"The 30-Year Gut"

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Reflecting on successes and failures, Dodge Data's Steve Jones recounts the re-tooling of an industry – for people.

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DesignIntelligence - Michael LeFevre (DI): As it as it turns out, we have amazingly similar common missions to connect and inform people. You, at Dodge Data, through data, industry and market analysis, and DesignIntelligence in a different vector, through practice, experience, community, and thought leadership. We've known each other for 20 years. For most of those years you've traveled the country – and recently, the globe – making regular conference presentations on the state of things. In subjects ranging from BIM to innovation and construction, you've regularly shared data and industry trends. As we begin the year, I'd like to reflect on what you've seen.

Steve Jones: You and I both come from long tenures on the architectural practice side. You went on to work with a major construction company and I moved over to technology (Primavera). But at this point we are both in the wonderful and fortunate position to be able to view the whole industry and try to understand and share the various forces shaping its future.
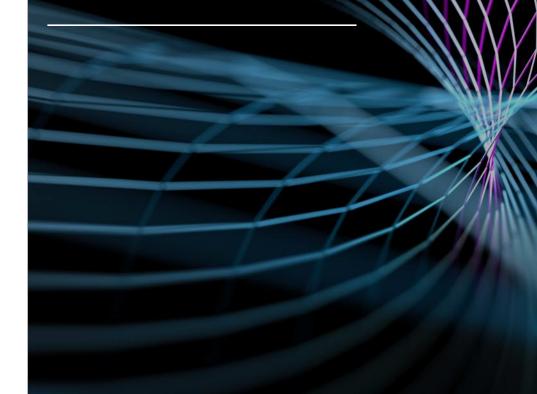
From my vantage point, I think we're about a third of way through what will be looked back on as a 30-year gut-and-redo of the global design, construction and built-asset management industry, from design to physically putting-work-in-place, to ongoing operation.

I tell everyone (especially younger folks) that this is THE best time to be in this industry, ever.

DI: We both spent much of the past 20 years evangelizing on the merits and transformative potential of BIM. You were responsible for producing dozens of McGraw-Hill, (now Dodge) SmartMarket Reports which shared hard survey data on BIM adoption, owner value, contractor value, interoperability, its impact on project delivery and sustainability, and a host of other timely topics. In recent years you've done less work specifically about BIM. You even joked at one conference: "BIM is dead." What did you mean by that, and where has your focus shifted?

SJ: I remember that conference, Mike. Trying to be provocative, what I actually said is: "I want BIM to die", meaning we should stop treating "a BIM project" as something special. I want modeling and model-based integrated digital workflows to be ubiquitous, so EVERY project is a BIM project. And digital information is like water from a faucet or electricity from an outlet. You can take for granted it will be flowing, with adequate volume and reliable quality.

Of course, we aren't there yet, so our research is constantly assessing where various players in the industry and regions of the world are in their relative transformation journeys. Our approach with any trend is to quantify exactly what the best users are doing with various tools or practices, what tangible, scalable, reliable benefits those activities are providing, and what they need specifically to advance.

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We're doing that with all kinds of technology as well as green trends, managing risk, and uncertainty, safety, project delivery, and the ever-changing business health of the companies operating in various market sectors.

DI: Why do you think BIM hasn't had the widespread adoption and impact it promised? The gap between BIM "haves" and "have nots" is widening. The leading-edge folks - designers and constructors - are still pushing it and doing great things, but most owners seem to care little. Why is that?

SJ: We are in the field right now with a major study of BIM adoption in North America, Japan, Australia/New Zealand, UK, Europe, and the Nordic countries, so I'll have data soon on how widespread it is. But in terms of the malingerers, we've been doing BIM studies all over the world for over 10 years and the number one reason they consistently give is: "Nobody asked me". Which translates into "Nobody is making me". As we all know, this is not an industry that readily adopts new technology. I like to say, "Everyone wants to be first to be third." Meaning, get somebody to try it first and screw it up, then get someone else to step in and fix it, then, and only then, call me, I'm all in.

So, we need both Pull, like what my research does to objectively quantify the reasonably achievable benefits to attract the otherwise skeptical, and Push in the way of owner mandates for designers and GCs, and GC mandates for trades. The US doesn't have a central government agency tasked with driving BIM into the industry, so we rely on ourselves. It's a bottom-up, street level revolution, a project at a time.

