

Performance Measurement in Facilities Management Organisations: Transition from Measurement to Management

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Abstract: *“Facilities” create environments for occupants to work effectively within organisations and the performance of these environments influence the activities that are carried out. Formulation of techniques that are capable of assessing “facilities performance” in terms of quality, cost and effectiveness, is critical for “Organisational” and “Facilities Management” advancements. In order to address the emerging assessment needs in the field of facilities management (FM), “The Balanced Scorecard,” concept is proposed in this paper. This paper speculates that BSC formulates a holistic performance measurement system that amalgamates facilities management performance indicators and business/organisational performance domains. A framework for facilities management performance measurement is offered based on the case studies carried out, and sets of propositions are suggested which might form a basis for future research in the field.*

Keywords: *facilities management, performance measurement, performance management, Balanced Scorecard*

Background

Atkin & Brooks (2000) define Facilities Management (FM) as, “an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organisation in order to create an environment that strongly supports the primary objectives of that organisation”. Thus, FM is viewed as a “...hybrid management discipline that combines people, property and process management expertise to provide vital services in support of the organisation (Then, 1999). FM is defined in various ways, whilst the emphasis remains the same: the management of interaction between the physical environment and humans to enhance the organisational effectiveness (Gagendran,2000).

The environment created for the occupants of a facility influence the performance of the activities carried out in that facility (Gagendran, 2000). Hence, organisations in general desire facilities that are comfortable to occupy, cost effective and efficient to run, and those facilities to remain as added value assets (Douglas, 1996). Surveys by Debenham Tewson Research (1992). Graham Bannock & Partners (1994), Workplace Management (1996) and Arthur Anderson (1995) reveal that only on rare occasions do facilities receives explicit attention, and facilities are generally viewed as more of a cost rather than a strategic resource (cited in Then (1999)). This has resulted in facilities managers missing the opportunity to manage the environment in which they operate for competitive advantage. Therefore, any attempt that can show a connection between quality, cost and productivity, offers a useful lever in advancing the facilities performance and the facilities management discipline (Leifer, 1998) (cited in Gagendran, 2000). If organisations are able to measure the performance

outcomes of their facilities they will be convinced to pay more attention to facilities related resources.

Facilities and organisational management

Facilities and organisational management domains have only marginal interactions in the past, and performance measurement methods from both these domains have continued to neglect the other perspective in their measurement, until the complex business environment urges an intensive dialogue between them (Gagendran, 2000). To this effect, research reported in this paper attempts to conceptualise a performance measurement system which would integrate both the business and facilities domain, and which intends to develop a method for meaningfully measuring facilities performance. As suggested by Gagendran (2000), this will enable improved utilisation of resources by organisations and optimum use of the facility to gain competitive advantage.

Performance measurement in FM: current thinking

It is worth noting that there is no universal agreement on the definition of “performance” (Avkiran, 1997). However, Hronec (1993) defines performance measurement as: “a quantification of how well the activities within a process or the outputs of a process achieve a specified goal”. In simple terms, performance is achievement against intention (Gagendran, 2000). Hronec (1993) lists four potential benefits that can arise as a result of having an appropriate performance measurement system: satisfying customers; monitoring progress; benchmarking processes and activities; and driving change. The emphasis on promoting customer satisfaction and driving change in accordance with the response to external pressures from an increasingly global competitive marketplace, while the emphasis on monitoring progress and benchmarking is a clear reflection of the culture promoting continuous improvement, driven from both within and outside the organisation (Then, 1996). The development of performance measurement within the context of business management is important in that it sets the background against which senior management within organisations will evaluate the current performance and contribution of their facilities services in fulfilling corporate objectives.

Even in FM environments, where performance measurement was not adequately addressed, the acceptance of performance measurement is growing. As Grimshaw and Keffe (1992) stated: “A link exists between the physical environment and the operational efficiency of the organisation”. The need for FM performance measurement systems has already been emphasised by identifying FM as a business resource (Hinks and Hanson, 1998; Alexander, 1996a; Then, 1999; Madeley, 1996; Amaratunga and Baldry, 2000). Today’s organisations constantly review the composition of their core business and the way it operates (Royal Institution of Chartered Surveyors, 1993). Therefore, clear attention must be paid both to the effective maintenance of support systems and the culture of the organisation. Tranfield and Akhlaghi, (1995) emphasised that FM is an important emerging business sector with an annual size well into tens of billions of pounds in the UK. The FM budget of an organisation can often require thirty to forty per cent of total organisational expenditure, second only in cost to payroll (Williams, 1994). Therefore, good performance in FM is essential.

In the research described in this paper, it was found out that FM managers no longer reject FM performance measurement and further acknowledge the benefits of their various measurement procedures.

Application of the Balanced Scorecard in the Facilities Management Domain

“What performance really means” and “to be able to measure it” are the most crucial things to be understood to embark on a performance measurement exercise (Gagendran, 2000). Numerous and different approaches to facilities performance measurement have been developed:

- Operating costs and Benchmarking (cited in Featherstone, 1999);
- BIFM measurement protocol (BIFM, 1997);
- Post-Occupancy Evaluation (Preiser et al, 1988);
- Hierarchical system of performance indicators (Belcher, 1997);
- Input versus output based performance measurement (Heavisides & Price, 2001).

