

Gaining control over challenging project management workflows

How architecture, engineering, and construction firms
can move beyond highly manual processes.

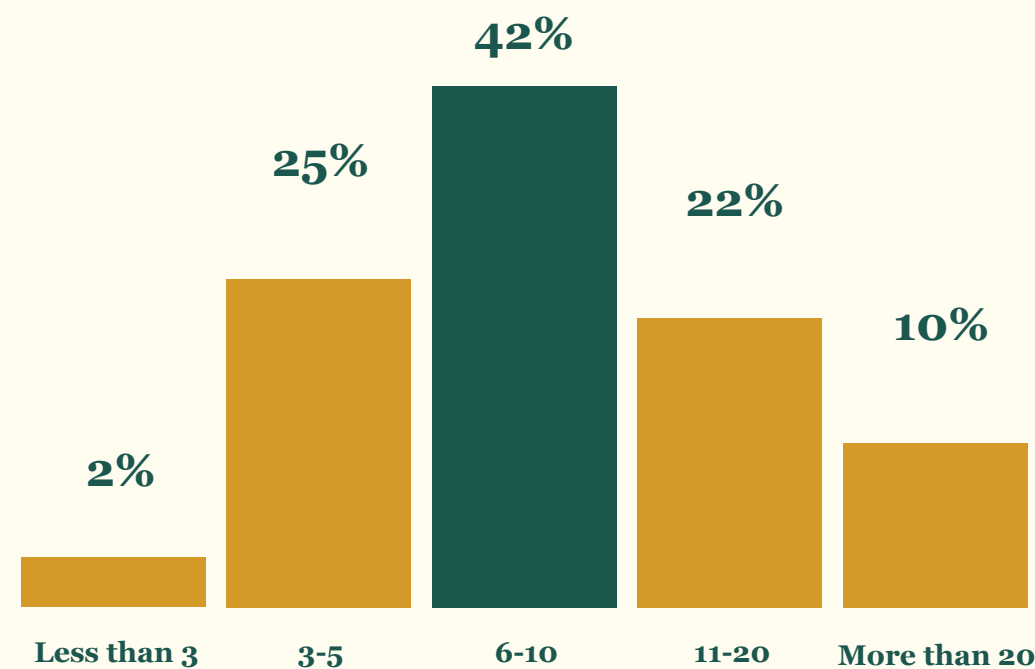


Introduction

Projects in the architecture, engineering, and construction (AEC) fields can be incredibly complex, whether it's building skyscrapers or creating intricate transportation networks. But the tools teams are using to manage this work are not as sophisticated as one might imagine. Multi-million-dollar construction projects are often managed in a Microsoft Excel spreadsheet or with single-purpose point solutions, relying on manual processes vs. automated workflows.

In fact, a recent survey reveals that a minority of respondents automate workflows, even though many use multiple software applications and tools to manage them. Even while automation adds reliability, data accessibility, and efficiency, organizations are not rushing to embrace it. Ironically, those that manage more than half of their workflows manually tend to use the most applications or tools (12, on average). That inefficient approach to workflow management can result in lower overall productivity, increased rework due to poor coordination, and, in extreme cases, even regulatory fines. Not surprisingly, those surveyed are seeking new solutions to help manage and automate.

Number of software applications or tools used on a day-to-day basis to manage project workflows



Challenged by inefficient processes

AEC firms are struggling with potentially huge issues in many areas, according to the survey by Foundry (previously known as IDG) for Quickbase:



Part of the issue may be due to an inability to find the right software. Just 13% of surveyed companies rely on one software platform to manage all workflows, while 61% use multiple software platforms, and 25% use specific software for each individual workflow. As a result, respondents often rely on highly manual processes and suffer from inefficiencies that reduce productivity, lead to missed deadlines, and, in some extreme cases, may result in regulatory fines due to noncompliance.

Workflow automation has the potential to make this sector much more efficient. On average, less than 40% of those surveyed automate workflows across critical areas such as scheduling, budgeting, estimating, and sourcing.

Survey base drill-down

The survey was conducted in March 2022, with 125 participants ranging from managers to CEOs at AEC companies with 250 or more employees. More than half of the respondents worked at companies with between 500 and 2,499 employees.

