# CUSTOMER SATISFACTION AND SERVICE QUALITY IN UK FINANCIAL SERVICES

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# CUSTOMER SATISFACTION AND SERVICE QUALITY IN UK FINANCIAL SERVICES

## ABSTRACT

This paper reports the results of a longitudinal study into the drivers of customer satisfaction in a large UK Bank. The findings confirm the significance of staff satisfaction and service quality, suggested by the service profit chain literature, but dispute that this comprises a simple linear relationship. The findings also question the pre-eminence afforded to the soft elements of the service encounter suggested by much of the Services Marketing literature. A five year study of the relationship between customer satisfaction and the technical and functional aspects of service quality suggests that technical service quality plays a critical role in determining customer satisfaction. Further analysis identifies Business Processes Management as a significant driver of technical service quality.

**Key Words:**

Service Quality; Business Process Management; Financial Services

## INTRODUCTION

Satisfying customers is a core business challenge which has attracted considerable research attention. The existing customer satisfaction literature is dominated by two theoretical perspectives: the service profit chain (Heskett et al, 1994) and SERVQUAL (Parasuranam, Zeithmal & Berry, 1985). In brief, the service profit

chain posits a positive relationship between staff satisfaction, service quality and customer satisfaction leading, ultimately, to profitability. SERVQUAL also recognises the significance of staff satisfaction and service quality as drivers of customer satisfaction. However, SERVQUAL differentiates the service quality construct distinguishing between functional service quality (doing things nicely) and technical service quality (doing things right). Priority is afforded to functional service quality.

Recently, there have been a number of challenges to these perspectives. For example, researchers have questioned the adequacy of the simple linear relationship proposed by the service profit chain (Anderson & Mittal, 2000). Similarly, the priority afforded to functional service quality by the SERVQUAL literature has been disputed (Newman, 2001). Meanwhile the emerging Business Process Management (BPM) literature also challenges the prevailing orthodoxy by predicating an alignment between processes and service delivery as critical to customer satisfaction (Armistead, Pritchard and Machin, 1999).

The research reported in this paper extends this debate by synthesising and empirically testing the key variables and relationships proposed in the current literature. Quantitative and qualitative data from a longitudinal case study of a large UK bank is used to address two key research objectives:

1. To evaluate the drivers of customer satisfaction, specifically to assess the relative impact of technical and functional service quality

2. To explore the drivers of technical service quality, specifically to assess the impact of BPM on technical service quality

The paper begins with a more detailed examination of the literature leading to the development of six propositions for testing. Collectively, the propositions embrace the key relationships expressed in current theory, supporting the first research objective. They also enable a more detailed investigation into the role of process management as a potential driver of customer satisfaction, supporting the second research objective.

The methodology used to test the propositions is outlined, and a detailed research design is presented. An initial series of correlations are presented which cast doubt on some of the traditional linkages. This prompts further detailed regression analysis. These quantitative findings are triangulated through a systematic analysis of company literature and interviews with a range of Bank personnel. The limitations of the research are considered and conclusions are presented.

**LITERATURE**

Providing excellent service quality is widely recognised as a critical business requirement (Voss et al, 2004; Vilares & Coehlo, 2003; Van der Weile et al, 2002). It is 'not just a corporate offering, but a competitive weapon' (Rosen et al, 2003) which is 'essential to corporate profitability and survival' (Newman & Cowling, 1996). However, service quality, particularly within the Services sector, remains a complex

concept and there is little consensus as to the drivers for effective delivery (Voss et al, 2004; Johnston, 1995).

The service profit chain, first proposed by Heskett et al (1994), provides one of the most powerful and widely supported perspectives on this issue. Within the service profit chain, service quality is driven, primarily, by employee satisfaction, which, in turn is influenced by HR practices. The overall chain sees service quality driving customer satisfaction, which creates customer loyalty leading to growth and profit. The original propositions were based on research in 20 large service organisations and subsequent research has broadly supported the proposed linkages (Loveman, 1998; Rucci et al, 1998;  Brooks, 2000;  Anderson & Mittal, 2000).

The specific relationship between employee satisfaction, service quality and customer satisfaction has been the subject of a number of empirical studies.  The relationship is often described as the 'satisfaction mirror' reinforcing the idea that business success results from employee satisfaction being 'reflected' in terms of customer satisfaction (Schlesinger & Heskett, 1991; Norman & Ramirez, 1993; Liedtka et al, 1997). Whilst Silvestro and Cross (2000) cast some doubts on the strength of the relationship, the balance of evidence suggests that employee satisfaction is a key driver of service quality. Voss et al (2004[1]), for example, find that 'employee satisfaction directly affects both service quality and customer satisfaction', whilst Vilares and Coehlo (2003) are so convinced about the fit that they recommend changes to one of the existing customer satisfaction indexes (ECSI) to recognise the 'cause and effect relationship between employee behaviour and customer satisfaction'.

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The SERVQUAL literature, on the other hand, takes a rather different perspective on service quality. Parasuranam, Zeithmal & Berry (1985), the originators of SERVQUAL, argue that much of the confusion surrounding the service quality concept has its legacy in the dominance of traditional manufacturing definitions of quality which are not appropriate in the service context. Services are different to goods in three critical dimensions:

- Services are *intangible*; as such they are more akin to performances rather than objects
- Services are *heterogeneous*; delivery can vary from provider to provider and customer to customer
- Production and consumption of Services are *inseparable*. Services are not 'manufactured' remotely and then delivered intact to the customer.

