service quality contributes to the strength of interpersonal, intra-organisational, and inter-organisational service encounters.

Service quality is an important construct in services marketing (Grönroos, 1990, 2000), industrial marketing (Håkansson and Snehota, 1995), and relationship marketing (Morgan and Hunt, 1994). It has also gained increased attention in consumer marketing (Kotler et al., 1999). Nevertheless, there is still much to investigate, because there are certain service-quality domains that have not been sufficiently explored. In particular, the question of the interactive features of service quality needs further exploration.
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Göran Svensson

Theoretical framework

Service quality in a service encounter is recognised as being dependent upon the interactive process between the service provider (the seller) and the service receiver (the buyer) (Brown et al., 1994; Czepiel, 1990; Echeverri, 1999; Lindqvist and Persson, 1997; Strandvik and Storbacka, 1996; Surprenant et al., 1983; Svensson, 2001a, 2002). In addition, Wilkinson and Young (1999) stated that relationship development and performance should be seen as a dynamic process. The various dimensions of a relationship interact and self-organise into a mutually consistent pattern of performance, perceptions, and attitudes.

A common factor in much service-quality research is an emphasis on the perspective of the service receiver and on non-interactive service quality. In contrast, the present paper explores the interactive qualities of service quality.

Operationalisation: interactive service quality

The above discussion indicates that there is a need for a framework of service quality that includes multi-item measures and that refers to the interactive nature of service encounters. Traditionally, multi-item measures have produced a measurement of an on-the-spot account – such as the construct of trust (Swan and Trawick, 1987; Swan et al., 1985). Multi-item measures of service quality produce a before-and-after measurement based on the individuals’ expectations and perceptions (Bienstock et al., 1997; Dabholkar et al., 1996; Parasuraman et al., 1988; Zeithaml et al., 1990). The dimensions of these constructs are dependent on the specific empirical context, which means that only two generic dimensions of the construct of service quality are considered – namely the facets and the perceptual degree of a phenomenon or object in a specific empirical context (Svensson, 2001b). Interactive service quality is not a simple phenomenon for quantification. It requires a number of elements to be operationalised properly (Figure 1):

• it should be based on a multi-item measure of the construct of service quality;
• it has to consider the service provider’s and service receiver’s perspectives in service encounters;
• it requires a selection of service encounters to be explored; and
• it needs statistical tests of difference and association between perspectives to describe the interactive qualities of service quality in service encounters.

In this research, the operationalisation of the construct of interactive service quality in service encounters considered the following four elements (Figure 1).

1. It was based on a multi-item measure of service quality (SERVQUAL). All five
dimensions of SERVQUAL were used – reliability, responsiveness, assurance, empathy, and tangibles.

2. A vehicle manufacturer (VM) and its most important suppliers in the automotive industry represented the perspectives of service receiver and service provider.

3. The selection of service encounters consisted of a set of 70 dyads.

4. The interactive qualities in the selected service encounters were analysed using six tests of differences and associations.

On an overall level between the VM and its suppliers, a high level of interactive service quality is characterized by there being hardly any significant differences between the service providers’ and the service receivers’ perspectives. In each dyad, between the VM and its suppliers, a high level of interactive service quality is characterized by significant associations between the same perspectives in the dyad.

**Method**

The study was performed as a mail survey of a VM and its most important national and international suppliers. Subsequently, an interactive approach was applied. The selection procedure of appropriate suppliers and suitable respondents for each supplier was made by a leading executive at the VM and confirmed by another. One representative of each supplier was contacted to match a corresponding executive at the VM (thus creating the dyads).

The population consisted of 70 suppliers and corresponding executives (the purchase manager and the materials manager) at the VM. The intention was to use these two respondents at the VM to compare the answers collected within the VM, but the organisational structure of the material managers at the VM did not permit a complete match with the suppliers. The executives responsible for the supplier selection of the survey also selected the appropriate purchase managers and materials managers in charge of the supplier at the VM. In total, 46 purchase managers and 6 materials managers participated in the survey. Consequently, some of the purchase managers at the VM filled in more than one questionnaire. The materials managers filled in five questionnaires each. This procedure of multiple questionnaires was necessary to match the VM’s questionnaire with the suppliers’ questionnaire. Two matched questionnaires were developed, each one considering the VM’s and the suppliers’ perspectives of the service quality. Questionnaires were sent to each of the executives selected in the survey. The executives selected by the supplier were mostly the production manager or logistics manager. At the VM, the purchase manager and material manager in charge of the supplier were selected. Each respondent at the suppliers and at the VM was contacted initially by phone to confirm their availability to respond to the questionnaire.

