Tech Talk 2021
This Year, It's About Connection, Collaboration, and Efficient Automation

Written by: A.D. Thompson for Constructor Magazine

It's 2021 and, 20 years after the fictional Space Odyssey, we are living in a world where we address our AI-driven computers by name with song requests, weather questions, and math problems. Some of us (raise your hands) even absently thank them. And when we do, they answer.

On the jobsite, some of the best tech talks mostly to each other — drones that track progress on builds, and bulldozer blades that move with GPS-based coordinates. They operate on one platform. They share information with each other and key human team members. And all of it moves the construction industry down the field toward optimal efficiency.

Things are done smarter, faster, better. Because the tech collaborates.

It can help people collaborate, too. And that's vital in an industry like construction.

"Construction is delivered by a group of people who don't work for the same company and in many cases have competing business interests in delivering the project," says Tooey Courtemanche, founder and CEO of Procore Technologies.

The buzzword this year, for all those we spoke to, was flow — of information and automation. Tech that shares the former and brings the latter to administrative systems enabling the human assets to do things smarter, faster and better, too. On-site and in the back office.

BAD REP

For eons it seems, the construction industry has gotten a rep for being slow on the tech uptake. In some cases, say the pros — it's deserved — but it wasn't a willful thing, says Brandon Maves.

"Prior to 2005-2006, tech was an afterthought for most companies."

Maves, partner and national construction leader for RSM US LLP, says that was primarily the back office talking.

"The attitude was 'Hey, we're doing great! Why spend the money on it?'"

After the recession and subsequent meltdown, it only got worse.

"So many people left the industry and never came back," he explains. "Companies doubled-down on not adding IT infrastructure, but now it was because they didn't have the cash to do so. As we began to climb out, they began to invest, mostly because they were woefully behind and saw leading firms getting out of the slump faster."

Courtemanche says in the early days at least, the industry's rep was unwarranted in the field.

"Prior to 2012, the Internet hadn't made it to the jobsite. You'd visit and there would always be some project manager on a PC doing things in Excel that would make a banker blush," he laughs. "They were so capable at getting things done on a computer because they had to — because of the complexity of construction."

The blame for later lags, he says, falls in part on the shoulders of the innovators themselves.

"The stuff they were making wasn't up to the game."

And there weren't many companies trying.

"We'd go to construction tech conferences and there'd be like six companies. It wasn't acknowledged as a space where there was a need. Today? Our app marketplace is made up of more than 300 partners building tech on our platform to enable the things our customers need to be more efficient."

One way is to cut down on rework, a problem that developers are actively working to help companies solve.

"There's $500 billion of rework that happens in the world's largest vertical industry," says Courtemanche, citing a 2018 study conducted by FMI. "It's inefficient, wasteful, dangerous…."

Part of the solution, he says, is getting "connected."

Zaid Rahman is a serial tech entrepreneur, but the CEO of Flexbase started this company for a very personal reason — his entire family is tied to the construction space.

"Historically, the challenge for most business owners is that they're really, really busy — because they're often doing everything themselves. They don't have unlimited budgets to hire people and figure out how to digitize their process."

FROM FRAGMENTED TO COLLABORATIVE

"Historically, because construction has been highly fragmented, it's been really difficult to get enough critical mass for any tech to become the standard versus other industries," says Raghi Iyengar, founder of Manufacton and president of ViZZ Technology, which acquired Manufacton earlier this year.

In semiconductors, aerospace and automotive, tech used by three or four leaders means up to 80% of the market is working on the same platform. Construction, he notes, with its disparate players and long tail has traditionally taken far longer.

Mike Cisar, director of marketing and customer service at Ryvit, says a quick look at just one project could prove Iyengar's fragmentation theory.

"You've got a general contractor, a project owner, architect, engineer, subs on top of subs. There's a materials provider, equipment manager, all these different players come together for one job."

One might have best-in-class tools in the company tech stack, "but it's not enough to give all of them the means to do their jobs more efficiently, to allow data to flow through the systems in such a way that keeps everyone aligned without creating more work."

