THE APPRAISAL OF PERFORMANCE MEASUREMENT TOOLS IN KNOWLEDGE WORKPLACES

Defining research methodology and initial findings

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ABSTRACT: This research focuses on defining the scope for the future development of workplace performance measurement tools to better respond to the needs of the changing practice of 'knowledge workplaces', by critically appraising the tools and processes documented in literature and used in practice.
This paper explains, firstly, the importance of applying a practical point of view to this research through describing the connection between 'management research' and the principles of 'action research'; and through highlighting the importance of a 'practice-led and theory-sensitive' approach to enable usefulness for both theory and practice.
Secondly, the paper explains how the research problem is defined through practice-led research activity carried out in a University-based research centre - Centre for Facilities Management. One of the centre's forum groups has identified a need for research to support them in demonstrating the improved performance of facilities and the value of this for the business.
Thirdly, it describes the intended research methods. Through reviews of literature and organisational case studies, current, theoretical and practical solutions for this real world problem will be defined. Critical analysis of these solutions will be carried out in a broader context of other fields of work, such as product design, to enable greater conventional thinking and mapping of other possible solutions to be addressed in future research.

Key words: Facilities Management, workplace performance measurement, practice-led research

1. INTRODUCTION

Traditionally, the evaluation of business productivity recommends a reduction in input costs and an increase in the rate of work done to achieve the greatest profitability. Workplace management has also been concentrating on controlling costs and maximising the value of built assets.

However, as the organisations' ability to create, communicate, and use knowledge has become widely accepted as critical to their success (Davenport and Prusak, 1998; Nonaka-Takechi, 1995, in Neely 2002, p.321), more interest is placed on staff performance and the impact the workplace has on this. The traditional focus of providing a healthy and safe working environment still overlooks the human dimension as the users are only considered from the physical/mechanical point of view and little focus is targeted toward the cognitive and social aspects of the users. These neglected aspects of the environment are especially important in organisations where work is more mental than physical, and where the key criteria of effective worker performance is not the speed or range of motion of their limbs, but the quality and the flexibility of their thinking (Adler and Winograd, 1992, p.4), hence 'knowledge working'.

The review of current workplace performance measurement tools, documented in literature, indicated that these tools focus on the occupant feedback of building performance and, thus, highlight evidence of favourable working conditions (Huovala, Alexander 2003).

Therefore, rather than assessing feedback against organisational factors, such as structure, culture and set objectives, relationships between the building data and satisfaction are assessed. The impact changes in organisational functions and structures have on the working environment and the work community has been underplayed. This indicates that, traditionally, workplace evaluations focus on the physical settings, however, referring back to Adler and Winograd (1992, p.4), greater emphasis needs to be placed on the people who use the facility and on supporting the quality and the flexibility of their thinking. Thus, instead of technical functions (a product), the organisational behaviour (the effects of a product) within these functions is under investigation.

Authors such as Bradley (2001) have also suggested that too much emphasis is placed on the impact of a physical environment and the broader context of business performance is often not addressed. From the same perspective, other authors (Alexander, 2002; Varcoe, 1996; Bon, McMahan, Carder, 1998; Douglas,1996) have underlined the importance of a strategic approach to performance measurement. Although non-financial measures are becoming commonplace and accepted, and the contribution real estate and facilities can make to the overall business performance is more widely recognised in theory, literature highlights that there is still a lack of understanding of these aspects within businesses and amongst the decision makers.

Similarly, the research problem identified in one of the Centre for Facilities Management's (CFM) practice-led forums' indicates that the over-emphasis on cost reduction in the Facilities Management practice limits the ability to demonstrate potential workplace improvements due to the insufficient evidence of the value these would add to the business. The forum group have suggested that 'one reason for this is a lack of workplace performance measurement knowledge' (Forums' project brief). This, mainly practice-initiated, enquiry has been used as a basis for this research as representing a timely, real world problem.

