

Multi-Stakeholder Involvement in Construction and Challenges of Building Information Modeling Implementation

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Abstract : Project development is a complex process where many stakeholders work together. Employers and main contractors are the base stakeholders, whereas designers, engineers, sub-contractors, suppliers, supervisors, and consultants are other stakeholders. A combination of the complexity of the building process with a large number of stakeholders often leads to time and cost overruns and irregular resource utilization. Failure to comply with the work schedule and inefficient use of resources in the construction processes indicate that it is necessary to accelerate production and increase productivity. The development of computer software called Building Information Modeling, abbreviated as BIM, is a major technological breakthrough in this area. The use of BIM enables architectural, structural, mechanical, and electrical projects to be drawn in coordination. BIM is a tool that should be considered by every stakeholder with the opportunities it offers, such as minimizing construction errors, reducing construction time, forecasting, and determination of the final construction cost. It is a process spreading over the years, enabling all stakeholders associated with the project and construction to use it. The main goal of this paper is to explore the problems associated with the adoption of BIM in multi-stakeholder projects. The paper is a conceptual study, summarizing the author's practical experience with design offices and construction firms working with BIM. In the transition period to BIM, three of the challenges will be examined in this paper: 1. The compatibility of supplier companies with BIM, 2. The need for two-dimensional drawings, 3. Contractual issues related to BIM. The paper reviews the literature on BIM usage and reviews the challenges in the transition stage to BIM. Even on an international scale, the supplier that can work in harmony with BIM is not very common, which means that BIM's transition is continuing. In parallel, employers, local approval authorities, and material suppliers still need a 2-D drawing. In the BIM environment, different stakeholders can work on the same project simultaneously, giving rise to design ownership issues. Practical applications and problems encountered are also discussed, providing a number of suggestions for the future.

Keywords : BIM opportunities, collaboration, contract issues about BIM, stakeholders of project

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