Close attention to preparatory phase of the research led to a high response rate. In all, 90.0 per cent (63 of 70) of the purchase managers at the VM filled in the questionnaires, and 95.7 per cent (67 of 70) of the executives at the suppliers filled in the questionnaires. However, it was not possible to achieve more than 42.9 per cent response rate (30 of 70) among the materials managers due to their organisational structure and the limited number of executives.

**Results**

A selection of univariate and bivariate statistical techniques were used to describe and analyse the data. Each VM’s perception and its supplier’s perception were measured and evaluated. The outcome of the statistical techniques is discussed below (Norusis, 1993).

**Univariate statistics**

The univariate statistics for each item of the five dimensions of SERVQUAL are shown in Table I.
A variety of items, based on these dimensions, were applied to test the stability and randomness of the collected answers. Seven-interval Likert-type scales were used in items 1-15. The anchor points of the scales were “Strongly Agree” (7) to “Strongly Disagree” (1). Items 16-21 were assessed using seven-interval Semantic Differential scales (Osgood et al., 1957). The anchor points of the scales were “Increase” (7) to “Decrease” (1). Reversed (negative) items are shown in italics. The following abbreviations are used in the table: N = number of observations.

Table I: Univariate statistics of the items used to measure the VM’s and its suppliers’ interactive service quality

<table>
<thead>
<tr>
<th>Questionnaire items – Suppliers and VM</th>
<th>VM</th>
<th>Supplier</th>
<th>N</th>
<th>Mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>This supplier’s services always keep what they have promised</td>
<td>63/30</td>
<td>5.89 5.67</td>
<td>Our services to the VM always keep what we have promised</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is always able to assist us immediately if it is necessary</td>
<td>63/30</td>
<td>5.83 5.63</td>
<td>We are always able to assist the VM immediately if it is necessary</td>
<td>67</td>
</tr>
<tr>
<td>We always feel confident with this supplier</td>
<td>63/30</td>
<td>5.35 5.80</td>
<td>The VM always feels confident with us</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is always able to satisfy our desires very well</td>
<td>63/30</td>
<td>5.02 5.73</td>
<td>We are always able to satisfy the VM’s desires very well</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is always obliging to us</td>
<td>63/30</td>
<td>5.67 5.96</td>
<td>We are always obliging to the VM</td>
<td>67</td>
</tr>
<tr>
<td>This supplier’s services are sometimes unreliable</td>
<td>62/30</td>
<td>2.29 2.30</td>
<td>Our services to the VM are sometimes unreliable</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is seldom able to assist us with help</td>
<td>62/30</td>
<td>1.95 2.17</td>
<td>We are seldom able to assist the VM with help</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is always very competent towards us</td>
<td>61/30</td>
<td>5.18 5.90</td>
<td>We are always very competent towards the VM</td>
<td>67</td>
</tr>
<tr>
<td>This supplier sometimes lacks comprehension of what we would like to have</td>
<td>62/30</td>
<td>2.73 2.60</td>
<td>We sometimes lack comprehension of what the VM would like to have</td>
<td>67</td>
</tr>
<tr>
<td>We always know what we get when we deal with this supplier’s services</td>
<td>63/30</td>
<td>5.40 5.80</td>
<td>The VM always knows what it gets when it deals with our services</td>
<td>67</td>
</tr>
<tr>
<td>We perceive that we can rely on this supplier’s services</td>
<td>63/30</td>
<td>5.59 6.14</td>
<td>The VM perceives that it can rely on our services</td>
<td>67</td>
</tr>
<tr>
<td>It is always easy to get in touch with this supplier</td>
<td>63/30</td>
<td>5.75 6.13</td>
<td>It is always easy for the VM to get in touch with us</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is always able to give us correct answers to our questions</td>
<td>63/30</td>
<td>5.40 5.97</td>
<td>We are always able to give the VM correct answers to their questions</td>
<td>67</td>
</tr>
<tr>
<td>This supplier is always sharp with us</td>
<td>63/30</td>
<td>5.27 5.79</td>
<td>We are always sharp with the VM</td>
<td>67</td>
</tr>
<tr>
<td>This supplier’s services never disappoint us</td>
<td>63/30</td>
<td>5.58 5.34</td>
<td>Our services never disappoint the VM</td>
<td>67</td>
</tr>
<tr>
<td>We perceive that this supplier’s reliability towards us… (decrease/increase)</td>
<td>63/30</td>
<td>4.90 *</td>
<td>We perceive that the VM’s reliability towards us… (decrease/increase)</td>
<td>67</td>
</tr>
<tr>
<td>We perceive that this supplier’s responsiveness towards us… (decrease/increase)</td>
<td>63/30</td>
<td>4.77 *</td>
<td>We perceive that the VM’s responsiveness towards us… (decrease/increase)</td>
<td>67</td>
</tr>
<tr>
<td>We perceive that this supplier’s assurance towards us… (decrease/increase)</td>
<td>63/30</td>
<td>4.67 *</td>
<td>We perceive that the VM’s assurance towards us… (decrease/increase)</td>
<td>67</td>
</tr>
<tr>
<td>We perceive that this supplier’s empathy towards us… (decrease/increase)</td>
<td>63/30</td>
<td>5.50 *</td>
<td>We perceive that the VM’s empathy towards us… (decrease/increase)</td>
<td>67</td>
</tr>
<tr>
<td>We perceive that this supplier’s tangibles towards us… (decrease/increase)</td>
<td>62/30</td>
<td>4.41 *</td>
<td>We perceive that the VM’s tangibles towards us… (decrease/increase)</td>
<td>67</td>
</tr>
<tr>
<td>The trend for this supplier’s service quality is… (decrease/increase)</td>
<td>62/30</td>
<td>4.82 4.82</td>
<td>The trend for our service quality to the VM is… (decrease/increase)</td>
<td>67</td>
</tr>
</tbody>
</table>

