WHITE PAPER

Taking the First Steps Toward Connected Construction

EVERY CONTRACTOR COMES TO connected construction with different expectations.

Fortunately, there are multiple entry points. For instance, if you have a few machines with grade control, expanding your connected fleet could be an initial step.

You may be considering what's available to solve your most immediate pain point.

Or you want solutions that will help you scale your business.

Start with what you know best: your needs, your organization, your team. Then start to envision where you could go.

And don't think you're too small to take advantage of connected construction. Smaller organizations, involving smaller teams, have a flexibility that can adapt quickly to new processes.

Avoid frustrating searches

Just typing "connected construction" in an online search will lead to frustration.

First, it's a broad concept. Several companies say they offer connected solutions, but in reality, they are more of a point solution – a specific app, for instance, for a specific task. Second, sorting through the options takes time, time you'd like to use to get a plan rolling.

This is where a technology provider provides a valuable handhold. They determine your needs and desires and come up with a plan that meets your goals. Once you've selected your solution, they'll get your people up to speed on how to maximize your investment.

Editor's Note: This is the third article in a series on connected construction. Other articles in the series include **How not being connected hurts your business** and **How to harness the power of connected construction**.

Questions to Consider

Ask yourself these questions when looking at connected construction solutions:

Is your team looking at the same data? How can you ensure all machines and field workers have the correct data as soon as it's available? Are your operators immediately notified of updates?

How do you monitor what's going on in the field? Can you remotely monitor job site activity? Do you use this data to adjust your daily workflow?

Are you making the most of the data coming off your machines? Do you know whether your operators are meeting production goals? Are you using machine health telematics data to track hours, PMs, and repairs?

Continued on next page

"What are you trying to solve?," says Steve DiBenedetto, Trimble Civil Construction field solutions software product manager. "There are a lot of flexible solutions. Understand that you have a partner who understands how you do business, and they can offer a solution — tailor-made for you."

A technology provider will help you take these first steps:

- Identify your objectives. This includes knowing where your current systems are not productive. What's taking too much time? Do you still have paper processes? Are people having to rekey data? (See sidebar "Questions to consider.")
- Making sure all key company decision makers know the objectives. Besides budget approval, they convey enthusiasm for a process that will likely have its bumps.
- Capitalize on existing data. Examine what your company currently collects and explore ways it can yield more value. How could you better use the data-collecting tools you already have?

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Britton Lawson, director of construction technology with civil contractor Veit, recommends contractors "start small, be intentional, get a committee of people, vet out two or three options and then pick a pilot." After that, document the process.

Questions to Consider, Cont.

How do you know what design version each machine is using? How easy is it to see where your machines are and what they are doing?

Are you meeting your financial goals? How do you ensure you're accurately charging the right job with equipment and resource expenses? How do you measure your job productivity against cost projections and estimating? Could you get paid quicker by providing proof of actual work done?

Are you focused on equipment uptime? When a machine breaks down can you locate it and immediately schedule service? Can you quickly locate a replacement machine?

What's important for you to transfer into any new system? Some existing systems may be critical to your workflow. Look at ways to integrate these systems into a common data environment.

Adopt a connected construction champion

“You need to have a champion, and they just have a yearn to learn,” Lawson says. “They have a curiosity.”

Charged with propelling your connected construction journey forward, this champion could come from anywhere in the company or be any age. They become the go-to person within your organization as you take steps to digitize your workflows. If they don’t know the answers, they find someone who does.

This person can also take advantage of generational differences in your company.

The younger members of your crew are likely digital natives, having grown up with touchscreens, phones, and the idea that everything is connected. Use that to get your other valued team members on board. With most job tasks, the older lead the younger. This time, younger teammates can take the lead, creating an opportunity

A champion could also use inventive ways to coax reluctant team members to embrace new processes. For example, instead of demanding an immediate switch to a new system, Lawson weaned a project manager off using a spreadsheet by allowing him to use the spreadsheet alongside the new system for 30 days.

“Within three days, he was off the spreadsheet,” Larson reports, “and he was like ‘my gosh, this is so easy.’”

Don’t take these steps in a vacuum. Get your employees involved. Along with you, they’ve experienced the painful disconnects that are prompting your switch to connected construction.

Determining ROI

Once you go through your initial training/implementation phase, review what's happening with office/field data sharing. Is it meeting or exceeding your expectations? Are there still disconnects that need to be addressed?

For example, in reviewing the impact of its connected digital solutions during the course of a massive data center project, **Aldridge Electric** is seeing clear advantages in production, attitude, quality and safety.

"With how fast everything has gone, there is no way we could have worked as fast and accurately without the technology as we have with it," says Devin White, BIM coordinator. "We probably would have had to quadruple the manpower to get the project done in the given timeline."

White's co-worker, Jeff Buckley, PreFab/BIM program manager, agrees. "Technology allows us to deliver a product that is not just built 'as planned,' but is delivered 'as intended,' often allowing us to make recommendations and deliver a final outcome that exceeds original expectations," he says.

And you might be surprised by the outcomes of connected construction. For example, one Texas contractor used a paving grade control system to ensure a smoothness bonus on a high-spec road project.

After using the system, "they discovered that the jobsite became more predictable," says Kevin Garcia, general manager, civil specialty solutions, Trimble. "They knew exactly where they would start and end, the exact volume of material, their milling and paving rate, and where to set up base or total stations to guide the equipment."

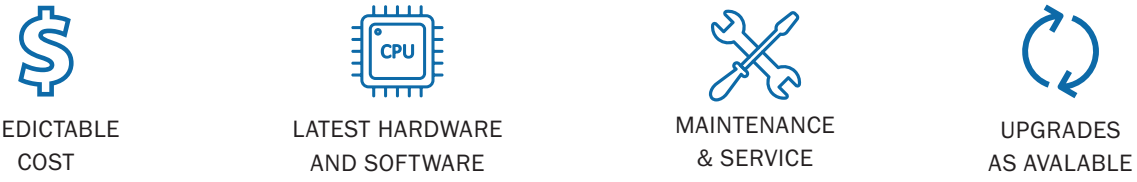
Consider a subscription

You may have taken a first glance at technology's price tag and backed away. The price reflects the long-term commitment you're making. A complete grade control system, for example, can cost between $35,000 to $75,000 per machine.

This can prompt many questions: what if I decide on a technology and it becomes obsolete? How can I update my technology? How can I make sure it's always working?

A **technology subscription** offers a way for you to have a predictable cost of ownership, get the latest hardware and software across your entire fleet, have it maintained and serviced, and receive upgrades as they become available. Technology switches from a capital to an operational expenditure.

With the high ROI, technology can be offset through construction savings, freeing up your capex budget to buy a new machine, for example. And since all your machines are on the same system, there's no need to keep different kits and spare parts for different versions. Everyone uses the same rover, controller, and machine display. Cross training becomes so much simpler when there's no difference in controls from machine to machine.



No more "wait and see."

The contractors featured in this report showcase what can be accomplished with connected construction. They also point out that the wait is over, and the opportunity to digitize your workflow is now.

What works for your company is not necessarily the same package that works for another company. Your solution will be your solution, one that fits the way you do business.

But none of the benefits outlined here can be realized without taking the first step. Outline the disconnects in your current systems. Come up with a list of wants and needs with your team and then reach out to a technology provider and start the process.

Lawson is succinct about the true opportunity in converting to a digital workflow:

"It's important to look at how much money it's going to make you, not how much money it's going to cost you."

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For more information, visit: ***civilconstruction.trimble.com***