



FORECASTING WITH CONFIDENCE

How Contractors Can Solve
Four Common Challenges

THE RIGHT SOFTWARE CAN MAKE THE DIFFERENCE BETWEEN HAVING A PROFITABLE PROJECT AND LOSING MONEY

Contractors know that being able to predict and prepare for variances in costs or schedules is essential to the profitability, cash flow and—in extreme cases—the viability of projects. However, reliable forecasting is a complex and multidimensional process that is difficult, if not impossible, with manual or out-of-date systems.

Scott Jennings, P.E., principal of SJ Construction Consulting, LLC, has over 25 years of experience working with hundreds of contractors across the country. “Forecasting feeds the lifeline of the financial health of a company,” he says. “If owners and CEOs want

to prevent profit fade during construction projects, they must equip project managers with sophisticated software tools that allow the managers to project costs accurately.”

“They also can know where their active projects stand at any time, in terms of profitability, by forcing the project managers to go into the software and actually update each of the line-item costs on a weekly or biweekly basis,” Jennings adds. “This brings tremendous confidence to the owners and CEOs, and will allow them to expand their surety bonding for their backlog of projects.”

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SPREADSHEETS: A LEADING CAUSE OF DEFICIENT FORECASTING

“One of the main reasons why forecasting is not done well in a lot of companies is because collection of all the necessary information is such a big task,” says Steve Cangiano, Product Manager at CMiC. “The majority of the time that’s spent on the forecast is really about collecting that data and then putting it into a format that others can understand and access.”

Two of the reasons that data collection is not done well are (1) use of multiple software systems to store and manage data, and (2) use of traditional spreadsheets as a supplementary measure. This patchwork approach inhibits free flow of information and results in data redundancies.

Unfortunately, use of two or more systems is all too common at construction firms. “Even

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if firms are using [automated] systems, they still use Excel to some degree,” observes Chet Kuchyt, Solutions Consultant at CMiC.

Kuchyt’s assertion is backed up by the JBKnowledge 6th Annual Construction Technology Report.¹ The functions within construction firms that are most dependent on software are **accounting (85%), estimating (60%) and project management (56%)**, but those same three workflows are also the ones most dependent on spreadsheets, in a slightly different order: **estimating (71%), accounting (59%) and project management (46%)**.

The spreadsheet method has inherent problems:

- **Out-of-Date Data** – Forecasting has to be done as close to real time as possible. A Carnegie Mellon University professor stressed this point in a construction-oriented textbook.² “For the purpose of project management and control, it is not sufficient to consider only the past record of costs and revenues incurred in a project,” he wrote. “Good managers should focus upon future revenues, future costs and technical problems. For this purpose, traditional financial
- **accounting schemes are not adequate to reflect the dynamic nature of a project.”**
- **Potential for Inaccuracies** – Manual data entry (or re-entry) is error-prone; a single typo can throw off an entire set of data.
- **Lack of High-Level Analytics** – When much of a company’s data is stored in spreadsheets, extrapolations are problematic. “The forecast should be systemized,” Cangiano says. **“It should state, ‘Here’s the data, this is what it’s telling us, this is what we should do moving forward.’”**



FOUR COMMON CHALLENGES THAT IMPAIR FORECASTING



Challenge #1: Inability to Identify All Potential Cost Impacts

Cost-to-complete forecasts are only beneficial if all potential cost impacts are considered. Contractors must be able to anticipate every possible factor that could cause a project budget to go south, and then budget accordingly. “The biggest risk is not accurately forecasting how much money you are expecting to spend,” Jennings says. “The first thing I tell my construction clients is that you want to become more responsible with job costs. However, **many construction companies lack the tools they need to follow this advice to its fullest.**”

A *Construction Executive* article³ elaborates: “The construction industry has been plagued for decades with projects coming in over budget and behind schedule. There are many reasons this happens, but it ultimately comes down to just one thing—a lack of connected information. Today, gigabytes and even terabytes of data are generated on a project and housed in

different systems that do not talk or share information, which creates a closed approach and inhibits collaboration. Data is siloed and only accessible to certain companies, departments or disciplines, which gives each project stakeholder a very limited view into the status of the project as they are making decisions.”

