Data and Insights in Construction

Where builders can get a competitive edge

PROCORE®

Executive summary

It's no secret that owners and contractors are **gathering more data than ever before**. The appetite for instant network access, technologies like 4G and 5G, BIM, and on site sensors has transformed the construction industry. It's clear that how owners and contractors make use of this data will be **key to their success** - whether they're a small regional operator, or a large multinational.

With 95% of data on a construction project going unused, meeting this challenge will involve getting to grips with a perennial issue in construction - the need to **connect stakeholders, information and processes on a single platform**. This e-book identifies the key opportunities to improve the areas which owners and contractors need to be focused on, and how platform technologies can support them to be most effective. It also includes case studies from businesses who are leading the way in making effective use of data.

In short, it finds that robust project data sets, connected platforms, and real-time insights are powering the **next wave of digital transformation in our industry**. The companies that are able to effectively capture, extract, and analyze project data across a project's life cycle, incorporating both past performance and predictive insight, will **make better real-time decisions**, differentiate themselves from the competition, and attain a higher profit potential.

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Today's competitive landscape

The COVID-19 pandemic forced the industry to rapidly adapt to new ways of working, and a more competitive tendering environment ensued. Contractors began to shift to remote ways of working, and rely more on digital collaboration solutions to connect stakeholders, which in turn has had the effect of raising client expectations. Clients are not only expecting more rapid turnaround on projects, but are also expecting a more collaborative approach through the lifecycle of the project. The days of "black box" construction are coming to an end. For their part, both owners and contractors are also looking for ways to integrate advanced techniques such as predictive analytics and machine learning into their workflows.

As projects evolve to become more complex, and tenders become more competitive, so too must approaches to project and performance management. The challenge for construction businesses is that, despite all of the recent advancements, according to recent research from FMI, 95% of construction data still goes unused, and 13% of construction managers' time is spent looking for information. That is time that should be spent creating more productive, safe projects. Making better use of the available data will be instrumental in accelerating project timelines, meeting evolving customer demands and accessing newer forward-looking and predictive insights.

95%

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*SOURCE: FMI

13%

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The role of performance metrics in achieving project success

Most construction projects that hit difficulties do so for a small, and quite consistent, handful of reasons. These tend to include:

+ **Poor communication** across functions and within the project supply chain

+ **Inability to scale** operations to meet client demands

+ **Poor cost / schedule management**

+ **Poor reporting** of project performance, leading to variations and scope creep

"These are challenges that have impacted construction for some time, and in order to fully get to grips with them, owners and contractors of all sizes need an integrated view of project performance"

says Brandon Oliveri-O'Connor, Senior Director of Procore EMEA.

"Project performance metrics are absolutely critical in capturing and quantifying what has been done, by whom, when, at what cost, and with what impacts on overall budgets and programmes. Such insights aid decision-making, deliver genuine project and business benefits that are shared across organisations, can be shared up and down supply chains, and can foster a culture of continuous performance improvement."

In the past, getting to these metrics has been hampered by complex and often disconnected approaches to information sharing. Many businesses still make heavy use of, and try to connect, on-premise office based solutions such as spreadsheets, ERP solutions, document management solutions, estimating solutions and snagging solutions. Trying to resolve and collect information from across these different solutions introduces delays and inaccuracies, hindering project performance.

Data visibility: where owners and contractors can achieve their competitive advantage

Our customers tell us that there are three main areas where owners and contractors can seek to maximise their advantage over the competition when it comes to information analysis and sharing. These are also the areas where we have seen businesses have the most success in terms of improving construction outcomes: getting projects closed out faster, and winning more repeat business.

DATA QUALITY

As a priority, it's critical that businesses are able to trust the data that is coming from the site. **Data that isn't complete is often less useful than no data at all** - it may for instance lead you to believe that all of the snags on a project have been closed out, when in fact there are many still remaining. Creating high quality data often starts with how it is collected. For example, a mobile tool that site teams actually like using, where they are bought into the value it adds to the construction process.

