



# Re-examining traditional service quality in an e-banking era

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## Abstract

**Purpose** – This paper aims to re-examine the role of traditional service quality in an e-banking environment by providing a review of how traditional service quality perceptions have evolved through the current and continuing stream of change in banking technology and the corresponding changes in the nature of how banks interact with their customers.

**Design/methodology/approach** – Data were collected from a mail survey sent out to a commercially purchased mailing list of 2,500 business names and addresses. The overall usable response rate was 30.6 per cent. Quadrant analysis was performed on the service quality dimensions from the SERVQUAL scale.

**Findings** – While the importance ranking of the five SERVQUAL dimensions has not changed dramatically over the years, large discrepancies were found between customer expectations and their perceived performance of traditional banking services.

**Practical implications** – Quadrant analysis produced specific recommendations on how banks should prioritise the allocation of their resources to maintain high perceived service quality in their human interactions.

**Originality/value** – This is the first study which revisits and re-examines traditional service quality in the e-banking era. It highlights how high levels of traditional service quality may lead to increased customer trust and thus more successful cross-selling of e-banking products to customers.

**Keywords** Customer services quality, Marketing strategy, Financial services, Virtual banking, Electronic commerce, Banking

**Paper type** Research paper

## Introduction

Electronic commerce (e-commerce) has become a very important technological advancement for businesses in changing business practices (Brodie *et al.*, 2007; González *et al.*, 2008; Lichtenstein and Williamson, 2006). This has experienced tremendous growth in recent years as a result of new business initiatives utilising these technologies (Barwise and Farley, 2005). In particular, industries that are information-oriented such as the banking services and securities trading sector are expected to experience the highest growths in e-commerce (Ibrahim *et al.* 2006; Hughes, 2002). Inevitably, this phenomenon has sparked a lot of attention in the academic literature lately (such as Gan *et al.*, 2006; Pikkarainen *et al.*, 2006; Shamdasani *et al.*, 2008).

Undoubtedly, electronic banking (e-banking) has experienced explosive growth and has transformed traditional practices in banking (Barwise and Farley, 2005; González *et al.*, 2008; Lichtenstein and Williamson, 2006). Brodie *et al.* (2007) speculated that these would lead to a massive shift in marketing practices leading to superior business performance. In fact, it has become the main means for banks to market and sell their products and services (Amato-McCoy, 2005) and is perceived to be a necessity in order to stay profitable and successful (Gan *et al.*, 2006). The changes occurring in the



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banking sector can be attributed to increasing deregulation and globalization, the major stimulus for rationalization, consolidation, and an increasing focus on costs (Ibrahim *et al.*, 2006; Hernandez and Mazzon, 2007). One offspring of this has been the rapid development and use of various new and innovative technologies by banks in the form of electronic banking services (e.g. Pikkarainen *et al.*, 2006; Orr, 1998). The implementation of e-banking, such as internet banking and the use of computer-based office banking software hold several obvious advantages for banks. It improves the bank's profit levels through the reduction of both variable and infrastructure costs, provides a source of differentiation and competitive advantage, provides global reach, adds another communication and feedback channel, increases customer satisfaction through the reduction of waiting times and thus improving service performance, or otherwise enabling the bank to more fully realise its sales potential through the achievement of higher sales volume (Lichtenstein and Williamson, 2006; Fox, 2005; Hernandez and Mazzon, 2007; Pikkarainen *et al.*, 2006; Shamdasani *et al.*, 2008; Schaggnit, 1998; Schneiderman, 1992).

As can be appreciated, the advantages to banks are manifold. These have led many banks to undertake high levels of marketing effort in the bid to push more customers, in particular businesses, into implementing e-banking into their business processes. This current strategic approach undertaken by banks, however, may be seen as contrary to the views of many authors of relationship marketing, such as presented by McKenna (1992) who proposes that marketers need to devise strategies with the primary objective of sustaining and enhancing relationships with their customers over time. Others scholars such as Roth and Van der Velde (1989) suggest that the role of human interactions within the bank branch will be even more critical in the future, despite the increasing popularity and acceptance of new banking technologies. Tyler and Stanley (2001) have reiterated that human interaction between the bank manager and the corporate financial officer to be of prime importance. O'Donnell *et al.* (2002) echoed this finding that business banking customers generally prefer personalised human interactions with their bank as a means of communication, and that this is especially pronounced for smaller businesses. Interestingly, despite the efficiencies created by e-banking, many businesses are still keeping duplicative traditional records, and performing traditional banking tasks that result in less than full implementation of the technology and continued dependency on human interactions. These problems in the adoption of electronic services are not uncommon, and have also been reported in related industries such as in securities brokerage services (Yang and Fang, 2004). More importantly, Howcroft and Durkin (2000) suggest that such interaction preferences on the part of both the bank and the customer are important considerations as they will ultimately have a significant impact on the perceived quality of the relationship by both parties.

These issues encountered in electronic service delivery have thus prompted a proliferation of research into how service quality may be measured and managed for electronic service deliveries (such as Parasuraman *et al.*, 1991, 2005; Zeithaml *et al.*, 2000, 2001, 2002; Yang and Jun, 2002; Bauer *et al.*, 2005; Ibrahim *et al.*, 2006; Shamdasani *et al.*, 2008). Research by Patricio *et al.* (2003) goes one step further to measure service quality of various banking services for different delivery channels, including both electronic and traditional channels. They have found that perceived service quality with one delivery channel has an impact on how another channel is

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perceived. Similarly, Burke (2002) suggests that marketers need to understand the value consumers place on technology as part of the overall interaction process, and stress that new interactions brought about by the advancement of technology are not separate, but rather act to enhance the overall shopping experience. Moreover, Fassnacht and Köse (2007) found that high electronic service quality in web-based services had an important role in building overall customer trust for the service provider. Indeed, it seems that e-banking and traditional banking, though very different in their bases of customer interaction, are inseparable facets of the banking system, and should be seen as complimentary rather than substitutable ways of banking. It follows then that the customer's experiences with e-banking may have an influence on changing their expectations and perceptions of traditional banking services.