The importance of applying a practical point of view to this research is explained through describing the connection between 'management research' and principles of 'action research'; and through highlighting the importance of 'practice-led and theory-sensitive' approach to enable usefulness for both theory and practice.

Through describing the identified solutions for workplace performance measurement (what, how, when and why), the aim is to reflect on and critically appraise the current tools and processes documented in literature and used in practice, to enable the exploration and creation of new innovative ideas for further development of workplace performance measurement tools for knowledge generating organisations.

2. RESEARCH APPROACH

The research approach has been greatly influenced by the action research carried out by CFM. This is because the research problem has been defined through practical enquiries within CFM's research activity: this has involved working closely with participating practitioners. The use of the principles of action research and the importance of a 'practice-led and theory-sensitive' approach are further explained.

2.1 Approach to action

The action research approach CFM has taken, which is being adopted for the purpose of this research, is to create a model of knowledge production, in which the theory and research problems are not to be generated within the academic context of application, but to be framed in the context of application as the research activity is to be driven by transdisciplinary concerns at both levels of theory and practice (Alexander, Kaya and Nelson, 2003).

However it needs to be highlighted that this research does not extend as far as action research (as defined in Alexander, Kaya and Nelson, 2003) as it does not initiate action to change organisational behaviour, nor is it concerned with the effects of this action. Instead, this research provides new insights for the practitioners, offering a sufficient theoretical background (adding rigour and reliability to the findings) that helps to convince both practice and the academic audience that some progress in the development of more appropriate measurement tools is achieved. This can be clarified further by following the steps proposed by McNiff (2000, p. 204) as a helpful beginning for action-based research (Table 1).This shows that the third point in which the way forward is envisaged, is reached, creating a basis for further action research.

Table 1. Helpful steps for action-based research (adapted from McNiff (2000, p. 204)

1. Review the current practice.
2. Identify an aspect wanted to be improved.
3. Imagine a way forward.
4. Try it out.
5. Take stock of what happens.
6. Modify a plan in the light of what has been found and continue with the 'action'.
7. Monitor the actions.
8. Evaluate the modified action.
9. Repeat steps 6-8 until satisfied with that aspect of the work.

2.2 Practice-led theory sensitive

Mailick and Stumpf (1998, p.3) suggest that the objective for any organisational changes, whether in structure, function or focus, needs to be a significant change in the participants' behaviour. The attempt should be to provide knowledge and impact attitudes. However, knowledge production in traditional research, described as 'mode 1' by Gibbons (in Tranfield and Starkey, 1998), '*occurs largely as a result of an academic agenda, predominantly driven through, and categorised by associated adjacent disciplines, developing knowledge stocks largely residing in universities'*. They further describe 'mode 1' as a downstream of knowledge production where little attention is given to the usefulness of findings to practitioners as the audience is often the academic community.

This approach, typically following the traditional scientific view of research (as, for example, in Robson, 2002 p.19), is limited in terms of investigating the organisational behaviour – 'knowing how'. Authors such as Robson (2002) Lawler (1999) and McNiff (2000) stress that too much emphasis is placed on establishing how certain we are of the validity of a particular relationship or finding, but to a degree this certainty can compromise the usefulness of the findings.

On the contrary to 'mode 1', the alternative knowledge production process 'mode 2' maintains a constant flow between the theoretical and the practical – fundamental and applied. In 'mode 2' *'the discovery occurs in contexts where knowledge is developed for, and put to use, while results which would have traditionally been characterised as applied – fuel further theoretical advances'*. (Gibson et al 1994 p.19 in Tranfield and Starkey 1998). Thus involving practice in research.

Easterby-Smith, Thorpe and Lowe (2002, p.61) acknowledge that the influence of 'corporate stakeholders' in defining the research question is important, as in management research there are both clients and users of the research findings. Facilities Management, according to Alexander, Kaya and Nelson (2003) *'is one of the most appropriate areas for researchers to collaborate with practitioners, as a nature of the field requires the relevance of research to seeking innovative ways of executing FM practices to deliver value to the business'*. Hucznyski (1996, in Easterby-Smith, Thorpe, Lowe, 2002 p.21) proposed that to be successful the management idea or theory must address a timely problem which relates to the needs and concerns of the managers to whom it is addressed.