Although many facilities performance measurement techniques are available, the focus of most of these is primarily on either technical or financial aspects. Amaratunga and Baldry (2002) comment that most of the facilities related measurement tools are either lead to a great deal of confusion about the reasons for performance indices and performance measures or that there are too many performance indices (especially in terms of cost) in the FM market, looking only at wider issues, which fail to link core business issues with those of facilities. They further argued that performance measurement techniques available in general management literature haven't been fully transformed into FM literature, emphasising the research need in performance measurement in FM.

This illustrates the present state of complexity in measuring facilities performance meaningfully. Assessment of facilities performance in an integrated manner requires a tie between facilities data and business related data that links physical, spatial and environmental issues describing the facilities' characteristics, with information concerning the operational behaviour of management and users, and financial consequences overall (Nutt, 1992). Further, enduring optimism towards facilities as a means of organisational effectiveness through enhancing facilities performance in a dynamic environment requires a dependable framework for the assessment of facilities performance, as supported by Gagendran (2000). Therefore, a broader framework that links and assesses the facilities indicators with business performance indicators is propelled in the research reported in this paper, to enhance organisational effectiveness and success.

In this context, can business performance measurement tools be an alternative to currently available facilities performance measurement tools? Amaratunga et al (2000) speculated that business performance measurement concepts such as the Balanced Scorecard (BSC) would be a valuable tool in the facilities domain. “The BSC integrates traditional financial measures with operational and softer customer and staff issues, which are vital to growth and long term competitiveness”, comments

Newing (1995). This management system was developed by Kaplan and Norton (1996), and proposes a system which integrates measures of customer satisfaction, process performance, product and service innovation and finance.

The BSC measures are built around the following four perspectives (Kaplan and Norton, 1996):

- **Customer** – what do existing and new customers value from us?
- **Internal processes** – what processes must we excel at to achieve our financial and customer perspective?
- **Learning and growth** – can we continue to improve and create future value?
- **Financial** – how do we create value for our shareholders?

The four perspectives of the scorecard permit a balance between short-term and long-term objectives, between desired outcomes and the performance drivers of those outcomes, and between the objective measures and softer, more subjective measures. While the multiplicity of measures on a BSC seems confusing to some people, properly constructed scorecards contain a unity of purpose since all the measures are directed towards achieving an integrated strategy.

Linking measurements to organisational strategy

Business performance measurement in general, and in particular: SMART pyramid (Ghalayini and Noble, 1996); the performance prism (Kennerley and Neely, 2000); EFQM (EFQM, 1999); time based performance measurement (Barker, 2000); Measuring service quality (Black et al, 2000); integrated performance measurement (Medori and Steeple, 2000) and the BSC (Kaplan and Norton, 1996; 2000) attempt to address a key management issue: that organisations often fail to turn strategy into action. The fact is that a clear, action oriented understanding of an organisation's strategy could significantly influence that organisation's success.

The primary focus of the BSC is on translating the organisation's strategy into measurable goals (Letza, 1996). Having understood what is important for the business, performance measures are designed to monitor performance and targets are set up for improvement. This is illustrated in Figure 1. These must then be clearly communicated to all levels within the business. This enables the organisation to understand how their own efforts can impact on the targets set in respect of each perspective.

Although offering a sample template, Kaplan and Norton (1996; 2000) acknowledged that the precise format of the BSC is an organisation-specific issue. A major task facing an organisation in attempting to introduce a BSC is how to devise a set of measures explicitly linked to its strategy? (Kaplan and Norton, 1996; 2000). Underlying this need is the essential condition that the strategy is widely understood and accepted within the organisation, as emphasised by Kaplan and Norton (1996; 2000).

