FACILITIES MANAGEMENT

Refereed Paper

FM SERVICE QUALITY INDICATORS - BENEFITTING SUPPLIER AND CUSTOMER

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ABSTRACT

The main objective of the Service Quality Indicator research project is to identify more objective service quality indicators that are important to service productivity, consequently leading to improved service delivery and higher customer satisfaction, and ultimately increased profitability for both suppliers and receivers of FM services.

The research will focus on cleaning, catering and security, and answer the following:
- What quality dimensions are important for supplier performance?
- What quality dimensions are important for customer satisfaction?
- Which quality dimensions are beneficial to both supplier and customer?

Answering these questions will involve three steps. Firstly, in order to make quality a measured output of service productivity, supplier perceptions on various service quality variables are to be compared with their business performance. Secondly, in order to make quality a measured output customer satisfaction, customer perceptions and expectations on the same quality variables are to be captured. Finally, by combining the outcomes of the first two steps, we can derive mutual beneficial service quality indicators.

The expected results from the research in progress, based on the current findings include: a gap between supplier and customer perceived service quality - as what is beneficial to the supplier is not always beneficial to the customer; the service quality variables will be different for each of the services reviewed - cleaning, catering and security; and the expected overlap between the service quality variables can lead to improved service delivery - the front of house service is one example of this issue.

Keywords: **Facilities Management, Service quality, Supplier performance, Customer satisfaction, Productivity analysis**

1 INTRODUCTION AND OBJECTIVES

While quality's significance for a firm's competitive position in the marketplace has been emphasised for years, the contribution of quality to business performance has been largely unexplored and the gap between supplier and customer perceived quality is still to be closed. Therefore it is important to examine whether and how quality affects supplier profitability as well as how it affects customer satisfaction. The problem with services however, is that especially the qualitative outputs of the productivity equation are intangible. Contrary to manufacturing, where it is relatively easy to measure for example the conformance of an end-product, much of the quality in services is in the eye of the customer. Subsequently, data on service quality is to be obtained through the customer and by observations of the process and/or the results.

Within the UK business support services sector, outsourced services continue to expand within both the public and private sector. Within the public sector Central Government guidelines on competitive tendering and Private Finance Initiatives are key drivers for outsourcing. Within the private sector the drivers include: reducing fixed costs, increasing labour flexibility, and securing scarce skill resources. Most recently the UK investment banks have identified facility management as a significant business activity within the support services sector. Their reports outline the key players and their performance within the £150 billion support services market sector in the UK. The support services sector in general attracts investors because it has outperformed the FTSE all-share index by 29% over the last few years. This economic growth is described from various perspectives. These sector reports describe various facets of the facility management market depending upon the particular emphasis such as; outsourced services (Deutsche Bank, 2001), total facilities management (Deutsche Bank, 2003), or infrastructure services (Foster, 2001). For the financial community, facility management is a significant part of the support services sector. By taking these support services out of the organisation's direct control the issue of service quality becomes a more complex issue to manage. In addition, the emphasis in the management literature is predominantly one based on a manufacturing perspective. This manufacturing perspective excludes the unique nature of many services not least of which is the importance of the customer in the service process as co-producer. It is service quality from a service management perspective that is being addressed in this research. Within the UK market this is an increasingly important topic to both the public and private sector as they pass control over to suppliers within these areas. Those most often outsourced are cleaning, catering and security and these are the focus of this particular research into service quality.

1.1 DEFINING SERVICE QUALITY
Although supplier strategies and customer decisions are still extensively driven by price, service quality variables such as reliability and reputation are believed to become more and more important. The focus of research therefore will be on service quality and to simplify the discussion, we will lump all non-price attributes into the single dimension called 'service quality' - any attribute that increases the demand for that service at a fixed price[1].

1.2 RESEARCH FOCUS AND QUESTIONS
The research will focus on cleaning, catering and security, and answer the following:
- What quality dimensions are important for supplier performance?
- What quality dimensions are important for customer satisfaction?
- Which quality dimensions are beneficial to both supplier and customer?

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1.3   RESEARCH OBJECTIVES
Ultimately, the outcome of the research should lead to:
More objective service quality indicators, consequently leading to:
- Improved service delivery
- Higher customer satisfaction
- Increased profitability for both supplier and customer

2   THE SERVICE PRODUCTIVITY CONCEPT

While productivity measures for manufacturing are widely understood and used, productivity measures specific for services have developed more slowly (Mills *et al.*, 1983). This slower development of productivity measures for services has been attributed to intangibility (Drucker, 1974), labour intensity (Flipo, 1988) and complexity (Schmenner, 1986). Ignoring these characteristics, productivity management in the service industry has for too long been dominated by the logic of manufacturing (which is less complex, less labour intensive and less intangible). While comparing productivity between service and manufacturing operations, one of the basic claims has been that the special characteristics of services demand a more holistic approach including a customer-orientation to productivity (e.g. Grönroos, 2000).