Although this suggests that a 'mode 2' approach (Figure 1) is more appropriate for management research, it has been underlined that research concerning an organisation needs to place importance on contributing to both theory and practice (Lawler, 1999, McNiff 2000, Robson, 2002). A balance between the theoretical and the practical contribution – 'mode 1' and 'mode 2' - is required. Tranfield and Starkey (1998) have highlighted that by placing too much emphasis on developing new theories the research is in danger of '*resulting in output which is often experienced by users as having little sympathy or relevance to the complexities of the managerial situation'*. In contrast, they highlight that by placing too much emphasis on practical problem solving the research can become dictated to by politics and funding and can conclude findings of non-academic interest (Tranfield and Starkey, 1998).Therefore, Tranfield and Starkey (1998) posited that *'management research should adopt a dual approach to knowledge production that is both theory-sensitive and practice-led'*. This is to satisfy the practice that is looking for a solution to a problem; and the academic community that is looking for a well-argued case that takes account of existing literature supported by tangible evidence obtained via a well-explained methodology.

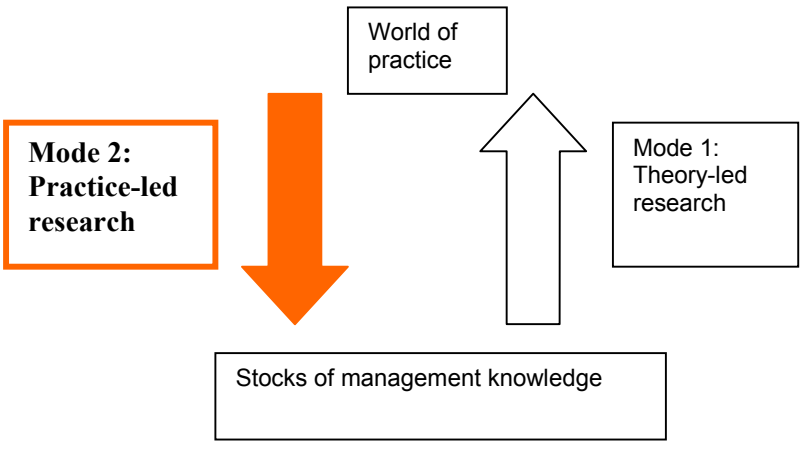

Figure 1. Mode 1 and Mode 2 – research (adapted from Tranfield and Starkey, 1998)

3. PROBLEM DEFINITION

The environment in which CFM works in, being university-based and facilitating the FM network for practitioners, provides a setting in which the authors have been surrounded with questions varying from broader theoretical research questions to very specific everyday practical enquiries. In that kind of an environment, a constant questioning of the importance of these enquiries is needed to define a researchable topic that will be of interest, and use for, the development of Facilities Management practice and of importance for theoretical development. To support this an awareness of the relevant literature is also required. The problem was therefore defined through parallel reviews of literature and the activities of practice.

In particular, the activities of the Financial Forum have been of great interest to the authors. The forum, mainly formed out of financial organisations (9 members), has taken the initiative to closer investigate and define workplace performance – thus the two-year programme of research entitled named 'High Performance Workplace'.

The CFM forums facilitate the open exchange of facilities management best practice and provides structures for a non-competitive environment to debate common issues, concerns and market trends. The CFM forums work on an action research basis (as defined in Alexander, Kaya and Nelson, 2003) and therefore the main principle in the collaboration is to narrow down the research interests through the activities and interests of the participating organisations. The forum's programme of action research is based on the Deming's quality cycle - plan-do-check-act. The 'plan' (problem defining) stage of the forum activity has formed the basis for this research by providing a timely, real world topic.

