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Strategic asset management: Assessment tool for educational building in Egypt



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Abstract The main objective of this study is to develop a Strategic Asset Management Framework (SAMF) for educational buildings in Egypt. The General Authority for Educational Buildings (GAEB) was chosen as a case study as it represents the biggest governmental organization responsible for planning, operating and maintaining schools in Egypt. This is achieved first through reviewing the literature of strategic asset management. In the next stage, structured interviews were conducted with senior managers of GAEB using a pre designed questionnaire to explore the current practice of asset management (AM). Gap analysis technique was applied against best practices compounded from a vast literature review and showed that the areas related to “people and organization” category are the weakest areas. Based on the findings, a SAMF for GAEB was developed. The study developed a checklist to be applied as a multifunctional tool for framework implementation and self assessment of asset management maturity. The developed checklist tool and its mechanism not only assess the overall AM maturity but also allow assessing the detailed step by step level of implementation of the framework. The framework was developed to improve GAEB AM performance and to reach at least the “Systematic Approach” level as a first stage in the improvement process. The framework has been implemented and the overall performance achieved the target score that lies in the range of Systematic Approach level, more over the areas related to “people and organization” category which represented a main weakness in GAEB have achieved a remarkable improvement.

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Introduction

A Strategic Asset Management Framework (SAMF), ties an asset management organization from end to end, and is targeted at improving efficiencies, effectiveness and overall performance while meeting the business objectives. The main objective of this research is introducing a comprehensive SAMF that could be applied to GAEB. The General Authority for Educational Buildings (GAEB) has been chosen to be

the case study of the current research as it represents the biggest governmental organization that is responsible for planning, operating and maintaining schools' buildings in Egypt. The current research aims at implementing the developed framework on GAEB and assists its performance. The study also developed a checklist to be applied as a multifunctional tool for framework implementation and self assessment of asset management maturity. It helps in providing the main SAM requirements, their steps and tasks to impendent them in order to have a real strategic asset management system and it can also be used as self assessment and allows assessing the detailed step by step level of implementation of the framework.

Strategic asset management

Definition

Office of Facilities Management, Griffith University (2008) [1], defines strategic asset management (SAM) as the planned alignment of physical assets with service demand and achieved by the systematic management of all decision-making processes taken throughout the life of the asset. A holistic view of AM as an integrated business process designed to optimize the use of a utility's assets while balancing the varying needs of key stakeholders is supported.

Strategic Asset Management Framework (SAMF)

It is a valuable tool which provides departments with a systematic and consistent approach to managing their buildings to meet service delivery requirements. It guides decision-making processes over the life cycle of an asset: planning, investment/procurement, management-in-use and disposal phases, to enhance the management capability of Government departments for the building assets under their control [2].

Strategic approach of asset management

More organizations are adopting a strategic approach in asset management. This new direction can be observed from the guidelines and best practices published by these organizations. Despite the difference in emphasis and perspectives, some common themes can be identified and can be categorized as follows:

- Systematic Management – To optimize asset performance, asset management must adopt a systematic and structured process of maintaining, upgrading, and operating physical assets in a cost effective way [3,4].
- Whole Life Cycle – Life cycle approach is central to asset management by taking account of the total cost of an asset throughout its life [5].
- Resource Allocation – Asset management can be described as a methodology to efficiently and equitably allocate resources amongst valid and competing goals and objects [6].
- Service – A better service, not a better asset, is a key indication of successful asset management [5].
- Strategic Focus – Strategic approach considers the assessment of costs, benefits and level of service provided to ensure that the present needs are met without compromising the ability of future generations to meet their needs [5].

SAM requirements

Amadi-Echendu et al. (2010) [7], stated that the key requirements of strategic asset management are:

- (1) Spatial generality: SAM extends across all types of physical assets, including human resources, in any industry.
- (2) Time generality: SAM extends over time to include short term (e.g. utilization) and long term (e.g. lifecycle) aspects of physical assets.
- (3) Measurement generality: Measurement data include measurements of the economic value the (financial dimension), social as well as the physical (the capability dimension) attributes of assets.
- (4) Statistical generality: Risk and other higher moment estimates of measures are important in SAM as well as the basic, first moment return measure of asset performance.
- (5) Organizational generality: SAM takes place at all levels of the organization, from direct contact with the asset to the strategic interactions that take place in the boardroom.

These five requirements of SAM generality have at least three implications: SAM is multi-disciplinary since it requires input of skills from virtually any discipline source, decisions in SAM extend from operational and tactical aspects of asset management to strategic aspects, the human dimension of SAM requires the use of qualitative modes of analysis as well as the more traditional quantitative modes.

SAMF ties three key links of the organization namely – people, process and technology and on this integration resides the delivery systems of the entire organization. The balance between the people, process and technology is achieved through an adequate understanding of the three links, and ensuring that an appropriate framework exists to retain the bond between these links [8].

Research objectives

The main objective of this research is to develop and implement a Strategic Asset Management Framework (SAMF) to improve the performance of the educational buildings in Egypt. The General Authority for Educational Buildings (GAEB) was chosen as a case study of the current research as it represents the biggest governmental organization responsible for planning, operating and maintaining schools in Egypt.

Research methodology

Research is adopting the “investigation, assessment, resolving and validating” approach and it is aimed to be applied through the following 4 stages:

- (1) Stage 1: diagnosing the current practice of AM implementation at GAEB
 - Identification of asset management components/activities through literature review.
 - Development of a questionnaire for the purpose of personal interviews with senior managers of the General Authority for Educational Buildings to identify the current practice of asset management implementation.

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