### **Significance and objectives of this research**

Based on the preceding discussion, a number of pertinent questions have emerged and have been reiterated by many scholars. First, what impact the adoption of e-banking by the customer has on sustaining and enhancing the bank-customer relationship (e.g. Reibstein, 2002)? Second, what impact does this new e-banking environment, brought about by the increasing popularity of e-banking, have on the customer's perception of traditional bank service quality (e.g. Pikkarainen *et al.*, 2006)? These are gaps in the literature that have not been adequately looked at and should be revisited. Thus the over-arching objective of this paper is to re-examine the role of traditional service quality in an e-banking environment by providing a review of how traditional service quality perceptions have evolved through the current and continuing stream of change in banking technology and the corresponding changes in the nature of how banks interact with their customers.

The paper is organised as follows. First, the theories and relevant literature in service quality and customer satisfaction are reviewed. The methodology and analysis and discussion of results are next presented. The paper concludes with the implications for both marketing theory and business practices and directions for future research.

### **Theory and relevant literature**

#### *Service quality and SERVQUAL*

There are numerous models of service quality described in the literature. Grönroos (1984) pioneered this concept and defines service quality as a set of perceived judgements resulting from an evaluation process where customers compare their expectations with the service they perceive to have received. He suggests that it may be split into two facets – technical quality (what is done) and functional quality (how it is done). These two facets may be further interpreted to suggest that the service must be effective (doing the right things) in satisfying the specific needs of the customer as well as executing the service efficiently (doing things right). Parasuraman *et al.* (1985) introduced a gap-model that focused on gaps in the perceptions of consumers. Both these models stressed the importance of expectation versus perception in service encounters. Cronin and Taylor (1992) introduced a service quality model based only on perceptions and not expectations as in the previous models. There are many other research describing models with varying degrees of difference to these original models, some of which are reviewed by Seth *et al.* (2005).

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The importance of measuring consumer expectations is paramount especially in the context of banking and financial services. Recent service developments, particularly with respect to the electronic delivery of these services, have resulted in a continuous increase in customer expectations and the consumer's subsequent demands as the quality of service improves (Rao and Kelkar, 1997; Parasuraman *et al.*, 1988). Any previous experience with traditional or electronic services, word-of-mouth, or advertising will have an influence on the expectations of the consumer.

One such model that accounts for both expectations and perceived performance is the SERVQUAL model formulated by Parasuraman *et al.* (1985) that highlights the main requirements for delivering high service quality. These researchers found five dimensions of service quality. These are presented in order of their importance as follows:

- (1) *Reliability* – the ability to perform the promised service dependably and accurately.
- (2) *Responsiveness* – the willingness to help customers and to provide prompt service.
- (3) *Assurance* – the knowledge and courtesy of employees and their ability to convey trust and confidence.
- (4) *Empathy* – the provision of caring, individualised attention to customers.
- (5) *Tangibles* – the appearance of physical facilities, equipment, personnel, and communication materials (Berry and Parasuraman, 1991).

Perceived service quality is thus measured from the differences in degree and direction between the perceptions of service performance and expectations for each of these dimensions (Parasuraman *et al.*, 1988).

This model is the most widely accepted and used measurement (González *et al.*, 2008) and has been tested in a wide variety of service industries for its validity and robustness. Many researchers have employed near identical models and have emerged with similar dimensions (such as Saleh and Ryan, 1992; Gagliano and Hatchcote, 1994; Dabholkar *et al.*, 1996; Devlin and Dong, 1994 and Boulding *et al.*, 1993).

#### *Customer satisfaction and expectancy disconfirmation paradigm*

Customer satisfaction is often seen as the long-term success factor to an organization's competitiveness (Hennig-Thurau and Alexander, 1997). Satisfaction refers to the consumer's emotional evaluation of their experiences with the consumption or ownership of specific goods and services (Westbrook, 1981). The literature on satisfaction is divided into two schools of thought – the process and outcome definitions of satisfaction. Outcome definitions of satisfaction can be viewed as a state of fulfilment that is connected to reinforcement and arousal. Several examples are given in the satisfaction-as-states framework developed by Oliver (1989). Literature on process definitions of satisfaction is more wide spread and generally more accepted in academic circles. The central theme of the process definition is the expectancy disconfirmation paradigm (Ruyter and Bloemer, 1999). According to this paradigm, a consumer's feeling of satisfaction results from comparing a product or service's perceived performance in relation to his or her expectations. If the performance falls short of expectations, negative disconfirmation occurs, resulting in a feeling of

dissatisfaction. If the performance exceeds the expectations, positive disconfirmation occurs, and the consumer is highly satisfied. If the performance just matches expectations, the consumer's expectations are confirmed, and the consumer is just satisfied.

Cumulative satisfaction is an overall evaluation based on the consumer's total set of consumption experiences with the product or service over time (Anderson *et al.*, 1994). This set of experiences is multi-faceted and includes experiences related to various aspect of dealing with the organisation providing the product or service, as well as the experiences related to consuming these products or services. Examples are given by Westbrook (1981) (retail store satisfaction) and Crosby and Stephens (1987) (satisfaction with life insurance companies). It is undoubtedly the aim of many organizations to achieve high customer satisfaction. Highly satisfied consumers are found to be much less ready to switch as high satisfaction creates an emotional bond with the brand, and not just a rational preference. The result is high customer loyalty.

#### *Service quality and satisfaction*

Both service quality and satisfaction are constructs resulting from the comparison of expectations and performance. They are thus very strongly related, but as several authors have pointed out are not necessarily equivalent (Bolton and Drew, 1991; Parasuraman *et al.*, 1988). The difference between these two constructs, is that perceived service quality is a form of attitude and is a long run overall evaluation, where customer satisfaction is more of a transaction-specific measure (Chadee and Mattsson, 1996; Cronin and Taylor, 1992; Bolton and Drew, 1991; Bitner, 1990). Indeed, empirical research by Parasuraman *et al.* (1985) have found several examples where consumers satisfied with a service still did not think that it was of high quality. Oliver (1993) has also suggested that customers require experience with the product or service to determine how satisfied they are with it, while quality can be perceived without actual consumption experience.