As a result of the workshop, held collaboratively by the research group and the forum participants, it was agreed within the group that research was needed to support Facilities Managers through a provision of a framework for workplace performance measurement. The Facilities Management practitioners agreed on the following issues:

1. The over-emphasis on cost reduction in the FM practice limits the ability to demonstrate potential workplace improvements due to the insufficient evidence of the value that these would add to the business.
2. It was suggested that one reason for this is a *lack of workplace performance measurement knowledge*.
3. It was proposed that tools which focus on *effectiveness* rather than efficiency should be developed to create a link between Facilities Management input and output to demonstrate the contribution of FM to the core business (workplace productivity).
4. Further, it was defined that there is a *lack of qualitative measures*. It was suggested that metrics that fail to measure quantitative and qualitative performance outcomes may depict an inaccurate picture of what really happens in the organisation.

From these issues the practical research question (as used in the forum)was formed: ***How to demonstrate the business value of improved workplace performance?*** The role of the research group was primarily to review previous work in the field, including a review of the existing approaches to the measurement of workplace performance. The authors, however, believed that further understanding of the theoretical background (than was possible to be gained within the business timescales) was needed, thus taking the practical enquiry aside for the purposes of theoretical reflection. In this context, an ultimate research problem was created: ***How should the workplace performance measurement tools be developed to better reflect the needs of the changing practice of 'knowledge workplaces' i.e. to help them demonstrate the effectiveness of improved facilities for their business?'***

This review is to contribute towards the future development of tools (and aiming to balance the practical and theoretical expertice) through:

- Defining practical ('real world') approaches to workplace management through case study reviews and confirming interviews.
- Reviewing current literature within the field.
- A Critical analysis of the current practice in comparison with theory.
- Reviewing literature outside the direct context to understand the benefit of learning from more 'established' fields of work, such as product design.
- Creating suggestions for the further development of practice and theory.
- Creating a basis for action research to explore the usefulness of the suggestions within and for practice.

As this research is strongly based on the practical enquiry presented earlier, a further investigation, firstly, into the validity and reliability of the process of problem defining, and secondly into the context of participating organisations was carried out. This also helped to clarify the scope of the further case study review, in terms of the focus on knowledge generating organisations. In particular, great emphasis within the investigation was placed on: types of organisations, the situations these organisations are currently in, and the different roles the member's played in the problem defining process.

1. Type of organisation – Knowledge work:

The organisations that took part in the problem defining were mainly large financial organisations, however, a pharmaceutical and a media organisation took part. These organisations operated a fundamentally similar office-based working function. Rather than the physical functioning of people, these organisations support *knowledge generation and distribution*. This type of organisation typically works in close proximity to the market and, therefore, very likely to experience frequent changes.

'Knowledge working' is a relatively new form of work, driven and enabled by Information and Communication Technology. Functions of knowledge workers, in comparison with non-knowledge workers, are different in terms of handling the processing, assimilating and synthesis of information; to the acquisition, creation, packaging, distributing, applying and maintaining of knowledge (Haron 2002). Austin and Larkey (in Neely et.al, 2002, p.322) have defined knowledge work as: '*it is work in which important value-creating transformations occur in the realm of ideas or symbols; or alternatively, in which a substantial amount of productive activity is intellectual rather than physical'*.

Haron (2002) also sees knowledge-work as an essential activity in the new economy and has resulted in drastic changes in work organisation and in workplace provision.

2. Member participation:

It was identified that the forum should consist of members that have previously worked within academic research projects and had a better understanding of theoretical issues within the field of workplace performance; but also members who had little experience in research and had little theoretical background knowledge. Although it could be seen that the more 'experienced' members took the leading roles in defining the research topic, the majority of the other members recognised the relevancy of the suggested research topics in their own organisations. However, some organisations chose not to take part in this project, two of which had already carried out workplace performance measurements, and did not see the need for further measurements. Some other organisations could not find the time and resources to participate. The problem defining process involved eight organisations, however three of those and a new member remained as active project members.