2.1   CONCEPTUAL UNDERPINNINGS
Because the current debate on service productivity is in its infancy, we must start by elucidating the conceptual underpinnings of productivity. First we have to decide what we are trying to capture before making any attempt to measure, and a meaningful definition of productivity has to keep the concept analytically distinct from related concepts like effectiveness and efficiency (Veld, 1998 and Vuorinen *et al.*, 1998).

Organisational effectiveness
The classic criterion to evaluate the functioning of an organisation is effectiveness. Effectiveness refers to what extent the actual result (output in quality and quantity) corresponds to the aimed result. It is expressed as the following equation:

$$\frac{\text{actual result (output in quantity and quality)}}{\text{aimed result (output in quantity and quality)}}$$

Note that the closer the actual result approaches the beforehand-aimed result, the more the effectiveness of an organization increases. If the actual result is better or more than the aimed result, the transformation process has a so-called 'overshoot'. If the actual result is worse or less than the aimed result, it has an 'undershoot'. In both cases the organisation is not optimally effective.

Organisational efficiency
During the first half of the 20th century, efficiency became more and more important. Efficiency refers to the ratio between the aimed resource use (input in people and means) and the actual resource use, in order to transform an input to an output. A formal definition is:

$$\frac{\text{aimed resource use (input in quantity and quality)}}{\text{actual resource use (input in quantity and quality)}}$$

According to this definition, the efficiency of an organisation increases, as the actual resource use is lower than the aimed resource use. Therefore, to increase organisational efficiency, it is important to reduce the use of resources as much as possible.

Organisational productivity
Increasing prosperity led to a new criterion for organisational focus: productivity. Productivity refers to the ratio between the actual result of the transformation process and the actual resource use. A proper definition is[2]:

actual result (output in quantity and quality)
actual resource use (input in quantity and quality)

Based on this definition, we can conclude that the organisational productivity is optimal when an organisation produces as great a result as possible at the lowest possible resource use. However, a so-called 'overshoot' or 'undershoot' is still not desirable. So at the level of an organisation as a whole, we can optimise the productivity through steering at efficiency, thus by reducing the actual resource use as much as possible (van Ree, 2002).

2.2 QUANTITY AND QUALITY ASPECTS
Although many authors still regard productivity and quality as separate concepts (e.g. Heskett *et al.*, 1994), several researchers (e.g. Grönroos, 2000) argue that quality and productivity cannot be dealt with separately in the case of services. Consequently, there seems to be a growing need for a thorough analysis of the productivity concept in the context of services.

Quantity aspects
Regarding the quantity aspects of service productivity, the input factors of services are the same means of production as in manufacturing: people and means. Owing to the labour-intensiveness of service production, labour is key input to productivity as salaries, commissions and social expenses can account for more than 80 per cent of operating costs. The output of the quantity dimension in services can be based on service volume - to be increased by selling a larger variety of services to the existing customers or attracting new customer segments.

Quality aspects
The quality aspect is a dimension that is difficult to define objectively. In the case of manufacturing products, the quality dimension has usually been operationalised as conformance to specifications and as actual product performance. However, this notion of quality has been regarded as inadequate in the case of services. The input of the quality dimension is depending on employee expertise and skills and to certain extends the facilities. The output of the quality dimension in services can be based on customer satisfaction.
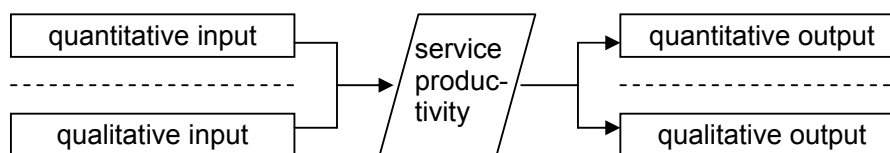

Figure 1   The content of service productivity (Vuorinen *et al.*, 1998)

It is important to recognise that the way customers perceive service and how service delivery is organised cannot be considered in isolation from each other. Most elements of the quantity and quality dimensions of service productivity are interrelated. And although difficult to analyse each element one by one in logical order, it is important to understand the elements constituting a whole.

