Chapter 13
Towards the Development of a Project Decision Support Framework for Adoption of an Integrated Building Information Model using a Model Server

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ABSTRACT
This chapter discusses an action research study towards the development of a decision framework to support a fully integrated multi disciplinary Building Information Model (BIM) using a Model Server. The framework was proposed to facilitate multi disciplinary collaborative BIM adoption through, informed selection of a project specific BIM approach and tools contingent upon project collaborators’ readiness, tool capabilities and workflow dependencies. The aim of the research was to explore the technical concerns in relation to Model Servers to support multi disciplinary model integration and collaboration; however it became clear that there were both technical and non technical issues that needed consideration. The evidence also suggests that there are varying levels of adoption which impacts upon further diffusion of the technologies. Therefore the need for a decision framework was identified based on the findings from

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1 INTRODUCTION

Despite the apparent benefits in terms of information sharing and management, efficiency in information flow and associated overall anticipated cost benefits, as well as project collaboration and coordination may seem evident, the adoption of BIM in practice has been slow (Bernstein and Pittman 2004). Many factors have been identified which contribute to the slow rate of adoption including; lack of training (Khemlani 2007), low business incentives (Holzer 2007), perception of lack of rewards (London and Bavinton, 2006), technological concerns (Howard and Bjork 2008), industry fragmentation related to uneven ICT adoption practices (London and Bavinton, 2006), contractual matters and resistance to changing current work practice (Johnson and Laepple 2003). In fact, the majority of the past studies were conducted at a distance from the research participants.

The aim of this national research study was to review and analyse the current capability of Model Servers leading to open software technical requirements with special emphasis on the so-called “non-functional” specification for BIM Model Server which would cater for digital models accessible through a web interface. The approach was to conduct the research collaboratively with industry market leaders who had been early adopters of the BIM approach. The findings reported in this chapter form an important part of an action-oriented research study which seeks to explore the technological, operational and strategic factors related to adopting BIM in the AEC/FM industry. There were five major phases to the study including:

**Phase 1 Literature Review:** An overview of BIM model server based collaboration platform including a literature review and discussion on the BIM approach and levels of technical capabilities and technology adoption.