3. Situation:

Collectively, from the project brief it was understood that the cost savings and the increasing need to demonstrate the value of non-core activities such as Facilities management are the main pressures for the participating organisations to develop the measurement tools, thus take part in the project. In many cases facilities managers are challenged to put forward a clear and appropriate business case for workplace related investments and capital budgets.

Further investigation, through content analysis and additional interviews, into the individual organisations will be carried out to better understand what kind of organisational pressures and expectations the FM departments (specific to participants' areas of responsibilities) have been under, at the time of participation, to prompt a need to demonstrate the workplace performance.

4. SCOPE OF RESEARCH

The focus of the appraisal of current workplace performance measurement tools and processes is concerned with what processes or tools are in place, and why, how and when they are carried out.

Why: It is important to look for reasons behind why businesses carry out or do not carry out workplace assessments. This indicates the value (importance) businesses perceive through these exercises and could lead to areas of investigations that have not been recognised as yet.

What: In cases where tools of measurement were in place, there is a need to identify what is measured and investigate possible links between the reasons for measurement and actual measures. This will help to identify the validity of measurement in comparison to the business objectives and benefits.

How: The investigation focuses on the processes of measurement: method, sampling size and type of participants. This indicates how reliable these measurements are.

When: The timing of assessments and replication of these are important areas of investigation, this, in turn, places importance on both the planning and design processes and the on-going management processes. This enables the aims businesses set for new workplace settings to be reviewed and whether they have assessed the success of the outcome; but also whether there is/ has been assessments of on-going (changing) business aims and integration of these to workplace settings.

It is acknowledged that there might not have been any set aims or formal assessments in place and where there is a lack of these, it will be further investigated why this is the case.

5. RESEARCH METHODOLOGY

Content analysis of the forum documents, such as meeting/workshop agendas and notes, informal/formal recorded comments and feedback, presentations and the project brief, was undertaken. The authors have participated in the workshops and contributed to the literature review and initial data analysis within the forum. Where further clarification was required in terms of the forum activity the forum leader (practitioner) and the project manager (researcher) were interviewed. The combination of content analysis, participation in the meetings and further interviews are believed to have given a comprehensive understanding of the forum's activity, particularly in the problem defining process.

5.1 Literature review

An initial review of the existing approaches (theories) to measurement of workplace performance and methods and tools documented in literature was carried out.

5.2 Case study review

Information about organisations with knowledge or experience in workplace performance measurement was looked for from CFM's own database and externally to form brief case studies.

CFM seeks to create 'learning partnerships' (Alexander, Kaya and Nelson, 2003) with each foundation member, which enables a better understanding of, and changes within, facilities management practice in the long-term. The process of creating and sharing new knowledge for use in practice is supported through CFM research activities such as forums, facilities management case studies, longitudinal studies, strategic reviews; and commissioned work and focus groups for more specific enquiries.

Successful partnerships have been formed and therefore CFM has a comprehensive record of Facilities management practice (FM case studies) within these organisations. These case studies (between 2002-2003) have followed a framework; developed by the Centre for Facilities Management (used in Workspace-project, EuroFM, Tornqvist, 2001). This framework is further developed to reflect different elements of facilities management (Alexander, 2002); time, environment, organisation, people, processes and settings. A basic set of questions has also been created, but these are adaptable according to the focus of the investigation. Therefore, although the focus of the different case studies have all been different, the basic structure for data collection enables comparison.

First of all, data about the financial forum organisations was reviewed to find more information about their workplace performance and possible processes and tools in use. To gain a broader view of other possible solutions for workplace measurement, other organisations with office-based workplaces and with interest or experience in workplace performance measurement were sought within CFM's case study database. As a result of this review, 9 organisations (4 within the forum and 5 others within the FM network) were identified and used as part of the research to demonstrate their current understanding of the methods and tools used in practice.

5.3 Telephone interviews

Telephone interviews will be carried out to confirm and update the data where necessary to add reliability. Although the case data was collected between 2002-2003 the case study organisations are all changing rapidly and, therefore, Facilities Management's priorities and practice can change quickly.

