How Construction Technology

Saves Time, Money, and Jobs

PROCORE

EMPLOYEES ONCE EARNED AS THEY LEARNED IN CONSTRUCTION, OPERATING BACKHOES AND DECIPHERING BLUEPRINTS ON THE FLY.

Even these days, workers on a construction site must think on their feet; a quick-thinking employee is a good one to have.

Still, employees don't want to run to the trailer to check plans, or carry a laptop around in order to verify they are working off of the latest plans. Constantly revising, reprinting, and redistributing paper-based documentation is not only time consuming and costly, but almost impossible to manage. Emailing with attached spreadsheets and documents isn't much better than a paper-based system; it slows communication and whittles profit.

Until recently, the aversion for new technologies might have been holding the industry back, but not anymore. Contractors are seeing the immediate savings they can gain by upgrading.

Table of Contents

I. Technology's Learning Curve

But while more professionals are adopting mobile technology each year, how well they are using it is debatable.

ONE STUDY FOUND THAT MANY INDUSTRY PROS STILL DON'T UNDERSTAND HOW THESE TOOLS CAN HELP THEIR BUSINESSES.

According to the 2014 Construction Technology Report & Survey by Texas-based IT consultant JBKnowledge, some construction professionals are using the cloud for their mobile solutions, but don't know they have data in the cloud. Many respondents to the 2014 Construction Technology Report & Survey said they don't store data in the cloud, but admitted later in the survey to using smart phones, tablets, web-based emails, and solutions like Dropbox or Google Drive for their work.

The report began in 2012 when JBKnowledge conducted it to confirm that construction professionals were using increasing amounts of technology. The study has grown yearly, with more than 1,300 people responding to the 2014 survey, which JBKnowledge produced in partnership with the Construction Financial Management Association and the Construction Science Department at Texas A&M University. The report shows more contractors are using apps.

From 2013 to 2014, solutions that grew most in use were Field Data Collection, Building Information Modeling, and Customer Relationship Management. And the United Kingdom has mandated contractors use BIM Level 2 for all large government projects by 2016, which will speed adoption of that tool.

"Contractors over there are all in with BIM," says Carol Hagen, a Phoenix-based construction industry consultant who owns Hagen Business Systems. "Which means the expertise contractors gain on those government contracts will be marketed to private owners who will increasingly adopt BIM."

But the average construction industry decision-makers should concentrate on the primary cost-minimising tasks they want the software to accomplish, experts say.

Technology in construction is not just about software, Hagen says. “It’s about sustainability and increased efficiency.”

Still, some industry leaders are not taking advantage of the possibilities of mobile technology. “The construction industry is using the technology, but ignoring whole new approaches that would replace Excel spreadsheets, Word documents, and email chains,” says Todd Dawalt, a Lexington, Kentucky-based leadership consultant who runs Construction Leading Edge.

Document and drawing collaboration platforms are widely used, but not universal, says Paul Wilkinson, a London, UK-based construction technology writer and analyst blogging for ExtranetEvolution.com. “Email still retains a strong hold in many organisations, and tools such as DropBox are sometimes used for simple file sharing. Version control and management of audit trails is not easy if companies rely on email and simple storage solutions,” he says. In 2011, the UK made BIM mandatory for centrally procured public sector projects starting in 2016, and regional and local government will follow, Wilkinson says.

“This mandate has hastened the industry adoption of BIM; some private sector clients are following the government line, too. It’s now just a matter of time before BIM becomes a normal part of project delivery,” Wilkinson says.

II. Building Trust in Construction

Some skills lacking on jobsites may be hindering the adoption of new technologies.

One of the biggest problems is construction managers not being taught leadership skills, Dawalt says. “They have a taker’s approach rather than a service-based approach to leadership. When people trust their leaders, and they know that their leaders trust them, it’s pretty amazing what happens,” Dawalt says.

TODAY’S HIGH-TECH SOLUTIONS SEEM TO BE CREATING MORE TRUST AND EMPOWERMENT AMONG EMPLOYEES.

The 2014 report showed more firms are buying hardware such as smartphones for their employees to use for work—a clear indicator that firms are engendering trusting relationships with their workers.