As a result of these differences, service quality is more difficult for the customer to evaluate than goods quality. Evaluations are not based solely on the outcome of the service, the technical quality, they also involve the process of service delivery or functional quality (Gronroos, 1984)

These distinctions enabled Parasuranam, Zeithmal & Berry (1985) to develop an instrument for measuring Service quality, SERVQUAL, which has subsequently dominated both academic and practitioner perspectives (Buttle, 1996; Robinson, 1999). SERVQUAL measures perceptions of service quality across five dimensions: tangibles; reliability; responsiveness; assurance and empathy. A 22 item scale assesses the gap between customers' expectations of the service and their perception of the

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actual service received. Positive scores show better than expected service; negative

scores suggest poor service. An overall service quality score can be calculated based

on average performance across the five dimensions, although later versions include

weightings to reflect the relative importance which customers may attach to each

dimension. SERVQUAL has been subject to a number of criticisms including the

theoretical base of the disconfirmation model (Cronin and Taylor, 1992), the

dimensionality (Babakus and Boller, 1992), the purpose (Cronin and Taylor, 1992),

the format (Teas, 1993) and validity (Buttle, 1996). Nevertheless, it remains the most

widely applied measure of service quality today (Sivadas & Baker-Prewitt, 2000).

Indeed Woodall (2001) considers that 'service quality has effectively *become*

SERVQUAL and vice versa.'

Recently, a number of researchers have begun to question the priority afforded to the

softer factors in the SERVQUAL analysis.

For example, Johnston (1995) accepts that customers are concerned with many

aspects of the service package and broadly supports the SERVQUAL approach, albeit

with some changes to the particular dimensions. However, he argues that fully

understanding service quality requires a distinction to be made between satisfiers and

dis-satisfiers. Both these constructs inform the customer evaluation. Critically, the

failure to remove the source of dis-satisfiers may be more significant than efforts to

enhance the satisfiers. He uses the example of the popular 'smile' campaigns which,

when implemented without addressing fundamental sources of dis-satisfaction such as

extended cycle times, and failure to meet promises, often lead to customer cynicism.

Such thinking builds upon the ideas of Kano et al (1984) who identified three types of customer requirements: 'must be'; 'one dimensional' and 'attractive'. 'Must be' requirements are simply taken for granted by the customer. Failing to meet these types of requirements will guarantee dis-satisfaction. With 'one dimensional' requirements, customer satisfaction is proportional to the level of fulfilment. 'Attractive' requirements provide the greatest opportunity to 'delight' the customer. Other researchers have adopted the terminology of 'hygiene factors'; 'enhancing factors' and 'dual threshold factors' (Lewis, 1995).

Anderson & Mittal (2000) have modelled the satisfaction relationship in terms of asymmetry and non linearity. Asymmetry recognises that changes to the drivers of satisfaction will not influence actual satisfaction equally, both in terms of direction and size. For example, a one day extension in delivery time may have a greater negative impact, than the positive impact arising from a one day improvement. Non linearity reflects the idea that there may be diminishing returns from progressive units of improvement. A reduction in delivery time from 10 days to eight days may have a greater impact than a subsequent reduction to six days.

Newman's analysis of a SERVQUAL implementation in a large UK Bank reinforces the idea that 'delivering the promise' is critical to service quality (Newman, 2001). Whilst the SERVQUAL focus on 'soft' issues such as empathy and assurance, resonate strongly with the Service marketing community, his findings suggest that effective delivery on hard factors is a necessary pre-condition for overall service quality. 'Where hard quality, especially reliability of service delivery, is low, then 'soft' quality cannot compensate'. Similarly, Lassar et al (2000) in a study of Private

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Banking customers, find a much stronger relationship between technical quality and satisfaction than functional quality and satisfaction.

Woodall (2001) argues that SERVQUAL has so captured the imagination that it has led researchers to over emphasise the functional or soft aspects of service quality at the expense of the technical or hard issues. He cites Keaveney's (1995) study which found that core service failures were the biggest cause of service switching. 'A zero defects philosophy to deliver technically correct services every time should be effective in reducing customer defections.'

The recognition that hard factors are critical to service quality has led some researchers to explore what determines performance on these dimensions. Here, process management seems to play an important role. Roth & Jackson (1995), in an investigation into the strategic determinants of service quality, find that business process management has a significant impact on service quality. Indeed, they report that 'business process capabilities had a larger impact on service quality than did people capabilities' and conclude that 'the area of robust business process capabilities requires greater scrutiny in service management'.

