Enhancing BIM-based information interoperability : dispute resolution from legal and contractual perspectives

Ahmad Huzaimi Abd Jamil[a,b], *Mohamad Syazli Fathi, Ph.D.*[a,c]

[a] Razak Faculty of Technology and Informatics, Universiti Teknologi Malaysia, Level 7, Razak Tower, Jalan Sultan Yahya Petra, Kuala Lumpur, 54100, Malaysia

[b] Faculty of Industrial Management, Universiti Malaysia Pahang, Lebuh Raya Tun Abdul Razak, Gambang, Kuantan, Pahang, 26300, Malaysia

[c] Occupational Safety, Health and Environment Unit, Universiti Teknologi Malaysia, Jalan Sultan Yahya, Petra, Kuala Lumpur, 54100, Malaysia

ABSTRACT

Building information modeling (BIM) produces positive results for the construction delivery process. BIM obtains these types of results by enabling information interoperability in respect of a building or facility throughout its life cycle phases starting at the conceptual design, continuing to facility management, and, in particular, dealing with contractual challenges for BIM-based construction projects. In spite of these compelling contributions by BIM in optimizing construction processes, their complexity leaves them still vulnerable to risk and uncertainty from unforeseen circumstances. The case study presented in this paper has developed insights into the implications of enhancing information interoperability by assessing the following categories of BIM-based contractual issues: (1) technology compatibility, (2) auditing procedures, (3) responsibilities, information and communication technology (ICT) protocols, and processes, and (4) transfer procedures. Project documents were reviewed followed by semistructured interviews with eight relevant project stakeholders to enable data triangulation. The set of results obtained was based on adopting the hierarchical Jaccard's coefficient cluster analysis that then initiated a starting point from which a more comprehensive data interpretation was developed. Several new codes emerged from the session. Respondents described BIM as a new strategic management innovation, and they discussed the need to consider legal aspects when devising BIM contracts. The strategies were then consolidated into a model data validation conceptual framework as a means of protecting the data from loss, corruption, and/or manipulation.

KEYWORDS

Building information modeling (BIM); Contracts; Interoperability; Model data validation

ACKNOWLEDGMENT

This research project was financially supported by Universiti Teknologi Malaysia Fundamental Research Grant Scheme (UTM-FRGS Grant No. 4F951) under the Ministry of Education, Malaysia.