Public/Private BIM: An Irish Perspective

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ABSTRACT

The current economic difficulties have affected most practitioners within the industry and, as a result, many firms and contractors are bidding for fewer projects, resulting in below-cost tenders. It is clear that, many firms and contractors are now operating on thin margins; which makes it increasingly difficult for them to commit to the introduction of new software applications and system upgrades. The transition to Building Information Modelling (BIM) from traditional 2D CAD by Irish firms and contractors has been a relatively slow process compared with the international colleagues. There are many reasons for this, including lack of resources, lack of awareness, ignorance, misunderstanding and adversity. The lack of BIM promotion and BIM training opportunities within the industry has meant that very few people possess the basic requirement to successfully embrace BIM at a level which would be considered efficient. BIM is the new way of operating and it is gaining momentum; the industry simply cannot turn a blind eye to the technology or it will be left behind. The industry must therefore adapt and change current working practices in order to compete with other established and recognized BIM nations. This paper will evaluate BIM in the international context and, investigate if these methodologies can be transferred to the Irish construction industry. This paper will also aim to identify obstacles and drivers for Irish firms, contractors and Government Departments with regard to BIM adoption, as well as the behavioral and cultural elements which are preventing BIM adoption in Ireland. It is hoped that the research findings will demonstrate a business case for the implementation of BIM, for both public and private sector organizations.

Keywords: BIM Adoption, Building Information Modelling (BIM), Education, Private Sector, Public Works, Social and Cultural Change

1. INTRODUCTION

The Irish Construction Industry is currently at a crossroads, faced with reduced fees, increased responsibilities and higher client expectations. All professionals working in this fragmented and broken industry will need to adapt working procedures in order for the industry to return to prosperity. There is a need to assert new relevancy in today’s rapidly changing industry by embracing new technology. This action can replace traditional cumbersome working prac-
tices with a virtual model that performs more efficiently, delivers more valuable information and, most importantly, achieves greater cost certainty.

This overall aim of this paper is to suggest a more robust methodology which can be used within the Irish public and private sector to help produce a more intelligent and efficient estate. This involves the implementation of Building Information Modelling (BIM) technology and its associated tools, to help stimulate the Irish construction industry. The Authors primary data collation methodology will involve the use of a survey, of both the Irish public and private sector. Collected data will be further complimented with a number of semi-structured and structured interviews with leading professionals from both sectors. The Authors also conducted a literature review of journal papers, professional publications and research articles with regard to the application of BIM as a tool for managing public and private sector estates. The literature review focused on four main topic areas, in order to establish the proposed methodology. These are set-out below:

1. BIM in the Global Arena;
2. Can BIM assist the Irish Construction Industry;
3. A BIM Mandate for Publicly-Funded Projects; and
4. BIM: A Driver for Cultural Change.

2. BIM IN THE GLOBAL ARENA

In order to understand if BIM can help the Irish construction industry, it is imperative that an investigation should take place into the performance of BIM in other international countries. If the Irish construction industry were to adapt and embrace BIM, we must examine the transition to BIM undertaken by these countries, in order to determine if we can also adopt their approach and migrate to BIM with minimal disruption.

Research indicates that the US is the main driving force behind BIM in the world and they are actively urging domestic firms and contractors to engage with BIM on all projects. BIM, as an innovative approach to design and construction for pioneering early adopters is now taking its place firmly in the north American construction industry and, will do so in the next twenty-year period, making BIM as important to the industry as Excel is for any office in the US. The McGraw-Hill Construction Report found that the adoption of BIM has expanded from 17% in 2007 to 71% in 2012 (McGraw-Hill, 2012). It may appear counterintuitive to increase spending during a recession, though research indicates, that the American construction industry is continuing to invest in a more efficient and productive future by embracing technologies and processes such as BIM (McGraw-Hill, 2012). The same report concluded with:

• Adoption has grown from 17% in 2007, to 49% in 2009 and 71% in 2012;
• More contractors (74%) are using BIM than architects (70%);
• Almost 40% of BIM users are using the technology on a daily basis (McGraw-Hill, 2012).

China’s rapid construction growth and industry modernization presents great challenges and exciting opportunities. By embracing BIM, China’s construction industry can catapult beyond the technology adoption and legacy issues that plague many western firms, taking immediate advantage of productivity benefits that surround a digital building methodology, thereby giving BIM users a competitive edge in the midst of the largest construction boom in history.

China is well-positioned to adopt BIM quickly - a fast moving construction industry and significant investment in infrastructure, coupled with strong Government support and a trust-based and pragmatic culture are good foundations for rapid BIM implementation and growth in the region (McGraw-Hill, 2010).

In the most recent studies conducted, BIM usage in the Middle East is on the rise and stands at 25%, which means that the region is
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www.igi-global.com/article/3d-hilbert-space-filling-curves-in-3d-city-modeling-for-faster-spatial-queries/120062?camid=4v1a