Frei et al (1997) take up this challenge. Using data from a large sample of American Banks, they analysed amongst other issues, the relationship between process performance and customer satisfaction. Their findings suggest that consistent process performance is critical to customer satisfaction. Moreover, banks with good, consistent processes, enjoy higher financial performance. Critically, it is the performance of the overall 'basket' of processes, rather than performance of one or

two individual processes, which determines satisfaction levels. Subsequent research by Tsikriktsis & Heineke (2004) reinforces the importance of effective process performance in driving service quality. Their analysis of customer dis-satisfaction data in the US Airline industry leads them to conclude that 'reduction of customer dis-satisfaction depends upon improvement in process quality.' Woodall (2001) argues that an increasing number of companies are focusing on process management in order to ensure effective performance on hard quality dimensions. He cites the recent explosion of Six Sigma initiatives as evidence that companies are taking dis-satisfaction seriously and suggests that the emphasis within Six Sigma on defect free processes is seen as a welcome balance to the prevailing focus on softer attributes.

Such thinking resonates with a growing body of literature exploring the re-birth of process management. Following the widely reported demise of Business Process Re-engineering, a number of authors are now reporting cases where companies are re-visiting process, albeit from a different perspective. McCormack & Johnson (2001) for example, find that processes are now viewed as 'strategic assets', which require companies to 'take a business process orientation'. Processes are considered 'a generic factor in all organisations. They are the way things get done' (Armistead, Pritchard and Machin, 1999). Process is not simply the 'management fad' of re-engineering, but a more pervasive issue, requiring serious attention. 'Process thinking has become mainstream' (Grover, Kettinger, Teng, 2000).

This new focus on processes is predicated on the view that it is the horizontal linkages between key activities that impact the customer (Zairi, 1997). Managing these 'end to end' processes is an ongoing requirement if a company is to meet customer

requirements. Process capabilities and execution determine critical aspects of the customer encounter such as speed, accuracy etc. Performance on these dimensions form an important part of the customer evaluation of service. Business Process Management (BPM) is a new phenomenon and there is little empirical evidence to support this key assumption.

In summary, three main bodies of research are found to be relevant to an exploration of the drivers of customer satisfaction: the service profit chain, including the satisfaction mirror, SERVQUAL and BPM. Whilst there is some common ground across these areas of research, each one posits a specific set of relationships. Figure 1 below illustrates these relationships.

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INSERT FIGURE 1 HERE

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The service profit chain proposes a direct causal relationship between staff satisfaction, service quality and customer satisfaction. Within the service profit chain literature, the satisfaction mirror simplifies this relationship suggesting that staff satisfaction is a direct driver of customer satisfaction.

The SERVQUAL literature differentiates the service quality construct into functional and technical service quality, suggesting that functional service quality is the critical driver. There is little discussion regarding potential antecedents to these two constructs; the role of staff satisfaction as a potential driver of both types of service quality is often assumed and rarely disputed within this literature stream.

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Finally, The BPM literature proposes a positive relationship between process management and customer satisfaction. Here, some authors suggest a link to technical service quality.

The research objectives, outlined earlier, seek to clarify conflicts identified by the literature review and to address gaps in current knowledge. Whilst there is a broad consensus that staff satisfaction is a significant driver of customer satisfaction, and that both technical service quality and functional service quality are also important, there is some dispute surrounding the relative significance of technical service quality and functional service quality. The first research objective addresses this debate.

Meanwhile, the BPM literature proposes a positive relationship between process management and customer satisfaction. However, BPM is an emerging subject and there is little empirical evidence to support this position. In particular, the authors are not aware of a specific study into the relationship between BPM and technical service quality. The second research objective addresses this gap.

**METHOD**

The relationships identified through the literature review were synthesised and the resultant framework was used to generate a number of propositions for empirical testing (Figure 2 below).

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INSERT FIGURE 2 HERE

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Six propositions were derived from the framework, reflecting the key relationships articulated within the main literature streams.

*P1 Customer satisfaction is positively correlated with staff satisfaction.*

*P2: Customer satisfaction is positively correlated with functional service quality*

*P3: Customer satisfaction is positively correlated with technical service quality*

*P4: Functional service quality is positively correlated with staff satisfaction*

*P5: Technical service quality is positively correlated with staff satisfaction*

*P6: Technical service quality is positively correlated with BPM*

The causal links expressed in the service profit chain are reflected in the first 5 propositions. The relationship between service quality and customer satisfaction is captured by propositions two and three. The relationship between staff satisfaction and service quality is captured by propositions four and five. As noted earlier, within the service profit chain, the satisfaction mirror posits a direct relationship between staff satisfaction and customer satisfaction and this is captured in proposition one. Propositions two and three also reflect the relationships expressed in the SERVQUAL literature between both forms of service quality and customer satisfaction. Collectively, these propositions support the first research objective (repeated for convenience):

1. To evaluate the drivers of customer satisfaction, specifically to assess the relative impact of technical and functional service quality

The BPM literature suggests that process management impacts technical service quality (proposition six), which in turn impacts customer satisfaction (proposition three). These propositions support the second research objective (repeated for convenience):

2. To explore the drivers of technical service quality, specifically to assess the impact of BPM on technical service quality

Figure 3 below illustrates the relationships between the literature, the propositions and the two research objectives.