2.3   THE SERVICE PROFIT CHAIN

The widely accepted service profit chain establishes the links between profitability, external service value and internal service quality. In the service profit chain, service quality plays a dominant - not to say vital - role. There are seven fundamental propositions that form the links of the chain (Heskett *et al.* (1994, 1997): customer loyalty drives profitability and growth; customer satisfaction drives customer loyalty; value drives customer satisfaction; employee productivity drives value; employee loyalty drives productivity; employee satisfaction drives loyalty, and internal quality drives employee satisfaction.
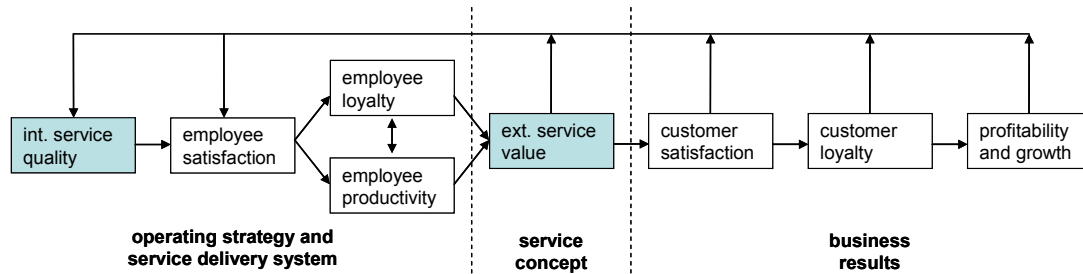

Figure 2   The service profit chain (Heskett *et al.*, 1994)

As stated before, the way customers perceive service and how service delivery is organised are not to be considered in isolation form each other. By combining the chains of supplier and customer, we find that external service value in the supplier chain becomes part of the internal service quality in the customer chain. In addition, employee satisfaction in the customer chain becomes part of customer satisfaction in the supplier chain.
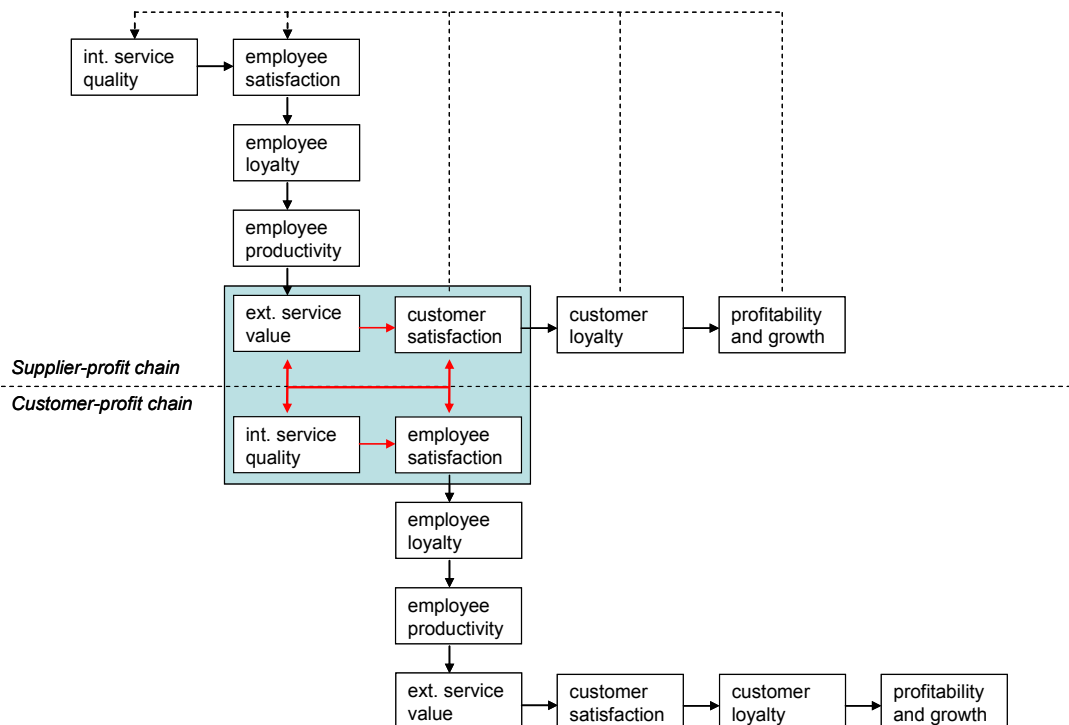

Figure 3   Focus of the research is on the discrepancies at the meeting point of both chains

On the supplier side, high-quality FM services have the potential to improve customer satisfaction and loyalty, leading to winning market share, enhancing sales and barriers to entry. On the client side, high-quality FM services have the potential to consecutively improve employee satisfaction, loyalty and productivity, ultimately leading to profitability and growth.