DATA ACCESS

Context is critical when analyzing data, so **it is vital that businesses are able to access all of the information relevant to their projects from a single solution**. Construction information that is spread across multiple solutions introduces the possibility of data 'disagreeing' with each other across tools. People have to be able to see the full picture through one window.

REAL-TIME

Construction work changes every hour of every day, so **businesses cannot afford to be looking at legacy or outdated information as part of their work.** Businesses can't effectively improve forecasting accuracy, enhance risk analysis or benchmark against peers in the industry if they are working from data which is days or weeks old. Information has to be kept up-to-date at all times.

The need for data quality, data access and real time visibility apply equally to businesses of all sizes - whether you're a small local housebuilder or a large multinational. What you choose to do with that data - a smaller business might be satisfied with a Red Amber Green view of how their projects are progressing, while a larger business is likely to want to implement forward looking metrics to improve processes - the fundamental tenets remain the same.

What this means for owners and contractors

The demands of the market are such that it will become increasingly untenable to attempt to manage a project using predominantly manual solutions, such as spreadsheets, or across multiple disconnected solutions. This is partly the result of regulation, but even more so being driven by client demand. Clients are driving aggressive project timelines, with fewer (or no) snags and defects, and to be involved throughout the supply chain.

For contractors, this means that high quality information, that can be accessed from a single solution, in real-time is becoming increasingly essential.

Although the construction industry has historically lagged in productivity, businesses that have improved insights through the adoption of platform technology can thrive even in this competitive environment. Take, for instance, how a platform solves data quality. Project insights you generate are dependent on the standardisation of how you input and gather the data to begin with.

Data needs to be accurate. It needs to be captured in real-time and it needs to be complete — meaning not siloed in multiple spreadsheets or stuck in disparate technology solutions that don't talk to each other. If you aren't looking at all of the data, you might as well not be looking at all.

The future of construction project management is about connecting construction to real-time data captured during the construction process. It will be less about hanging onto thin margins and more about leveraging data to make the best decisions on project pursuits, business partners, design plans, and preparing accurate estimates. Capturing consistent and accurate data is also integral to leveraging key enhancements in artificial intelligence and machine learning. These advancements in technology are only as smart as the data and direction they are given.
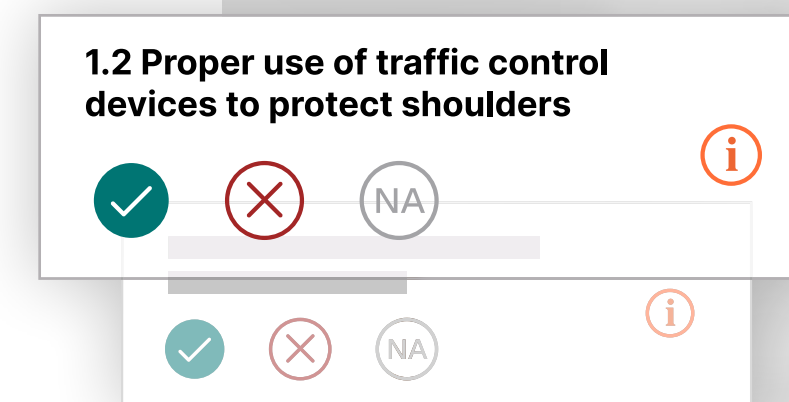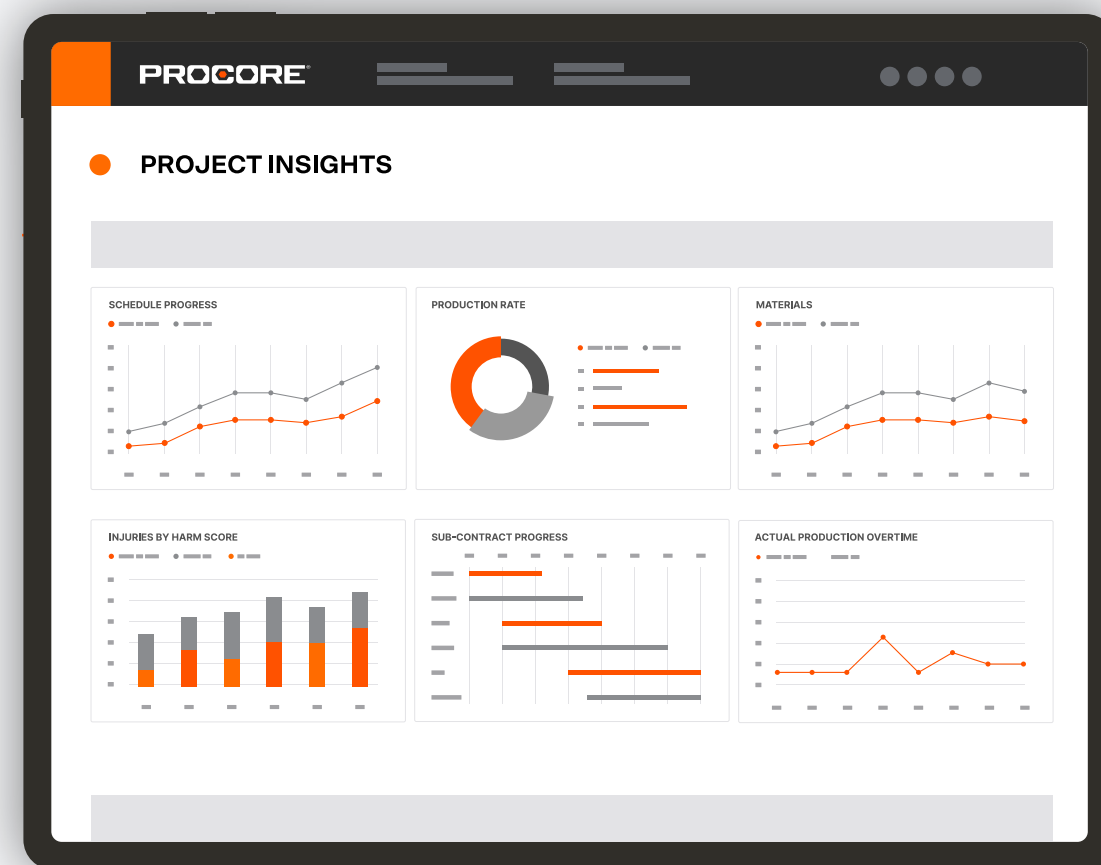
"Procore gives us that edge with real-time information"