Note: *The item was not used in the designated questionnaire to the material managers.
Mn = mean; PM = purchase manager; and MM = materials manager.

In total, 21 interactive items were used in the survey (representing both VM’s and its suppliers’ perspectives). Fifteen items were used in each questionnaire (Table I) to measure the VM and its suppliers’ perceptions of the service quality. Initially, the items were structured according to the five pre-specified dimensions of SERVQUAL: reliability (items 1, 6, 11), responsiveness (items 2, 7, 12), assurance (items 3, 8, 13), empathy (items 4, 9, 14), and tangibles (items 5, 10, 15). Five additional items (16-20) were used in each questionnaire to measure the perceived trend (increase or decrease) of the service-quality dimensions: reliability (16); responsiveness (17); assurance (18); empathy (19); and tangibles (20). Item 21 measured the overall trend of service quality.

Table I indicates that there was a similar perception of the service quality by VM and suppliers. There was also a similar perception by the purchase manager and the material manager at the VM. Tentatively, the service quality was satisfactory in the dyads studied and the trend of service quality was slightly improving.

### Bivariate statistics

A combination of parametric and non-parametric techniques was used to compare the differences and associations between the VM and its suppliers because Likert scales and Semantic Differential scales can sometimes be interpreted as only ordinal. The parametric techniques require at least interval scales and the non-parametric techniques require only ordinal scales. Furthermore, a selection of parametric and non-parametric tests was combined to test the overall stability and randomness of the performed statistical outcomes of the bivariate analyses. Therefore, the non-parametric techniques were used to reinforce and support the use of parametric tests. The following abbreviations are used in Tables II-VI:

- correlation (the direction of an association: (+) positive/(-) negative): $C; 
- Kendall rank correlation coefficient: $K; 
- Pearson correlation coefficient: $P; 
- paired samples $t$-test: $P^1; 
- Spearman rank correlation coefficient: $S; 
- sign Test: $S^1; 
- Wilcoxon matched pairs signed-ranks test: $W; 

The five dimensions of service quality categorised the bivariate analyses to test the potential differences and associations between the perceptions of the VM and its suppliers in assessing interactive service quality. Correlations and differences are illustrated in Tables II-VI. The bivariate analyses of items were based upon approximately 60 complete pairs of the VM’s and its suppliers’ questionnaires. Single asterisk (*) is used to indicate a significance level of 5 per cent or less in terms of the differences or associations between the variables and double asterisks (**) is used to indicate a significance level of 1 per cent or less. Only the data collected from the purchase managers are used in the bivariate analyses, because the data collected from the materials managers is matched to a minor extent to the data collected from the suppliers, due to a lower response rate.