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A longitudinal case approach was considered suitable to examine this subject which embraces both theory testing (objective 1) and theory development (objective 2).
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BPM is an emerging phenomenon and case methods are particularly powerful in the development of new theory, (Yin, 1994, Stuart et al, 2002). They allow the phenomenon to be studied in its natural setting; enable the how and why questions to be addressed and support explorations of complex issues where the variables may be unknown (Benbasat et al, 1987). Case methods have also been used effectively in theory testing for example Pagell and Krause (1999) and Boyer and McDermott (1999). Here the use of multiple methods can enhance validity (Voss et al, 2002).

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Critically, the case approach facilitates the use of longitudinal data. Much of the current research into service quality and customer satisfaction has relied upon cross sectional data which reports relationships at a single point in time. Voss et al (2002) are among a growing body of researchers who call for more longitudinal analysis to 'clarify the relationship between cause and effect.'

A large UK Financial Services company was approached and agreed to support the research. The Financial Services sector dominates the modern business landscape yet remains relatively unexplored (Narasimhan & Jayaram, 1998). Compared with the manufacturing environment, there is little theoretical insight to support practitioners (Slack et al, 2004). Changes in the Financial Services sector, including deregulation, increasing competition and new technology have led to a 'gradual shift in strategic focus from price to service quality' (Frei et al, 1997). Indeed customer satisfaction is now seen as an important strategic differentiator (Newman, 2001). As such the sector offers an active and fertile environment to explore customer satisfaction and service quality issues.

The Financial Services sector also provides a useful environment for the application of case methods. Generalisability of findings represents a key challenge for case research, particularly where evidence is presented from a single case. However, the UK Financial Services sector is dominated by a small number of large companies. The Cruikshank report[1], for example, found that the largest four Financial Services companies provided 68% of current accounts and 61% of credit cards. Moreover these companies typically operate a Bancassurance model providing investment, mortgage

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[1] Review of Banking Services, published by HM Treasury, March 2000

and insurance products in addition to basic banking facilities, thus extending their impact right across the FS market. In this context, a detailed analysis of one of these large companies may be seen as offering an insight into the sector as a whole.

The selected company had experienced significant variation in service quality performance, following a series of mergers and acquisitions in the late 1990's and had introduced an extensive BPM programme to address perceived Service weaknesses. A wide range of long term, robust statistical data was available in respect of the major constructs. In addition, the company provided access to key personnel and documents, thus enabling qualitative triangulation of the quantitative data. Again this is considered an important requirement to enhance the validity of single case analysis.

**Research Design**

Initial interviews were held to establish available data sources and to support the development of an appropriate framework for data collection and analysis. At the same time consideration was given to operationalising the five key conceptual constructs: customer satisfaction; functional service quality; technical service quality; staff satisfaction and BPM.

A number of factors emerged to inform the design of the framework. A wide range of statistical data was available. As expected, data items, frequency, scope and sample size varied over time. The data was examined in light of general quality requirements and, in particular, in regard to common weaknesses highlighted by Heskett et al (1994) in their pioneering work on the service profit chain. These included the lack of

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consistency often found in customer research, the failure to use external agencies and inadequate sample sizes. They cite Xerox's use of an unchanging set of survey questions issued to 10,000 customers a month as a positive approach

To maximise the useable data, whilst ensuring consistency, a framework was created based on quarterly performance over a five year period from January 2000, to December 2004. Some data items were only available from interviews and documentary records. Specific details are given below.

**Data Sources**

In 1999, the company had engaged an experienced third party research company to collect and analyse a variety of customer data on their behalf. Collection and analysis protocols were consistently applied over a five year period from January 2000 to December 2004. Results were based on a monthly sample of around15,000 telephone interviews with customers. All customers were asked five questions:

1. Overall, how satisfied are you with the company?
2. To what extent do staff understand your needs?
3. How easy is it for you to contact us?
4. To what extent do you feel we are putting your interests first?
5. Do staff have the expertise to do the best possible job for you?

Measured on a five point scale, response choices ranged from 1 (did not) to 5 (fully met). Results were analysed to provide a monthly score for each item expressed within the range 0-100.

During this period, the company also carried out extensive research into staff satisfaction again using a third party provider, ISR, who are recognised as leaders in this activity. All Business Units carried out a minimum of one annual staff satisfaction survey involving the total population. Quarterly supplementary surveys were also held across many Business Units, based on statistically robust samples. Whilst there were a number of changes to the full question set over the period, all surveys included a single question in respect of overall satisfaction with the company. Again responses were collected using a Likert scale and results expressed within a range 0-100.

A wide range of service performance data was routinely generated. Monthly volumes of complaints were captured and reported consistently by type throughout the five year period. Adherence to various service levels were also monitored, for example, call waiting times, branch queuing times and time to delivery for consumables such as replacement credit cards and cheque books. However, these items were not reported in a consistent manner over the five year period, reflecting ongoing changes to organisational structures, products, standards and perceived customer issues and operational priorities.

For example, during this period there were significant changes to the telephony operating model, with the introduction of a dedicated telephony channel, followed by

the wholesale centralisation of branch telephony. Service level reporting reflected the changes both in terms of the services monitored and the standards to be achieved.

The company had launched a BPM programme in 2000. The programme involved developing and implementing an extensive process infrastructure including the creation of a process architecture, the introduction of dedicated process owner teams, and end to end process measurement and improvement. Details of this programme have been previously reported. (Maddern, Maull, Smart, 2003, 2004) Whilst some implementation key milestones were established and reported regarding the process infrastructure, BPM itself was viewed as an ongoing journey. Process experts were available to assess performance levels throughout the period. Process performance statistics, generated through a Six Sigma measurement programme launched in 2003, provided additional data.

