

Building Information Modelling for Construction Delay Management

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Abstract : The Kingdom of Saudi Arabia (KSA) is not an exception in relying on the growth of its construction industry to support rapid population growth. However, its need for infrastructure development is constrained by low productivity levels and cost overruns caused by factors such as delays to project completion. Delays in delivering a construction project are a global issue and while theories such as Optimism Bias have been used to explain such delays, in KSA, client-related causes of delays are also significant. The objective of this paper is to develop a framework-based approach to explore how the country's construction industry can manage and reduce delays in construction projects through building information modelling (BIM) in order to mitigate the cost consequences of such delays. It comprehensively and systematically reviewed the global literature on the subject and identified gaps, critical delay factors and the specific benefits that BIM can deliver for the delay management. A case study comprising of nine hospital projects that have experienced delay and cost overruns was also carried out. Five critical delay factors related to the clients were identified as candidates that can be mitigated through BIM's benefits. These factors are: Ineffective planning and scheduling of the project; changes during construction by the client; delay in progress payment; slowness in decision making by the client; and poor communication between clients and other stakeholders. In addition, data from the case study projects strongly suggest that optimism bias is present in many of the hospital projects. Further validation via key stakeholder interviews and documentations are planned.

Keywords : building information modelling (BIM), clients perspective, delay management, optimism bias, public sector projects

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