Chapter 3
Delivering BIM to the UK Market

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ABSTRACT

Technology has developed dramatically over the past five and particularly three decades. The way we live our lives has changed and is set to change ever more with the effects this technology has on our planet's environment. Construction is one of the world's oldest industries and has been slow to adapt and change with the arrival of these developing technologies. For example, it has been nearly two decades since Building Information Modelling (BIM) was first mooted and we still await significant adoption. The UK picture is further burdened with a fragmented supply chain, slow consolidation and generally low investment in the industry. However, BIM is not CAD. It is so much more; like the move from old accounting packages to Enterprise Resource Planning (ERP), it includes the formal management of processes on a consistent, repeatable basis. Like ERP, this is a very difficult transition to make. The product vendors have not helped through creating a confused market, with patchy product capability and no process management tools available on a scalable production basis. Furthermore, the construction industry's approach to contracts, training and education also need attention if it is to deliver this operating model. However, the key questions are: does it work and is it worth pursuing in the competitive UK market? The answer to both questions is yes, but it is important to be aware of what is involved, to understand the evolution and to take sensible steps to achieve the reward. The focus of this chapter is to begin exploring the issues towards the delivery of BIM to the UK construction market sector.

1 INTRODUCTION

Building Information Modelling – What is it all about?

The past twenty years has seen an amazing transformation in people's perception of the world, and much of this change has been driven by the introduction of technologies which previously could not have been dreamed of. The same opportunities

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have presented themselves to the UK construction and real estate sector but how has it responded? Clearly not as well as some other industry vertical sectors and there are some perfectly reasonable mitigations, it is a large disparate industry, highly fragmented with low barriers to entry. The contractual rules of engagement have changed very little from when they were originally drafted at the end of the Victorian era and the industry has also stopped developing and training engineers and tradesmen in the quantity and to the levels of the past. The margins are low and most innovation is carried out when the market tightens and businesses are faced with survival options, and not through client pressure as no one client is large enough or suitably inclined to sufficiently affect the market (the opposite to the automotive or aerospace market).

So with all this opportunity and all these challenges how does a member of the construction supply chain community go about adopting Building Information Modelling (BIM) technologies and processes to improve their business and their offerings to their clients, while still remaining profitable enough to satisfy local stakeholders in the shorter term. Clearly the first hurdle is to establish what BIM really is and to understand what it means to the individual and their business. Once this is understood, an evolutionary approach to adoption can be implemented, thus ensuring the level of e-readiness, technology and processes are in place within both the business and the wider supply chain, including amongst clients and operators.

What is clear is this is a collaborative activity and no one player in the supply chain or the market has or is likely to make an individual commercial fortune on a short term basis. This is counter to market pressure where short term goals and returns are seen as essential. The key, however, is to ensure that whatever the chosen strategy, it makes sense for the particular business and stakeholders involved. There is little point in being ahead of the game; while a business may have the most technically elegant solution available it is essential to consider where this technology fits within an overall business strategy and whether this investment would be better made in the training or business development budget.

To consider all of these issues is beyond the scope of a single chapter but the following will consider some of the misinformation surrounding BIM and its adoption specifically in the UK market. It will commence with a positioning of both the BIM products and the market, with specific reference to the people, processes and technology now available. This will provide a rounded view of the current environment and an opportunity with which to go forward in the light of the prevailing economic conditions. Some key elements of the evolutionary adoption process, the maturity of some key elements and how these maturities can be measured and articulated will also be considered. Finally, some of the key elements that are missing from the current vendor offerings will be reviewed.

2 BACKGROUND

What is Building Information Modelling?

Lack of a Universal Definition and Consequential Industry Understanding

BIM evolved from the early product modelling efforts, such as the STEP international standard for the exchange of product model data (ISO 10303: Industrial Automation Systems – Product Data Representation and Exchange). Emerging in 1983, STEP defined product modelling as the long-term ambition to improve the communication of engineering information (including manufacturing, ship building and construction) and to enable integration through the co-ordination of open standards for data exchange and sharing. In the mid-1990s, an alliance of non-profit building industry organisations