

Delivering Value with BIM: A Whole-of-life Approach

Sanchez AX, Hampson KD and Vaux S

Part I: Theory and Practice

Part I of this book provides a theory base to understand what BIM is and what some of the main challenges are to measure and realise its value. It also provides examples from current industry practices through case studies. The final chapters of this section offer a practical framework to develop a value-driven strategy to implement BIM in different types of projects by different stakeholders as well as share insight from implementation in asset management.

Chapter 1: BIM, Asset Management and Metrics

Sanchez AX and Hampson KD

This chapter introduces key concepts for this book and challenges related to implementing BIM and measuring its value. It also provides a general international context to the relevance of realising and monitoring benefits from BIM across the life-cycle of a constructed asset.

Chapter 2: Leadership in Implementation

Kraatz JA and Sanchez AX

This chapter provides a greater context for the realisation of benefits and highlights the need for leadership during implementation in order to achieve said benefits. The chapter also explores four industry-wide national leadership and one early local adopter case studies.

Chapter 3: BIM Performance and Capability

Månsson, D and Lindahl G

This chapter provides an overview of what BIM performance and capability is and describes current developments related to approaches to measure these aspects of implementation. There are many descriptions of competencies needed but few frameworks that actually include aspects to measure these and thus enable comparison in for example tendering situations. Further, the chapter provides an analysis and discussion of the need and possible criteria related to performance and capability measurements that can help maximise the realisation of benefits from BIM.

Chapter 4: BIM Benefit Realisation Management

Sanchez, AX, Mohamed S and Hampson KD

This chapter introduces the theory behind Benefit Realisation Management (BRM) and how it can be applied to BIM. It also provides a value realisation framework for practical implementation of this approach. This chapter provides a practical step-by-step guide for the implementation of framework which has been developed to be flexible enough to suit a large range of project types.

Chapter 5: Implementation Tips with Hindsight

Linning C, Sanchez AX and Hampson KD

Hindsight is a wonderful resource. However, its biggest frustration is that people only have access to it after they have labored often for years, trying to achieve it. This chapter provides access to some of the knowledge that was gained by a small team trying to implement the concepts of BIM and Building Information Management principally on the global icon: the Sydney Opera House.

Part II: Dictionaries

Part II of this book includes three *Dictionaries* which complement the information provided in Part I: Benefits, Enablers and Metrics. These are the result of extensive review of industry practices and literature to provide the reader with a comprehensive view of how BIM-related tools and processes can help deliver value to the built environment industry across the whole-of-life of assets.

Benefits Dictionary

Sanchez, AX and Joske W

This section lists benefits that can be already realised by implementing BIM tools and processes, including those that may not be considered currently mainstream but have the potential to increase usage in the near future. Each benefit profile includes: (i) a general definition as well as phase-specific descriptions when applicable; (ii) a list of main beneficiaries; (iii) a list of tools and processes that enable and maximise the profiled benefit; (iv) a list of benefits that can flow on from each profiled benefit; (v) a list of metrics that can be used to monitor progress towards achieving the benefit; and (iv) examples of projects where they have been achieved. The aim of this dictionary is to serve as basis for stakeholders to develop their own value realisation management strategy based on those benefits which they identify as being most relevant to their organisational goals.

Enablers Dictionary

Sanchez, AX and Joske W

This section of the book provides the definitions of all tools and processes mentioned in the *Benefits Dictionary* as enabling the delivery and maximization of value through specific benefit from implementing BIM. Each enabler profile includes documented examples of how these tools and processes have been used to deliver value and examples of commercial and experimental versions.

Metrics Dictionary

Sanchez, AX and Joske W

This section provides an overview of metrics that can be associated to the benefits outlined in the *Benefits Dictionary* in order to estimate the return on investment of implementing BIM. Metrics have been categorised into: people; processes; procurement; and sustainability and future proofing. Each metric profile provides definitions, challenges and information about reported use of these metrics.