Despite these differences, the link between service quality and satisfaction is an important one in this research. Mattsson (1992) found that service quality is the outcome of the satisfaction process; Spreng and Mackoy (1996) connect the constructs of perceived service quality and consumer satisfaction derived from expectations, perceived performance and desires. Dabholkar *et al.* (2000) describe a broader conceptual framework supported by the antecedents of service quality and the mediators of customer satisfaction. In other research, it has been shown that service quality affects satisfaction and that satisfaction in turn affects behavioural intentions (Gotlieb *et al.*, 1994; Taylor and Baker, 1994; Fornell, 1992; Halstead and Page, 1992). Organisations that strive to continually increase service quality have shown to be more successful in retaining repeat customers as well as more successful in cross selling products and services to these customers (Rao and Kelkar, 1997). Reibstein (2002) argues that firms will only be profitable if these customers are retained and in order to do that, firms must attain high levels of customer satisfaction.

More specifically, Fullerton (2005) tested the relationships between service quality, commitment, and switching and advocacy intentions. The results show that commitment served as a partial mediator of the service quality-loyalty relationship. Tam and Wong (2001) has also examined similar constructs and shown that trust and satisfaction built up through human interaction through the salesperson's relationship

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orientation significantly influenced the success of future product adoption by customers. This evidence from traditional service settings show that service quality is a major driver of customer satisfaction, trust, and loyalty, which ultimately lead to increased sales opportunities and profitability. In the context of this research, high perceived service quality with traditional bank services will enable more successful cross-selling of e-banking products to customers through a relationship of trust and commitment.

## Methodology

### *Measures*

Operationalisation of the service quality construct was based on Parasuraman *et al.*'s service quality model SERVQUAL (Parasuraman *et al.*, 1985). Since this scale has been specifically developed for and tested in the financial services industry (Berry and Parasuraman, 1991), the same scales will be used in this research measuring the five dimensions of service quality; identified as:

- (1) reliability;
- (2) responsiveness;
- (3) assurance;
- (4) empathy; and
- (5) tangibles.

Perceived service quality in this research is thus to be measured from the differences in degree and direction between the perceptions of service performance and expectations for each of these dimensions (Parasuraman *et al.*, 1988). Expectations and perceptions were measured on a seven-point scale from 0 (Strongly disagree) to 6 (Strongly agree). Of the 22 items in the scale, each assessing the different aspects of service quality, nine items were negative statements. These were subsequently recoded to form a set of unidirectional statements that can then be compared with each other based on their means.

Using the SERVQUAL scale without any alterations will allow a direct examination of how service quality perceptions have evolved in the 17 years that have passed between the aforementioned research and this research. This enabled direct comparisons to be made between the findings discovered by Berry and Parasuraman (1991) and the data collected in this research.

### *Survey instrument*

The survey instrument used in this research was a self-administered mail questionnaire that included two sections measuring expectations and perceived performance from the SERVQUAL scale, and a variety of personal and business demographic measures that provided information to establish categories for analysis.

### *Data collection*

An Australia-wide database of 2,500 business names and addresses was purchased from a professional source for use as a sampling frame for the mail survey. The data collection procedure followed the recommendations provided by Dillman's work on conducting successful mail surveys (Dillman, 1978, 2000). This included the use of a

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four stage pre-notification procedure suggested by Dillman (2000), and involved the use of personalised cover letters to respondents, and by making prior contact to notify the respondent of the pending arrival of the questionnaire in order to substantiate its authenticity and increase respondent cooperation. A self-addressed pre-paid envelope accompanied each questionnaire.

Of the 2,500 sampling elements, 114 addresses were deemed void, 25 businesses responded to request removal of their details from the database, and 706 businesses responded within the 30 day cut-off period for valid questionnaires to be returned. This represented an overall response rate of 30.6 per cent.

## Results

### *Sample*

A broad range of businesses from various industry groups was surveyed. Table I shows the proportion of different types of business based on their main activity and annual turnover. The largest segment of the market is businesses with sales turnover between AUD\$1M and AUD\$3M, representing 36.5 per cent of the total market. Service based businesses make up over half of this segment with 18.9 per cent of the market.

Table II shows the distribution of business according to their ownership structure and annual turnover. Businesses that are family owned and controlled are by far the largest market segment, comprising 59.9 per cent of the market. Of these family owned and controlled businesses, a large proportion are small businesses that have sales turnover of less than AUD\$3M; this group representing 44.2 per cent of the overall market. Large businesses (sales turnover of between AUD\$5M to AUD\$10M) and corporations with sales turnover of greater than AUD\$10M are predominantly publicly or government owned, and collectively constitute 9.9 per cent of the market.

### *Factor analysis*

Factor analysis was undertaken on the 22 items in the service quality scale to determine the main dimensions of service quality in this research, which can then be used to compare against Berry and Parasuraman's (1991) dimensions found previously in their research.

The final statistics and the rotated factor matrix (after subjecting to Varimax rotation) of the 22 items yielded five factors, which are summarized in Table III (KMO = 0.910, Barlett's Test of Sphericity = 0.000). Only one item ("Adequate support for employees") was loaded to a different dimension than was originally found by Berry and Parasuraman (1991). In this research, the said item was shown to belong to the Reliability dimension with a loading of 0.450. However, it was decided that for the purposes of comparing these results to that of past research, to load this item to the Assurance dimension as per Berry and Parasuraman's previous findings. A total of 66.7 per cent of the variances is captured collectively by the five factors.

Cronbach's Alpha was used to test the extent to which the various items purporting to measure the underlying dimension are reliable, and thus may be added together to give an overall score for each dimension of service quality. The item ("Adequate support for employees") that was reallocated from the Reliability dimension to the Assurance dimension as described above, still brought about a very high alpha for the Assurance dimension –  $\alpha = 0.824$  and  $\alpha = 0.782$  for the expectations and perceptions scales respectively, thus confirming its high reliability in belonging to this dimension.