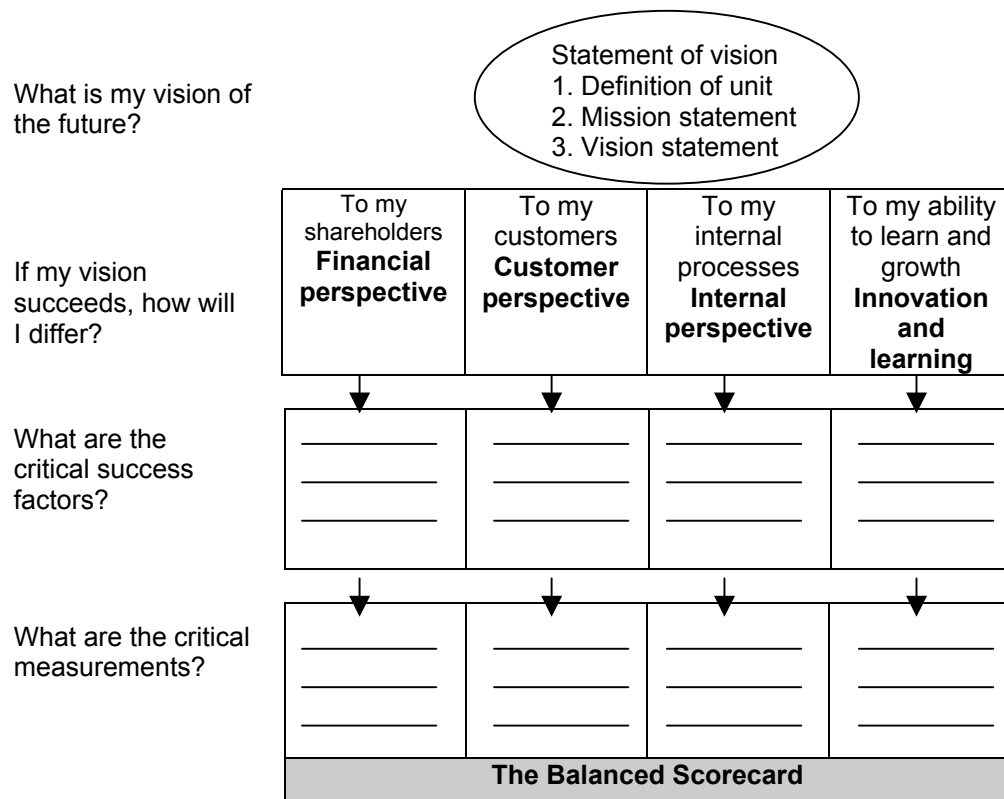


Figure 1 – Linking measurement to strategy
(Source: Kaplan and Norton, 1993)

Only by combining, measuring and thinking in terms of all four perspectives can managers prevent improvements being made in one area at the expense of another. The BSC forces managers to focus on some really important non-financial factors which impact on long-term profitability and which might otherwise be neglected (Newing, 1995).

However, there is no clear agreement among FM researchers (e.g. Gagendran, 2000) about whether the BSC technique is appropriate for assessing facilities performance if it is to consider as an isolated function from the rest of the organisation. Amaratunga (2001) argues that if facilities performance measures are to be effective, then facilities strategy needs to be aligned with the core business/organisational strategy.

Given the characteristics of the FM environment, recognising and satisfying the needs of the core business is vital for long term survival (Hinks, 2002). To ensure satisfaction of various customer needs, it is essential that FM identifies, focuses on, and monitors key performance indicators. The remainder of this paper reports findings of an approach investigating the suitability of the BSC to FM as a method of linking performance measurement to business strategies.

Research methodology

The purpose of the research being reported on is an attempt to devise a BSC for FM and to facilitate learning about performance assessment and the outcomes. In this context a detailed review of critical methodological issues is undertaken.

Review of the literature was the initial step and this included an in-depth examination of literature relating to performance measurement in organisations in general and performance measurement in FM organisations in particular. The main purpose and outcome of this was to identify theoretical gaps in the literature relating to performance measurement in FM. Although the area of performance measurement is not new, this concept is neither well established or standardised across and even within FM organisations.

A pilot case was conducted before the field data collection was initialised (see Amaratunga and Baldry (2000a)). The conduct of a pilot case is seen as a crucial step in order to improve the quality of the research, especially concerning the data collection phase (Miles and Huberman, 1994; Easterby-Smith et al, 1991; Yin, 1994). The pilot case was chosen on the basis that it supported the criteria mentioned above, that is, it was FM intensive.

From the conclusions of the literature review and the pilot study findings, the research objectives and research strategy were derived. In this context, the researcher decided to investigate the following key questions with respect to the practice and theory of performance measurement in FM: “How could a performance measurement framework be created based on the BSC concept in FM organisations in order to effectively transfer modern performance measurement principles in FM practice, thereby to demonstrate the links that exist between the prime organisational goal and the FM support mechanism?”

Having identified the questions to which answers need to be found, it is then important to describe the research strategy. The literature review on research methods revealed a wide variation in the classification of research approaches. Esterby-Smith et al (1991) provide a simple classification of research by outcomes that are assumed to emerge: pure, applied and action research. According to Yin (1994), a research strategy should be chosen as a function of the research situation. Each research strategy has its own specific approach to collect and analyse empirical data, and therefore each strategy has its own advantages and disadvantages. As mentioned elsewhere, there was a strong need to understand how the BSC concept will apply as a performance measurement tool to enable the achievement of optimum results within the FM context. In this context, authors agreed the “case study” is the research strategy that matches better with these characteristics. The preference of the case study strategy derives from the fact that the main research question in this work is in the form of “how”, and the case studies provide the ability to examine contemporary events – the development of performance measurement theory in FM by dealing with a wide range of evidence, documents, interviews, and observations - where the relevant behavioural aspects cannot be manipulated (adapted from Yin, 1994). This allowed an in-depth investigation of the concepts of performance measurement issues in FM in its real life context. The criteria to select the cases were a matter of discretion and judgement,

convenience, access and to be those which were FM sensitive for the purpose of this research, as described by Yin (1994). For the purpose of this research, an important criterion was the presence of some sort of performance measurement procedures within the FM organisation. This emphasis on measurement principles made it unnecessary to consider in the selection criteria organisational characteristics such as the organisational size or type as also indicated by Pacitti (1998). The level of FM practice was another criterion for choosing the host organisations as it was intended to compare the “best practices” of the “best FM organisations” to ensure fair comparisons (Yin, 1994). In this work, a multiple case study design was adopted in order to add confidence and achieve more robust conclusions. Thus, by looking at a range of similar and contrasting cases it was expected to strengthen the precision, validity, and the stability of the findings of the research as described by Miles and Huberman (1994).

