

# Building Information Modelling – a Reality Check for Information Professionals?

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I have always been fascinated by television programmes that go behind the scenes and show how a product is made or an event is staged. I can't even enjoy a frozen Walls "99" ice cream without contemplating how the flake and topping were inserted into the cone and wrapped up. It's probably the result of both my father and grandfather being engineers, a profession now being followed by one of my sons. As an intranet consultant I have spent a lot of time walking around offices and wondering just how plugs, doors, lifts and much else has ended up in (usually) the right place. The answer to that question is Building Information Modelling, or BIM for short. I came across BIM quite by accident when reading a paper in [Advanced Engineering Informatics](#) entitled "Ontology-assisted provenance visualization for supporting enterprise search of engineering and business files." As you might guess it was the "enterprise search" phrase that caught my attention! I am not going to delve further into the search elements but will focus on Building Information Modelling, because it is a wonderful example of a digital workplace and the role of information management.

## What is BIM?

The entry on [BIM in Wikipedia](#) is very well written, and I'd like to quote from the Definition section.

"The US National Building Information Model Standard Project Committee has the following definition:

*Building Information Modelling (BIM) is a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life cycle; defined as existing from earliest conception to demolition.*

Traditional building design was largely reliant upon two-dimensional technical drawings (plans, elevations, sections, etc.). Building Information Modelling extends this beyond 3D, augmenting the three primary spatial dimensions (width, height and depth) with time as the fourth dimension (4D) and cost as the fifth (5D). BIM therefore covers more than just geometry. It also covers spatial relationships, light analysis, geographic information, and quantities and properties of building components (for example, manufacturers' details).

BIM involves representing a design as combinations of ‘objects’ - vague and undefined, generic or product-specific, solid shapes or void-space oriented (like the shape of a room), that carry their geometry, relations and attributes. BIM design tools allow extraction of different views from a building model for drawing production and other uses. These different views are automatically consistent, being based on a single definition of each object instance. BIM software also defines objects parametrically; that is, the objects are defined as parameters and relations to other objects, so that if a related object is amended, dependent ones will automatically also change. Each model element can carry attributes for selecting and ordering them automatically, providing cost estimates as well as material tracking and ordering.

For the professionals involved in a project, BIM enables a virtual information model to be handed from the design team (architects, landscape architects, surveyors, civil, structural and building services engineers, etc.) to the main contractor and subcontractors and then on to the owner/operator; each professional adds discipline-specific data to the single shared model. This reduces information losses that traditionally occurred when a new team takes ‘ownership’ of the project, and provides more extensive information to owners of complex structures.”

### **Why should I be interested in BIM?**

I suspect that few readers of eLucidate work in the construction sector and you are already wondering what are the implications of BIM. The answer is that in using BIM, companies are also building digital workplaces. Far too much (probably 95%+) of the discussions around digital workplaces are just about how a digital workplace will make life so much better for desk-bound digital workers. This is a total waste of effort because it doesn’t matter how well your organisation manages its digital workplace if suppliers and customers either cannot match your level of sophistication or (horrors) are way ahead of you. It’s all about sharing digital information along the supplier-purchaser route. That’s what is so interesting about BIM. From the outset it was about sharing digital information with others on a *global basis*.

We are talking big numbers here, with total file numbers for a building being in the range of 500,000, and many of these are very large files indeed. We are not in SharePoint territory in terms of file management. This is where very sophisticated search applications are going to be required, as described in the informatics paper I cited earlier, based on work being undertaken at [Laing O’Rourke](#) in the UK. [Mott MacDonald](#) is also very active in the area. The UK is amongst the leaders in promoting the benefits of BIM at a national level. For several years the Royal Institute of British Architects has been publishing an annual survey of BIM adoption. The [National BIM Report](#) 2016 notes:

*“We can see that BIM adoption is set to increase. Within one year, 86% of people expect to be using BIM on at least some of their projects. Within three years, 95% expect to be using BIM. Within five, that number increases to 97%.”*

As an information professional there are many reasons why you should be aware of and looking at BIM even if you are not in the construction industry.

- BIM is about working with non-conventional file formats. Microsoft Office can't cope! These file formats will include text, data, graphics, video and much else
- BIM is about working collaboratively on a global basis to make sure buildings are a delight to work in and do not fall down under any circumstances. Both are very challenging objectives but present a wonderful business case for BIM adoption
- BIM is about moving files through organisational boundaries, and this is possible because of standards and guidelines developed over the last fifteen years. Do you have IM standards and policies?
- BIM is about pushing search to its limits with novel solutions and a team to support them
- BIM is about e-Information, so what are UKeIG and CILIP doing to reach out to this sector and act as an information and knowledge exchange?
- BIM is about managing information in highly innovative ways, the benefits of which may well have an impact in other areas (search, tagging, information quality etc.)
- BIM requires organisations to have a digital workplace platform in order to create and use BIM files. A firm cannot be in the position of thinking about it! Hence the very high adoption figures above. Either you are in, or out. It's a binary decision
- BIM represents a sector that could offer employment opportunities to information professionals interested in pushing the boundaries of information science and information management. Could you be one of them?

#### **Are there lessons to be learned?**

Starting from an accidental discovery a few months ago BIM now has a heading to itself in my digital library because I'm now tracking developments quite closely to see how they might impact the development and adoption of digital workplaces. Frankly I'm tired of seeing yet more "clever" schematics about digital workplaces where collaboration is the key objective. They belong in the parallel universe of Perfect Collaboration. Digital workplaces have to about supporting the delivery of products and services to customers to drive economic development, and a lot more. BIM to me has been a reality check. All these initiatives going on and I knew nothing of them. Hopefully this article will have given you an excuse to broaden your digital workplace horizons. You may even be sitting in a building that BIM helped to build!