To assess progress, we did a study recently looking at how many BIM users have mandates for the companies they have power over hiring. While the GC's were strong with MEP and structural contractors, almost none were demanding BIM for civil work. And only a handful of architects were enforcing mandate policies for engineers. There was some "Would'ja please" going on, but a disheartening percentage of "No BIM Policy" responses. Meanwhile, we've all been watching the UK and other regions with government BIM mandates to see if they successfully spill over into private work. This new global adoption study should reveal a lot about that.

In many ways, I think BIM suffers from what I call the "shiny object syndrome". It got established early as a miracle cure for all that ails you, before almost anyone really knew what it was. So, it could only fail to meet hyper-inflated expectations. Even Phil Bernstein, who was the top BIM evangelist of all time in his years at Autodesk says: "Revit is the kernel of a good idea."

BIM also suffers from the "ROI trap". Since it requires investment to buy software, upgrade hardware, train staff, and create and maintain processes and content, the money people always ask: "What's the ROI". That misses the point that BIM is more about cost avoidance than cost reduction. And since hardly anyone carefully counts the cost of their avoidable mistakes, it's not realistic to quantify a traditional ROI for BIM.

Our research consistently shows the first few projects are losers, but benefits accrue quickly after that. In all our BIM SmartMarket Reports we separately track some 30 Process , Project, and Business Benefits, many of which are reduced occurrence of bad things as well as improvements in good ones. When we ask about measuring what we call "Perceived ROI" it's also always true that the more experienced users gave up bothering to measure it long ago. They know it's good and they devote their precious energy to trying to make it better.

As model-based, integrated digital workflows slowly and steadily become more common, and their benefits are well understood and expected as givens, it will just become "how we all do things." That's the peaceful, productive end stage of that 30-year transition I think we're in the middle of.

DI: At one point you were very focused on, even investing in, a collective, consortium, or movement of standard, shareable, data-rich manufacturer's BIM objects. Even that seemed to fizzle. What happened?

SJ: One problem is that BIM objects are too easy to make, and too hard to make well. When Bentley bought its first BIM tool, Triforma in 1996, they asked my A/E firm to try it out on a project. We did a 90,000 SF office building with it and realized while "object-oriented design" as it was referred to then - because it hadn't even been named BIM yet - was a powerful idea. If you don't

have content you spend most of your time building that content, much of which can't be easily re-used. Then enter multiple BIM platforms with multiple data standards for content and you quickly had a Tower of Babel. One of my first BIM-oriented research reports (2007) addressed interoperability. At Sweets.com we tried to help guide good content creation, but many building product manufacturers just used any 3rd party resource they could find to build their content. Unfortunately, most of it was poor quality (too big, lacked the right data, not parametric or out of date by the time you tried to use it).

Some tech companies tried to aggregate content suitable for their tools (e.g. Seek), but in the end, most firms just built their own. There are several businesses going now that help them manage that. As with many things in the US, the BIM movement defied centralization. We're an independent, self-reliant people who resist top-down, one-size-fits-all solutions. The chance to have a single repository of "standard, shareable, data-rich manufacturer's BIM objects" as you call it has probably come and gone.

DI: In hosting innovation conferences which address a broader set of themes, you and Dodge Data are redirecting the industry's attention to a broader set of challenges and opportunities. Talk about that.

SJ: A lot of evolution is taking place. Green design has moved from focusing mostly on energy conservation to its impact on the health and safety of green building occupants. Worker productivity has also shifted to worker wellness, in all the ways that matter. I think we became enchanted with tech as the answer to everything, and now we're coming back to the human element of our business.

I remember when I was just a puppy on the drafting board, a grizzled old project manager (who was certainly much younger then than I am now) told me something I've never forgotten. I was wrapped around the axle about some design problem and she said, "Just pick up the phone and talk to the client about it. This is a people business." When you boil it down, she was right. This whole digital transformation is 10% technology and 90% sociology. We can talk all day about data, but it's people who use it. Yes, we are introducing automation and AI at an amazing pace, and that will do wonders to reduce tedious or dangerous tasks, and provide analysis faster to support decision-making, but it won't ever replace higher level thinking, or take the place of collaboration, qualitative judgment, and emotional intelligence. Sorry Hal, but Dave's going to keep being able to open the pod doors.