3   THE VALUE ADDING FACILITIES CONCEPT

Stiffening competition, caused by an increasingly turbulent contextual and transactional environment, forces many organisations to re-examine every way in which they can improve their performance. As a substantial part of the resources used during the transformation from input to output within office-based organisations, facilities can have a significant impact on organisational performance (van Ree, 2002).

3.1   EFFICIENCY AND EFFECTIVENESS

Currently there are approximately 7 million workers are employed in office buildings across the United Kingdom; this is over 25 percent of the active labour force (www.statistics.gov.uk, 2005). The primary process in office-based organisations consists of receiving (input), generating, interpreting, processing, editing, managing (transformation), and providing (output) information (Wentink and Zanders, 1985). In this process the actual transformation is established through co-ordinated interaction between the production factors: people and means.

If an organisation is guided by profitability, the transformation process should be effective as well as efficient at the same time. If this is the case, we can speak of a fruitful or productive process. As a substantial part of the resources used during the transformation from input to output within office-based organisations, facilities (accommodation, services and resources, Information Technology and Facilities Management) can have a significant impact on organisational performance.

Nowadays, there are two important approaches in which facilities can contribute to organisational performance:

(1) Achieving greater efficiency - by reducing total facilities costs; and
(2) Achieving greater effectiveness - by optimally supporting employee productivity

In order to maximise the cumulative impact of both approaches, and to avoid a negative impact of one approach on the other, a transparent decision support structure with clear definitions is desirable.

3.2   THE ADDED VALUE OF FACILITIES

Being part of the resources used during the transformation from input to output, facilities can influence organisational efficiency and therefore organisational productivity. By relating the accommodation to the organisational performance criteria, we can tell something about its quality.

Effective facilities
Given the fact that the main goal of facilities are to support the productivity of the accommodated individuals, and that effectiveness refers to the ratio between actual and aimed result or output, a proper definition of effective accommodation is:

$$\frac{\text{actual contribution to individual productivity}}{\text{aimed contribution to individual productivity:}}$$

Note that, contrary to organisational effectiveness, the effectiveness of facilities increases if the actual contribution to the individual productivity exceeds the aimed contribution. Although this is a so-called 'overshoot', it is contributing to the organisational efficiency because the number of people needed in the transformation process from input to output could be reduced. However, if the actual contribution turns out to be lower than the aimed contribution, we have to deal with an 'undershoot' - the facilities are not optimally effective. Besides that, it might turn out that more people are needed to feed the transformation process, which has a negative impact on organisational efficiency.

Efficient facilities
As stated before, efficiency is the ratio between the aimed resource use and the actual resource used, in order to transform an input to an output. From this point of view we can consider the facilities as a part of the total resource use. A formal definition is:

$$\frac{\text{aimed occupancy cost}}{\text{actual occupancy cost}}$$

As in the definition of organisational efficiency, the efficiency of the facilities increases if the actual occupancy costs are lower than the aimed occupancy costs. So the actual occupancy costs should be reduced as much as possible to create optimal efficiency. Increasing the efficiency of the facilities however can harm its' effectiveness. By approaching facilities from a productive point of view, we can prevent this.

Productive facilities
As stated before, productivity refers to the ratio between effectiveness and efficiency. According to the definitions of effective and efficient facilities, we can define productive facilities as:

$$\frac{\text{actual contribution to individual productivity}}{\text{actual occupancy cost:}}$$

Based on this definition we can state that facilities become optimally productive when the contribution to the individual productivity is as high as possible at the lowest possible occupancy costs. Its productivity also increases when the individual productivity increases with the same occupancy costs, or when the occupancy costs decrease at the same level of individual productivity. More important, by approaching facilities from a productive point of view, we gain insight into the impact of efficiency on effectiveness and vice versa, thus making it controllable.

