STRATEGIC AND OPERATIONAL FACTORS INFLUENCE ON THE MANAGEMENT OF BUILDING MAINTENANCE OPERATION PROCESSES

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ABSTRACT: Timely implementation of repair activities for buildings and structures, particularly of minor and major repairs underlie the safe operation of real estate and guarantee its long-term and effective use. Current requirements contained in Russian regulatory documents form the basis for the planning of maintenance activities' performing.. Facility management has been employed because of the necessity to decrease overheads cost and unnecessary waste. In building construction environment, developers will have to tie up with providers of such services to ensure longetivity and a better selling price for their properties. On the other hand, corporates will continue to avail of the benefits of outsourcing facilities management services for their office spaces to enhance their overall image and brand value. The general ideas of minor and major repairs as integral measures at the stage of operation of buildings and structures facilities maintenance are presented in the paper. All the necessary prescriptions for the maintenance of buildings and structures are formulated quite fully and clearly. However, regularization of the procedural processes of operation, taking into account all the mechanisms that are available for today, is a matter of not only preserving and efficiently using capital construction objects, as well as maintaining their safety, but also information content of such technologically complex units, as buildings or structures under conditions of modern urban environment.

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1. INTRODUCTION

Facilities management (FM) is concerned with planning, designing and managing buildings as well as their support systems, equipment and furniture in order to enhance an organization's ability to compete successfully (Becker, 1990). FM is about taking control, adding value, supporting the business and ensuring that the space and working environment enhance and not impede productivity of the staff and the core activity (Wiggins, 2010). FM evolved from traditional building support service (BSS) practices such as maintenance management, corporate real estate management, property management and asset management among others. It is an umbrella practice that incorporates other BSS disciplines. Facility management companies are the drivers and the primary components of building industry. They are the service providers who serve of the service seekers. With increasing complexity of the operations and client demands, challenges of day to day activities, medium term, long term business operations have become even more complex. The way to tackle them is to infuse multipronged management solutions into business operations. While looking through literature one finds a whole abundance of terminology and explanations for the expression "Facility Management". This is due to the fact that there have been a lot of attempts for definition though there is no standardized system of definitions one could actually use. "Facilities" are considered the totality of materials necessary for the process of work, not being a physical part of the product or service but being essential for the performing of the company's ends. Thus, property, buildings, utility equipment, all kinds of installations, material for one's work, also: office furniture, communication devices etc. are all considered facilities. For this reason, the expression "facilities" contains all operating and working equipment."

The strategic and proactive nature of FM makes it different from these other building support services. FM implements company policies on property issues and adopts strategic cost control and service performance level control mechanisms in its operations. The Facilities Manager assumes the role of the intelligent client (Williams, 2003) and as the champion of the end user's need (Wiggins, 2010) his main focus is supporting the objectives of the building occupant, a responsibility which usually includes managing the physical assets. The current global economic downturn has forced company executives to look towards their internalised

competitive advantage in order to sustain their businesses. Consequently, there are on-going attempts to try to identify major improvements to facilities and support services that will enhance staff productivity and invariably the profitability and sustainability of businesses. In view of the potential advantages of facilities management, there is increasing clamour to carve out strategic roles for it in Nigeria organizations that has to do with design, construction and maintenance of buildings.

LITERATURE REVIEW

Building Facilities Maintenance

From the literature it can be seen that the subject of building facilities maintenance [BFM] has received considerable attention but with regard to the specific issue of the factors that influence public BFM projects, there is a noticeable shortage of articles. Building maintenance demands a combination of administrative and technical actions to ensure all elements of a building are at a required standard to perform its intended function (Wordsworth, 2001). It is necessary for buildings to show a good level of functionality, since they represent one of the most valuable assets of a nation, providing as they do, facilities for work. And as time passes, the maintenance of buildings becomes an invaluable process in retaining their value and quality (Vijverberg, 2002). Building maintenance accounts for over half of the total output of the building industry worldwide (Wordsworth, 2001). Clearly it can be seen as a vital component of the industry, and as noted by Lam *et al.* (2010), in order to execute BM tasks efficiently, a proper BM plan and monitoring system is essential.

The literature provides several definitions and objectives of BFM. Francis *et al.* (2001), for example, state that BFM is an operation involving the interaction or combination of technical, social, legal, and fiscal determinants that govern and manage the use of buildings. It can be seen as a complex operation, yet arguably, many people do not understand its importance and/or the need for its proper management (Syahrul, 2009). recently, Lee and Wordsworth (2001) claimed that the main objective of a maintenance management organisation is to ensure an acceptable standard and level of service is provided continuously, and at minimum cost. Buildings must be considered both as facilities and assets, and this requires viewing maintenance in a wider context. The British Standards (BS 3811:2010) define maintenance as: "*A combination of any actions carried out to retain an item in, or restore it to an acceptable condition*". From this definition it can be observed that action is considered not only in reference to the physical execution of maintenance work, but also in regard to initial planning, financing, and management. Furthermore, understanding all the requirements for effective BFM implies that acceptable conditions within a building be present. At the same time, however, what is regarded as acceptable conditions depends on the building type, and can be interpreted differently from person to person. Hence, the complexity of the concept is enhanced.