Business: main activity		Business: annual turnover							Total
		Under 500K	500K-1M	1M-3M	3M-5M	5M-10M	10M +		
Retail	Percentage within business:								
	Main activity	6.0	9.6	48.2	8.4	16.9	10.8	100.0	
Service	Percentage of total	0.9	1.4	7.0	1.2	2.4	1.6	14.5	
	Percentage within business:								
Manufacturing	Main activity	19.0	15.0	33.6	8.1	11.5	12.8	100.0	
	Percentage of total	10.7	8.4	18.9	4.5	6.5	7.2	56.1	
Total	Percentage within business:								
	Main activity	15.5	16.7	36.3	9.5	8.9	13.1	100.0	
Total	Percentage of total	4.5	4.9	10.7	2.8	2.6	3.8	29.4	
	Percentage within business:								
Total	Main activity	16.1	14.7	36.5	8.6	11.5	12.6	100.0	
	Percentage of total	16.1	14.7	36.5	8.6	11.5	12.6	100.0	

**Note:** Business: main activity \* business: annual turnover cross-tabulation

Traditional  
service quality

**Table I.**  
Types of businesses surveyed based on their main activity and annual turnover

**Table II.**  
Types of businesses surveyed based on their ownership structure and annual turnover

Business: organizational category	Family-owned and controlled	Under 500K	Business: annual turnover				10M +	Total
			500K-1M	1M-3M	3M-5M	5M-10M		
Business: organizational category	Family-owned and controlled	18.3	16.6	38.9	10.4	10.1	5.6	100.0
	Unlisted public company	11.0	9.9	23.3	6.2	6.1	3.4	59.9
Listed public company	Unlisted public company	8.8	9.9	40.7	8.8	18.7	13.2	100.0
	Listed public company	1.3	1.5	6.2	1.3	2.9	2.0	15.3
Government/semi-government enterprise	Listed public company	19.2	11.5	21.2	7.7	5.8	34.6	100.0
	Government/semi-government enterprise	1.7	1.0	1.9	0.7	0.5	3.0	8.8
Other	Government/semi-government enterprise			18.2		36.4	45.5	100.0
	Other			0.3		0.7	0.8	1.9
Total	Other	11.9	16.7	32.1	4.8	9.5	25.0	100.0
	Total	1.7	2.4	4.6	0.7	1.3	3.5	14.2
Total	Other	15.7	14.8	36.3	8.9	11.5	12.8	100.0
	Total	15.7	14.8	36.3	8.9	11.5	12.8	100.0

**Note:** Business: organizational category \* Business: annual turnover cross-tabulation

Factor	Items	Loadings	a.		b.	
			Expectations Alpha	Mean	Perceptions Alpha	Mean
Reliability	Keeping timely promises	0.853	0.767	5.709	0.890	4.000
	Keeping promises	0.794				
	Dependable	0.773				
	Sympathetic and reassuring	0.657				
	Accurate records	0.558				
Empathy			0.743	4.673	0.860	3.082
	Individual attention	0.783				
	Employees' knowledge of customer needs	0.779				
	Customers' best interest at heart	0.769				
	Personal attention	0.758				
Tangibles	Convenient operating hours	0.483				
			0.805	4.756	0.811	4.393
	Physical facilities appealing	0.851				
	Physical facilities appearance	0.813				
	Employees well dressed and neat	0.729				
Responsiveness	Up-to-date equipment	0.630				
			0.715	4.802	0.799	3.341
	Employees willing to help	0.806				
	Prompt service	0.749				
	Prompt response to requests	0.724				
Assurance	Timing of services	0.399				
			0.824	5.526	0.782	4.413
	Employees trustworthy	0.848				
	Feel safe in transaction	0.814				
	Employees polite	0.606				
	Adequate support for employees <sup>a</sup>	0.251 <sup>a</sup>				

**Notes:** <sup>a</sup> Originally belonging to Reliability with a loading of 0.450 but decided to load to Assurance as per Parasuraman *et al.* (1991) due to high alp; Extraction method: Principal Component Analysis.  $\square$  rotation method: Varimax with Kaiser normalization; a: Rotation converged in six iterations; Rotated component matrix ( $R^2 = 6.7\%$ )

**Table III.**  
Factor analysis: expectations and perceptions of service quality of traditional banking services

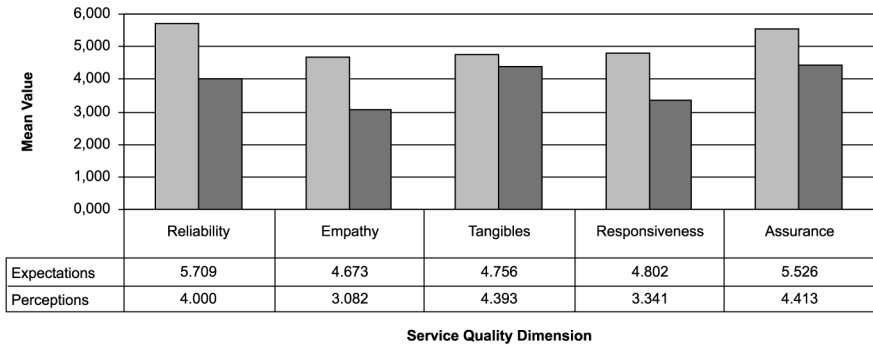
The mean scores for each dimension are also indicated in Table III as well as illustrated graphically in Figure 1. The data shows how businesses rated what they expected and what they perceived in terms of the five service dimensions. Reliability and Assurance were the top two dimensions businesses expected from the bank, while banks were seen to be performing best in terms of Tangibles and Assurance.

### Analysis and discussion

#### *Comparing service quality dimensions with past research*

Comparing the results from the service quality dimensions from this research to that of past research, namely that of Berry and Parasuraman (1991) is useful in gaining insights into how the relative importance of these dimensions to customers have changed through time, and more specifically in the new era of e-banking.

Table IV shows how the expectation ranking of the five service quality dimensions is compared to that of Berry and Parasuraman's (1991) original research. It is seen that



**Figure 1.**  
Service quality:  
expectations and  
perceptions

Service quality dimension	Berry and Parasuraman (1991)	This research	
	Importance rank	Expectations rank	Perceived Perf. rank
Reliability	1	1	3
Responsiveness	2	3	4
Assurance	3	2	1
Empathy	4	5	5
Tangibles	5	4	2