61% **25%**

of surveyed companies use multiple software platforms

of surveyed companies use specific software for each individual workflow

Connecting teams in-house and at job sites

The ability of teams to collaborate digitally across the organization is essential to putting information into the right hands and can address—and solve—problems before they become costly.

Survey respondents identified several processes that stand to benefit from the visibility and connectivity offered by automation. Sharing top billing at 42% were cost management and contractor and employee scheduling. Next was supplier and materials management at 40%, followed closely by safety management at 39%.

Connecting in-house and job site teams is critical to improving efficiency. Without proper communication, tasks can be delayed, issues may not be mitigated in time, and schedules have to be reconfigured.

“When the office holds the project plan, those in the field often feel out of the loop and don’t think they are receiving the information they need,” says Jacob MacIntyre, Director of Customer Acceleration at Quickbase. “Automation tools are trying to make that better.”

Many AEC companies are struggling with manual processes that require collaboration on tasks such as developing bids and drawings, managing permits and safety reports, and scheduling, among others.

The ideal state for these businesses is to better deliver projects on budget, improve communication and collaboration among stakeholders, and increase the speed and accuracy of estimating and bidding.

“What usually happens is companies transmit documents via email and everyone ends up having a different version,” says MacIntyre. “What they need is a database so all the relevant sections—or even different companies—can access one version of the truth. Engineers can say they’ve received RFIs, and builders can start asking questions before they’re even handed drawings. So, they are all collaborating in one platform.”

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JACOB MACINTYRE, QUICKBASE

Workflow management complications

Organizations are struggling to understand their day-to-day operations in real-time, with some using highly manual processes to manage complex workflows.

Architectural firms average the most software tools (12.4). They are also more likely to handle workflows manually. The other groups range from 8.6 to 9.2 applications, and their use of manual workflow management ranges from 11% to 16% less than the architects.





Top priorities to blunt negative impacts

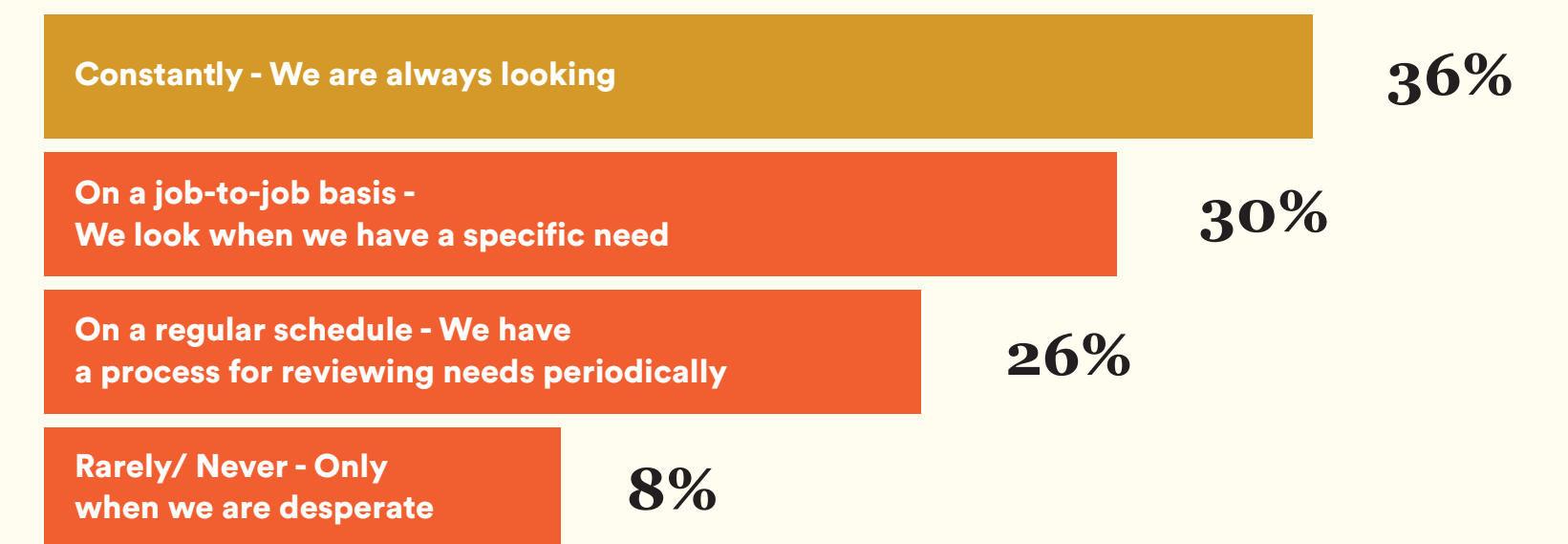
Firms are looking to improve on-budget delivery, collaboration, bidding, and safety. Integration with existing processes, and data collection and accessibility capabilities are highly sought-after features.