Given the definitions mentioned, it is seen that the objectives of BFM are:

- To ensure that buildings and their associated services are in a safe condition.
- To ensure that the buildings are fit for use.
- To ensure that the condition of the building meets all statutory requirements.
- To carry out the maintenance work necessary to maintain the value of the physical assets of the building stock.
- To carry out the work necessary to maintain the quality of the building (Syahrul, 2009).

The above objectives are not easily achieved, however, and the universal problems that negatively affect the maintenance of building services must be considered. In the following sections, these problems and challenges are explored.

Problems Facing the Maintenance Industry

The maintenance industry in general is facing numerous problems that affect its growth, and the purpose of this section is to present a brief description of those problems as they influence the operation and maintenance industry.

(i) *Poor Maintenance Management*

According to Lam, (2001), the main objective of maintenance management is to minimise the need to repair of building defects, by enhancing planning and implementation, and adopting suitable materials and tools for the initial construction. Effective maintenance management should have a clear strategy for corrective, preventive, and condition-based maintenance. This includes ensuring that failure to execute maintenance at the right time does not occur, as according to Narayan (2003), failure or delay when executing maintenance actions can cause further excess damage, wear and defects. Thus, additional maintenance works must be performed in order to treat problems. Lack of documentation regarding maintenance work also leads to problems and higher maintenance costs in the long term (Lam, 2001).

(ii)*Poor Quality of Material*

Poor quality of spare parts and the materials used in building components, elements, services, and or facilities, significantly influences maintenance costs. Clearly, the use of spare parts is necessary in maintenance activities, but as identified by Al-hammad *et al.* (1996), problems related to the lack or unavailability of required spare parts, tools, and or materials to perform maintenance tasks, do occur. As a result, poor quality or second-hand spare parts are sometimes acquired for maintenance tasks, and not surprisingly, this poor quality may have a direct effect on the performance of elements or the systems to be maintained.

(iii) Poor Performance of the Maintenance Team
Team effectiveness is central to the success of any project. Since maintenance is performed as teamwork, the factors that increase the effectiveness of the work of a team should be taken into account. If a team is ineffective, this will affect the productivity of the workers and increase the cost of maintenance (Azmy, 2012).

(iv) *Budget Constraints*
Pascual *et al.* (2008) stated that the asset or building failure rate increases as time passes and this produces a higher number of repair and maintenance tasks. It is often seen that delay in maintenance tasks has occurred because the budget allocated is not sufficient to cover the need for maintenance (El-Haram and Horner, 2002), and maintenance managers continuously complain about the insufficient funding earmarked for maintenance work, since any limitations in funds will proportionally decrease the amount of maintenance performed.

(v) *Lack of Training*
Poor training is likely to negatively influence maintenance costs. Indeed, Narayan (2003) states that the absence of maintenance skills in personnel training is one of the reasons for poor operating practices. Inadequately trained staff produce defective work, show reduced productivity, and cause accidents, as they use unsatisfactory operating and maintenance practices. Human error and poor quality maintenance outcomes are the logical result of no or poor training, and as noted by Colen and Lambrecht (2012), ultimately, this lack of attention to, and investment in training, contributes to higher maintenance costs. Undeniably, maintenance skills are essential if good maintenance performance is to be achieved (Pascual *et al.*, 2008).

(vi) Poor Communication
Poor communication between maintenance groups and end users is another problem since this results in focusing on maintaining areas that are not necessarily the main cause of a defect identified. Hence, it can result in additional work, which eventually escalates maintenance costs (Hua *et al.*, 2005).

(vii) *Contract management*
A management agreement or contract is a formal and binding document that establishes the manager's legal authority over the operation of the property. The manager is usually an agent for the owner, serving as the owner's trustee of the owner's funds and assets associated with the property. The agreement states each party's responsibilities and authority and it guarantees certain protections to one party from the other. A well-drafted and well-negotiated agreement should eliminate, or at least minimize, most misunderstandings between the parties. A poorly drafted agreement on the other hand may lead to disputes between the management firm and the property owner, raising questions of trust, undermining the confidence of the parties in each other and creating an uncomfortable relationship for both parties.

(viii) *Resource Utilization*
One of the modern "keys to successful business" is the efficient use of resources. Out-tasking is the oldest form of outsourcing. In out-tasking an outside service provider is hired to provide the service. Out-tasking does not involve transfer of personnel and the whole business unit. Similarly a word contracting-out is used for out-tasking a certain function.

(ix) Education
The education sector is also one of the Government's initiatives in the implementation of the facility management in Nigeria. There are now several institutions of higher education offering undergraduate programs for facility management to enhance the expertise and competency of staff in an organisation. Among the institutions directly involved are our Polytechnics and Universities. In addition there are several other institutions which also offer studies in research in the field of facility management such as Technical Colleges, Colleges of Education and some other specialized institutions. All this effort is to meet the needs of the labour market that is still low Nigeria.