**Table IV.**  
Comparing service  
quality dimensions with  
past research (by rank)

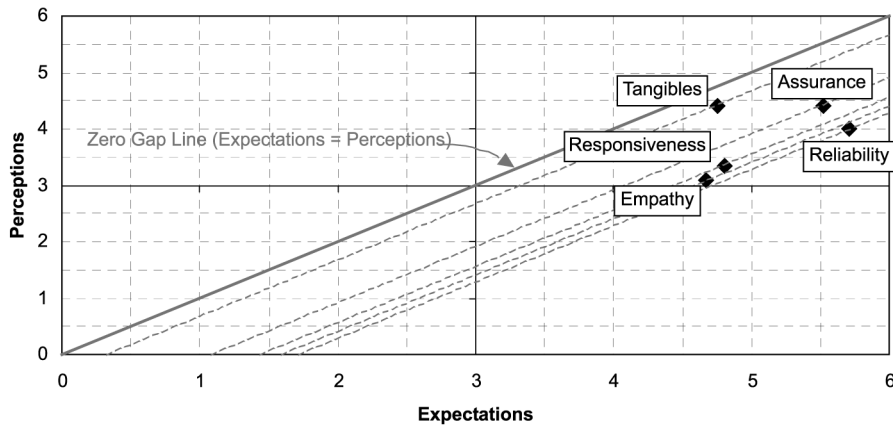
time has brought little change with regards to the relative importance of these service quality dimensions to the customer. Reliability remains to be the top most important aspect of service quality for the customer. Responsiveness has moved down to third place while Assurance has moved up to second place in terms of importance rank. Similarly, Empathy has moved down a rank, while Tangibles has moved up a rank. In each of these shifts, the change is only by one rank.

Comparing the perceived performance ranking with the expectations ranking of this research, however, shows much larger discrepancies. For the top two expectations, only Assurance is perceived to be doing well, while in the bottom two expectations, Tangibles seem to be overrated.

Comparing the differences in service quality expectations and perceived performances merely by rank, however, is inadequate to highlight the true size of these service quality gaps (or the size of the expectation – perception discrepancy). Other tools such as quadrant analysis will be more useful to examine the size of these service quality gaps, which will have implications on how banks are fairing on each dimension, and hence corresponding implications on the bank’s resource allocation strategy to improve its performance on these dimensions. Quadrant analysis was performed on these service quality dimensions adopting a similar approach to Joseph *et al.*’s (2005) work on banking technology.

*Quadrant analysis of service quality dimensions*

Quadrant analysis can be seen as a variation of cross tabulation where responses to two rating scale variables are plotted graphically. This is shown for the service quality dimensions in Figure 2.



**Figure 2.**  
Quadrant analysis of  
service quality dimensions

Here, expectations are plotted along the horizontal axis, while perceptions are plotted along the vertical axis. The Zero Gap Line is shown passing through the origin (0,0), and each of the points where expectations equal perceptions. This line is where the service quality gap is 0, indicating that customers rated their expectations similarly to their perceptions of the bank's performance and are hence satisfied with the service. Points above the zero gap line are where perceptions exceed expectations indicating very satisfied or delighted customers, while points below the line are where perceptions fall short of expectations indicating that the customer is dissatisfied with the service.

In the case at hand, it is shown that all five service quality dimensions fall within the upper right hand quadrant in the matrix. More detailed examination, however, indicate that for all dimensions, perceptions fall short of expectations (all points are below the zero gap line). It has become imperative then not so much to judge within which quadrant the points lie or whether the point is above or below the zero gap line, but rather more importantly how far the point is below the zero gap line.

Results from this analysis then bring about an indication of the service quality gaps that exist for each of these five dimensions. These five dimensions are listed again in order of the size of their corresponding service quality gaps from smallest (least dissatisfied) to biggest (most dissatisfied).

- (1) *Tangibles* – (smallest service quality gap).
- (2) *Assurance* – v.
- (3) *Responsiveness* – v.
- (4) *Empathy* – v
- (5) *Reliability* – (biggest service quality gap).

This shows that banks are performing relatively well in terms of their appearances (tangibles), and in building trust and confidence with their customers (assurance), while relatively poorer in providing prompt service (responsiveness), individualised attention (empathy), and dependability and accuracy (reliability).

Measuring the size of the service quality gaps is important in determining how satisfied or dissatisfied customers are with the bank's service. The question now arises on the bank's resource allocation in dealing with these levels of satisfaction or

dissatisfaction – which of these gaps need to be given attention first, and how much attention.

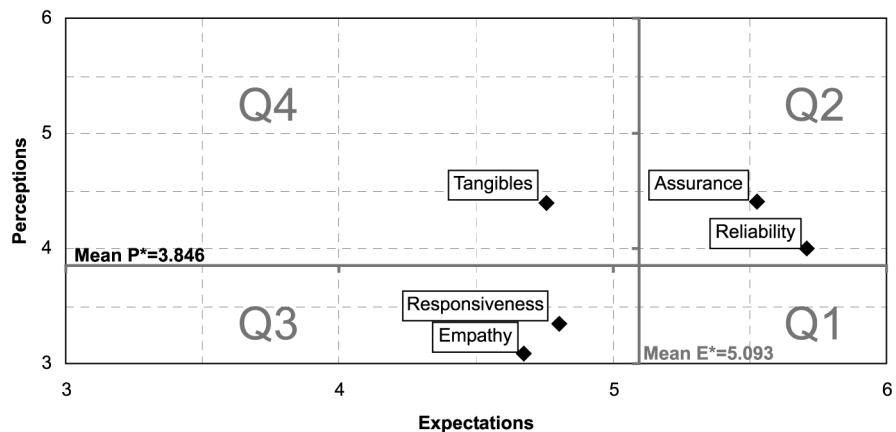
The simple notion is to prioritise resources according to the size of each service quality gap. That is, that the dimensions with the largest service quality gaps should gain the most attention of resources in order to close the gap, while the dimensions with the smallest gaps should be given a lower priority and allocation of resources.

This however is a fallacy as it neglects to analyse the most important aspect of service quality – how important that gap is to the customer. It may be that a large gap exists for a service dimension, but if the overall magnitude of the customer’s expectations is relatively low, that dimension should not receive more attention than another dimension with the same gap but has a higher customer expectation. The latter case should be dealt with more fervently by the bank than the former case.

To account for the differences in magnitude of expectations for the five dimensions of service quality, it is necessary to first calculate the mean ratings for expectations and perceptions across the five service quality dimensions and replot the quadrant analysis matrix with these means as the dividing lines between quadrants in the matrix.

