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Conceptual Framework of Information Exchange Processes in Building Information Modelling (BIM) for Facilities Management

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Abstract. The current research demonstrates Building Information Modelling (BIM) as one of the emerging construction technologies in the industry. Nonetheless, the adoption of BIM for Facilities Management (FM) has not yet been acknowledged. FM in Malaysia is still driven by traditional processes in which flag its development and economic competitiveness. The probable reason is lacking understanding of information exchange in the BIM platform across the project life cycle. Hence, the objective of this paper is to develop a conceptual framework of information exchange processes in Building Information Modeling (BIM) for Facilities Management. A comprehensive review of the literature is employed in this research. The findings revealed the relationship between the information required by BIM in FM and the process for information exchange between BIM and FM systems emphasises four moderators as external factors, namely the FM information need to track, stakeholders' responsibilities for data provision, equipment information export in COBie format in FM and import facilities data from the COBie spreadsheet into FM systems. The outcomes of this paper may assist stakeholders in optimising their present BIM requirements, increasing workflow efficiency, and expediting the effective adoption of BIM in Malaysia.

1. Introduction

The Malaysian government has taken several steps to urge the construction industry to utilise BIM to develop current construction projects [1]. Even though most Malaysian construction companies are aware of the BIM concept, the lack of supervision, government assistance, and competent employees has been a significant factor in technology's delayed uptake [2]. Other impediments to implementing BIM in Malaysia include application system specifications and a lack of understanding and willingness to change. Traditional processes still dominate the construction industry. There is a paucity of knowledge regarding the areas in which BIM might assist FM processes, the associated challenges, and the anticipated benefits. For BIM to be adopted effectively, all project construction stakeholders, including small construction companies, should participate in this change [3]. Introducing Building Information Modelling (BIM) in FM practice essentially streamlines the flow of information related to project systems and components throughout their life cycle [4]. In the viewpoint of FM, BIM can be defined as a dynamic document collection instrument in archives to manage and control building data accurately throughout the life cycle, which owners can use to handle facilities during the FM phase [5]. Consequently, the more accurate and recent the FM team can access the data, the more excellent the opportunity for processes improvement during the handover stage. BIM is an added value process involving the operation, administration and interchange of facility information that forms a dependable