The bivariate statistics (Table II) indicate that the interactive service quality was low in each of the service encounters studied in terms of the associations with respect to reliability. There was no significant association between the VM’s perspective and its suppliers’ perspectives of reliability in the dyads. The bivariate statistics indicate that the interactive service quality was satisfactory on an overall level in terms of the differences with respect to reliability. There were hardly any significant differences, except for one item (item 11), between the VM and its suppliers. In conclusion, the overall interactive service quality in the service encounters studied appears to have been satisfactory in terms of the reliability dimension, but each service encounter had a low interactive service quality in terms of this dimension.

The bivariate statistics (Table III) indicate that the interactive service quality was low in each of the service encounters studied in terms of the association with regard to responsiveness. There was no significant association between the VM’s perspective and its suppliers’ perspectives with respect to responsiveness in the dyads.

### Table II Differences and correlations between the VM and its suppliers for the items of reliability

<table>
<thead>
<tr>
<th>Item</th>
<th>VM (mean)</th>
<th>Item</th>
<th>Supplier (mean)</th>
<th>Reliability Differences</th>
<th>Correlations</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VM vs suppliers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5.89</td>
<td>1</td>
<td>5.55</td>
<td></td>
<td>0.096</td>
<td>0.134</td>
</tr>
<tr>
<td>6</td>
<td>2.29</td>
<td>6</td>
<td>1.87</td>
<td></td>
<td>0.082</td>
<td>0.028</td>
</tr>
<tr>
<td>11</td>
<td>5.59</td>
<td>11</td>
<td>6.25</td>
<td></td>
<td>0.241</td>
<td>0.168</td>
</tr>
<tr>
<td>16</td>
<td>4.90</td>
<td>16</td>
<td>4.51</td>
<td></td>
<td>0.132</td>
<td>0.210</td>
</tr>
</tbody>
</table>
The bivariate statistics indicate that the interactive service quality was also low at an overall level in terms of differences with respect to reliability. There were various significant differences, except for one item (item 17), between the VM and its suppliers. In conclusion, the overall interactive service quality in the service encounters studied appears to have been low in terms of the reliability dimension, and each service encounter also has a low interactive service quality in terms of this dimension.

The bivariate statistics (Table IV) indicate that the interactive service quality was satisfactory at an overall level in terms of assurance. There were hardly any significant differences, except for one item (item 13), between the VM and its suppliers. In conclusion, the overall interactive service quality in the service encounters studied appears to have been satisfactory in terms of the assurance dimension, but each service encounter had a low interactive service quality in terms of this dimension.

The bivariate statistics (Table V) indicate that the interactive service quality was low in each of the service encounters studied in terms of empathy. There was no significant association between the VM’s perspective and its suppliers’ perspectives of empathy in the dyads. The bivariate statistics indicate that the interactive service quality was rather low at an overall level in terms of empathy.
empathy. For example, there were significant differences (items 4 and 14) between the VM and its suppliers. In conclusion, the overall interactive service quality in the service encounters studied appears to have been low in terms of the empathy dimension and each service encounter had a low interactive service quality in terms of this dimension.

The bivariate statistics (Table VI) indicate that the interactive service quality was rather low in each of the studied service encounters in terms of the associations with respect to tangibles. There was hardly any significant association between the VM’s perspective and its suppliers’ perspectives of the tangibles in the dyads, except for one item (item 5). The bivariate statistics also indicate that the interactive service quality was low at an overall level in terms of the differences with respect to tangibles. There were significant differences (items 5, 10, and 15) between the VM and its suppliers. In conclusion, the overall interactive service quality in the service encounters studied appears to have been low in terms of the tangibles dimension and each service encounter has a rather low interactive service quality in terms of this dimension.

In summary, the service encounters studied between the VM and its most important suppliers tend to have a low interactive service quality.

Discussion and managerial implications

The gap of interactive service quality

The interactive service quality depends on the gap between the service provider’s and service receiver’s perceptions of a service encounter (Figure 2). The term “perception” refers to the accumulated measure of expected and perceived service quality of each perspective in a service encounter – that is, expectation – perceived = perception (which might be positive or negative).

In a managerial context, the interactive service quality is satisfactory if there is no gap between the service provider’s and the service receiver’s perspectives of a service encounter, but no gap does not represent the ideal situation, because the service receiver’s perspective should exceed the service provider’s perspective.

To maintain long-term and prosperous service encounters, companies need to focus on the service receivers’ perception and on the service provider within the organisation. A disharmony might cause problems and eventually affect performance in the service encounter.