The resulting quadrant analysis shown in Figure 3 now shows each service quality dimension plotted using its difference from the mean expectations and perceptions across all five dimensions. Points in quadrant one (Q1) would indicate a higher than average expectation of the service and a lower than average perception of the same service. Points in Q1 should receive the most attention in closing or minimising the service quality gap. The second priority would be the points that lie within quadrant two (Q2). Points in this quadrant have a higher than average expectation, but also have a higher than average perception. These points should receive second priority in resource allocations needed to further minimise or close the gap and to maintain or improve service quality. Quadrant three (Q3) indicates a lower than average expectation with also a lower than average perception, while quadrant four (Q4) indicate a lower than average expectation but higher than average perception. They should receive third and fourth priorities respectively.

In this analysis, we note that there are no points within Q1, but two points within Q2. These two dimensions of service quality – namely Reliability and Assurance,



**Figure 3.**  
Quadrant analysis of service quality dimensions (using difference from mean)

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should receive the highest priority and most attention from the banks. Despite Assurance having a relatively small service quality gap (as found in the first analysis from Figure 2), the high expectation by customers for the bank to perform well in this dimension makes it an important gap to close. Reliability of the banking service also holds a high expectation from customers, and its relatively larger service quality gap (as found in the first analysis from Figure 2) further accentuates its needed attention.

Responsiveness and Empathy are the next dimensions to be dealt with that fall in Q3. These dimensions should receive lower priority in resource allocation than the dimensions in Q2 described earlier. They have moderately large service quality gaps, but lower than average expectations.

Tangibles should receive the lowest priority in resource allocation as it falls within Q4, where despite still having a small service quality gap, this dimension is characterised by lower than average customer expectations, while being perceived as performing higher than average.

### **Implications and concluding comments**

The results of this study have provided a re-examination of how traditional service quality perceptions have evolved amid the challenges faced by the banking sector brought about by the advancement of e-commerce.

Little has changed with regard to the various dimensions of service quality and their importance to the customer. These findings seem to point to the apparent stability of the revealed factor structure with regard to the validity and robustness of the SERVQUAL measure (similar findings to Ibrahim *et al.*, 2006). This is particularly important noting the concern about the multi-dimensionality and reliability of the SERVQUAL scale (e.g. González *et al.*, 2008). The SERVQUAL scale has withstood the course of time and will remain a popular measure in consonance with González *et al.* (2008).

#### *Managerial implications*

This research has shown that the shift in expectation rankings is minimal and is expected, given the continued importance of human interactions in bank-customer relationships in the new e-banking era. Despite the increasing popularity and acceptance of new banking technologies and the increasing move to an e-banking landscape, these findings continue to support the views of many past scholars (such as Yang and Fang, 2004; O'Donnell *et al.*, 2002; Tyler and Stanley, 2001; Roth and Van der Velde, 1989) that have found that customers, in particular businesses, still have a high preference for human interactions when dealing with their bank. This is an exceedingly valuable proposition in this e-banking era where banks are continuing to erroneously cut costs through the reduction of service staff levels and the streamlining of branch operations.

The comparisons of expectations and perceived performance ratings appeared to have more than modest differences. While the raw comparisons alone may not be statistically robust, they raise the concern for both practitioners and academics alike. These findings reflect Rao and Kelkar (1997) contention that the electronic delivery of such services, have resulted in a continuous increase in customer expectations and the consumer's subsequent demands as the quality of service improves.

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The use of the quadrant analysis served to add more reliability to the discrepancy and the results show that the performance of traditional banking services is misaligned to the current set of customer expectations. This misalignment is the source of dissatisfaction among customers. As stated in Reibstein (2002), e-banking will only be successful if banks can retain existing customers. This study has applied the tools needed to understand and identify the dimensions, identified by customers as determinants of satisfaction and more importantly, allow banks to optimise the use of sometimes scarce resources available to them. As such, it is proposed that banks need to prioritise their resources to focus on key service quality dimensions critical to the customer as well as at the tactical level in devising marketing programs for products such as e-banking. More specifically, banks should focus on improving their service performance on the Reliability and Assurance dimensions of service quality as their first priority. This supports Fassnacht and Köse (2007) study that high electronic service quality in web-based services had an important role in building overall customer trust for the service provider. The dimensions of Responsiveness and Empathy should be served as the second priority, and lastly Tangibles as their third priority. High customer satisfaction will in turn act to increase the effectiveness of marketing effort to increase the adoption of e-commerce innovations like e-banking; thus more fully realising the cost advantages for the bank, an issue that has also been highlighted by other researchers (Hernandez and Mazzon, 2007; Ibrahim *et al.*, 2006).

In summary, this research has focussed on providing a more current examination of the service quality of traditional banking services in an environment where customers are now presented with greater choice on how they choose to interact with their bank. Burke (2002), in stressing that new interactions brought about by the advancement of technology are not separate, but rather act to enhance the overall interaction experience, called for further research to better understand the value consumers place on these different ways of interacting with service providers. This research has answered that call by confirming the value of human interactions. It therefore provides a first step toward investigating other constructs associated with a bank's relationship with its customers and how e-banking products may be more successfully marketed to them. Indeed, it seems that e-banking and traditional banking, though very different in their bases of customer interaction, are inseparable facets of the banking system, and should be seen as complimentary rather than substitutable ways of banking.

#### *Directions for future research*

The findings of this study are limited to the Australian context where the Australian internet maturity is solid (Lichtenstein and Williamson, 2006). It should be replicated in other countries especially those with different levels of development and proliferation of Internet infrastructure, or where the adoption of e-banking has not reached critical mass for various reasons. For example, an emerging economy versus a fully industrialised one may have differing customer expectations of service quality (Pikkarainen *et al.*, 2006; Hernandez and Mazzon, 2007). Further research should also look to examine how different levels of traditional service quality influence the rate of e-banking adoption by the customer. The extent to which high traditional service quality is a necessary antecedent to successful cross-selling of e-banking solutions to customers, and the mediating role of trust and commitment will need to be further investigated. Other questions that need to be answered include how banks should

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respond to the aging population and how other demographic variables influence e-banking usage behaviour and practices? How will these issues affect the perceived quality of traditional bank services and other forms of bank-customer interaction options like e-banking?

