




CONSTRUCTION INDUSTRY

Trends and Forecasts

2020





As we begin a new decade, themes of under-digitization persist within the construction industry. While a growing skilled labor shortage continues, drone surveying has matured to finally meet the high expectations of early adopters.

In this ebook, we'll discuss how these three key themes will impact worksites as we start a new year.

- You'll learn about how these trends could—or already are—impacting your business.
- You'll understand how technology has caught up to expectation.
- You'll see how tech might be a tool to mitigate the effects of the labor shortage hitting most construction sites in recent years.
- Lastly, we'll discuss industry forecasts. Most notably, the shift towards using software for total worksite management.

LET'S DIVE IN.

CONTINUED UNDER-DIGITIZATION PLAGUES AN INDUSTRY

We discussed in our 2019 Trends Report about the construction industry's low rate of digitization. [It trails nearly every other industry, save agriculture](#), according to McKinsey. That contributes to a lack of project data [costing US construction sites \\$177B annually](#).

At first glance, these numbers can paint a pessimistic picture. But these metrics also show the vast opportunities to improve productivity in an industry that employs about seven percent of the world's working-age people.

↓ \$177B
LOST ANNUALLY



McKinsey's [Reinventing construction: A route to higher productivity 2017 report](#) estimates that if the industry caught up to the rest of the world, it would stand to gain \$1.6 trillion in value. That is roughly the 2016 GDP of Brazil.



**\$1.6
TRILLION**

The route to close that productivity gap is paved in technology. If 2019 was a year of identifying problems like these, 2020 should be the year to take action.

**>
50
PERCENT**

Over 50% of engineering and construction professionals report one or more underperforming projects in the previous year, while just a quarter of projects came within 10% of their original deadlines in the past three years, according to a [KPMG International 2016 report](#).

Currently, it's still the norm to see a construction site office with paper plans, administration and logistics carried out by hand, and other pervasive non-digital habits. This is costing businesses now and hurting their prospects and returns.

When we talk to customers today, those trends have not changed. Coming in over time and over budget has become so commonplace in the industry that it's no longer the expectation, but instead a lofty goal.

**IT'S TIME TO CHANGE THE
STATUS QUO.**



DIGITIZING YOUR BUSINESS IS EASIER TO START THAN YOU IMAGINE

The first step towards getting your slice of that productivity pie is digitizing your business. This can sound daunting. Don't let the unfamiliarity of this kind of change prevent you from moving forward. There is a ton of low-hanging fruit.

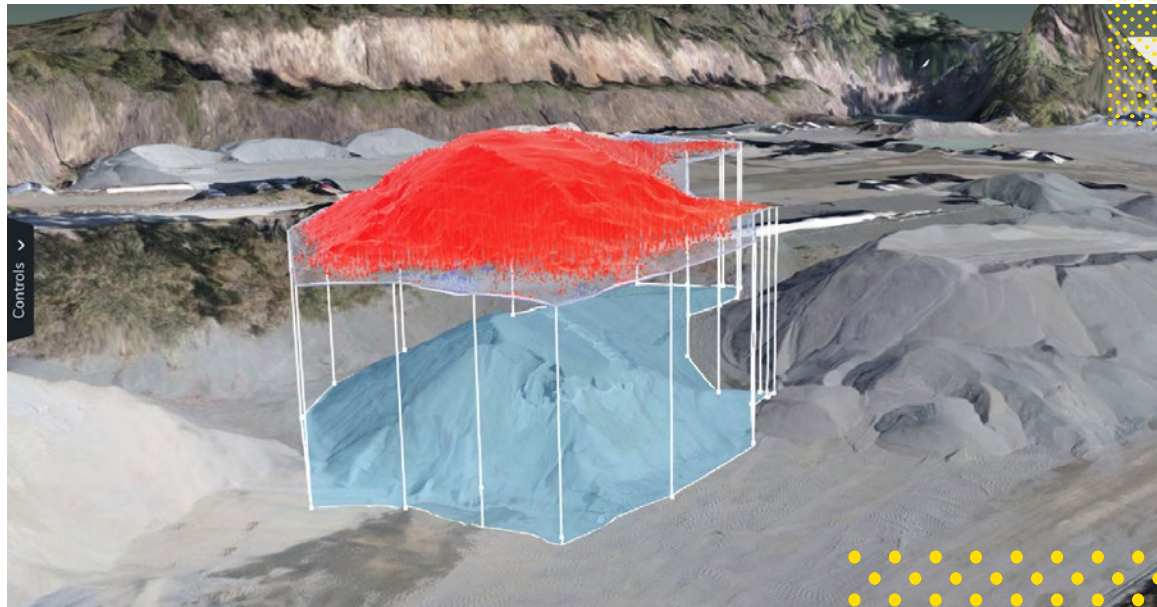
Still use paper files? Consider a digital document system. Still survey every single thing by hand? Check out using a drone. There are a number of ways to start the process.

