The Case for Asset Centric Project Management

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For the last year, an idea has been socialized among the CMAA community and with various other construction owners that has resonated with every audience. The idea is simply that as we manage construction projects, we need to do so through the lens of an asset owner.

As design and construction professionals, we have spent our careers thinking of the asset (facility, infrastructure, etc.) as a project, something temporary that we must push to get completed. We start with a budget and a schedule. A fixed amount of money and a fixed amount of time. The construction might take a few months or a few years, but it is a very limited amount of time. The useful life of the asset will be decades or longer.

The cost may be millions or billions of dollars, but it will be a fraction of what the owner will spend operating and maintaining the asset over the long course of its useful life.

During the temporary time of design and construction, we have historically created and collected an enormous amount of information about the asset we are building. Much of this information could be useful to the owner for the purpose of operating and maintaining the asset. But the sad truth is that most of it never gets reused. There is a better way.

Kahua President Brian Moore explains it like this, "As a student at Auburn University in the 1980s, I would several times a year drive back home to Chicago. I would buy a Rand-McNally atlas and a highlighter. The atlas would help me plan my route.

What it didn't do was tell me that since it was published, a new interstate had opened that could have saved me time and fuel. It did not tell me that the bridge was out near Nashville and that I would be stuck in traffic for hours and hours. It gave me static information because that was all that was available. Along came cell phones and easy-to-use apps, and today we have dynamic data, information that is crowd sourced and always up to date. We now use Waze, and we get the latest info on the road, the traffic, even where the police are waiting to slow us down. It's time we begin to use available design and construction data to better build and manage our valuable assets."

Since we began to go digital with project information, using various software programs, electronic messaging, CAD, then

BIM, and so on, we've collected more and more valuable data along the way during a project. But one of the fundamental problems is that we make this data static when we turn it over at the end of a project. Databases and files become a series of PDFs and spreadsheets, stuck on some sort of media device, and for the most part forgotten.

Even as poor as this process is, it is nonetheless expensive. A contractor will spend 0.3% of the project budget corralling and organizing data he has (or should have) already collected. That might seem like a small slice of the pie, but it all comes directly out of the profit margin; $3 million for every $1 billion in revenue is real money.

It's a much more expensive process for the owner. A study by FMI indicates that 95% of all data collected during design and construction goes unused after the project concludes. FIA Tech estimates that owners spend 2-4% of the cost of the project after the project, in an effort to compile data in a way it becomes useful to the teams that will operate and maintain their assets for years to come. That's $20 million to $40 million for that same $1 billion project.

The concept of Asset Centric Project Management addresses and eliminates this project after the project. By specifying upfront what data is important, the owner tells the design and construction team what they must collect along the way. The process requires very little or no additional effort. We already gather this information. The only thing different is that we are provided a means and method for tagging assets and associating them to other important project documents and business processes.

Consider the life of one particular asset, an air handling unit. It starts as a request, something specified on a drawing, and then included in a cost estimate and a submittal process. Then it becomes part of a purchase order. Then it is acquired and moves through the supply chain. It finds its way onto the job site. It is installed, in a certain place, by a certain installer, under specific conditions, and then inspected. Later, it will be commissioned by another party. Finally, the keys to the building are handed over to the owner. There is a warranty period, but otherwise, this is the end of the project.

Let's think about what information we have collected, and what documents we have affected in this story. Our air handling unit was part of:

» Several drawings
» Multiple models
» An estimate
» A submittal log
» A purchase order
» A shipping document
» A contract
» An installation form
» Daily reports
» An inspection report
» A commissioning report
» Possibly RFIs
» Possibly change orders

Amongst all these processes and documents, we can discover part numbers, locations, room numbers, zones, serial numbers, installation dates and conditions, who was the installing company, who was the actual installer, and more. Asset Centric Project Management requires that construction owners specify we collect certain pieces of this data in a certain way for a certain purpose. That purpose is to eliminate the "project after the project". But it is also to inform the owners asset decisions going forward.

The project is over, but our air handling unit will live in the owner's collection of assets for decades. It will need to be maintained. It will have components that need to be repaired. It may get moved to a different place in the facility, or it may get moved to a different facility altogether. It may go through a recall and need to be replaced. And, at some point, years down the road, it will surely be retired and replaced. Along the way more data has been collected. Maintenance records and logs, notices from the manufacturer, location data, specific notes from technicians who have been maintaining, repairing, and upgrading the asset.

Why should you care about data accessibility?

» Cost and time to collect info for handover process
» Cost to pull together commissioning report for an asset
» Inability to feed and maintain BIM, ESRI, and CMMS

- » Improve future decisions about new facilities
- » Retain knowledge around an asset
- » Struggle with corporate memory leak

Asset Centric Project Management tools create an asset data repository. This repository continues to inform the owner's other tools and inform the owner's decision making regarding his assets long after the project is over. Data flows from the project into operations, from specs into BIM and then into CMMS, and then continually, back and forth, between the asset data repository and the tools used for mapping, for digital twinning, for M&O, and for future capital planning. These tools exist today, and owners are beginning to take advantage of the wealth of data that has until now been an unearthed goldmine.

Jim Ellis, President of the Construction Users Roundtable and Retired VP of Global Construction at Microsoft, may have said it best in a recent blog post, "Our industry continues to look for fusing and integrating advanced technologies across the asset lifecycle, from build to operate and maintain, to leverage optimum value for key stakeholders. I am delighted to see companies like Kahua, PrairieDog, and CIR Analytics get it and work toward advancing this for our industry. I can't wait to see more."

More is here. The goldmine is now open. And the time has come for construction owners to begin mining.

About the Author

Serving the AEC industry as Kahua's Chief Evangelist, Nicholas Johnson grew his 40-plus year career around the latest technologies. First CAD/CAM, then BIM, then internet based PMIS, and now Kahua's low/no-code PMIS platform. Nicholas was design engineer with General Dynamics, then Heery International (now CBRE). He has held sales leadership positions at Constructware/Autodesk, Trimble Connected Water, Beck Technology, and Trimble e-Builder. He twice took two-year working sabbaticals to serve a greater cause.

Kahua is the only construction project management information system built as a low code platform, enabling the industry to innovate. Kahua is FedRAMP Authorized and is used by construction owners, program managers, contractors, and specialty contractors.

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