3.3   FROM THEORY TO PRACTICE

The average running costs of a workplace in an office building, including operation and maintenance, are slightly over £6,400 per year. The yearly costs of labour, including benefits, are around £44,000 per FTE. Together with the costs of Information Technology (£3,570), the total annual cost of an office employee averages £64,000. If an organisation is guided by profitability, an employee should bring in at least 1.5 times his or her annual costs, which equals £95,000 (see Figure 4).
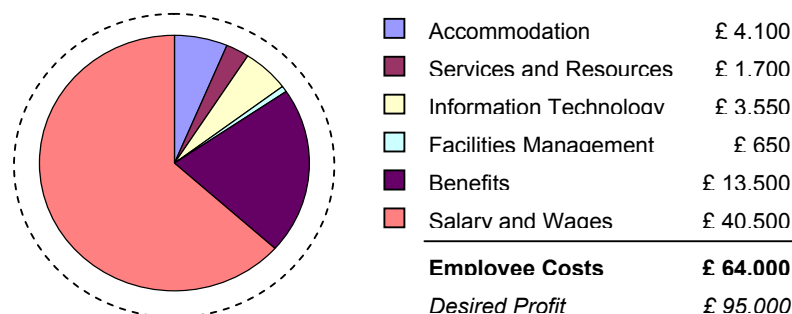

Accommodation	£ 4.100
Services and Resources	£ 1.700
Information Technology	£ 3.550
Facilities Management	£ 650
Benefits	£ 13.500
Salary and Wages	£ 40.500
Employee Costs	**£ 64.000**
Desired Profit	*£ 95.000*

Figure 4   The annual costs and desired profit of an average white-collar employee in the UK

Based on Figure 4, the services and resources of an organisation can be made more efficient by looking for possibilities to reduce the £1,700 a year spent on them. More effective services and resources means optimally supporting employee productivity, which corresponds with increasing the £95,000 desired profit per employee. The problem, however, is that focusing on the efficiency might have a negative impact on the effectiveness of these services and vice versa. Therefore, the focus should be on establishing productive service delivery.

Due to the fact that the £95,000 corresponding to the desired profit is much higher than the £1,700 spent on services and resources, the most intelligent way to make them more productive is to focus on doing more with a proportionately smaller increase in resources consumed. Following this reasoning, an over-investment of even 10 percent on service and resources, equalising £170, will already be cost-justified if employee productivity increases just 0.2 per cent, which is less then half a day of labour per year or 1 minute per day.

The biggest contribution to total organisational performance however, can be made if we are able to make service delivery more efficient and effective at the same time.

4   CLASSIFICATION FOR MEASUREMENT PURPOSES

Productivity measures express relationships between the outcomes or outputs of services processes and the resources or inputs required to operate them. Having appropriate definitions of outputs and inputs is critical to meaningful productivity analysis. Without the right specifications of inputs and outputs derived from careful process analysis and matched with the right measurement techniques productivity measurement in services cannot succeed (McLaughlin and Coffey, 1990).

4.1   MEASUREMENT PROBLEMS
Both the quantitative and the qualitative input and output indicators for a service delivery process must be quantifiable if service productivity is to be measured. The problem with services however is that most of the qualitative inputs and outputs are intangible - and the intangible aspects of service delivery processes - depending on consumer involvement and customisation[3] - make productivity measurement difficult (Gadrey, 1988).

Contrary to manufacturing, where it is relatively easy to measure for example the conformance or durability of an end-product, much of the end-product quality in services is in the eye of the customer (customer perceived quality). Subsequently, data on service quality is to be obtained through the customer or by observations of the process and/or the results. Research on customer perceptions of services would enable us to capture more of quality in an output, ensuring that the attributes being measured are closely linked to customer desires. Moreover, services have many directly observable attributes in terms of waiting time and speed of delivery, physical characteristics (e.g. cleanliness, temperature and colour), expertise, courtesy, etc.

All in all, intangibility should not be a reason to avoid productivity analysis, but form a challenge to 'tangibilise' the intangibles or to establish proxies. In order to measure the right things right, we must first identify the productivity measures available for services and develop a classification scheme for facility services and resources in order to determine which measurement approach is appropriate for which service.

4.2   CURRENT PRODUCTIVITY MEASURES
Currently, a variety of productivity measures are available for services (McLaughlin and Coffey, 1990). Derived from traditional manufacturing, methods such as output-input ratios

and work measurement methods are available. The problem however, is that output-input ratios are frequently criticised for their narrowness and that work measurement methods are most appropriate to services where the outputs and inputs are simple.

Within the aggregate comparative methods, the most commonly used measures are statistical comparisons and deterministic models. Although already more useful for service productivity analysis, statistical comparisons require a rather large numbers of units are required for statistical significance, and deterministic models (e.g. Data Envelopment Analysis) are better suited to diagnosis than to control.