Each company, working on its own system "even the best ones!" notes Cisar, will lose ROI when it has to bring in staff just to track data, implementation, updates.

"Construction firms are like, 'I just want to build something! I can't launch an entire IT department!'"

Connection, says Courtemanche, is key.

"Start with a platform, easy to use by all team members," he says, noting that a project management solution should be deployed first. "It's the core of everything that happens, the hub and spoke of all communications across all project stakeholders. It enables everyone to work off the same piece."

Transparency, access to relevant information, makes the paths between the project's different arms clearer. "It allows the teams to communicate and collaborate with each other."

It's even more valuable now that pandemic spawned practices are in place, says Cisar.

"Even if the office hasn't gone fully remote, most have remote flexibility that was unheard of two years ago … now you're not physically dropping off documents, but you're still able to collaborate in real time, a huge deal when you're trying to bring a structure to life."

Rahman notes that the COVID-spawned evolution has been dramatic.

"The back office was no longer 'essential,'" he points out. "And so accountants, estimators, even engineers were sitting at home having to figure out how to collaborate on a physical project … it's prompted something of a black swan moment where construction tech — because of COVID — has in 18 or so months had 10x in terms of growth."

It's mind boggling, says Rahman, that construction professionals are doing things easily now that would not have been possible just a couple of years ago.

With tech that's available right now, owners, architects, and engineers can communicate in real time, new plans can get approved, purchase orders processed, changes for subs to make implemented "and it could happen in a day," Cisar says, marveling. "That easily could have taken an entire month in the past."

He projects data will soon reflect a solid correlation between tech adoption and both accuracy and project turnaround.

PAPERLESS, BUT PUSHING

Maves, who's worked in the industry for more than 20 years, says it's exciting to see how tech has transformed manual labor and menial manipulation of machines, but no less so when it comes to the math in the back office.

"Better accounting systems, better integration between accounting/finance and project personnel, better automation in terms of processing large chunks of data…. Tech also allows companies to perform better financially, to be more efficient and accurate and gives us a better crystal ball than we used to have."

Important, because Maves projects that soon, interest rates will begin to climb, projects will slow, the number of bidders will increase, the margins will squeeze and the bids will grow tighter.

"Successful contractors will have found a way to live profitably under those margins, which usually requires improvements in office software — estimation, dashboarding, payroll automation," he says. "It's less expensive, it's more accurate and can run practically 24/7 so they'll be more successful in that market climate.

"Those who don't will stay afloat by working far harder to be okay — and many of them won't be okay."

His three hot picks: robotic process automation to make accounts payable/payroll more efficient, dashboard data analytics and project management software that is really serving your needs — meaning "data from the jobsite gets back to the people who manage it and that those on the site have the information they need to be flexible."

Companies who don't step up?

"They're done," says Maves. "In today's economy you can't be a luddite and allow your firm to slip behind. It's too expensive to catch up. You don't need a CIO but you do have to have someone for whom at least part of their job is keeping an eye on tech."

Not every solution is for every company, he notes, and there can be a risk in being the firm who spends on the cutting-edge tech. But there is balance to be found.

"You don't need a new iPhone every two years," he says with a chuckle. "But if you wait five, you're really far behind the technology."

People, says Cisar, are the real assets. Tech can help companies get the best out of them.

"People are still the greatest creators, problem solvers, critical thinkers, new-idea generators. And for a company to have employees focused on typing emails, following up on expense code issues, remedial tasks that can easily be automated away? You are wasting your most powerful resource."

About the Author

Written by A.D. Thompson for Constructor Magazine.

About the Article

Republished from Constructor Magazine, a publication of Associated General Contractors of America. The Associated General Contractors of America works to ensure the continued success of the commercial construction industry by advocating for federal, state, and local measures that support the industry; providing opportunities for firms to learn about ways to become more accomplished; and connecting them with the resources and individuals they need to be successful businesses and corporate citizens.

Any views and opinions expressed in this article may or may not reflect the views and opinions of the Construction Management Association of America (CMAA). By publishing this piece, CMAA is not expressing endorsement of the individual, the article, or their association, organization, or company.