

Chapter 6

Integration of BIM Work Culture for Improving Global Project Collaboration Productivity

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ABSTRACT

Building information modelling is further globalizing architecture, engineering, and construction (AEC) professional partnerships. However, little is known on the effect of cultural and human factors on BIM-enabled visualization applications. This desktop study examined the extant literature on factors relating to application of BIM-enabled visualization technologies as a process that can improve, leverage, and conduct visual communication for coordination during implementation of global projects. It identifies BIM-enabled visualization having the capability in facilitating knowledge flows in complex discontinuous working environment of a property development's life cycle, and supports designers' understanding in its early working phases. This chapter presents the development of a theoretical proposition for embedding local work culture etiquette in BIM-enabled visualization application for augmenting dynamic knowledge transfer among discontinuous members in a building project. The result is expected to benefit rapidly developing countries (e.g., Malaysia) in enabling successful partnerships with counterparts from developed countries.

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INTRODUCTION BACKGROUND

Architecture, Engineering and Construction (AEC) team members have ways of leveraging communication to coordinate their activities, although most communication traditions work across many building processes. The authors see AEC visual communication being leveraged through utilisation of technological and professional collaborative tools for managing construction activities and implementation progresses. Seminal literatures frequently advocating BIM with its potential for revolutionising the whole AEC industry by enhancing team collaboration (Gu & London, 2010); improving project integration (Woo, *et al.*, 2004); leveraging better construction information flow (Ibrahim, Krawczyk & Schipporiet, 2004); helping documentation flow (Popov, *et al.*, 2006); and providing construction simulation for teamwork planning, clash prevention and coordination interface (Fischer & Kunz, 2004).

Globalisation has made AEC industry, particularly of interest for developing country like Malaysia, utilise BIM enabled visualisation in implementing project delivery through partnerships with their respective counterparts in other countries. The need has been elevated when the Malaysian Government is promoting globalisation of services through exportation of building and professional services in the last 2012 Budget. Business Watch (2005) estimated that the AEC sector in Malaysia is one of the largest industrial employers, representing 9.8% of Malaysian Gross Domestic Product as it employs over 7.1% of workforce. The ability of BIM to depict and analyse construction schedules and logics (Heesom & Mahdjoubi, 2004), interoperability of data between applications (Fischer & Kunz, 2004), and allowing transition of *nD* CAD modelling and analysis (Lee *et al.*, 2005) are merits to AEC delivery. These benefits have proven to improve profitability, lower construction cost, and enhance time management and healthier client relationships (Azhar, 2011). Hence, the authors note that the success of AEC projects is highly dependent upon the type, level and quality of their communication exchanges between various disciplines involved in the different design and implementation phases (Pour Rahimian and Ibrahim, 2011).

This paper supports Bouchlaghem *et al.* (2005), in consigning cost as a vestige issue. It heeds their recommendation to focus towards the human issues as increasing number of professionals are embracing BIM enabled visualisation for their building projects. The authors had seen lack of emphasis given to the human factor especially the users' socio-cultural issues when using these visualisation tools. This paper agrees with Delavari *et al.* (2011) that further studies would be required on the following issues: 1) superior control over tools, 2) how fast feedback is returned to users, and 3) how much added-value are these tools to team members during the collaborative phase. In anticipation of future works in these areas, the purpose of this paper is

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