Survey participants say automating workflows would bring relief in areas including contractor and employee scheduling, cost management, supplier and materials management, and safety management, among others.

Less than half of those surveyed use purpose-built software platforms to manage any of their workflows; when they do, budget and schedule management are the most common areas of focus. That's likely why two-thirds of companies surveyed are either always looking for a new technology solution to improve workflows and processes or do so on a job-to-job basis.

The constant hunt for new solutions results in inconsistent workflows, lack of standardized delivery, and dampened productivity. According to McKinsey & Co., "Construction ... represents 13% of global GDP, but construction has seen a meager productivity growth of 1% annually for the past two decades."¹

Frequency that companies look for new technology solutions to improve their workflows and processes



Over a third of AEC survey participants want a workflow management platform that:

- Easily integrates with existing systems
- Collects and presents real-time data
- Centralizes and standardizes data across multiple teams and sites
- Facilitates collaboration with real-time visibility
- Governs access to data based on defined stakeholder permissions

For the most part, says MacIntyre, the leaders in the AEC sectors want to control these workflows. "They want IT to sanction and govern the solutions, but then to 36% hand over the keys to those in the field and the office that know the processes," he explains. "They want a common platform that, unlike Excel, provides a place where all can go to share data in real-time." Those with little or no IT support have to go it alone or devote precious budget to outside contractors.

To Grow the Business, Something Had to Change

Challenge

Lighthouse Electric, one of the largest electrical contractors on the East Coast, found coordinating large-scale projects incredibly challenging to manage in spreadsheets. To grow their business, they needed to establish a more operationally efficient system to manage their prefabrication process - a process that could require up to 2,000 tasks to complete.

Needs

Lighthouse Electric identified multiple critical factors that they required in a software solution:

- **Ability to collaborate and work in real-time in one system**
- **Automated notifications to simplify communication between multiple teams**
- **Flexibility to easily adapt and innovate as prefab division expands and grows**
- **Strong API connections to integrate their existing data sources**

Solution

The firm implemented the no-code Quickbase application development platform to meet its needs. “For us, it came down to the ability to see how quickly something could be prototyped and built, so the process owner could then take ownership,” says Bob Salaj, Senior Director at Safe.Right. Fast, a Lighthouse Electric subsidiary.

Empowering users across the business

AEC firms often rely on manual Excel inputs and specialized point-product solutions that make integrations a challenge and don't provide an overall view into workflows.

The search for new and project-specific solutions reflects the often-unique requirements of each project. AEC project managers need to bend management tools to their own needs, without having to employ programmers.

Increasingly, forward-thinking IT and project leaders are in favor of empowering business users to create their own custom solutions using no-code platforms.² According to [Gartner](#), 41% of non-IT employees, sometimes called citizen developers, customize or build data or technology solutions.³ Accelerating continuous innovation of unique processes with citizen development can unite AEC business users and IT teams to better automate key tasks and gain control over workflows.



Quickbase helps customers see, connect, and control complex projects that reshape our world. Whether it's raising a skyscraper or coordinating vaccine rollouts, the no-code software platform allows business users to custom fit solutions to the way they work—using information from across the systems they already have.

Learn how more than 6,000 customers—including Mondelez, AT&T, and Consigli Construction – are using Quickbase to keep their biggest projects on track at [quickbase.com](https://www.quickbase.com).

¹ “[The Next Normal in Construction](#),” June 2020. McKinsey & Co.

² Mary Branscombe, “[8 tips for managing low-code citizen developers](#),” Dec. 1, 2021. CIO.

³ “[Gartner Forecasts Worldwide Low-Code Development Technologies Market to Grow 23% in 2021](#),” Feb. 16, 2021. Gartner, Inc.