There are arguments on number of case studies to be used in research. Yin (1993) presents the view that considered case methodology “microscopic” because it “lacked a sufficient number” of cases. Hamel et al (1993) and Yin (1993) forcefully argue that the relative size of the sample whether 2, 10 or 100 cases are used, does not transform a multiple case into a macroscopic study. The selection of number of cases for literal and theoretical replication is discretionary and judgemental, depending of the level of certainty that is wanted about the results (Yin, 1994). Overall, the number of cases is conditioned by the scarcity of time and other available resources, and explained by the tension that arises when the following two opposing criteria are applied to this limitation: case studies versus depth of study.

A multiple case study demands a formulation of a protocol for data collection that reduces the chances of missing important data and, thus, facilitates subsequent analysis (Robinson, 1993; Yin, 1994). In this research, the developed protocol for data collection followed the structure illustrated in Figure 2:

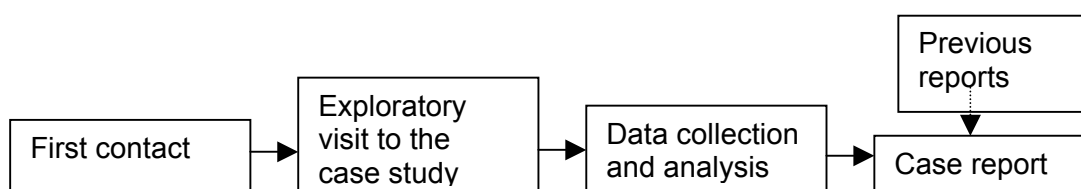


Figure 2: Protocol for Data Collection (adapted from Santos, 1999)

As indicated in Figure 2 above, each case study organisation received a report containing the main findings of the case study observations and a summary of data collected. The findings presented in the report included the outcome of interviews with the senior and middle management and operational staff. Their contribution was acknowledged although specific names were avoided throughout the text following an agreement about the confidentiality of information. (See Amaratunga (2001) for more information on case study outcomes) Most of the organisations provided feedback on the practical validity of case study findings. This feedback was incorporated into the final research report, on which this paper is based (see Amaratunga, 2001) and was the basis for theory development in performance measurement applications for FM using the BSC as the theoretical framework.

Table 1 outlines the eight case studies, which were investigated (it is worthwhile to note that the abbreviations listed in the following table were used to refer to the relevant case studies due to confidentiality of information associated with the case studies):

Organisation	Industry sector
CABO FM	Public sector – Health
CAMA FM	Public sector - Health
CACE FM	Public sector - Health
CASU FM	Public sector – Higher Education
CASA FM	Public sector – Higher Education
CALA FM	Public sector – Higher Education
CAAB FM	Financial sector
CALO FM	Semi government sector

Table 1: Summary of case study organisations

Due to space limitations, information relating to above organisations is not presented within this paper. {See Amaratunga (2001) for more information on individual case study organisations} A multi-dimensional case study survey across a number of sectors as identified in Table 1 above was carried out. This selection was influenced by evidence from the literature survey that management perceptions of the role of facilities can vary considerably according to the type of business and the environment of the particular business sector (Then, 1996). There is also the possibility that by confining the study to a particular sector not enough cases would be found to develop theory, as emphasised by Pacitti (1998). The decision to extend the study to cover multi sector case study applications is also influenced by the fact that the process will strengthen external validity (Amaratunga & Baldry, 2000b).

Data analysis and the Balanced Scorecard Development

The aspect of data analysis of the case study methodology is the least developed and hence the most difficult (Tellis, 1997). Data analysis consists of examining, categorising, tabulating, or otherwise recombining the evidence to address the initial propositions of a study (Yin, 1994). Miles and Huberman (1994) suggested analytic techniques such as re-arranging the arrays, placing the evidence in a matrix of categories, creating flowcharts or data displays, tabulating the frequency of different events, using means, variances and cross tabulations to examine the relationships between variables, and other such techniques to facilitate analysis.

Data analysis

For case study analysis one of the most desirable strategies is to use a pattern-matching logic (Yin, 1994). Trochim (1989) considers pattern matching as one of the most desirable strategies for analysis. Such logic compares an empirically based

pattern with a predicted one. Campbell (1975) described pattern matching as a useful technique for linking data to the propositions and asserted that pattern matching is a situation where several pieces of information from the same case may be related to some theoretical proposition. Thus, the data analysis was associated with the formation of performance measurement constructs aimed at identifying the applicability of the BSC within FM environments. This was done through the pattern matching process.

Findings of the research being reported

This research is best described as a study, which analyses FM performance measurement issues against the BSC business performance measurement concept. One of the outcomes of this study was a sharper and more insightful questioning of what is known about performance measurement in FM. Using Dubin's (1978) phrase: "This should add knowledge to the field by increasing the realms of the known and the knowable and by pointing out more accurately the realms of unknown".

In this context, this section sets out the different critical success factors and measurement tools relating to performance measurement, which exist in the FM organisation (there may be other performance measurement tools which have not been exposed through this research). The subsequent discussion describes these different types of performance measurement categories and the importance of making them visible. The identification of different critical success factors according to the BSC framework identified in a previous section, and related performance measurement tools which exist within FM organisations, present a new framework through which to measure FM performance aimed at increasing the effectiveness of the FM process thereby to increase the overall organisational efficiency. Further, this process provides a basis for the discussion around usefulness and applicability of performance measurement within FM through the exposure of each type of FM critical success factors and related measurement tools, by linking facilities performance within the overall organisational performance. Findings are presented in sections below by taking each perspective at one time.

