# Diagnostic and Assessment Benefits and Barriers of BIM in Construction Project Management

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## Abstract

This paper aims to diagnostic and assessment the benefits and barriers of Building Information Modelling in the construction project management. Both open and closed questionnaire was used to explore the views of a number of Iraqi engineers; in order to investigate the level of BIM implementation in Iraq construction sector. Questionnaire indicated an acceptable awareness of (BIM) in Iraq, especially among the young generation of engineers which indicates the arrival of the evolutionary stream of BIM in the next few years. Moreover, questionnaire showed that the most important advantage of implementing BIM in the Iraqi construction sector was the ability to generate accurate 2D plans at any stage, while the least important advantage was the ability to provide a careful planning of the site facilities, with a relative importance of (82 %) and (33 %) respectively. Furthermore, the most important barrier to its implementation was the unspecified responsibilities for data content, as presented by questionnaire, while the least important barrier was the lack of programs efficiency in data exchange and internal collaboration, with a relative importance of (81 %) and (34 %) respectively.

*Keywords:* Building Information Modelling; Questionnaire; Personal Interview; Barriers; Construction Project Management.

## 1. Introduction

Building Information Modelling, basically, is the process of fabricating the actual reality within the virtual reality by combining the design with a database based on introducing parameters to develop various significantly rich information to simulate each object's properties, creating extra dimensions to be represented; in order to reach the optimized solutions for different aspects of the building (such as building design, construction duration, construction cost, building sustainability, facility management, safety management and risk management) before initiating the actual construction. The idea of Building Information Modelling (BIM) and its use in construction industry has been conceptualized for less than thirty years. However, the development in this area was significant and included multiple applications in the construction sector, including but not limited to the highly accurate visualization of the model, the capability to produce accurate two dimensional plans extracted from the three dimensional models, time control, cost control and sustainability [1].

## 2. Research problem

Although building information modelling is widely adopted around the globe, yet it is a relatively new philosophy in the Middle East; as a result of the slow evolution in the construction industry. It is often argued that Iraq, as a developing country, is considered to be one of the slowest Middle Eastern states in adopting new technologies; thus, an

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