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There's a
Storm
Brewing in the
Construction Industry...
are you Ready?



BIM: A Healthy Disruption to a Fragmented and Broken Process

By David Jordani, FAIA, Jordani Consulting Group

I HAVE HEARD THE terms BIM and *disruptive* used together quite often lately. Some tend to think of disruption as a sign of trouble. My preferred connotation for the term is *unsettling*. Is BIM the catalyst to unsettle and shake-up the construction industry? I hope so...and it's about time.

Much has been said and written about the inefficiencies of the construction industry. Fragmented in its makeup and slow to adopt change, statistics from the U.S. Bureau of Labor Statistics suggest that the construction industry productivity not only lags behind other industries, but is also in decline. The costs of these inefficiencies are palpable, costing billions of dollars annually.

Let's be clear, BIM is not the salvation of the construction industry. Efforts on many fronts will be needed to address

issues that have gone unattended far too long. But there's good reason to believe that the introduction of BIM will serve as a catalyst for many of the necessary changes to unfold. The signs are already there.

At its core, a BIM based methodology is built around the notion of *collaboration*—people and systems exchanging information about a facility throughout its life cycle. Embracing a collaborative model is the most effective way I can think of to address fragmentation. Adopting this approach requires and results in a number of positive changes in the industry. While technology may be the catalyst, business process reform and vision is required to create meaningful change.

So how do we get there, and what kinds of changes will we see along the way?

OWNERS WILL DEMAND IMPROVEMENTS

No longer willing to yield to a tradition of inefficiency, building owners will lead the charge for a smarter process. As change agents for the industry, both public and private owners will challenge their providers to deliver facilities faster, better, safer and at lower cost. Owners will require BIM to enable lean practices to identify and eliminate waste in the entire project cycle. They will expect their construction partners to be proactive in applying these concepts looking for early returns—tangible results from bid through implementation at the site.

NEW BUSINESS MODELS WILL EMERGE

The benefits of consolidating previously disjoint design and construction organizations will lead to mergers and acquisitions

in search of more cost effective business models for collaboration. These organizations will promote the benefits of being under one corporate umbrella as a distinct advantage they can translate into lean process benefits for the owners. The visionaries will extend their offerings into operations and maintenance support leveraging BIM through the full life cycle of a facility as they move towards managing total cost of ownership (TCO) as a service delivery model.

A host of new businesses will emerge to meet the needs of a digitally based process. Even at this early stage Googling *BIM Services* returns an international list of boutique providers ready to assist those in need. And BIM is rapidly a new tag line on AE print ads. Current services predominantly focus on the startup events as organizations struggle to get out the BIM starting gate, but that is about to change. I recently saw a demonstration of a Smart Codes™, an automated code compliance checking software being developed by the International Code Council. This application

and others like it will embed professional expertise to a far greater extent than ever before. Professional service organizations and associations will be able to encode their knowledge for use by others. Need to gain access to best practices for the layout of a surgical suite? Why not license it from subject matter experts? This and many other examples will likely be available as a web service in the not too distant future. With the computer acting as a design partner, the need to evaluate—perhaps certify—that software is properly contributing to a BIM will emerge. The benefits of quality controlling BIM project data for its proposed short and long term uses will be realized as well. This in turn will lead to new services for organizations with the professional and technical skills willing to take on that risk.

OWNERS WILL USE BIM AS A BUSINESS INTELLIGENCE MODEL

Owners now reaping the benefits that BIM yields through design and construction, will seek even greater value in the use of the BIM to manage

operations, maintenance, and renewal activities throughout the life cycle of the facility. For owners this forecasts a transition to a more meaningful BIM where *digital facility DNA* is used to tune and maintain a building and its systems. Owners will recognize the value of the information about their facilities as an asset in addition to the physical facility itself. An owners' BIM will morph into a *Business Intelligence Model* integrated with other corporate systems to maximize impact on corporate's operations and mission. The long sought opportunity to connect facilities to the corporate mission will be realized.

Owners look for partners who can take on a stewardship role for managing an expanding network of facilities data and step up to a new level of professional service.

SOFTWARE SUPPLIERS WILL PLAY NEW ROLES

Convergence of software products to meet the needs of industry will continue. Marketing distinctions between BIM, CAD, CAFM, WMIS, CMMS and

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other construction industry products will blur. As systems are integrated with more powerful professional capabilities the focus (finally) turns from software products to the design, construction and operations issues the systems were supposed to impact. Construction industry software providers will follow trends of other industries as *software as service* models emerge for collaborative project teams. Application Service Provider (ASP) models will expand with the need to host large data models not only for design and construction but throughout the life cycle of a facility. Some vendors will position

to become active participants on design and construction project delivery as IT skills become an increasingly important core competency for project delivery.

LEGAL AND RISK MANAGEMENT CONCERNS WILL BE RESOLVED

Unlike the CAD migration of the 80s, the BIM disruption is being felt at the highest management levels of the industry. At the top of their discussion list are fears of new risks and liability exposure that will creep into projects. The need to exchange digital data is central and essential to support BIM's

thesis of interoperability and collaboration. Transferring data from one group to another with a litany of disclaimers won't yield a lean collaborative process—we must do better. Construction industry attorneys suggest that while concerns must be addressed they should not stymie progress. Groups like the Business Process and Legal Task of the buildingSMART alliance™ are working with representatives from a broad cross section of professional associations to take on the challenge of examining and recasting contracts and compensation models.


EDUCATION AND TRAINING WILL BE CRITICAL FOR SUCCESS

With changes that extend from the design office to the job site and everywhere along the way, it's certain that a broad array of educational and training programs will be needed to make the transition to an information driven process. Not only will the methods for obtaining information change, but as an effective collaborator, we'll need to better understand the responsibilities and information needs of our partners. Technical and professional development programs will emerge to meet the needs of a digitally tuned workforce. The challenge is also being felt in higher education, where already overloaded curricula need to incorporate classes to prepare the next generation for a leaner more collaborative construction industry.

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Disruptive though it may be, the transition to BIM for design, construct, operate and maintain process for facilities is well underway. Changes will yield benefits to all stakeholders that embrace the concept of a more *informed* collaborative process. ■

As President of the Jordani Consulting Group, David A. Jordani, FAIA has developed a highly regarded practice providing facility management business process and IT consulting. As a leading authority in this volatile area, Jordani provides an objective resource for understanding, facilitating and applying new business practices and technologies to achieve a competitive advantage. He Chairs the Facilities Information Council and the Business Process Integration Task Team of the buildingSMART alliance™ under the auspices of the National Institute of Building Sciences (NIBS). David Jordani can be reached at djordani@jordani.com.



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