Types of customer related FM critical success factors and associated measures

This section outlines three types of customer related critical success factors, uncovered primarily from the case study findings. These critical success factors are quality, timeliness and degree of partnership and corporation. It is not the existence of these types of success factors which is an important issue for facilities managers but the way in which they are being measured, and the development of a shared understanding of each type of critical success factor and related measurement tools.

Critical success factor	Associated measurement tools
Quality	Customer satisfaction surveys
Timeliness	Customer satisfaction surveys
Degree of partnership and corporation	Customer satisfaction surveys

Table 3: Types of customer related measurements – Definitions

Details relating to the pattern matching process in identifying the above critical success factors and associated measurements instruments are not presented in this paper, once again, due to space limitations. See Amaratunga (2001) for more related information.

FM processes, learning ad growth issues and financial capabilities

Similarly, tables shown below (Tables 4,5 and 6) summarise the critical success factors and associated performance measures derived through the case study analysis.

Critical success factor	Associated measurement tools
Operational service efficiency	Post-occupancy evaluation Service standards Benchmarking Maintenance management
Contract management	Service level agreements Procurement partnerships Performance based outsourcing Controls assurance standards
Risk management	Controls assurance standards Periodic risk audits Incident reporting systems Probability analysis
Supply chain management	Level of communication Supply chain partnerships
Workforce management and employee competence	Cost effective management of facilities workforce Attitude surveys Team work Operational capabilities Investors in people award
Work environment	Overall health and safety performance Employee surveys
Capital asset management	Asset accountability rate
Facilities management culture	Job satisfaction Economic progress

Table 4: Types of FM process related measurements – Definitions

Critical success factor	Associated measurement tools
Strategic facilities information and management	Extent of reliable FM systems in place Communication
Innovation	FM service development cycle time Share of cost from new services Innovation success rate Number of ideas and suggestions
Professionalism and staff development	Investors in people award Training and development Employee alignment Staff strategic awareness Employee turnover
Knowledge resource	Employee satisfaction Skills gaps
Research and development	Output performance measurement Project goals achievement ratings R&D spend

Table 5: Types of FM learning and growth related measurements – Definitions

Critical success factor	Associated measurement tools
Value for money/cost efficiency	Establishment and maintenance of cost data Cost efficiency Reduction of service operating costs Cost of service re-location Cost of acquiring and maintaining best FM practices Cash releasing efficiency schemes
Asset utilisation strategies	Asset utilisation rates
Procurement and purchasing strategies	Cost control effectiveness
Financial resource management	Balance of income and expenditure Financial reporting
Profitability	Return on assets

Table 6: Types of FM learning and growth related measurements – Definitions

This section has outlined several categories of performance measurement issues, uncovered primarily from the case study findings. The case study data provided evidence that it is always desirable to expose these performance bases, as it is the first step in achieving an understanding of the usefulness of performance measurement within FM organisations.

The customer, internal FM Processes, learning and growth, and financial issues reflect the FM organisation's overall functions and activities and its perspective on critical success factors. However, that view is not necessarily correct and a well-balanced set of measures does not guarantee a winning strategy (Kaplan and Norton, 1996). They can only translate a particular strategy into specific measurable

objectives. Failure to convert improved operational performance into improved financial performance make facilities managers rethink the FM strategy or the FM implementation plan.

Discussion of findings

Common issues derived through this research in trying to apply the BSC concept to create a performance measurement framework for FM are summarised below:

Identification of performance measurement tools in FM

The main body of this paper is an explanatory study which has tried to investigate the applicability and implementation of BSC principles in FM environments. The analysis uses empirical evidence collected in eight case studies, coupled with additional information assembled via other data collection methods. Some of the propositions achieved in terms of contribution to performance measurement initiatives within FM are outlined below:

Proposition one - FM organisations represented the need for performance measurement applications

A major hypothesis set at the commencement of the study reported in this paper was that there would be a need to develop new performance measurement practices within FM. Hence, comprehensive analysis of existing literature and practice tried to identify that there is such a need in order to confirm, or deny such a proposition. The main findings of this research in this respect is listed below:

- It has been emphasised that, despite the considerable achievements of the last few years, the field of performance measurement in FM remains at a very early stage of development in which it has few secure methods of its own to underpin good practice experience (Hinks, 2002);
- A large potential market for application, the diversification of facilities professions and context for facilities professions, have been identified as potential opportunities for performance measurement deployment in FM (Gagendran, 2000);
- The need for new approaches to measure performance in FM has been identified by highlighting the problems with existing approaches to performance measurement in FM (Amaratunga, 2001);
- Performance measurement in FM is currently focused on operational level measures rather than measures representing the strategic FM issues;
- Performance measurement systems rooted in general management literature have not been fully utilised by the FM community;
- Most of the existing performance models in FM do not explain the mechanisms through which FM can contribute towards the success of the core organisation;
- Current performance models of FM lack pure empirical support;

- Descriptive guidelines on performance measurement in FM have failed to generate useful guidelines for facilities managers; and

As indicated above, there is no indication of how performance measurement activity is permeating within the FM organisation, leaving room for the identification of new ways of deploying performance measurement within FM organisations.