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Challenge #2: Inadequate Projection and Control of Cash Flow

Cash flow is the lifeblood of the construction business, where the funding for one project often comes from the revenue of another.

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One in five construction companies says cash flow is a constant problem. As a result, these companies sometimes have a tough time making payroll, investing in future growth, or even taking on new projects.”

A 2018 survey conducted by TSheets and Zlien

Cash flow affects the ability to acquire and maintain equipment, purchase supplies, run payroll, pay subcontractors and invest for future growth. **Construction companies need to be able to forecast and manage cash flow precisely and on a continuous basis.** That requires tools that allow them to input costs and budget changes, execute other calculations, and anticipate and keep track of each project’s cash requirements.

However, not all construction leaders have the wherewithal to manage cash flow. According to a 2018 survey conducted by TSheets and Zlien, “one in five construction companies says cash flow is a constant problem. As a result, these companies sometimes have a tough time making payroll, investing in future growth, or even taking on new projects.”⁴



Challenge #3: Poor Resource Allocation

The construction industry has a productivity problem. **Over the last 40 years, the productivity of construction labor in the U.S. has fallen**, according to the World Economic Forum.⁵ The organization is conducting a multiyear project to help the industry evolve to meet new challenges because it represents 6% of global GDP.

“Digital technologies have launched the Fourth Industrial Revolution, transforming entire industries. However, the Infrastructure and Urban Development industry (IU) has not kept up. Most companies in the industry’s many sectors still use primarily manual methods, offer traditional products and services, and operate according to established practices and business models. Productivity has lagged as a result,” stated the Forum’s most recent report.⁶

Labor constraints impact the forecasting aspect of resource management by making it difficult, time-intensive and, worse, fraught with errors. The effects are detrimental. If project managers cannot project future resource needs quickly

and accurately on a weekly or biweekly basis, they most certainly will have trouble keeping productivity on track.

“**Studies have shown that the most significant factors affecting construction productivity can be influenced and improved through jobsite management efforts,**” according to a 2011 conference paper.⁷ Researchers identified four factors that have the greatest negative impact on construction productivity: work that must be redone or repaired, lack of materials when needed due to poor planning or delays in delivery times, project changes during the execution phase and poor workmanship.

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Digital technologies have launched the Fourth Industrial Revolution.”

The World Economic Forum



Challenge #4: No Real-Time Visibility

In order to forecast accurately, contractors need to see up-to-date information on every business aspect relating to project costs.

“Visibility is important not only for the project manager, but also for the leadership team,” Cangiano says. “I have heard a few VPs say,

“**The big goal is to make sure everybody is forecasting in the same way.**”
Steve Cangiano, Product Manager at CMiC

‘I’d much rather know when a project goes sideways right away, so we can try and do things to correct it.’ Incorporating some kind of a dashboard tool, with workflow notifications when certain conditions are met, could be really helpful. The big goal is to make sure everybody is forecasting in the same way.”

In a survey of more than 500 construction executives and managers conducted by TrackVia,⁸ **78% of executives and 89% of managers said data coming from their jobsites was important to their success**, with the most critical jobsite data being quality of work, the cost of time and materials, and safety. Fifty-two percent of executives reported that four or more departments in their organizations relied on data from jobsites.

ONE PLATFORM SOLVES FOUR KEY CHALLENGES

By adopting a comprehensive, single-database Enterprise Resource Planning (ERP) platform that incorporates the latest technologies and is purpose-built for construction, contractors can overcome the aforementioned challenges that have been hindering their forecasting speed and precision. Such a platform allows contractors to compile complete, accurate and timely data from all essential sources to formulate a single version of truth. This can include real-time data as well as historical, trend-based data.