Darran Hennessy 🇮🇪
Contract Manager
Monami Construction Ltd.
General Contractor, Ireland

It is critical that data is accurate, complete, and comprehensive so that the insights these engines can provide are accurate and action oriented. Without an integrated platform that bridges the data connections across life cycles and provides solutions your teams are willing to adopt, you'll never be able to leverage the power of real-time, data-driven decision making. Over the next three years, simply running lean and efficient will no longer make construction businesses competitive alongside companies operating on platforms with data-driven insights.

By making such project performance metrics visible, Procore research in January 2021[1] showed that contractors:

+ **Save management time** (averaging around five hours per week)

+ Made **annual savings** of the equivalent £253,000 from addressing performance issues

+ Registered **fewer defects**

+ Reported **better tracking** of safety records, and

+ Achieved **better compliance** with standards such as ISO 9001 / 45001.

£253k_{GBP}

Saved annually by contractors from addressing performance issues

[1] SOURCE: Procore Research Report

"Construction is seeing a clear shift toward the development and launch of integrated platforms rather than point solutions."

McKinsey & Company

McKinsey & Co
Global management consulting

Maintaining a competitive advantage: The platform investment

Businesses who invest in a platform approach are likely to see the benefits for years to come. According to McKinsey & Co, construction is seeing a "clear shift toward the development and launch of integrated platforms rather than point solutions". It defines platforms as:

"... technologies that enable visibility into management of business or operations processes through native capabilities and seamless integration with other technologies to aggregate data and process control in a single place."[2]

There is a "compelling economic logic for platforms", McKinsey says, believing "the most likely outcome will be the continued growth of multiple, interconnected platforms in the future."

The future of design, planning and pre-construction is enabling the unlocking of a project's complete data journey, with actual data driving inputs for future pursuits. Real-time insights and robust data sets will sit at the forefront of all decision making, and drive new profit potential as companies put emphasis on future-proofing their projects before the construction phase has even begun.