Proposition two - There was empirical evidence leading to the development of new performance measurement constructs in FM organisations by using BSC as the theoretical framework

A major research construct set at the beginning of this study was that there would be empirical evidence in FM organisations matching the core performance measurement principles described by BSC when it is used as the theoretical framework. This process of searching for validation helped to refine these principles and interpret them for application in FM environments. The following items represent the main findings of this research in this respect:

- Important theoretical replications were found for core performance measurement principles investigated, using BSC as the theoretical framework;
- General definitions of core performance measurement principles detailed through BSC can be generalised to FM, but required creative adaptation when it comes to implementation in practice;
- There is great room for improvement in FM by using the developed framework illustrated in this paper as the base line.

Proposition three – A general performance measurement framework for FM can be established

Critical analysis of existing literature in FM indicated that performance measurement in FM requires the development and identification of more effective mechanisms. New performance measurement techniques need to be identified in order to close the gaps in knowledge relating to performance measurement principles found within FM.

In this context, it is worth re-emphasising the importance of having a clear understanding of the underlying issues and organisational demands relating to performance measurement in FM (Varcoe, 1996). In this paper, the use of performance measurement concepts in the field of FM have been identified as relatively sparse and this has led to an over simplification of the role and the processes of performance measurement in FM organisations.

It is worth emphasising that it was understood that improvements in FM performance have to pass through a natural evolutionary process, starting from improvements in quality and time and then progressing towards lower cost and service efficiency. Therefore, whilst business survival may require focus on one or two competitive criteria of the performance measurement framework identified in the short-term, it seems that a logical and evolutionary sequence is the most likely way to achieve sustainable competitive advantage in the long-term.

Links between business performance and FM performance

The case for a strong link between FM and organisational performance was made by Duffy, as far back as 1988: “Costs are now made in new ways – not just how many pounds per square metre of construction, but real costs of occupancy related to how much per head of workforce – or even better, per rate and quality of information processed. FM at last makes it possible to bring up to board level the total picture of occupancy costs”. Derived BSC model for FM supports this as critical success factors are derived based on the facilities organisational strategy, which clearly has links with the core organisational vision and strategies.

Good practice performance measurement

This paper emphasises how to bring together different kinds of measures in a single comprehensive view of the entire FM business. In this sense, the BSC framework development outlined in this paper bring together customer related FM measures, FM internal process related measures, FM innovation and future potential issues and FM financial base. It is important that this view describes what facilities managers actually want to put in focus. Experience has shown that developing this kind of measurement system and then using it in the ongoing exercise of management control is a good tool for strategic FM control as well.

Both financial and non-financial measures

The financial environment in which today’s organisations do business puts new and different demands on management control and on the control systems which organisations use (Olive et al, 1999). In this context, the choice of non-financial measures illustrated in Tables 3,4,5 & 6, is determined by the focus of the FM organisation, the people who are using them and what they are being used to measure. Non-financial facilities performance indicators are most frequently determined by organisations themselves and although there are commonalities between organisations within the same sector, it is more likely to be a wider range even within one business sector as organisations display the view of their core competencies.

Strategy communication through measurement

Performance measurement and management framework development outlined in this paper helps FM organisations map out a clearly defined destination, as well as a plan to navigate by (Kaplan and Norton, 1996). The structure of the performance measurement system provides a framework to translate strategy into operational terms by identifying the related critical success factors and associated performance measures so that it can be effectively communicated, understood, and acted upon. The process: align strategy with the FM organisation and resources, leverage hidden assets and knowledge, link people and processes, and create strategic feedback systems that accelerate organisational wide performance. The result: making strategy work – rapidly, measurable, knowledgeably (Kaplan and Norton, 1996).

Performance management and not simply performance measurement

As identified already, performance measurement is an area which has been discussed increasingly over the past few years, and the adages “you can’t manage what you can’t measure” and “what gets measured gets done” and “has never been so powerful a truth” (Peters, 1987) (cited in Stone, 1996) are an all too common elements of many management texts. Performance management on the other hand, is the use of performance measurement information to effect positive change in organisational culture, systems and processes, by helping to set agreed performance goals, allocating and prioritising resources, informing managers to either confirm or change current policy or programme directions to meet those goals, and the sharing of results of performance in pursuing those goals (PEA, 1998). The system outlined in this paper tries to develop links between the FM strategy and its operational processes and measurements, thus creating a performance management culture within the FM organisation.

Future suggestions

Issues discussed throughout this paper has attracted interest of both academics and practitioners. The need for further research in the area is supported by the recent developments in the FM knowledge base, that is to raise its awareness within the core organisational setting. The following recommendations for further research are primarily driven by emerging performance measurement strategies identified in this paper:

- There is a need to uncover more critical success factors and corresponding performance measures relating to learning and growth issues of FM performance as there seems to be opportunities for such new explorations beyond the cases used in this research;
- There is a necessity to justify the framework’s application in different FM settings to verify its validity. Such an application will further increase the generalisability of the FM BSC framework;
- There is also a need to understand the relationships that exist between the different types of performance measurement constructs, for e.g., between customer related issues and internal FM processes. By doing so, it will be possible to eliminate the constructs which do not have strong relationships among each other from the BSC framework;
- Further, development of a facilities performance measurement assessment criteria is required for facilities managers to develop tools for communicating the performance measurement dimensions of FM. Methodologies to integrate FM performance constructs with the core organisation’s performance measures are needed as also emphasised by Hinks (2002). This will help to understand the facilities contribution towards the core business performance;
- The development of further clarification of FM performance measures, where FM performance measurement leads in the future being based upon how useful FM is to the core business;