Among other methods we find practice variation studies and quality plus techniques, of which the latter seems the most interesting, because it attempts to make quality a measured output of the service. The Service Assessment Matrix (SAM) is one interesting approach developed to incorporate aspects of quality into service productivity measurement. In this approach potentially 'productive' service quality criteria are linked to more traditional productivity measures (e.g. output/input ratios) through a matrix to test interrelations.

4.3   CLASSIFICATION OF FM SERVICES

Customer involvement and customisation have often been cited as key characteristics of services. A number of authors have suggested them as the classification variables for services (Schmenner, 1986; Chase, 1981; Maister and Lovelock, 1982). Using those two dimensions, the measurability of service quality decreases when customer involvement and/or customisation increases. Service quality of services with high customer involvement and high customisation is hardly measurable. Here quality enhancement or improvement ask for commitment from the people involved (attitude) and their relation (interaction), which is depending on a constructive dialogue between contractor and client (Vinkenburg, 1995).

In the research to be performed we will focus on cleaning, catering and security. The main reason for this focus is that productivity measurement on these services is relatively easy due to low customer involvement and low customisation. A second reason is that these services are daily experienced by the customer and therefore have a relatively high impact on total perceived facility service quality.

5   FM SERVICE QUALITY CASE STUDIES

As in manufacturing, good process analysis precedes good productivity analysis: one has to have a clear picture of the service process itself before undertaking any productivity measurement.

5.1   PROCEDURE FOR SERVICE PRODUCTIVITY ANALYSIS

With a classification scheme and knowledge of available measurement techniques in hand, we can consider how one can go about tackling productivity issues in services. We suggest the following (after McLaughlin and Coffey, 1990):
1. First of all, one should specify the reason for investigating service productivity.
2. Then analyse the service delivery system in place and decompose it into its process steps/stages.
3. Next specify the service characteristics that are of strategic importance at each service process step/stage.
4. Then specify quantitative inputs (and measures), qualitative inputs (and measures or proxies), quantitative outputs (and measures), qualitative outputs (and measures or proxies), as well as limits of trade-offs.
5. Select the methods of productivity measurement which seems most appropriate to the analytical objectives.

Besides the suggested steps it is important to involve implementers[4] all along the way - not least because staff acceptance of any proposed productivity measures is critical to their ability to enhance productivity.

5.2   CASE STUDIES

As stated before, quality's significance for a firm's competitive position in the marketplace has been emphasised for years, but the contribution of quality to business performance has been largely unexplored and the gap between supplier and customer perceived quality is still to be closed. Examining whether and how quality affects firm performance is an important issue for businesses, both on the supply and the demand side.

The case studies will focus on cleaning, catering and security. Customer perceptions on these services will be captured through surveying employees of the Royal Bank of Scotland. Supplier perceptions on cleaning will be obtained through interviewing Lancaster Cleaning and Mowlem Pall Mall. Perceptions on catering will be captured by interviews at Compass Group and perceptions on security by interviews at Group 4 Securicor. To obtain larger numbers for statistical significance, market surveys within the cleaning, catering and security market are to be held.

The Service Quality Indicator project started in August 2005 and will be disseminated according plan in spring 2006. The research is a joint effort between the Workplace Innovation Centre (University College London) and Group Property (Royal Bank of Scotland) as well as Lancaster Cleaning, Mowlem Pall Mall, Compass Group and Group 4 Securicor.

5.3   RESEARCH METHODS

By using quality plus techniques (Service Assessment Matrix), quality can become a measured output of the service delivery process. Incorporating customers' and suppliers' perspectives, this will involve:
- Identifying perceived service quality variables (group interviews)
- Capturing supplier perceptions (supplier surveys)
- Measuring supplier business performance (market surveys)
- Capturing customer perceptions (customer surveys)
- Linking the quality variables to supplier business performance (regression analysis)
- Linking the quality variables to customer perceptions (regression analysis)
- Deriving mutual beneficial service quality indicators from the two regression analyses

By linking quality variables to supplier performance and customer satisfaction the research proposed should lead to clear quality indicators for service delivery concerning cleaning, catering and security.

Group interviews
The group interviews, involving all research participants, are to determine a set of service quality variables that are crucial indicators of service quality and as likely determinants of a firm's market and financial performance. Preliminary service quality variables are: physical characteristics, reliability and trustworthiness, responsiveness and service recovery, professionalism and skills, courtesy and attitude, reputation and credibility, security and assurance, accessibility and flexibility, communication with the customer, and understanding the customer

In addition these interviews are to determine the most important financial measures. Preliminary measures are focussing on market share and profitability ratios: market share, market share growth, profit margin, profit margin growth, sales volume, sales volume growth, return on investment, assets, equity, capital employed and/or sales, and return on investment, assets, equity, capital employed and/or sales growth.