## References

- Amato-McCoy, D. (2005), "Creating virtual value", *Bank Systems and Technology*, Vol. 1 No. 22.
- Anderson, E.W., Fornell, C. and Lehmann, D.R. (1994), "Customer satisfaction, market share, and profitability: findings from Sweden", *Journal of Marketing*, Vol. 58, July, pp. 53-66.
- Barwise, P. and Farley, J.U. (2005), "The state of interactive marketing in seven countries: interactive marketing comes of age", *Journal of Interactive Marketing*, Vol. 19 No. 3, pp. 67-80.
- Bauer, H.H., Hammerschmidt, M. and Falk, T. (2005), "Measuring the quality of e-banking portals", *International Journal of Bank Marketing*, Vol. 23 Nos 2/3, p. 153.
- Berry, L.L. and Parasuraman, A. (1991), *Marketing Services: Competing through Quality*, Free Press, New York, NY.
- Bitner, M.J. (1990), "Evaluating service encounters: the effects of physical surroundings and employee responses", *Journal of Marketing*, Vol. 54, April, pp. 69-82.
- Bolton, R.N. and Drew, J.H. (1991), "A multistage model of customer's assessment of service quality and value", *Journal of Consumer Research*, Vol. 17, March, pp. 375-84.
- Boulding, W., Kalra, A. and Staelin, R. (1993), "A dynamic process model of service quality: from expectations to behavioural intentions", *Journal of Marketing Research*, February, pp. 7-27.
- Brodie, R.J., Winklhofer, H., Coviello, N.E. and Johnston, W.J. (2007), "Is e-marketing coming of age? An examination of the penetration of e-marketing and firm performance", *Journal of Interactive Marketing*, Vol. 21 No. 1, pp. 2-21.
- Burke, R.R. (2002), "Technology and the customer interface: what consumers want in the physical and virtual store", *Academy of Marketing Science Journal*, Vol. 30 No. 4, p. 411.
- Chadee, D.D. and Mattsson, J. (1996), "An empirical assessment of customer satisfaction in tourism", *The Service Industries Journal*, Vol. 16 No. 3, pp. 305-20.
- Cronin, J.J. and Taylor, S.A. (1992), "Measuring service quality: a re-examination and extension", *Journal of Marketing*, Vol. 6, pp. 55-68.
- Crosby, L.A. and Stephens, N. (1987), "Effects of relationship marketing on satisfaction, retention, and prices in the life insurance industry", *Journal of Marketing Research*, Vol. 24, November, pp. 404-11.
- Dabholkar, P.A., Shepherd, C.D. and Thorpe, D.I. (2000), "A comprehensive framework for service quality: an investigation of critical conceptual and measurement issues through a longitudinal study", *Journal of Retailing*, Vol. 76 No. 2, pp. 131-9.
- Dabholkar, P.A., Thorpe, D.I. and Rente, J.O. (1996), "A measure of service quality for retail stores: scale development and validation", *Journal of the Academy of Marketing Science*, Vol. 24 No. 1, pp. 3-16.
- Devlin, S.J. and Dong, H.K. (1994), "Service quality from the customer's perspective", *Marketing Research: A Magazine of Management & Applications*, Winter, pp. 4-13.
- Dillman, D.A. (1978), *Mail and Telephone Surveys: The Total Design Method*, John Wiley & Sons, New York, NY.

- Dillman, D.A. (2000), *Mail and Internet Surveys: The Tailored Design Method*, John Wiley & Sons, New York, NY.
- Fassnacht, M. and Köse, I. (2007), "Consequences of web-based service quality: uncovering a multi-faceted chain of effects", *Journal of Interactive Marketing*, Vol. 21 No. 3, p. 35.
- Fornell, C. (1992), "A national customer satisfaction barometer: the Swedish experience", *Journal of Marketing*, Vol. 56, pp. 6-21.
- Fox, S. (2005), "Online banking jumps 47% in 2 years", Pew Internet and American Life project, Washington, DC.
- Fullerton, G. (2005), "How commitment both enables and undermines marketing relationships", *European Journal of Marketing*, Vol. 39 Nos 11/12, p. 1372.
- Gagliano, K.B. and Hatchcote, J. (1994), "Customer expectations and perceptions of service quality in apparel retailing", *Journal of Services Marketing*, Vol. 8 No. 1, pp. 60-9.
- Gan, C., Clemes, M., Limsombunchai, V. and Weng, A. (2006), "A logit analysis of electronic banking in New Zealand", *International Journal of Bank Marketing*, Vol. 24 No. 6, p. 360.
- González, M.E., Dentiste, M.R. and Rhonda, M.W. (2008), "An alternative approach in service quality: an e-banking case study", *The Quality Management Journal*, Vol. 15 No. 1, p. 41.
- Gotlieb, J.B., Grewal, D. and Brown, S.W. (1994), "Consumer satisfaction and perceived quality: complementary or divergent constructs?", *Journal of Applied Psychology*, Vol. 79 No. 6, pp. 875-85.
- Grönroos, C. (1984), "A service quality model and its marketing implications", *European Journal of Marketing*, Vol. 18 No. 3, pp. 36-44.
- Halstead, D. and Page, T.J.J. (1992), "The effects of satisfaction and complaining behaviour on consumers' repurchase behaviour", *Journal of Satisfaction, Dissatisfaction, and Complaining Behaviour*, Vol. 5, pp. 1-11.
- Hennig-Thurau, T. and Alexander, K. (1997), "The impact on customer satisfaction and relationship quality on customer retention: a critical reassessment and model development", *Psychology and Marketing*, Vol. 14 No. 8, pp. 737-64.
- Hernandez, J.M. and Mazzon, J.A. (2007), "Adoption of internet banking: proposition and implementation of an integrated methodology approach", *International Journal of Bank Marketing*, Vol. 25 No. 2, p. 72.
- Howcroft, J.B. and Durkin, M. (2000), "Reflections on bank-customer interactions in the new millennium", *Journal of Financial Services Marketing*, Vol. 5 No. 1, pp. 9-20.
- Hughes, T.J. (2002), "Marketing principles in the application of e-commerce", *Qualitative Market Research*, Vol. 5 No. 4, p. 252.
- Ibrahim, E.E., Joseph, M. and Ibeh, K.I.N. (2006), "Customers' perception of electronic service delivery in the UK retail banking sector", *International Journal of Bank Marketing*, Vol. 24 No. 7, p. 475.
- Joseph, M., Sekhon, Y., Stone, G. and Tinson, J. (2005), "An exploratory study on the use of banking technology in the UK: a ranking of importance of selected technology on consumer perception of service delivery performance", *International Journal of Bank Marketing*, Vol. 23 Nos 4/5, p. 397.
- Lichtenstein, S. and Williamson, K. (2006), "Understanding consumer adoption of internet banking: an interpretive study in the Australian banking context", *Journal of Electronic Commerce Research*, Vol. 7 No. 2, p. 50.