When team members are able to access and update all relevant data through a central control dashboard, they can use that high-level information to make forecasting decisions that are thoroughly informed.

Better-informed decisions can produce better operational outcomes and have a material impact on profitability.

In an interview with Construction Dive,⁹ Stuart Binstock, President and CEO of the [Construction Financial Management Association](#), explains that CFMA member companies are investing in ERP systems because they see return on investment (ROI). Although large companies have put \$1 million or more into ERP implementations, **“at the end of the day, you have saved money because you’re able to make quicker decisions, so, therefore, you become more competitive.** There’s a cost advantage, which could inevitably lead to you garnering more projects and getting more business,” he says.





Industries across sectors and across the globe are transforming themselves to adapt to the digital world. To find out why and how these organizations are investing in digital, IFS commissioned a survey¹⁰ that included construction and contracting decision makers in North America, Europe, the Middle East, Asia and Australia.

Business leaders were asked to rank the types of technologies they were prioritizing for investment. **ERP systems ranked number one, chosen by 46% of respondents, just edging out big data and analytics, desired by 45%.** “The prioritization of ERP systems points to the need for more mature centralization and

management of data internally,” according to the report. The importance of ERP also relates to the reasons construction firms are adopting new technology: **for internal process efficiencies (44%), improved reporting and decision making (39%), and productivity gains (37%).**

Solving Challenge #1: Identify and Respond to Potential Cost Impacts

The key to identifying cost impacts is being able to combine historic project data and timely information from across the organization to predict expenses accurately. A fully featured, construction-specific ERP system leverages a single repository of enterprise data that is shared across the organization, giving access to the same cost-related details to everyone who needs them. With data that is automatically updated—and not subject to errors or delays from fallible humans—teams can stay on top of cost variances and make immediate adjustments to keep the financial picture of each project on track.

“If you want to take job costs seriously and actually be accurate with forecasting, you have

to step up into one of the premier construction software systems,” Jennings recommends.

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Solving Challenge #2: Improve Control of Cash Flow

Kuchyt says use of a single database system provides two advantages. “First, it allows better reaction to current scenarios because it includes real-time data. That allows you to adjust, pivot and move money around so that you can maintain adequate cash flow,” he remarks. “Second, it enables more accurate projection of ‘what if’ scenarios. You can enter information and then see the impacts on the different areas affecting cash flow.”

Richard Tregaskes, Senior Product Manager at Faithful+Gould, a leading construction project and program management consultancy, [explains the connection](#) between unified data and optimal cash flow.¹¹ “Historically, cost data has been owned by the contractor, but today, the growing trend is for project owners to take ownership of cost data. From a financial as well as an efficiency standpoint, this shift in ownership makes sound business sense.

“As projects go live, owners provide access for the contractors into the owner’s system,

rather than rely on a set of costs and schedules presented by the contractor (or multiple contractors) across multiple systems,” he writes. “By tying the schedules and the costs into a unified system, the project management office can have an overview of the cash forecasting for both actual and proposed projects on a portfolio basis. **This unified data allows the project office to make well-informed decisions** as to where cash resources are needed and should be allocated across their projects.”

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Richard Tregaskes, Senior Product Manager at Faithful+Gould



CASE STUDY: BARTLETT COCKE GENERAL CONTRACTORS INFORMING DECISIONS WITH BETTER DATA

Founded in 1959, Bartlett Cocke General Contractors (BCGC) is one of the largest and most respected commercial contractors in Texas. **Originally, BCGC used a system from one vendor for accounting and a different company's software for project management.** Eventually, the company decided to search for a best-of-breed solution to replace the latter.

“What prompted the need for a switch was the amount of downtime and rework required to manually reconcile the two systems monthly, especially from a financial standpoint,” says Luis Berumen, Director of Construction Technologies at BCGC. “It was a fairly cumbersome process with opportunity for human error.”