Supplier and market surveys

From the group interviews we will draft a two page questionnaire to be sent out to major cleaning, catering and security firms in the UK. From these questionnaires we are then able to determine the links between Service Quality Variables and organisational performance within each segment through regression analyses.

The service quality variables will be measured against strategic importance on a 7-point scale from "least important" (=1) to "extremely important" (=7) and as performance relative to major competitors on a 7-point scale from "poor" (=-3) to "excellent" (=+3). The financial ratios will be measured objectively on actual values and subjectively on a 7-point scale from "worst in industry" (=1) to "best in industry" (=7).

Customer surveys

From the group interviews we will also draft a customer survey with additional questions under each Service Quality Variable. These questionnaires are firstly to be set out under the RBS employees (and maybe later to other organisations) to determine what customer' employees see as the most important variables within each segment.

The service quality variables will be measured against service performance as well as two levels of expectations: desired service (what the customer believes the service should be) and adequate service (the minimal level of service acceptable to the customer) on a 7-point scale from "poor" to "excellent".

Final analysis

By combining the outcomes of the supplier and market surveys with the outcomes of the customer surveys we can finally determine whether there is significant overlap in supplier and customer perceptions and expectations, or that there are discrepancies between the two, which then might ask for a strategic redirection in one or more of the segments.

6   EXPECTED RESULTS AND CONCLUSIONS

At present the research is in progress, but the results from the first interviews are consistent with previous research findings in this area. The interviews have indicated a gap between suppliers' perceptions and customers' desires, especially if not both parties were fully involved in the original contract Service Level Agreements for example. Therefore the expected results from this investigation based on the current findings include: a gap between supplier and customer perceived service quality - as what is beneficial to the supplier is not always beneficial to the customer; the service quality variables will be different for each of the services reviewed - cleaning, catering and security; and the expected overlap between the service quality variables can lead to improved service delivery - the front of house service is one example of this issue.

The conclusions from the Service Quality Indicator research project will hopefully underline the continued importance of research work that looks at service operations from a service perspective. The manufacturing paradigms do not always generalise well to the service environment and this project begins to indicate the limitations of taking this manufacturing approach. The project then seeks to provide a number of insights into the service quality framework.

APPENDIX   EXAMPLE DATA ANALYSIS

Because the research project on Service Quality Indicators only started two month ago, there is no hard data analysis available yet. With a proposed timeframe of six month and all participants contributing constructively, research finding are to be disseminated in February 2006 and to be presented firstly at the International Conference of the Cooperative Research Centre for Construction Innovation.

Below examples are presented of the data analyses to be performed after the supplier and market surveys.

Business performance measure	Model *p* value	Quality variable	Entry *p* value
Market share	0.032**	reliability and trustworthiness	0.032**
Market share growth	NS	NS	NS
ROI	0.002***	reliability and trustworthiness	0.002***
ROI growth	0.014**	responsiveness and service recovery	0.014**
ROCE	0.008***	professionalism and skill	0.008***
ROCE growth	0.006***	professionalism and skill	0.058*
		courtesy and attitude	0.086*

*** significant at 0.01, ** significant at 0.05, * significant at 0.10
NS = not significant

Figure 5   Example of results of analyses with business performance as dependent variable