Whenever tech companies ask me to give them feedback on their new whiz-bang whatever-it-is, I always ask, "How does this help the user's day go better?" And if it's not obvious, I tell them they probably just have "technology in search of a solution." Like BIM content, technology is now easy to build, but we need to ask ourselves, just because we can, does that mean we should? We're creating built assets for our civilization, so let's keep people at the center of our focus.

Collaboration and integration of formerly disparate entities, information silos and processes isn't about optimizing data models, it's about making things easier, less stressful, and yes, more fun for people.

DI: Looking back, do you have regrets? Missed opportunities for industry change, either personally, for McGraw-Hill / Dodge, or the industry at large? Were there any golden chances we missed? If so, can we still retrieve them for benefit?

SJ: I was a VP at Primavera during the dot.com boom (1999-2003) and was our representative to FIATECH. I recall posing a question to that group at the time about whether we believe the ideal tech-driven end state for this industry is MOAD (the Mother Of All Databases) or DOSI (the Dream Of Seamless Interoperability). That sparked a lot of fun debate. Regardless of which side you were on the common thread was we all fervently believed it was a decision we needed to make, and quickly, because tech was going to disintermediate all workflow processes and completely re-invent construction "at internet speed", within the next two or three years.

It was a time of crazy names (who remembers "Citadon"?) and crazier claims (everything, no matter what it was, was an "end-to-end solution".) While some of the start-ups survived and thrived (e.g. e-Builder), the flood of easy venture capital money was funding a lot of vaporware being expensively promoted at dozens of AEC tech conferences, and generally just confusing everybody. I used to joke at the time that the most popular develop-

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ment platform was PowerPoint. Meanwhile, established tech providers with good code, solving real problems for actual customers were being relegated to the trash heap of history as digital dinosaurs.

A perfect storm of bad decisions and economic conditions led to the collapse of the dot.com bubble, and I think that stunted what could have been an exciting digital transformation. Worse, it soured a lot of practitioners on the idea of "web-based anything" for years. What a crappy hangover!

But that kind of event forces discipline into a market, and fortunately we have much more well-reasoned solutions available today. But we could have already been here and be further along.

DI: What are you proud of? Any significant accomplishments?

SJ: I like to think my Industry Insights Research team has brought some structure to helping everyone evaluate what "good" is for a variety of technology solutions, digital workflows, and practices, green design and construction, project delivery approaches, safety programs, risk management initiatives, and business management metrics.

So, users can benchmark their own status and progress against the industry, and everyone can have reasonable expectations of achievable benefits, and the realistic challenges involved. We also identify what current users need in order to advance/improve, and what non-or low-frequency users need to get more engaged, so everyone can enjoy better outcomes. People in this industry are crazy-busy. Very few have time to comparatively evaluate new tools and processes on their own, so we at least lay out a brand-agnostic framework for what to focus on. From the feedback I get, it's helpful. And I love doing it!

DI: I know you to be a positive, optimistic person. Turning the page on a crazy year, what gives you hope?

SJ: We carbon-based bi-peds are a fantastically resilient bunch! As nasty as the COVID-19 pandemic continues to be, look at how many video-conference meetings are taking place now vs. a year ago. I know people gripe about them, but it's a tangible demonstration of our natural desire and need to collaborate. Traditional contractual agreements have been a fundamental driver of a lot of the information silos that construction technology is trying to mitigate.

Emerging delivery models like IPD are attempting to legislate more integrated processes. But I like to look at what what's happening from the bottom up. That's the stuff that persists and that we want to encourage. What's great is that young people coming into the industry will never know any other way. No bad habits to un-learn. Trust among project team members will be a natural resource, like air and water, and all the tools will support transparency and omni-directional knowledge flow to everyone's benefit.

While I think the end-state of this 30-year transformation will be vastly different than how things were at the start, it would probably look like a natural evolution to our earlier ancestors, who cooperated to feed their villages, build each other's barns, and collectively create civilization. We'll be doing what we were put here to do. We just have to get out of our own way to do it.

Stephen Jones is senior director, industry insights research, at Dodge Data & Analytics, formerly McGraw-Hill Construction. He focuses on how emerging economic, practice, and technology trends are transforming the global design and construction industry. His decades of industry experience offer perspective on emerging practices in building information modeling, virtual design and construction, innovation, sustainability, risk management, and other industry trends. He is a frequent international presenter and the author of SmartMarket Reports.