**Key Constructs & Operational Definitions**

**Customer Satisfaction**

Most researchers recognise that customer satisfaction is a distinct construct from service quality, with service quality generally viewed as an antecedent to customer satisfaction (Robinson, 1999, Voss et al 2004).

For this research, a single item measure was used to operationalise the concept of Customer Satisfaction, in line with the approach taken by Voss et al (2004). This measure was extracted from the customer research described above in which a

random sample of 15,000 customers a month were asked about their overall level of satisfaction with the company.

**Service Quality: Functional & Technical Quality**

Whilst the conceptual separation of functional and technical service quality proposed by Gronroos (1984) has been widely supported, Kang & James (2004), highlight the difficulties faced when trying to operationalise these constructs. They note that some researchers have used SERVQUAL to measure functional quality (Powpaka, 1996, Richard & Allaway, 1993). However, two of the five items within SERVQUAL, reliability and tangibles, do not seem to fully align with the original concept of Functional Quality as outlined by Gronroos. These two deal more with outcomes of the service rather than the experience of the service itself.

For this research, a multi item measure was used for Functional Quality, drawing upon the four remaining questions asked in the monthly customer research. These were:

1. staff understanding of customers and their needs
2. accessibility
3. putting customers first
4. staff expertise

These aspects of services quality resonate with the relevant elements of SERVQUAL. For example, staff understanding of customers and their needs has an obvious overlap

with the SERVQUAL category (empathy). They also accord with the interpretations offered by Armistead (1990) regarding the 'soft' determinants of quality eg style (attitude of staff, accessibility of staff and ambience); steering (the degree to which customers feel in control of their own destiny) and safety (trust, security and confidentiality) and Lassar et al's (2000) measures of functional quality including competence, availability, responsiveness and trustworthiness.

Kang & James (2004) also note that technical quality measurement has typically been carried out using qualitative methods (Brady & Cronin, 2001). As such, few operational definitions have been developed. Indeed, the lack of attention to technical quality 'requires that researchers develop their own measures to assess the dimension'.

Technical service quality addresses the outcomes of service delivery. In this context, Operational measures seem relevant. Consideration was given to developing a consolidated measurement construct based upon a variety of Operational metrics. However, such multi construct items are vulnerable, particularly where the data is constructed from disparate time periods. To overcome this, a single item measure of technical service quality was created through volumes of complaints, data for which was available throughout the period. Fitting a simple linear relationship suggests that the number of complaints would reach zero for a certain finite level of quality beyond which, in theory, there could be negative complaints. It also suggests that for zero quality there is a finite level of complaints and that quality can go negative. Fitting the reciprocal of complaints helps to overcome this problem. The measure was correlated

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with a range of Operational data for various time periods and Business Units to provide convergent validity (Peter, 1981).

**Staff Satisfaction**

Staff satisfaction was operationalised using a single item measure with the question descriptor 'How satisfied are you with the company?' Data was extracted from existing company surveys.

**BPM**

A single item measure was used to operationalise the state of Business Process Management over the relevant time period. Previous research (Maddern, Maull & Smart, 2004) had identified five key criteria for assessing process management in terms of quality and deployment. Results for these criteria were generated through a facilitated workshop with ten process experts. To support discussion and ensure a common understanding, a time line of key events was created and validated against company documentation. Each criteria was scored using a Likert scale from 1 to 5 (strongly disagree to strongly agree), creating a total score in the range 0-100 for each time period. There was considerable consensus across many of the individual scores which reflect specific changes such as the launch of process owner teams or the introduction of Six Sigma measurement.

**FINDINGS**

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Table 1 below show the quarterly results over a five year period for each of the key

constructs. For completeness, the original complaints data is shown, together with the

reciprocal of this data which was used in subsequent analyses. Details of the BPM

workshop and supporting operational measurement used to validate the Technical

service quality results are given in the Appendices.


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A preliminary analysis was carried out to establish the Pearson coefficients for each

proposition. Details are given in Figure 4 below


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These results provided support to the following propositions:


*P1 Customer satisfaction is positively correlated with staff satisfaction.*

*P3: Customer satisfaction is positively correlated with technical service quality*

*P5: Technical service quality is positively correlated with staff satisfaction*

*P6: Technical service quality is positively correlated with BPM*

However, the results cast doubt on the following propositions:

*P2: Customer satisfaction is positively correlated with functional service quality*

*P4: Functional service quality is positively correlated with staff satisfaction*

Correlations are a relatively unsophisticated analytical tool, and the research sought to explore the relationships more fully using regression analyses. The objective was to develop a statistically robust model which could explain as much of the variation in customer satisfaction as possible, using the relevant theoretical constructs.

The correlation data suggested that technical service quality and staff satisfaction were the critical constructs and a regression equation was calculated based on these elements. The results are shown in Table 2 below.