A survey data visualization and analytics software platform also fits nicely into a digitization plan. There's a few programs on the market today, but here we'll focus on the [Propeller Platform](#).

Cloud-based platforms like Propeller serve as a source of truth for all your survey data. [Browser-based](#) software operates straight whatever device you want to use. You don't need any expensive hardware to process your data or access it.

With drone-captured aerial images and data uploaded and processed, you can visualize your site in three dimensions visually instead of just having numbers on a spreadsheet.

Further, this kind of [3D map](#) is accurate and measurable. Sometimes likened to a video game, the platform lets you measure features as they are in the real world with a few clicks, rather than doing arithmetic without context.



Putting these capabilities together, you not only digitize your data, but you make it accessible to everyone who needs it. And because drones are easier to use, faster, and more affordable than traditional methods and equipment, your data is more up-to-date than ever.

It's a new decade and it's time to put the trends of sluggish data updates and over-budget projects behind once and for all.

It's easier to do than you might imagine: aligning your goals towards the kind of data collection, processing, and visualization described above and you've put your business well on its way to the digital future.



QUESTIONS TO DISCUSS WITH YOUR TEAM:

- What are the easiest ways we can start to digitize?
- What technology are our competitors using that we might benefit from?
- What are our biggest data and information silos?
- What would improve if everyone could access current site data when they needed answers?
- How would we implement this kind of technology?
How do we get people trained?



INCREASING SKILLED-LABOR SHORTAGE

As more and more skilled construction professionals retire, fewer young people replace them. This trend isn't new, but it's getting worse. According to the Bureau of Labor Statistics, there were 200,000 unfilled construction jobs in 2016, skilled or otherwise. That increased to 263,000 [in 2018](#).

It's estimated that from 2014 to 2024, there will be 378,600 job openings for construction laborers. This growth surpasses other sectors over the same period. Job openings are expected to increase as construction needs grow, adding more jobs to meet growing construction demands.

**378,600
JOB OPENINGS**

But it'll likely become harder to fill them, especially for skilled positions. "The labor shortage is so acute that 91 percent of more than 2,700 contractors, construction managers, builders and trade contractors surveyed in the latest [Commercial Construction Index](#) reported having a difficult or moderately difficult time finding skilled workers," said the [US News and World Report](#).





Survey results from construction professionals coupled with industry labor statistics are all pointing in the same direction: the skilled labor shortage isn't going anywhere. In fact, it might worsen.

So let's focus on how technology can help your workers do more with less and help attract new talent.

“The issue of a skilled-labor shortage is one of workload,” said [Propeller CEO Rory San Miguel](#) in our 2019 Report, and it's true today. **“The future workforce needs to be doing more with less. So instead of just fixing the hiring problem, companies need to adopt tools to fix the workload problem.”**

Tools like drone surveying reduce the time it takes to complete surveying tasks. Outsourcing data processing can put days back on the clock. BIM technology keeps everyone on the same page, reducing miscommunication and more. And these technologies are just the tip of the iceberg.