- Provide a cost benefit analysis of implementing performance measurement systems in FM organisations. This is one of the key issues to be addressed in future by FM researchers in the field as it would be of interest, both to organisations who have made the move to performance measurement and to those who are considering it, to know exactly how much value is added;
- Further, clarifying the FM organisational performance measurement process as to its dependence on the existing knowledge base of the FM organisation. That is, observing how the content of the FM knowledge base impacts the FM organisation's ability to learn;
- Examining FM organisational learning by observing the changes to the FM organisation's knowledge base. In particular, changes to the FM knowledge base of the core organisation and the impact of this on other knowledge bases, would be an interesting study;
- The findings of this research are most visible in large FM organisations. The vast majority of businesses in the UK are small businesses and in these organisations FM is often integrated with other functions and may not play a major role. In large organisations, such as the case studies identified in this paper the importance of FM performance measurement is reasonably obvious, but this may not be true for small or even medium sized organisations. Thus, this area needs further attention.

Hence, the clarification and development of the concepts relating to FM organisational performance measurement in this paper provides a basis upon which further research can be conducted, as suggested above.

Conclusion

This research study has focused on the evolving role of performance measurement within FM organisations.

The proposed FM BSC framework and the resulting classification constituted a contribution in the form of a new tool to expose performance measures in FM. The model may be viewed as being a collection of work on different elements of performance perspectives.

Further, as suggested in a previous section, the outcome of this research will lead to the exploration of performance measurement applications in FM further, especially in terms of identifying the facilities contribution in terms of achieving the objectives set at the core organisational level.

References

- Alexander, K. (Ed). (1996). *Facilities Management: Theory and Practice*. London: E & FN Spon.
- Amaratunga, D. & Baldry, D. (2002). Sample View of Current Performance Measurement Practices in Facilities Management. *Proceedings of International Postgraduate Conference*, The University of Salford, 10-11 April 2002. Pp. 193-202.

- Amaratunga, D. & Baldry, D. (2002) (Accepted for publication). The Balanced Scorecard: Universal Solution to FM? *Refereed publication in the proceedings of International Symposium in Facilities Management*. Centre for Facilities Management, The University of Salford, UK.
- Amaratunga, D. (2001). *Theory Building in Facilities Management Performance Measurement: Application of Some Core Performance Measurement and Management Principles*. Unpublished PhD Thesis. The University of Salford, UK.
- Amaratunga, D. & Baldry, D. (2000a). Performance Evaluation in Facilities Management: Using the Balanced Scorecard Approach. *In the proceedings of COBRA 2000 RICS (Construction and Building Research Conference)*. Royal Naval College, University of Greenwich, UK. Pp. 1-16.
- Amaratunga, D. & Baldry, D. (2000b), "Theory building in facilities management research; case study methodology", *Proceedings of Bizarre Fruit Conference*, pp.107-123, University of Salford, UK.
- Atkin, B. & Brooks, A. (2000). *Total Facilities Management*. London: Blackwell Science.
- Avkiran, N.K. (1997). Models for Retail Performance for Bank Branches.: Predicting the Level of Key Business Drivers. *International Journal of Bank Marketing*. Vol.15
- Barker, B. (2000). Time Based Performance Measurement – Best Principles and Results from Two Implementation Case Studies. In Neely, A. (Ed). *Performance Measurement – Past, Present and the Future*. Cranfield: Centre for Business Performance, University of Cranfield.
- Belcher, B. (1997). Corporate Objectives, Facilities Management and Use: A University Case Study. *Paper presented in COBRA 1997 RICS Conference*. Portsmouth.
- Black, S., Briggs, S. & Keogh, W. (2000). Service Quality Performance Measurement in the Public and Private Sectors. In Neely, A. (Ed). *Performance Measurement – Past, Present and the Future*. Cranfield: Centre for Business Performance, University of Cranfield.
- British Institute of Facilities Management [BIFM] (1997). *Facilities Management Measurement Protocol*. Essex: Saffron Walden.
- Campbell, D. (1975). Degrees of Freedom and Case Study. *Comparative Political Studies*. 8. pp.178-185.
- Douglas, J. (1996). Building Performance and its Relevance to Facilities Management. *Facilities*. Vol.4. No. (3/4). Pp. 3-32.
- Dubin, R. (1978). *Theory Building*. Free press, London: Collier Macmillan.
- Easterby-Smith, M. (1991). *Management Research: An Introduction*. London: Sage Publications.
- EFQM (1999). EFQM (online). (Cited March 1999). Available from the Worldwide Web: <URL <http://www.efqm.org/imodel/modelintro.htm>
- Featherstone, P. (1999). *The Application of Effective Facilities Management Techniques to Best Optimise the Provision of Community Health Services within Community Health Care Premises*. Unpublished MPhil thesis. The University of Salford.
- Gagendran, T (2000). *An Integrated Approach to Assess Facilities Performance*. Unpublished Masters thesis. National University of Singapore.
- Ghalayini, A.M. & Noble, J.S. (1996). The Changing Basis of Performance Measurement. *International Journal of Operations and Production Management*. Vol.11. No. 8. Pp.63-80.
- Grimshaw, R. & Keeffe, G. (1992). Facilities Management: The Potential for Research. In Barrett, P. (Ed). *Facilities Management: Research Directions*. London: RICS Books.
- Hamel, J., Dufour, S. & Fortin, D. (1993). *Case Study Methods*. Newbury Park, CA: Sage Publications.
- Heavisides, B. & Price, I. (2001). Input versus Output-Based Performance Measurement in the NHS – The Current Situation. *Facilities*. Vol. 19. No.10. Pp.344-356.
- Hinks, J. (2002). Lies, Damned Lies and KPIs: Moving Towards More Meaningful Performance Measurement for FM. In the Proceedings of Euro FM Symposium. The University of Salford, UK.
- Hinks, J. & Hanson, H. (1998). Facilities Management's Profound Strategic Potential. *Facilities Management World*. June. Pp.30-32.
- Hronec, S.M. (1993). Vital Signs, Using Quality, Time and Cost Performance Measurement to Chart you Company's Future. New York: Amacom.
- Kaplan, R.S. & Norton D.P. (1993). Putting the balanced score card to work, *Harvard Business Review*, 134-142