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Adjusted $R^2$ 61.3%

In searching for a fuller explanation of customer satisfaction (CS) we also tested for the relationship with functional service quality (FSQ). The rationale for this lies principally in the extensive literature supporting the relationship between FSQ and CS. The results are shown in Table 3, below

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Adjusted $R^2$ 79.3%

Durbin-Watson statistic = 1.36


It is always important in time series data to check for serial correlation. The Durbin

Watson (DW) statistic does not reject H0 that there is no serial correlation; however

we are tentative about the conclusion because the test statistic falls within the DW

uncertain range. We used the estimated residuals from the fitted equation and to these

residuals fitted an auto-regressive model of order 1, AR (1) by maximum likelihood

methods. This yielded a result where the co-efficient was 0.198, the asymptotic "t"

was 0.80 with a p value of 0.437. The implication to be drawn from this supports the

argument that there is no serial correlation in the error term.


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The results provide strong evidence of the fit of the model.

These results are clearly interesting. The correlation tests suggest an insignificant relationship between FSQ and CS, yet there is a strong relationship shown in the regression. Our interpretation is that in the original regression equation only 61% of the variance is explained by the two independent variables. In other words, there is a large error term. Putting FSQ into the equation helps to explain the variance contained in the error, and contributes to the understanding of customer satisfaction. We now have an equation that accounts for nearly 80% of the variation in customer satisfaction.

In light of these results we decided to conduct some further tests on the data to analyse whether FSQ was particularly important under certain conditions. In light of the work reported earlier (Johnston, 1995; Anderson & Mittal, 2000), we investigated the data to look for a trigger point in technical service quality (TSQ). We used a grid search technique to find the minimum point on the sum of squares error (SSE). Despite running numerous tests on the data we found no statistically valid breakpoint. However we do recognise the limited dataset and we would suggest that further data points may provide the basis for a substantial investigation.

The next point of analysis was to look at the drivers for TSQ. We looked at the relationship between TSQ, staff satisfaction (SS) and BPM. The following results were obtained.

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Adjusted R$^2$ 67%

Only BPM is significant in this relationship, indicating that it is the driver for changes in TSQ.

The findings were discussed with a number of process experts and senior managers within the company and triangulated through a range of secondary data such as presentations, minutes, internal magazines etc. The qualitative data strongly reinforced the quantitative findings.

Staff emphasised the requirement to deliver on their operational promises. '*To the customer, we are as good as our processes, and they only see us by the way in which our processes interact with the customer and so you can either take the view that I'm just going to let it happen haphazardly and hope that something arrives for the customer that's good, or I'm going to take a much more conscious decision, I'm going to actively monitor measure and improve my processes so that whenever anything hits a customer, I understand the performance of that and I'm doing things all the time to make it better.*'

These views were echoed by senior management in a range of company literature throughout the five year period. For example, the Director of Group Operations, in a Conference report from 2000, notes that '*Our processes define customer service. In*

*this Internet age customers can see right into our business. There's no smiling face between them and the heart of our operations.'* In the same report, the IT and Operations Director outlines the consequences of poor process management for both staff and customers. *'If the process is a pig, smiling front line staff are simply lipstick on the pig.'*

The May 2002 issue of the in-house change management magazine, Project Matters, sees a call for *'a more balanced approach to strategic change management, with the business process and its impact on the customer at the centre of any proposed change. In future our business analysis must be process driven in order to improve customer service.'*

Later that year, Pulse, the company IT magazine, highlights the need for good process management when reporting the success of the Group IT Customer Experiences initiative. *'If we think there is a step in the process that is out of line, we send that item to the relevant Process Owner Team. It's a natural home as it is the POT's responsibility for delivery of end to end, seamless processes…When it comes to putting customer service first, this initiative shows that we are committed to really making a difference.'* The need for effective processes is also highlighted by the Director of Customer Services, in the January 2003 edition of Frontrunner, a company magazine distributed to all members of staff. *'We have worked hard in 2002 to improve systems and processes and this focus on <u>getting the basics right</u> has seen the number of complaints fall by more than50 per cent.'*

In 2004, the CEO announced three key strategic goals, including 'flawless execution' and 'the creation of a high performance organisation'. The Summer 2004 edition of Perspectives, a magazine circulated to the management population, highlights the role of process management in delivering these goals. *'Improving customer service through the flawless execution of our processes involves everyone across the Bank.'*

At the same time, staff recognised that delivering customer service was a complex issue. Kano et al's (1984) distinction between 'hygiene' factors and 'delights' resonated with a number of respondents. *'How well your processes perform will add value to your bottom line, but, there is a caveat to that .. if a customer comes into a branch.. but wasn't greeted with a smile, called by a name, all the if you like the personal touch, the humanistic side, of the overall experience, then you can still really severely impact your customer service. So processes can only go so far.'*

**Discussion**

The first research objective sought to evaluate the drivers of customer satisfaction. Our findings provide support to only some of the linkages expressed in the service profit chain. The results of the multiple regression show that staff satisfaction and both components of service quality are significant factors in determining Customer Satisfaction. However, the simple, linear linkage between staff satisfaction, service quality and customer satisfaction is challenged. Our data does not support this generally accepted relationship. We have no evidence to suggest what does drive functional service quality (FSQ) however the linkage expressed in this analysis is statistically insignificant.