6. INITIAL FINDINGS

The case study reviews and data confirmations are still to be completed. However, from the initial review of the case studies and the Financial Forum's research proposals some lessons have been learnt.

Four of the Financial Forum's organisations have undertaken an initiative to measure their workplace performance and a questionnaire was developed at their request to meet the needs of, and offer support to, these Facilities Managers in demonstrating the impact

workplace performance has on business. The measures for the workplace performance were developed around the following output factors initiated and agreed within the group:

1. Staff retention / attraction
2. Comfort
3. Risk (Health and safety, environmental, security& workplace)
4. Speed/ minimum disruption
5. Creative thought
6. Communication/ minimum interference
7. Corporate image / 'brand'

The review of the existing approaches to the measurement of workplace performance and the methods and tools used was carried out and the identified limitations of these to evaluate the performance of the business objectives were presented to the group.

The Facilities Managers in the forum felt that the priority was to show the business that the workplace facilities did not hinder the business function. Although questions relating to all seven output factors were included in the questionnaire, the measurement of minimum disruption (% of working time) within the use of a workplace took main priority. The traditional approach to the measurement of 'downtime' (see Bartlett and Oseland, 1999 for example) was that occupants evaluate the time lost due to some certain situations (that are pre-determined as non-productive) such as IT failure or queuing for the copy machine. In addition to this, a perceived level of hindrance to task completion was included to be balanced with the perceived lost time. Therefore, the *effect* the facilities have on task completion was measured rather than measuring the satisfaction with different *qualities* of a building (as criticised earlier).

Further analysis of the validity, reliability and usefulness of this approach to workplace measurement is to be carried out. This will include further investigation into why, when and how the measurement is carried out. As the questionnaire survey of the Financial Forum is to be finalised in the spring 2004, some feedback of the usefulness of this approach will be also available (organisation's feedback is an integral part of the action research approach taken in the forum). A review of the other case studies will be completed in the spring 2004.

To summarise the initial review of the case studies and the research activities in the financial forum, the following assumptions relating to the practice of workplace performance measurement could be made (specific to the reviewed organisations and not to be generalised):

1. Facilities Managers recognise the positive difference the workplace facilities can make to the business, but find it difficult to demonstrate the effectiveness of this to the business.
2. Need for measures that can be presented in financial figures, such as 'downtime'.
3. The priority of minimising the hindering factors in the workplace facilities.
4. Facilities Management rarely has resources (time, money, people) available to investigate 'ideal' working facilities.
5. Organisations do not have systematic workplace performance measurements in place.
6. If measurements are carried out they are often related to a major change (such as relocation) and often involve a staff questionnaire to gain feedback on the success of this particular project.
7. Facilities Management rarely has the resources available to investigate the continuing suitability of the facilities for the business in the long term. Instead short term priorities (such as minimising the ad-hoc hindering factors) take over.

8. In a relatively small workplace (around 500 staff) systematic workplace performance measurements are seen as unnecessary and monitoring is informal. However, in one of these cases, facilities management and business have both indicated that there is a lack of systematic monitoring, which have led to confusion and frustration especially associated with internal moves.

Where measurement is in place, the following three approaches could be identified:

1. Consultancy-led measurement satisfaction: A questionnaire assessing the users' satisfaction with the physical facilities (such as new lay-out, desk size, use of meeting rooms) and environmental conditions. 'Downtime' is calculated in time spent on certain activities (predefined as non-productive).

   The aim is to provide feedback on *intended objectives* (mainly for the use of the designer) concerning the users' satisfaction with *physical* qualities. No connection with satisfaction rates and business performance is made.

2. Facilities Management-led measurement: A questionnaire focusing on the level and time of hindrance in: use of different work settings for team working and individual working; IT capacity and failure; availability and serviceability of support services; and environmental conditions (lighting, ventilation, heating etc.).

