



BIM for Facility Management: Challenges and Research Gaps

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Received 24 October 2016; Accepted 25 December 2016

Abstract

This writing presents research gaps in the area of Building Information Modelling (BIM) in Facility Management (FM) industry, and identifies practical challenges that facility management professionals are facing in utilizing BIM. Although this issue, BIM for Facility Management, has gained attention both in literature and practice, and it is highly demanded in FM industry, still it is far away from effective implementation. It is not clear for facility manager whether BIM is helpful to accelerate the process or it is a cost effective solution, and what skills are required for them. The key for effective BIM implementation in FM industry is to enhance collaboration among different parties in project lifecycle. However, still there is a doubt about the importance of FM in Construction industry. In other words, construction does not understand FM. Furthermore, there are issues over interoperability and data exchange. Thus, to assist BIM implementation, it is required to prove the correctness of benefits, uses, and challenges identified in the literature. This paper uses an intensive literature review and highlights the potential research issues in terms of BIM for FM to assist effective implementation of BIM in facility management phase of projects.

Keywords: BIM; Facility Management; Construction Industry; Research Gaps.

1. Introduction

Building Information Modelling (BIM) is “an IT enabled approach that involves applying and maintaining an integral digital representation of all building information for different phases of the project lifecycle in the form of a data repository” [1]. It is a set of ICT technologies able to insert, extract, update or modify information of the facility model, and supports stakeholders’ collaboration over the projects life cycle. BIM is not just a 3D model and intelligent structured data of a facility, but rather it is a value–creating collaboration tool [2]. However, BIM is widely adopted in construction industry. It is an important issue in Facility Management (FM) industry as well, but it is often misconceived, and not utilized effectively [3]. In fact, BIM acts as an information backbone for FM systems, which if it combines with advanced technologies, it can enhance operational workflows efficiencies [4]. Nowadays, BIM is converting from a simple information storage to a platform which is capable of performing different kinds of analyses based on raw data [5].

On the other hand, according to [5] in the Architecture, Engineering and Construction (AEC) industry, little consideration has given to the quality of delivered facility manager services. One of the key challenges in FM industry is the intensive amount of data that should be captured and managed during the life cycle of the facility. BIM can facilitate and accelerate data accessibility to facility managers. “BIM is something that Facilities Management must engage with, and that engagement must begin as soon as possible” [6]. Although it is estimated that BIM can achieve about 20% Capital Expenditure savings, “the largest prize for BIM lies in the operational stages of the project life-cycle” [7].

BIM application in FM phase alternates the conventional methods of documentation, control, maintenance, and analysis. BIM helps facility manager accessing facility information within minutes, while it may take hours of efforts to achieve the same information without BIM. FM departments utilize BIM technology in order to reduce the

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