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The second regression goes on to show the importance of the linkage between FSQ and CS with the caveat that SS and FSQ are not correlated. This lack of correlation and the subsequent significance of FSQ in the second regression equation suggests an orthogonal relationship in explaining the variance in CS. In other words they are both significant but independent of one another. This is an important finding requiring much further investigation using longitudinal data sources.

The second research objective explored the drivers of technical service quality. Here, our findings suggest that effective management of processes is critical to technical service quality, which in turn contributes, significantly, to customer satisfaction.

Both the quantitative and qualitative data suggest that, first and foremost, companies must deliver on their operational promises to ensure customer satisfaction. No matter how friendly and informed front line staff may be, they cannot compensate for poor operational performance.

These results together lead us to question the traditional priority afforded to functional service quality over technical service quality suggested by much of the SERVQUAL literature. We suggest that at the very least TSQ is as important as FSQ in determining customer satisfaction. Yet, there is relatively little evidence in the literature which points to the importance of managing TSQ. We have gone further and pointed to the linkage between BPM and TSQ as the driver for this explanatory variable.

**Limitations**

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As with all empirical research, there are a number of limitations. The study has responded to two demands from the Operations Management research community: a recognition that robust longitudinal data is required to support the more prevalent cross sectional analyses and a desire for a greater understanding of sectors beyond the traditional manufacturing base. Nevertheless, the findings are based on a single case, within a specific, fast changing sector and further research is welcomed.

Operationalising the key constructs and developing relevant performance measures is both critical and challenging in this form of research. Two of the constructs, customer satisfaction and staff satisfaction, are based on direct, specific questions supported by very large and frequent samples. Similarly, data for functional service quality is based on large samples, although the theoretical base and the use of a multi-item scale could be further developed. Measuring technical service quality is particularly challenging, given the limited amount of existing research and operational definitions. Here, the authors have favoured consistency over depth and variety. Business Process Management is the most vulnerable measurement. The theoretical model and evaluation criteria are the product of a parallel research stream which has had limited exposure. The use of documentary evidence to inform and validate local process expertise provides a pragmatic and repeatable method for assessing the state of process management, but further research would be required to confirm these exploratory findings.

**Conclusions**

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Customer satisfaction is a critical business requirement. Much of the research into the drivers of customer satisfaction has been based upon cross sectional analysis at a single point in time. Our research has explored the drivers of customer satisfaction over a five year period. The findings reinforce much of the existing literature in that staff satisfaction and service quality are found to be key drivers of customer satisfaction. However, the findings cast doubt on the simple, linear relationship between staff satisfaction, service quality and customer satisfaction suggested by the service profit chain. At the same time, the findings question the priority afforded to functional service quality suggested by the SERVQUAL literature. Rather, the results echo the findings of both Newman (2001) and Johnston (1995) by recognising the importance of technical service quality in driving customer satisfaction levels. Exploring this relationship further, the research goes on to postulate a linkage between Business Process Management and technical service quality first suggested by Frei et al. (1997). This seems an important factor and one which has enjoyed little research attention. If, as these findings suggest, customers perceive companies to be 'only as good as their processes' a far greater understanding of the nature of BPM and its relationship with customers satisfaction is required.

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## Appendix 1:  Technical service quality data

## Correlations between service level performance and levels of complaints (TSQ)

Service level achievement

Group Operations Jan 02 - Sep 04

| Period | % SLA achieved | TSQ |
|---|---|---|
| q1 2002 | 0.604651 | 0.000166 |
| q2 2002 | 0.665733 | 0.000222 |
| q3 2002 | 0.703515 | 0.000247 |
| q4 2002 | 0.777778 | 0.000308 |
| q1 2003 | 0.790724 | 0.000286 |
| q2 2003 | 0.739130 | 0.000269 |
| q3 2003 | 0.848039 | 0.000300 |
| q4 2003 | 0.848701 | 0.000288 |
| q1 2004 | 0.925803 | 0.000288 |
| q2 2004 | 0.905096 | 0.000273 |
| q3 2004 | 0.920875 | 0.000293 |

Correlation        0.79

Service level achievement

Branch Queuing - Jan 00-Dec 02

| Period | % SLA achieved | TSQ |
|---|---|---|
| q1 2001 | 65.30 | 0.000183 |
| q2 2001 | 63.83 | 0.000154 |
| q3 2001 | 62.43 | 0.000124 |
| q4 2001 | 63.20 | 0.000144 |
| q1 2002 | 66.80 | 0.000166 |
| q2 2002 | 68.97 | 0.000222 |
| q3 2002 | 68.53 | 0.000247 |
| q4 2002 | 68.80 | 0.000308 |

