

Chapter 4

Building Information Modelling Maturity Matrix

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ABSTRACT

Building Information Modelling (BIM) is an expanding collection of concepts and tools which have been attributed with transformative capabilities within the Architecture, Engineering, Construction and Operations (AECO) industry. BIM discussions have grown to accommodate increasing software capabilities, infinitely varied deliverables, and competing standards emanating from an abundance of overlapping definitions attempting to delineate the BIM term. This chapter will steer away from providing its own definition of BIM yet concurs with those identifying it as a catalyst for change (Bernstein, 2005) poised to reduce industry's fragmentation (CWIC, 2004), improve its efficiency (Hampson & Brandon, 2004) and lower its high costs of inadequate interoperability (NIST, 2004). In essence, BIM represents an array of possibilities and challenges which need to be understood and met respectively through a measurable and repeatable approach. This chapter briefly explores the multi-dimensional nature of the BIM domain and then introduces a knowledge tool to assist individuals, organisations and project teams to assess their BIM capability, maturity and improve their performance (Figure 1). The first section introduces BIM Fields and Stages which lay the foundations for measuring capability and maturity. Section 2 introduces BIM Competencies which can be used as active implementation steps or as performance assessment areas. Section 3 introduces an Organisational Hierarchy/Scale suitable for tailoring capability and maturity assessments according to markets, industries, disciplines and organisational sizes. Section 4 explores the concepts behind 'capability maturity models' and then adopts a five-level BIM-specific Maturity Index (BIMMI). Section 5 introduces the BIM Maturity Matrix (BIM³), a performance measurement and improvement tool which identifies the correlation between BIM Stages, Competency Sets, Maturity Levels and Organisational Scales. Finally, Section 6 introduces a Competency Granularity Filter which enables the tailoring of BIM tools, guides and reports according to four different levels of assessment granularity.

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