Measuring the effects of using ICT/BIM in construction projects

This paper focuses on presenting part of the findings from a research project completed in the period of 2009-2013. The research project was funded by the Danish Building & Property Agency with the primary aim to identify and measure the economic effects of using ICT/BIM in construction projects. Firstly, this paper presents a conceptual evaluation method developed in order to define and describe how case studies focusing on use of ICT/BIM in construction projects could be completed in order to measure (both quantitatively and qualitatively) the effects achieved from using ICT/BIM in construction projects. In this context effects are defined both as tangible and intangible effects (both economically and non-economically) directly and/or indirectly as a consequence of using ICT/BIM in a construction project. Secondly, the paper presents and analyses findings achieved from completing four case studies in Denmark, with focus on the method and how it effectively can be used to complete case studies documenting the effects of using ICT/BIM in construction projects. The case studies completed involved construction projects in which the participating companies were client consultants, architects, consulting engineers or contractors. Participating companies were of different sizes and construction projects were at different stages, including the design, construction and operation stage. The findings presented in the paper are firstly that using the developed evaluation method to document the effects of using ICT/BIM in construction projects requires extensive efforts in documenting and tracing the contextual conditions for achieving the effects in order to fully understand the value of using ICT/BIM in construction projects. Secondly, the findings indicate that using ICT/BIM in construction projects has a significant impact on the processes completed in both design and construction and that an advanced field-study approach is necessary in order to be able to measure the effects.

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