Based on the recommendations of a consultant, BCGC sought an integrated, construction-specific ERP system that would automate data management and fulfill three criteria: **meet their implementation schedule, fit inside**

their budget, and enable their day-to-day workflows and tasks. BCGC concluded that CMiC met or exceeded all three criteria. “CMiC helps us leverage our data to make well-informed decisions at all levels of the company—from executive to project management,” Berumen says.

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Luis Berumen, Director of Construction Technologies at BCGC



Solving Challenge #3: Manage Resource Allocation

Working from a single database, schedulers and project managers can forecast allocation of all resources, including manpower. This more granular approach helps them better manage the challenges of seasonality, over/underutilization and conflicting labor demands.

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Advances in ERP and project-management solutions are helping schedulers and project managers find more reliable methods of resource management.”

Jeff Weiss, Chief Revenue Officer, CMiC

“Advances in ERP and project-management solutions are helping schedulers and project managers find more reliable methods of resource management,” asserts Jeff Weiss, Chief Revenue Officer for CMiC, in a [Constructech guest column](#). “One such example is the introduction of visual resource planning tools that proactively enable the allocation of resources—including manpower—based on skills, availability and location for greater precision in meeting construction project needs.”

“Productivity forecasting becomes straightforward and powerful when the budget and the actuals are being tracked in the same system,” Cangiano adds. “The productivity benefits are especially relevant to self-performing contractors.”



Solving Challenge #4: Gain Real-Time Visibility

Real-time, project-specific data provides construction-company owners, CEOs and project managers with information they can act on. The ability to marry historical data with the most current project data improves visibility even more.

Ideally, **a single-database platform allows key players to quickly compile polished, big-picture financial reports on how the business is performing at any given point in time.** This enables them to forecast and offset cost variances, such as subcontractor delays, unexpected safety inspections, potential overtime work or rush shipments of replacement parts.

When owners and contractors are working with “different versions of reality,” a host of costly problems can ensue, according to an article in the McKinsey Quarterly.¹² “It’s long been difficult for central-planning teams and on-site construction teams to connect and share information about progress in

real time... As frontline users such as project managers, tradespeople, and operators adopt real-time crew-mobility apps, they could change the way the industry does everything—from work- and change-order management, time and material tracking, dispatching, scheduling, productivity measurement and incident reporting.”

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An article in the McKinsey Quarterly



CASE STUDY: AGI GENERAL CONTRACTING ELIMINATING DATA SILOS TO EMPOWER COLLABORATION

Founded in 1978, Art Gautreau, Inc., dba AGI General Contracting (AGI), is a full-service commercial general contractor. Despite their successes, **AGI's owners knew that their legacy system was holding them back from performing at their best on every project.** "It wasn't a scalable technology that could take us to the next level," says Andrew Gautreau, Vice President of AGI. "It was difficult to collaborate because of the silos departmentally and interdepartmentally." AGI decided that it was "now or never" to make the switch, or else continue wasting time and money.

The company consulted industry sources, such as Engineering News Record, for top software reviews and sought the recommendations of other general contractors. Although the individual suggestions varied, the conclusion was the same: **the key to effective collaboration is having a system, built on a single database platform, that captures and organizes data**

across the enterprise. More important, the data must be available in real time.

Ultimately, AGI determined that CMiC offered the best solution. The company is now "functioning at a higher level than ever before," remarks Gautreau. "We optimized our forecasting, and we know our numbers better than ever."

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Andrew Gautreau, Vice President of AGI General Contracting



CONCLUSION

Adoption of a comprehensive, single-database ERP platform allows construction company leaders to overcome poor data collection, gain greater insights and surmount many of the typical challenges involved in project forecasting. With this type of platform, **they are able to identify all potential cost impacts, improve control of cash flow, enhance productivity and gain real-time visibility across the organization.** These

advantages produce a greater level of certainty through every phase of a construction project, leading to higher predictability and profitability.