Next-gen tech like automation, the Internet of Things, 3D printing, and more are already showing promise in the industry as a whole. They're saving people time, keeping workers safer, and making work more efficient.

A solid tech stack is also an advantage in recruitment. As a younger, digitally savvy generation enters the workforce, they have certain expectations around tech.

They're not only expecting basic technological infrastructure that allows them to do their job efficiently, but they're also hoping for cutting-edge hardware that keeps them on their toes and business competitive.



In fact, if you're struggling to refresh your recruiting efforts, the [World Economic Forum suggests](#) establishing “customized recruiting channels for key target groups; [setting] up a social-media-focused recruiting team; [and building] up capabilities to address unfamiliar candidate pools (such as IT specialists).”

The main takeaway here is the skilled labor shortage isn't a passing trend. It's been building for years and will likely increase. Proactive action now positions your business for a better future as the average worker age increases and more people continue to retire.



QUESTIONS TO DISCUSS WITH YOUR TEAM:

- How are we affected by a labor shortage?
- What are the key roles we're trying to fill? How can technology aid them?
- If we can't fill our vacancies, how will it affect our business?
- What feedback are we getting about our hiring process and offers? How can we leverage technology to entice more applicants?
- Are there tasks that we can outsource to improve the high-value workload of our existing employees?



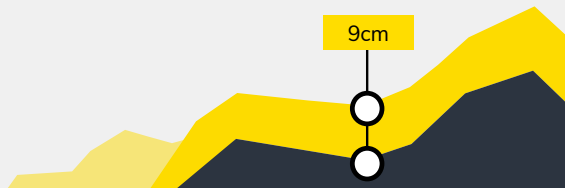
THE SURVEY REVOLUTION IS HERE

Over the last decade, drone technology has made some impressive promises. Unfortunately, for the most part, reality had fallen short of expectations.

But with last year's introduction of affordable RTK-enabled drones, like [DJI's Phantom 4 RTK](#), that's changed. Achieving 1/10ft (3cm) accuracy with a drone is now not only possible, but the new standard.

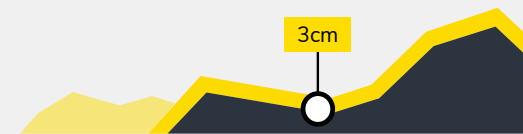
Standard Drone

Accuracy within 9cm



High Precision with PPK

Accuracy within 3cm



This means two things: reduced data-collection time and site-wide accuracy. And because the Phantom 4 RTK is an affordable, widely available craft, many people can access it.



That access, in turn, powers an advancing wave of surveying more often and faster, which we've seen speed up over 2019. And because you have more survey data that's easier to collect, more people can use it.

Survey data has traditionally been a scarce resource, often locked up with the survey team. But it's also true that more complete data improves analysis, which lets people make business and operational decisions based on facts, not guesswork. When we zoom out, it means tighter planning and more efficient work and resource use for businesses.

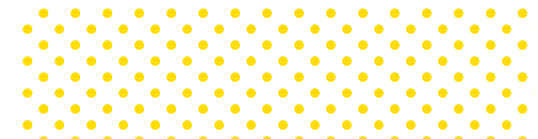
We recommend assessing your surveying needs, tools, and personnel to see how you can [start a drone program](#) for your company.

It's a simple first step towards getting your business up-to-date with digital trends and improving the workload of your staff, while staying informed about all your jobs.



QUESTIONS TO DISCUSS WITH YOUR TEAM:

- How are we taking advantage of the survey revolution?
- What areas of our survey process are using the most resources? Is the outcome worth it?
- What could we do if we could get updated topos, quantities, and visuals of our site every week?
- When was the last time one of our projects went over time or over budget? How much money would we have saved if it didn't?
- Are our competitors already using drone surveying?
- How could we show our clients the added value of drone surveying and make ourselves stand out?