- McKenna, R. (1992), "Relationship marketing", *Executive Excellence*, Vol. 9, pp. 7-8.
- Mattsson, J. (1992), "A service quality model based upon ideal value standard", *Journal of Service Industry Management*, Vol. 3 No. 3, pp. 18-33.
- O'Donnell, A., Durkin, M.G. and McCartan-Quinn, D. (2002), "Corporate banking in the UK: personal vs remote interaction", *International Journal of Bank Marketing*, Vol. 20 No. 6, p. 273.
- Oliver, R.L. (1989), "Processing of the satisfaction response in consumption: a suggested framework and research propositions", *Journal of Satisfaction, Dissatisfaction, and Complaining Behaviour*, Vol. 2, pp. 1-16.
- Oliver, R.L. (1993), "A conceptual model of service quality and service satisfaction: compatible goals, different concepts", in Swartz, T.A., Bowen, D.E. and Brown, S.W. (Eds), *Advances in Services Marketing and Management*, Vol. 2, JAI Press, Greenwich, CT, pp. 65-85.
- Orr, B. (1998), "Where will internet banking be in two years?", *ABA Banking Journal*, Vol. 90 No. 3, pp. 56-7.
- Parasuraman, A., Berry, L. and Zeithaml, V. (1991), "Refinement and reassessment of the SERVQUAL scale", *Journal of Retailing*, Vol. 67 No. 4, pp. 420-50.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, Vol. 49 No. 3, pp. 41-50.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.
- Parasuraman, A., Zeithaml, V. and Malhotra, A. (2005), "E-S-QUAL: a multiple-item scale for assessing electronic service quality", *Journal of Service Research*, Vol. 7 No. 3, pp. 213-33.
- Patricio, L., Fisk, R.P. and Cunha, J.F. (2003), "Improving satisfaction with bank service offerings: measuring the contribution of each delivery channel", *Managing Service Quality*, Vol. 13 No. 6, p. 471.
- Pikkarainen, K., Pikkarainen, T., Karjaluoto, H. and Pahnla, S. (2006), "The measurement of end-user computing satisfaction of online banking services: empirical evidence from Finland", *International Journal of Bank Marketing*, Vol. 24 Nos 2/3, p. 158.
- Rao, C.P. and Kelkar, M.M. (1997), "Relative impact of performance and importance ratings on measurement of service quality", *Journal of Professional Services Marketing*, Vol. 15 No. 2, pp. 69-86.
- Reibstein, D.J. (2002), "What attracts customers to online stores and what keeps them coming back?", *Journal of the Academy of Marketing Science*, Vol. 30 No. 4, pp. 465-75.
- Roth, A.V. and Van der Velde, M. (1989), "Investing in retail delivery system technology", *Journal of Retail Banking*, Vol. 11 No. 2, pp. 23-34.
- Ruyter, K. and Bloemer, J. (1999), "Customer loyalty in extended service settings: the interaction between satisfaction, value attainment and positive mood", *International Journal of Service Industry Management*, Vol. 10 No. 3, pp. 320-36.
- Saleh, F. and Ryan, C. (1992), "Analysing service quality in the hospitality industry using the SERVQUAL model", *Services Industries Journal*, Vol. 11 No. 3, pp. 324-43.
- Schaggnit, T. (1998), "Business by bytes", *Ivey Business Quarterly*, Vol. 62 No. 4, pp. 32-7.
- Schneiderman, B. (1992), *Designing the User Interface: Strategies for Effective Human Computer Interaction*, 2nd ed., Addison-Wesley, Reading, MA.

- Seth, N., Deshmukh, S.G. and Vrat, P. (2005), "Service quality models: a review", *International Journal of Quality & Reliability Management*, Vol. 22 No. 9, pp. 913-49.
- Shamdasani, P., Mukherjee, A. and Malhotra, N. (2008), "Antecedents and consequences of service quality in consumer evaluation of self-service internet technologies", *The Service Industries Journal*, Vol. 28 No. 1, p. 117.
- Spreng, R.A. and Mackoy, R.D. (1996), "An empirical examination of a model of perceived service quality and satisfaction", *Journal of Retailing*, Vol. 72 No. 2, pp. 201-14.
- Tam, J.L.M. and Wong, Y.H. (2001), "Interactive selling: a dynamic framework for services", *Journal of Services Marketing*, Vol. 15 Nos 4/5, p. 379.
- Taylor, S.A. and Baker, T.L. (1994), "An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions", *Journal of Retailing*, Vol. 70 No. 2, pp. 163-78.
- Tyler, K. and Stanley, E. (2001), "Corporate banking: the strategic impact of boundary spanner effectiveness", *International Journal of Bank Marketing*, Vol. 19 No. 6, pp. 246-60.
- Westbrook, R.A. (1981), "Sources of satisfaction with retail outlets", *Journal of Retailing*, Vol. 57, Fall, pp. 68-85.
- Yang, Z. and Fang, X. (2004), "Online service quality dimensions and their relationships with satisfaction: a content analysis of customer reviews of securities brokerage services", *International Journal of Service Industry Management*, Vol. 15 Nos 3/4, p. 302.
- Yang, Z. and Jun, M. (2002), "Consumer perception of e-service quality: from internet purchaser and non-purchaser perspectives", *Journal of Business Strategies*, Vol. 19 No. 1, pp. 19-41.
- Zeithaml, V., Parasuraman, A. and Malhotra, A. (2000), "e-Service quality: definition, dimensions and conceptual model", working paper, Marketing Science Institute, Cambridge, MA.
- Zeithaml, V.A., Parasuraman, A. and Malhotra, A. (2001), "A conceptual framework for understanding e-service quality: implications for future research and managerial practice", MSI Working Paper Series, No. 00-115, Cambridge, MA, pp. 1-49.
- Zeithaml, V.A., Parasuraman, A. and Malhotra, A. (2002), "Service quality delivery through web sites: a critical review of extant knowledge", *Journal of the Academy of Marketing Science*, Vol. 30 No. 4, pp. 362-75.

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