From the example above we can conclude that there is a relatively strong link between market share and the quality variable reliability (p = 0.032). In addition, there is a very strong link between ROI and the quality variable reliability (p = 0.002). Also responsiveness, professionalism and courtesy are of positive impact on various business performance measures.
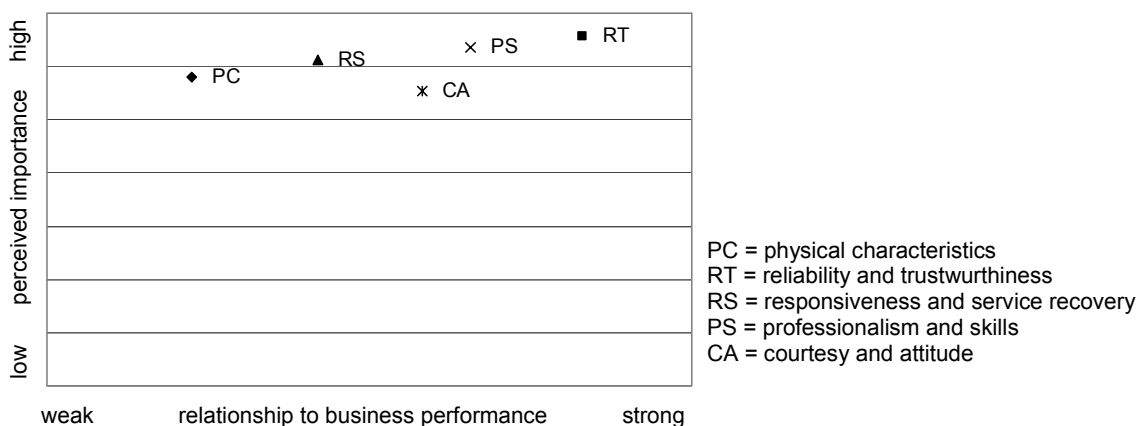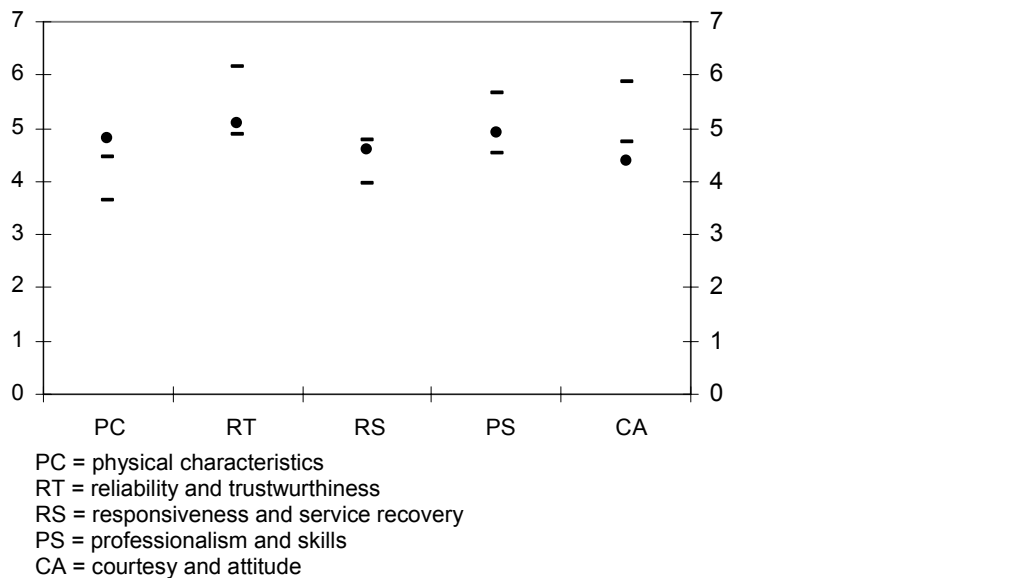

PC = physical characteristics
RT = reliability and trustwurthiness
RS = responsiveness and service recovery
PS = professionalism and skills
CA = courtesy and attitude

Figure 6   Example of perception-performance gap analysis of quality dimensions

From the example above we can conclude that reliability and professionalism, as perceived, indeed have a strong relationship with overall business performance. Contrary to the perception however, courtesy also has a relatively strong link with overall business performance.

Below an example is presented of the data analyses to be performed after the customer surveys.

PC = physical characteristics
RT = reliability and trustwurthiness
RS = responsiveness and service recovery
PS = professionalism and skills
CA = courtesy and attitude

Note: The dots indicate perceived service. The vertical lines indicate customers' zones of tolerance bounded on the top by their desired service expectations and the bottom by their adequate service expectations.

Figure 7 Example of service quality ratings by customer (RBS employees)

From the example above we can conclude that also customers rate reliability and professionalism as the two most important quality variables to overall service quality. Furthermore we can conclude that the service provider is underperforming on courtesy and over performing at physical characteristics.

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[1] Other working definitions are: 'how consistently the product or service delivered meets or exceeds customers' (external and internal) expectations and needs' (Clark, 1992) or 'the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs' (BS EN ISO 9000, 2000).

[2] Another often used definition of service productivity is 'the ability of a service organisation to use its inputs for providing services with quality matching the expectations of customers' (cf. Järvinen et al., 1996), but this definition ignores the quantitative output aspects of service productivity.

[3] Also the interpretability of the server from the service, the participation of the client in the process and the subjective role of the client in evaluation contribute to intangibility.

[4] Ideas about *what* changes or opportunities will benefit your business; sponsorship from someone with enough authority to put money or people's time into working on the idea; specialised technical or analytical thinking about the best way to make the idea work; the energy and commitment of all who have to do anything to implement the idea to make it successful (Stankard, 1986).