These values are inherently tied to the foundation of what a platform can offer, and the companies who are able to connect these data silos will thrive in their construction process and this next wave of digital transformation.

[2] SOURCE: McKinsey & Co, Rise of the platform era: The next chapter in construction technology, 30 October 2020.

BW: Workplace Experts

Delivering quality work at every stage of a project is a vital component of BW: Workplace Experts' organisational philosophy. To support their goal of delivering every project defect-free at practical completion, BW: Workplace Experts needed another way to gather consolidated, actionable, detailed and trustworthy insights on each project.

BW: Workplace Experts had a number of tools collecting data, and a growing pool of business intelligence, but many of the insights they needed to improve their business were spread across different pieces of software. BW: Workplace Experts saw in Procore Analytics one route to help maximise the value of their existing workflow by collecting analytics through the course of construction.

Using Procore Analytics, BW: Workplace Experts has been able to simultaneously streamline their processes and gather more accurate and valuable data on an individual and cross-portfolio level - ultimately saving time, improving productivity and enabling them to continue to deliver on their Defect Free promise.

"Procore Analytics continues to deliver value for our site teams, who now have an invaluable level of access to insights that were previously unavailable."

BW WORKPLACE EXPERTS

Maria Russo 🇬🇧
Customer Experience Manager
BW: Workplace Experts,
United Kingdom

Procore Analytics' data-crunching takes place in the cloud, so BW: Workplace Experts' on site teams can easily access up-to-date insights in the field through mobile devices, iPads or laptops without the need for additional or specialist hardware.

180+
team members

Alongside unlimited seat licensing, Procore can also be used flexibly by any of the 180+ team members at BW: Workplace Experts without additional costs, providing affordable scalability as new projects begin or older ones wind down.

Maria Russo, Customer Experience Manager at BW: Workplace Experts said:

"With Procore Analytics, we now have a 360-degree view that allows us to understand how many days a particular trade or a specific team takes to resolve snags, which trade had the most, and what is the most efficient way to go about it. Procore Analytics also continues to deliver value for our site teams, who now have an invaluable level of access to insights that were previously unavailable. This is helping them to save time, improve supply chain performance, create new best-practice standards and deliver on our vision of being Defect Free at practical completion."

BW
WORKPLACE EXPERTS

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Henry Boot Construction

Henry Boot has continued to expand in recent years, taking on new projects in civil engineering, commercial and retail, industrial, education and more. To achieve its goals, Henry Boot wanted to move beyond using point solutions to make data-informed decisions, better track schedule performance, and improve contractor experience.

By moving from a point solution to a platform, Henry Boot was able to capture data more efficiently and accurately, and ensure that all stakeholders were working from a single source of truth across the whole lifecycle of the project.

Once the data is in the platform, Procore keeps Henry Boot updated with real-time company reports that can be built with ease. These can cover everything from the number of open RFIs on a project, performance of an individual crew, or number of days lost to bad weather.

As a result of these improvements, Procore has dramatically improved reporting across Henry Boot's various locations. Procore's Company Level reports feature provides Henry Boot with a variety of ready-to-go reports on the company's datasets. This includes everything from high-level overviews to the number of open RFIs across projects, and these reports can be built and accessed quickly.

Admin users are also able to build detailed custom reports easily, as well as drill down on more precise detail using the project rollup reporting feature. "Prior to Procore, site and contract managers were having to spend a long time travelling between sites, something that's much more difficult with today's environment and COVID-19," said Chris Connor, HSEQ Advisor at Henry Boot Construction.

"Now with reports being logged in Procore and by people on site, contract managers get instant access to information on performance."

Chris Connor,
SHEQ Advisor, Henry Boot Construction, UK

"With Procore, we can see the whole project lifecycle in one place from start to finish, through the build phase and onto the finished asset. Having that visibility of performance throughout the project is helping us put our customers first like never before."

Henry Boot
CONSTRUCTION

Chris Connor 🇬🇧
SHEQ Advisor
Henry Boot Construction,
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If you have any questions,
give us a call at 0800 368 7703

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