WHAT'S NEXT?

ALL YOUR WORKSITE MANAGEMENT NEEDS IN ONE INTEGRATED SOFTWARE PACKAGE

Much like other industries, construction is looking at a future of integration. That means a “worksites management” will be a single solution, not a collection of scattered best practices and numerous software or paper tools.

Naturally, that means corralling a number of moving pieces and ensuring everything is updated. The only way that can happen is with a single source of truth that processes and visualizes data as seamlessly and automatically as possible.



THIS INVOLVES A FEW TECHNOLOGIES:



First, easier, and more automated data-capture.

We discussed above how the reality of drone surveying has finally caught up to expectations. This has reduced data collection time from days to hours, on average.

But it still requires individual action. Looking ahead, we expect a portion of survey data to be collected automatically. This will, in part, be done by drones, but we also expect new tools to arise that either capture real-time data on their own or supplement machines to do it. Ultimately, it will probably be a combination of all contributing to a real-time snapshot of a worksite.

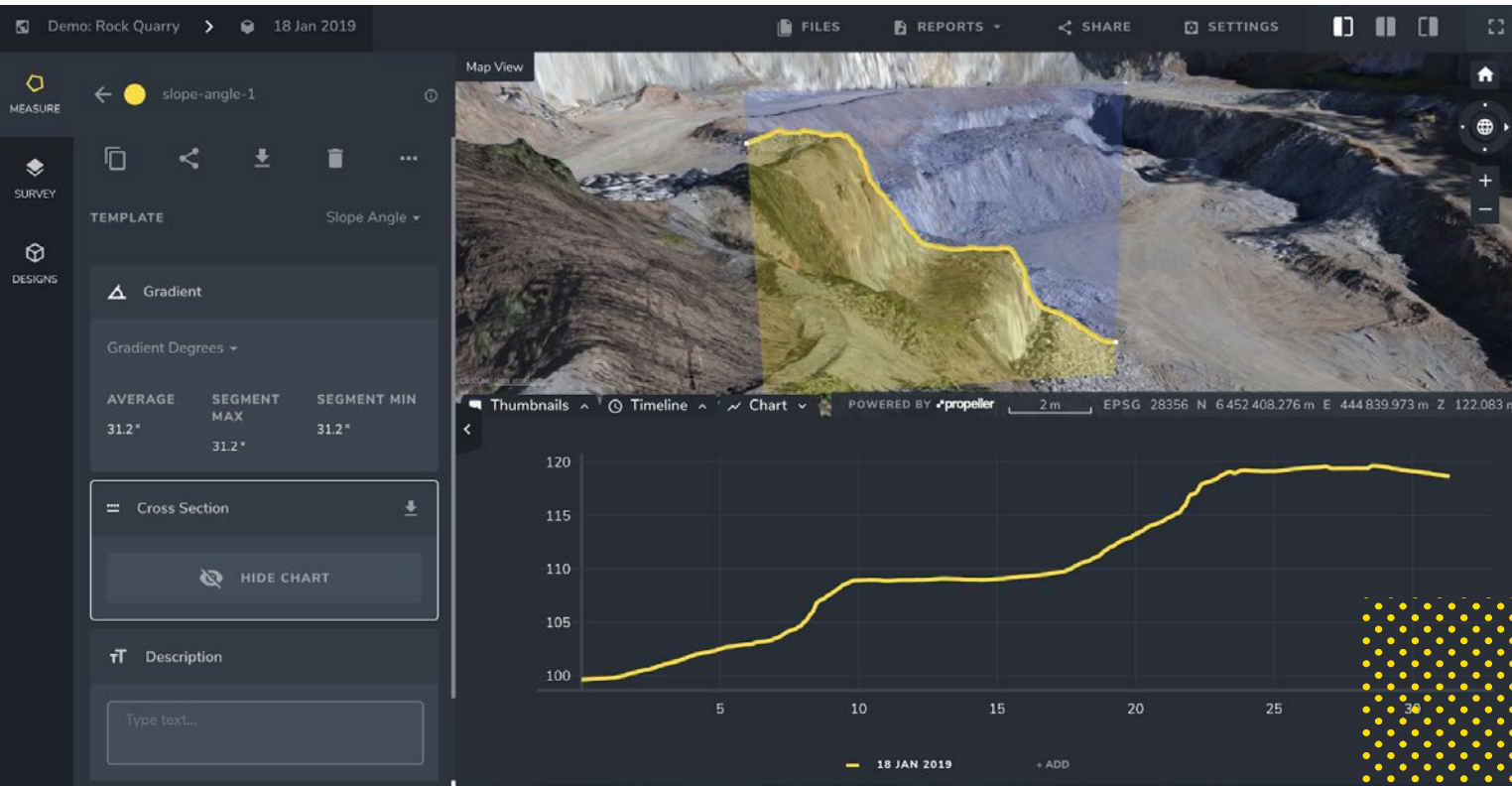
Second, a visualization and analysis platform that's accessible and simple to use.

