Effectiveness and Practicability Analysis of BIM Adoption in the AEC Industry

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ABSTRACT

Applications of Building Information Modeling (BIM) have widely infiltrated various construction fields. BIM serves as a set of technologies to maximize productivity, increase collaboration, and improve work efficiency throughout the project life cycle. BIM also supports the best practices of other emerging technologies by creating a platform for integration and coordination. The process, approach, and strategy of implementing BIM can impact the entire project's cost and schedule performance. A need exists to evaluate the effectiveness and practicability of the current BIM practices. First, this study reviewed 84 selected BIM projects from 21 countries based on their features, including project information, delivery methods, BIM approaches, level of development, software, and emerging technologies. Second, the challenges and limitations of adopting BIM in the construction project were evaluated. One significant outcome of the research was the identification of key attributes that facilitate the effective use of BIM on construction projects. The result of this study can assist practitioners in making better decisions on project planning and BIM adoption.