It’s an act of trust when a firm gives a tablet or smartphone to a worker and tells him to learn how to use it. In doing this, the firm is showing the employee can be trusted with equipment and that it’s worth teaching the employee new skills.

“Outside of desktop computers, smartphones are the most frequently used computing devices by construction professionals in 2014, and the majority of those smartphones are corporate-provided,” the report states.

Smartphones and other hardware provided by firms aren’t just for project site managers anymore, says Rob McKinney, who works for an Atlanta, GA-based general contractor and also known in the industry as the “Construction App Guru.”

“I was in a meeting this morning and two of the tradesmen had their iPads out and were looking at plans,” McKinney says.

Mobile tech is changing construction faster than many people thought possible. Now, the savings to be gained with such tools are significant even for smaller companies, who are regularly saving 1% to 2% in annual revenues by using mobile solutions.

“Widespread adoption of smartphones and tablets by every part of the construction supply chain has driven the development of new applications to help workers access construction information anytime, anywhere,” Wilkinson says.

With savings through elimination of design mistakes and rework, streamlined workflows, and better communication,

contractors have extra money to invest in their IT departments. That boon should accelerate adoption of new technologies.

McKinney has seen foremen using smartphones for apps on many work sites and thinks pricing could have something to do with it. “Tablets are much cheaper to buy than laptops, and that is driving their increased use on work sites,” he says.

It could also be that the writing is on the wall. Contractors know keeping projects on schedule is crucial, and avoiding delays requires everyone to deliver work on time. If a firm can’t monitor deadlines and anticipate delays, time and resources are lost. But today’s solutions offer those capabilities, and more.

III. Managing Risk

Mobile technology is also increasing accountability and risk management by providing more insight into the hourly tasks of workers, JBKnowledge co-founder James Benham says. “It gives them tools to capture much more of their day for review, safety, and accountability. It’s also decreasing delays and rework by keeping everyone up to date. This is big because it means everyone can operate from the same set of plans or the same 3D model without having to check with someone. That’s a first for many in the construction industry,” Benham says.

Technology is being used to create safer working conditions, sometimes even before the project begins. “I’ve seen firms use a constant video stream from the jobsite to analyse for safety and efficiency,” Hagen says. “I also see that done pre-construction, where they’re identifying potential hazards. They may consider repositioning the crane for safety reasons.”

Savings from technology can be achieved through greater safety, but even more so through greater efficiency. It’s a matter of making paperwork as easy as possible, McKinney says, adding that he likes Procore for such tasks. “Procore offers construction users a great platform to store, share, and manage plans. They also have a great app for tablets and smartphones, with a dashboard that shows team members items such as outstanding RFIs and who is sitting on submittals,” McKinney says.

Hagen says Procore’s interface is exceptional. “People in the field want ease of use. If you’re more than three clicks [of the mouse] deep to get to what you want, it’s too deep,” she says. Robbins | Reed, a San Luis Obispo, CA-based contractor, found Procore for iPhone while looking for a tool to manage defect lists in the field. After a demonstration by a Procore rep, Robbins | Reed co-owner Grant Robbins was sold.

“WE KNEW WHAT THE OTHER PROGRAMS COULD DO, AND THEY WANTED MORE MONEY AND WERE HARDER TO USE,” ROBBINS SAYS.

On one of the first projects managed with Procore, Robbins | Reed’s project manager was amazed at how the software shortened the defect list completion time.

“Procore allowed the project manager to stay on top of the subs to get that work done without all the typical phone calls and emails. The subs got tired of getting the automatic reminder emails from Procore, and got their work done to stop the emails!” Robbins says. “We love the RFI process and the Submittals Tool—and adding subs doesn’t cost us any additional money.”

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Procore Technologies, Inc.

Procore is a leading provider of cloud-based applications for construction. Procore connects people, applications, and devices through a unified platform to help construction professionals manage risk and build quality projects—safely, on time, and within budget. Procore has a diversified business model with products for Project Management, Construction Financials, Quality & Safety, and Field Productivity. Headquartered in Carpinteria, California, with offices around the globe, Procore is used to manage billions of dollars in annual construction volume.

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