The see-saw model of interactive service quality

In a managerial context it is necessary to maintain a balance between the service provider’s and service receiver’s perspectives to reduce the impact of a potentially poor interactive service quality in a service encounter.

The importance of the relationship between the service provider’s and service receiver’s perspectives can be described in terms of a see-saw model of interactive service quality (Figure 3). If the service provider’s perspective exceeds the service receiver’s perspective, the interactive service quality is high (that is, a positive dissonant quality). In contrast, if the service provider’s perspective does not exceed the service receiver’s perspective, the interactive service quality is low (that is, a negative dissonant quality). If there is a balance between the perspectives, then there is a congruent quality of interactive service quality. This is a satisfactory situation, but it should be enhanced to reduce the risk of future negative dissonance. As noted earlier, service quality in a service encounter is usually assessed on the basis of the service receiver’s perspectives, but the simultaneous consideration of the service provider’s perspective is desirable. It is therefore, important to extend the meaning of the construct of service quality to consider the interactive qualities of service encounters as measured by the gap (or dissonance) between the service receiver’s and the service provider’s perspectives. This validates the introduction of the three constructs of interactive service quality – positive dissonance, negative dissonance, and congruence.

A hierarchy of priorities to interactive service quality

Two other parameters influence interactive service quality – time and context. What was positive yesterday might be negative today (and vice versa), and what is positive today might be
negative tomorrow (and vice versa) – depending on the context. Consequently, the parameters of time and context influence positive or negative outcomes of perspectives in service encounters (Figure 4). Therefore, the interactive service quality studied in this research might be seen as an “on-the-spot” account that reflects the service receiver’s and service provider’s perspectives at a particular time. It is appropriate to examine the evolution of interactive service quality in service encounters.

The following hierarchy consists of four levels of priority in terms of the congruence or dissonance between the perspectives of interactive service quality, taking into account the parameters of time and context.

• The first priority level occurs when the service provider’s perspective is positive and the service receiver’s perspective is negative. This means that the service provider overestimates the service quality being offered to the service receiver. This situation requires a close examination of the negative dissonance of interactive service quality. It is urgent to achieve at least congruence between the two perspectives.

• The second priority level occurs when the service provider’s and the service receiver’s perspectives are equally negative. This means that the service provider’s negative perspective of the deficient service quality offered in the service encounter matches the service receiver’s negative perspective. This situation is troublesome and needs attention to improve the interactive service quality.

• The third priority level occurs when the service provider’s and the service receiver’s perspectives are equally positive. This means that the service provider’s positive perspective of the service quality offered in the service encounter matches the service receiver’s positive perspective. This situation is pleasing, because there is a positive congruence of the interactive service quality in the service encounter. It does not need immediate attention.

• The fourth priority level occurs in a service encounter when the service provider’s
perspective is negative and the service receiver’s perspective is positive. This means that the service provider underestimates his own service quality offered in the service encounter. This is, again, a pleasing situation, but it could be useful if the provider took steps to understand the reason for the positive dissonance.

Conclusions

This research was limited to a small sample in the vehicle industry and used one model of service quality. Although this reduced the generality of the findings, the purpose was to examine the existing shortcomings in current service quality research. Most research efforts of the construct of service quality have been dedicated to identifying and confirming different dimensions based on the expectations and perceptions of the service receiver. The service provider’s expectations and perceptions have been mostly ignored.

The findings indicated low interactive service quality in the studied dyads, despite the fact that there was a similar perception between the VM and its suppliers. These findings should be regarded as an on-the-spot account, illustrating how the parameters of time and context affect the interactive service quality in service encounters. Although there can be a similar perception between service providers and service receivers in service encounters, the actual interactivity between perceptions can be low. This is an important insight that stresses the importance of dyadic approaches to service encounter research.

A number of conceptual frameworks of interactive service quality have been introduced: (1) the gap of interactive service quality, (2) the see-saw model of interactive service quality, and (3) the hierarchy of priorities to interactive service quality.

This research should encourage researchers to undertake replication studies of the research performed, with various changes to the parameters. Further research should continue to examine the interactive qualities of service quality by considering the perspectives of both the service provider and service receiver. The theoretical and managerial implications presented might be useful for training and for facilitating replication studies. The implications might also be applicable in an intra-organisational context, such as internal marketing. The principal parameters would refer to a company’s and its employees’ perspectives of the interactive service quality in internal service encounters.

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Interactive service quality in service encounters

Göran Svensson


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Further reading