In general, the structural hierarchy of government asset management document is composed of four (4) levels of documents, namely the document policies, manuals, procedures and supporting documents for

comprehensive asset management the Government as in Figure 1.

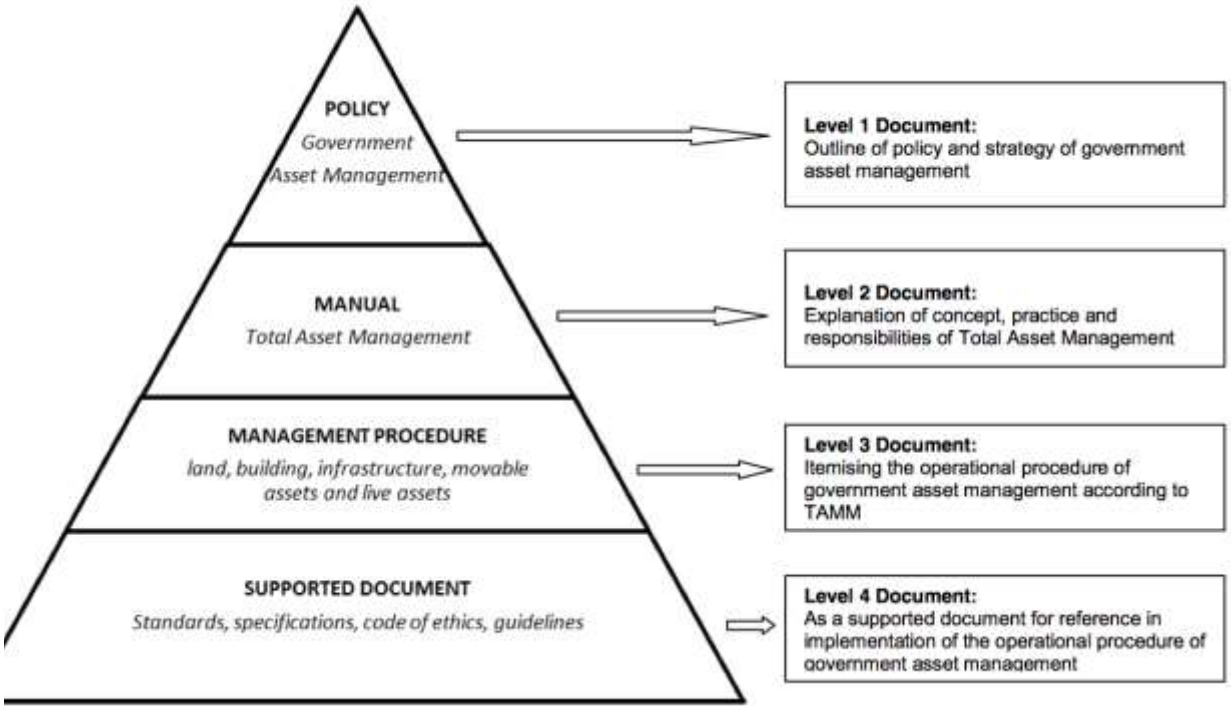

Figure 1: Government asset management document structure (Comprehensive Asset Management Manual, 2009)

While the NIOB outline roadmap, principles and strategies for the implementation of the asset management that must be complied by each agency. Four main objectives to be achieved through this policy namely;

- The creation of assets to meet the needs of government service delivery.
- Asset management carried out in a systematic, holistic and sustainable manner to achieve optimum asset interest.
- Systematic asset Information, integrity and easily reach.
- Comprehensive asset management practices implemented and monitored.

Nigerian Institute of Building (NIOB)

NIOB aims to develop, maintain and implement guidelines for facility management practitioners in Malaysia. The guidelines are in the form of manuals, policies, procedures and detailed procedures that will provide a clear definition of how facility management managed to complete successfully. Among its functions are; Promote and stimulate the development, improvement and expansion of the construction industry;

- Advise and make recommendations to the Federal Government and the State Government on matters affecting or relating to the construction industry;
- To promote, encourage and undertake research on any matters relating to the construction industry;
- To promote, encourage and assist export of services relating to the construction industry;
- Provide consultancy services and advice in respect of the construction industry; Develop quality assurance in the construction industry;
- Revitalise the standardisation and improvement of construction techniques and building materials;
- Enable earned and maintain an information system of the construction industry;
- Convene, promote, review and coordinate training programs organized by the Center for public and private construction training

for skilled construction workers and construction site supervisors;

- Accredited and register of contractors and to cancel, suspend or restore the registration of any registered contractor; and
- Accredited and certify skilled construction workers and site supervisors.

CONCLUSION

Overall this research presents clearly the current scenario and the important of facility management in Nigeria. No doubt the facility management industry is still new in many areas of the country and requires huge support from all parties whether from the public or private sectors. Being a developing country that requires competing with others in attracting investors in order to bring prosperity to the country, providing and maintaining functioning and good working condition

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