- Kaplan, R.S. & Norton, D.P. (1996). *The Balanced Score Card*. Massachusetts, Boston, Harvard Business School Press.
- Kaplan, R. & Norton, D. (2000). *Strategy Focused Organisations*. Massachusetts, Boston: Harvard Business School Press.
- Kennerley, M. & Neely, A. (2000). Performance Measurement Frameworks – A Review. In Neely, (A.) (Ed). *Performance Measurement – Past, Present and Future*. Cranfield: Centre for Business Performance.
- Letza, S.R. (1996). The design and implementation of the balanced business score card: Analysis of three companies in practice. *Business Process Re-engineering & Management Journal*. Vol.2. No.3. pp.54-76.
- Madeley, A. (1996). *The Performance of Organisations and Facilities Management: An Exploration into the Opportunities Afforded for Facilities Management to Contribute Toward Corporate Performance*. Unpublished MSc Dissertation. University of Strathclyde.
- Medori, D. & Steeple, D. (2000). A Framework for Auditing and Enhancing Performance Measurement Systems. *International Journal of Operations and Production Management*. 20(5). Pp.520-533.
- Miles, M.B. & Huberman, A.M.(1994). *Qualitative Data Analysis*. Thousand Oaks: Sage Publications.
- Newing, R. (1995). Wake up to the balanced scorecard!, *Management Accounting*. March. Pp.22-23.
- Nutt, B. (1992). Facility Management: The Basis for Applications Research. In Barrett, P. (Ed.) *Facilities Management: Research Directions*. London: RICS Books.
- Olve, N., Roy, J. & Wetter, M. (1999). *Performance Drivers: a Practical Guide to Using the Balanced Scorecard*. Chichester: John Wiley & Sons.
- Pacitti, B.J. (1998), Organisational learning in R&D organisations: a study of new product development projects, unpublished PhD thesis, University of Manchester, Manchester.
- Preiser, W.F.E., Robinowitz, H.Z. & White, E.T. (1988). *Post-Occupancy Evaluation*. New York: Van Nonstrand Reinhold.
- Procurement Executives' Association (PEA) (1998). *Guide to a Balanced Scorecard Performance Management Methodology*. USA.
- Robinson, C. (1993) *Real World Research: A Resource for Social Scientists and Practitioners*. Oxford: Blackwell.
- Royal Institution of Chartered Surveyors (RICS) (1993). *Facilities Management: Fitting All the Pieces in a Changing World*. London: RICS.
- Santos, A. (1999). *Application of Production Management Flow Principles in Construction Sites*. Unpublished PhD Thesis. University of Salford.
- Stone, C.L. (1996). Analysing Business Performance: Counting the 'Soft' Issues. *Leadership and Organisational Development Journal*. Vol.17. No.4. Pp.21-28.
- Tellis, W. (1997). Introduction to Case Study. *The Qualitative Report*. 3(2).
- Then, D.S.S. (1996). *A Study of Organisational Response to the Management of Operational Property Assets and Facilities Support Services as a Business Resource – Real Estate Asset Management*. Unpublished PhD thesis. Harington-Watt University.
- Then, D.S.S. (1999). An Integrated Resource Management View of Facilities Management. *Facilities*. Vol.17. No. (12/13). Pp.462-46
- Tranfield, D. & Akhlaghi, F. (1995). Performance Measures: Relating Facilities to Business Indicators. *Facilities*. Vol. 3. No. 3. Pp.6-1.
- Trochim, W. (1989). Outcome Pattern Matching and Program Theory. *Evaluation and Program Planning*. Vol.12. No.4. Pp. 355
- Varcoe, B. (1996a). Facilities Performance Measurement. *Facilities*. Vol.14. No.10. Pp.46-51.
- Williams, B. (1994). *Facilities Economics – "Incorporating Premises Audits"*. London: Building Economics Bureau Limited.
- Yin, R. (1993). *Applications of Case Study Research*. CA, Beverly Hills: Sage Publications.
- Yin, R.K. (1994). *Case Study Research: Design and Methods*. Newbury Park, London, Sage publications.