While the construction industry has been notoriously slow to embrace digitization, the potential of technology is transformative, as a recent [article in Fortune magazine](#) points out:

“Observers believe the construction industry’s ongoing digitization has the potential to reshape not just an industry but also the entire built world, the term for all humanmade surroundings. ‘In a lot of industries, [technology companies] are replatforming existing technologies,’ says Koji Ikeda, an equity research analyst at Oppenheimer & Co. ‘In construction, they’re not just replatforming legacy technologies but the way the industry does business.’”



SOURCES

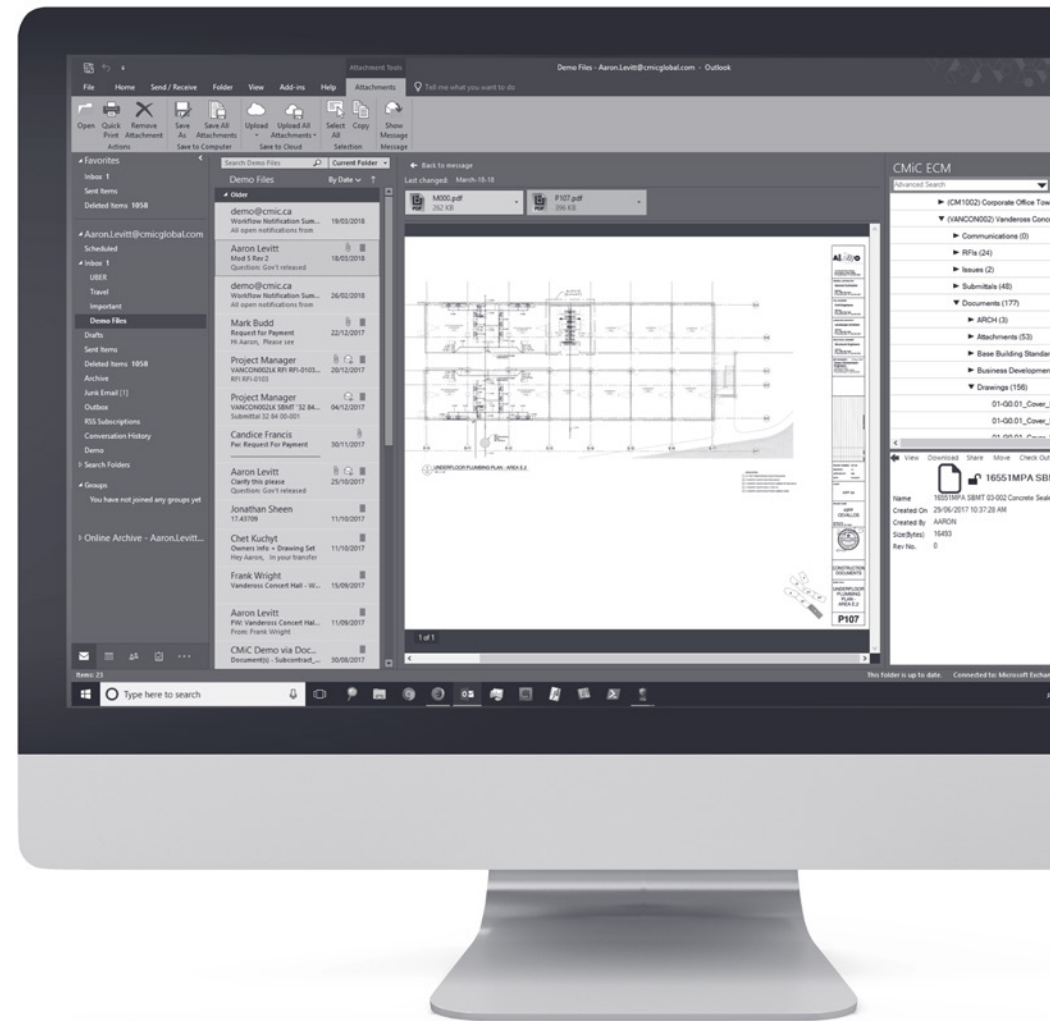
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