Correlation    0.871402

**Appendix 2: Business Process Management Assessment**

| | Strategy | | | Architecture | | | Ownership | | | Measurement | | | Improvement | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Infra structure | Deployment | TOTAL | Infra structure | Deployment | TOTAL | Infra structure | Deployment | TOTAL | Infra structure | Deployment | TOTAL | Infra structure | Deployment | TOTAL | TOTAL |
| **2000-Q1** | 3 | 2 | 6 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 2 | 6 | 3 | 2 | 6 | **36** |
| **2000-Q2** | 3 | 2 | 6 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 2 | 6 | **39** |
| **2000-Q3** | 3 | 3 | 9 | 4 | 3 | 12 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 3 | 9 | **48** |
| **2000-Q4** | 3 | 3 | 9 | 4 | 3 | 12 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 3 | 9 | **48** |
| **2001-Q1** | 3 | 3 | 9 | 4 | 3 | 12 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 3 | 9 | **48** |
| **2001-Q2** | 3 | 3 | 9 | 4 | 3 | 12 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 3 | 9 | **48** |
| **2001-Q3** | 3 | 3 | 9 | 4 | 3 | 12 | 3 | 2 | 6 | 3 | 3 | 9 | 3 | 3 | 9 | **45** |
| **2001-Q4** | 4 | 3 | 12 | 4 | 3 | 12 | 3 | 2 | 6 | 3 | 3 | 9 | 3 | 3 | 9 | **48** |
| **2002-Q1** | 4 | 3 | 12 | 4 | 3 | 12 | 3 | 3 | 9 | 3 | 3 | 9 | 3 | 3 | 9 | **51** |
| **2002-Q2** | 4 | 3 | 12 | 4 | 4 | 16 | 5 | 3 | 15 | 5 | 3 | 15 | 3 | 3 | 9 | **67** |
| **2002-Q3** | 4 | 3 | 12 | 4 | 4 | 16 | 5 | 3 | 15 | 5 | 3 | 15 | 3 | 3 | 9 | **67** |
| **2002-Q4** | 4 | 4 | 16 | 4 | 4 | 16 | 5 | 4 | 20 | 5 | 3 | 15 | 3 | 3 | 9 | **76** |
| **2003-Q1** | 4 | 4 | 16 | 4 | 4 | 16 | 5 | 4 | 20 | 5 | 3 | 15 | 4 | 3 | 12 | **79** |
| **2003-Q2** | 4 | 4 | 16 | 4 | 4 | 16 | 5 | 4 | 20 | 5 | 3 | 15 | 4 | 3 | 12 | **79** |
| **2003-Q3** | 4 | 4 | 16 | 4 | 3 | 12 | 5 | 4 | 20 | 5 | 4 | 20 | 4 | 3 | 12 | **80** |
| **2003-Q4** | 4 | 4 | 16 | 3 | 3 | 9 | 5 | 4 | 20 | 5 | 4 | 20 | 5 | 3 | 15 | **80** |
| **2004-Q1** | 3 | 4 | 12 | 3 | 3 | 9 | 5 | 4 | 20 | 5 | 5 | 25 | 5 | 3 | 15 | **81** |
| **2004-Q2** | 3 | 4 | 12 | 3 | 3 | 9 | 5 | 4 | 20 | 5 | 5 | 25 | 5 | 3 | 15 | **81** |
| **2004-Q3** | 3 | 4 | 12 | 3 | 3 | 9 | 5 | 4 | 20 | 5 | 5 | 25 | 5 | 4 | 20 | **86** |
| **2004-Q4** | 3 | 4 | 12 | 3 | 3 | 9 | 5 | 4 | 20 | 5 | 5 | 25 | 5 | 4 | 20 | **86** |

**Appendix 3: Business Process Management – Summary Time Line**

| | Strategy | Architecture | Ownership | Measurement | Improvement |
|---|---|---|---|---|---|
| 2000-Q1 | | | | | |
| 2000-Q2 | Launch of Process Design Authority | | | | |
| 2000-Q3 | | Development of initial Enterprise Framework | Launch of 5 Enterprise POTs | | Development of Process Improvement method |
| 2000-Q4 | | Processes mapped /IDEF0 | | Measurement pilot | POT Quick Wins |
| 2001-Q1 | | Process Repository | | | |
| 2001-Q2 | Launch of Intranet Site | Introduction of Process Governance | | | Lending POT reports 43% reduction in complaints |
| 2001-Q3 | Group Process Forum launched | Detailed process definitions published | | | |
| 2001-Q4 | New CEO attends launch of UKRB POTs | | Launch of 14 UKRB POTs | | 100 quick win opportunities reported |
| 2002-Q1 | | IT, HR, Audit use  EF | Full Time Process Owners | 1st dashboard (PPs) | |
| 2002-Q2 | | | Full Time resource allocated | | |
| 2002-Q3 | | Review of software launched | | | |
| 2002-Q4 | | | | 17 dashboards in place | |
| 2003-Q1 | Group Sigma reporting | ARIS as new software | POTs recognised as integral | | Improvement targets |
| 2003-Q2 | | ARIS training launched | | | |
| 2003-Q3 | | | | | |
| 2003-Q4 | | | | 34 dashboards in place | £3m benefits: defects reduced from 300k to 90k |
| 2004-Q1 | PDA restructured – focus on Six Sigma | | POTs created for 'sub processes' | | Sigma training launched |
| 2004-Q2 | Distribution take ownership of some POTS | | | | |
| 2004-Q3 | Waste reduction programme launched | ARIS dropped as Bank Standard | | 39 processes measured | |
| 2004-Q4 | Customer Experience Teams launched | | | 98% of customer touches measured | 160 projects ongoing 650 staff trained |