Thankfully, these software platforms already exist. These programs are cloud-based, so you don't need to rely on a stationary desktop computer to access it. You can get the answers you need about your site from your device.

And, with collecting more data and more often, you'll have a better picture of site conditions than ever before.

But what makes this all the more powerful is its accessibility. Anyone who needs to know can access this valuable data to make better decisions. It democratizes information in a way that hasn't been possible on the jobsite before.

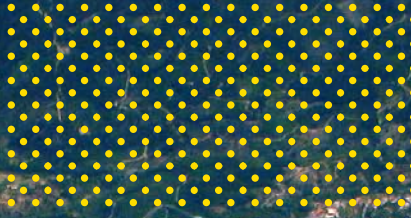
Knowing up-to-date site conditions means better troubleshooting. And when you know what you're doing is correct, there's less rework and more productivity.



QUESTIONS TO DISCUSS WITH YOUR TEAM:

- If we could get real-time data on our earth movement, what could we improve in our day-to-day work?
- How could we use worksite management tools in the future to position ourselves as a better option for our clients?
- If we had a worksite management platform, what roles and stakeholders would benefit most from access to it?





2020 IS THE YEAR OF TAKING ACTION





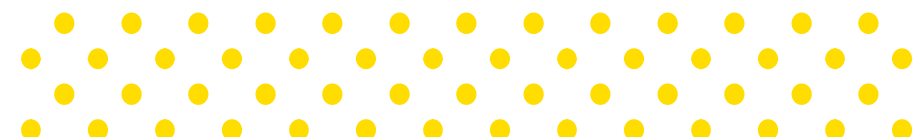
IF YOU ONLY TAKE AWAY THREE THINGS FROM THIS REPORT, LET THEM BE THESE:

- Under-digitization is hurting construction companies today and won't support future success.
- The skilled-labor shortage is real (and not going anywhere). Hiring is likely to get even harder in 2020.
- Drone surveying is a reliable, accurate, and affordable method you can use on your site.

This is the ecosystem you'll be operating in as we move into 2020. We've talked here about ways you can address these issues today and future-proof your business. Some of these trends will be well-known to your teammates already, others less so.

We know talking about industry trends can be difficult, especially when people don't see effects firsthand. That's why we've included questions at the end of each section. These are prompts to help get a conversation started with your team.

The first step to solving a problem is recognizing that you have one. So from here, we recommend talking with your team to understand how under-digitization, labor shortages, and drone surveying are affecting your business today.



WHEN YOU'RE READY TO ARM YOUR COMPANY WITH TECHNOLOGY-BASED WORKSITE MANAGEMENT OR DRONE SURVEYING

Come talk to us



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