   The questionnaire was aligned with other data collection, such as clarifying interviews; observations on the use of space; and company documents outlining complaints and financial inputs.

   The aim was to create measures that demonstrate the effects of the *physical* facilities to benefit the *financial* business.

3. Consultancy-led measurement of communication: A satisfaction questionnaire included questions concerning communication networks (in organisation where frequent internal communication was essential).

   The aim was to provide feedback (mainly for the designer) on the efficiency of communication as an essential *business process* (rather than just a physical function). However, this survey was used as feedback for the workplace designer, rather than the demonstration of efficiency in work processes for the business.

The first of these approaches, which is the most commonly used, focuses on the physical qualities of the *product* (workplace), while the second (used in the financial forum) aims to estimated the time lost. In addition, the second approach aims to measure the *effect* of the product by defining the level of hindrance to the work activities (which can be translated into monetary value). The third approach (used in one of the cases) is also concerned with the effects of the physical facility on people, but focuses on the measurement of communication networks.

7. EXPLORATIVE APPROACH

Current workplace measurement surveys (as defined in this initial case review) focus on the dissatisfaction with physical facilities so that designers can better understand how to improve their designs; or facilities managers can prioritise what actions needs to be done to minimise the dissatisfaction.

This approach is similar to the traditional concern in the field of product design, which emphasises the physical and psychological well-being of users to reduce errors,

discomfort, injuries, delays and low productivity. However, increasing competition in the market has forced product industries to do better than mearly preventing people from becoming sick, damaged or irritated whilst using their products (Green, Jordan et al, 2002).

Bonapace (in Green, Jordan et al, 2002) also suggests that the success of a commercial product in the market place inevitably depends on how ergonomic and useful it is, how easy it is to use, in what ways it is better than other products in the market, and in many cases how the product is marketed and delivered to the user. In fact, the buying public today expects the product to be ergonomic, useful and easy to use and will be disappointed if this is not the case. Even further, the rapid changes in the demand of products, mainly because of developing technologies and business structures, have also made other demanded qualities from a product, such as flexibility and adaptability.

If we were to translate these principles of successful product design into the planning and management of workplace and its supporting facilities infrastructure, more emphasis should be placed on workplace qualities such as usefulness, ease of use and adaptability, as well as on the supporting processes of marketing and delivery of the workplace 'product'.

Therefore as part of completing the review of the current workplace measurement processes and tools, and especially within the question of *what* is measured, these workplace qualities will be explored as criteria for demonstrating the improved workplace performance. A further review into product design literature, especially into 'usability' of a product, will be carried out to investigate whether facilities management could gain from the lessons learnt in the field of product design.

8. CONCLUSIONS

A literature review of the current tools available for workplace performance measurement and the identified lack of knowledge in practice (in the CFM forum) led to the further investigation into what tools and processes are used, why, how and when they are used. This review is to contribute to the development of workplace performance measurement tools.

Through CFM's database of facilities management practice in the UK, nine organisations have been taken into a further investigation and brief case studies will be formed and critical analysis completed. However, some initial findings of the facilities managers' expectations from, and approaches toward, demonstrating the value of workplace facilities can already be outlined. These show that (although in most of the cases there is no systematic measurement in place) the emphasis is on defining the dissatisfaction of the users ,and that there is a need for measures to show financial implications to enable the effective demonstration of added value to the business.

Alternative approaches to workplace measurement are explored through a literature review of the product design industry and the emphasis that is placed on the usability of a product. It has already been recognised that the increasing competition in the market has forced product industries to move forward from avoiding dissatisfaction towards increasing satisfaction. The review, and particularly the question of why measurement are carried out, will help to identify whether a similar approach is demanded from workplace management. If this is the case the tools and processes for workplace performance measurement need to include dimensions of usability.

Therefore, to complete this review, the current practical approaches will be critically analysed to align with the literature of facilities management, but also to align with the literature of product design to explore alternative approaches for the future development of workplace measurement tools.

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