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Effective cost control on capital projects

THE TOP 5 CHALLENGES AND HOW TO OVERCOME THEM



With limited budgets, public entities must make the most of their construction dollars by maintaining tight control over project costs and schedules. Unfortunately, statistics suggest that this can be quite challenging:

[A 2016 McKinsey study](#) showed that large projects went up to 80% over budget and took 20% longer to finish than scheduled.

[A study](#) that looked at almost 900 international infrastructure projects found that over 40% had cost overruns and more than 82% had time overruns.

Effective cost control requires clear, accurate data that is integrated from multiple sources and is made

available to all project team members for analysis and input. Having a central software platform to organize project data allows teams to collaborate on where they stand with what work needs to be done to achieve project goals. Accuracy and transparency are key for this collaboration to succeed.

The top challenges to effective cost control include reliance on manual processes, lack of system integration, price volatility, unforeseen changes, and communication breakdown. Collaborative software solutions can help teams overcome these challenges, improving efficiency and profitability.



Reliance on manual processes

Often, due to a lack of software options, project owners rely on manual processes to track and manage project costs. Spreadsheets and other low-tech methods are used, regardless of the size or complexity of a task. Owners are forced to manually compile data from multiple sources, including contractors, designers, and their own teams. A recent survey found that workers can spend [up to 5 ½ hours a week](#) hunting down project data alone.

Relying on manual processes often causes administrative delays while project teams wait for reports from outside parties, and these processes have no fail safes against data inaccuracies. A report on [workplace productivity](#) found that workers waste 5.3 hours per week waiting on data from coworkers or re-creating data that already exists. In addition, a [SmartSheet survey](#) found that over 40% of workers spend at least a quarter of their work week on manual, repetitive tasks, including data collection and transfer.

Data accuracy suffers as a result. Even one mistyped decimal on a multimillion-dollar construction budget can drastically impact the project's profitability. Studies on data quality control have shown that each record can [cost up to \\$100](#). Some industry experts have placed that number even higher. This does not even account for the additional problems caused by errors or omissions, which can be amplified across project reports.

SOLUTION

From planning to construction, occupancy, and maintenance, owners should take advantage of modern, cloud-based solutions to manage data through all phases of capital projects. Program management software can help you save time and money by enforcing project controls and systematically handling construction costs. Owners can mitigate the time wasted waiting for data from others by integrating systems and allowing everyone to provide their input directly into the software. Automated data transfer provides more accurate information while saving administrative time. Improved accuracy ensures error-free plans, budgets, and costs.



Lack of system integration

When every party to a project uses different software and their own financial management practices, it can be difficult to share reliable information. While the owners have detailed information on the preconstruction stage of the project (since they manage it), the contractors may have more detailed information about the construction stage. Combining this information is difficult when data points and cost categories don't align, or there is no data crosswalk. Data silos can lead to making decisions based on outdated or incorrect information, costing small- and medium-sized businesses [*an average of \\$15 million per year*](#).

To get a complete overview of the project costs, project members must gather data from various sources. The level of information each party shares is often in the form of a high-level view of project costs—often just the sum totals. If further detail is required, the owner must ask the design team or contractor to provide that information from a different system in the desired format. Gathering the necessary data takes additional time, which can cause delays in decision-making, potentially costing projects both time and money.

SOLUTION

An all-in-one system that allows individual team members to share data seamlessly reduces risk. Inviting all project parties to collaborate in a single system helps eliminate data silos, ensures greater accuracy, and keeps everyone on the same page. Since everyone operates with the same information, teams can have more effective communication and resolve conflicts quickly. Notifications and alerts for project team members can prompt quick(er) action in the field. Other automations let members know as soon as changes are made to the scope or schedule. This is particularly important when there is an urgent change order or a work directive pending approval.



Price volatility

Since the beginning of the pandemic in early 2020, building material prices have [quadrupled in some markets](#) and are now up by [35.6% overall](#). Project teams have had to reprice entire projects multiple times, as vendors and owners alike cannot guarantee costs for any length of time. Predictability in procurement is something the industry may have taken for granted in the past, as we are now seeing contracts include price escalation clauses and variable lead time waivers.

In addition, a labor shortage in the industry has further increased prices and caused significant project delays worldwide. In order to meet this increasing need, it is estimated that the industry will have to bring in [nearly 590,000 new workers](#) on top of regular hiring to fulfill demand in 2023. Contractors have had to offer higher pay and more benefits to attract workers, further raising prices and lowering margins. Construction [wages grew by 7.9%](#) between December 2019 and 2021. In the same period, a combination of higher hourly rates, premiums, incentives, and overtime payments meant that overall labor costs doubled pre-pandemic levels. Increasing material and labor costs mean today's project delays directly affect costs more than they did in the past. Even short delays can greatly affect price points for standard construction materials.

SOLUTION

Minimizing project delays helps reduce the impact of price volatility. Clear pre-project planning, complete design and engineering documents, and accurate budgeting from the beginning reduce the probability of price changes affecting the construction schedule. Accurate estimation and effective bid management can help owners determine which contractor(s) offer the most value and consistency in pricing. When a project delay does occur, it is important that the delay, along with any impact on material prices or availability, is clearly documented so everyone is aware that it may lead to a cost increase. Implementing the right project controls ensures finance teams are aligned and can make funding updates when needed.



Unforeseen changes

While the main [*causes of change orders*](#) in construction projects are a highly debated topic and vary across industry and project types, most 'top 5' lists include additional work, errors and omissions, a lack of coordination between parties, defective workmanship as well as financial difficulties.

Unfortunately, there is no foolproof way to eliminate unforeseen changes from a project. However, mitigation is certainly possible. To reduce the impact of these changes, project teams must commit to being totally transparent in their communications by working together as a team, collaborating, and sharing information about potential problems, including sharing the responsibility of resolution. This level of collaboration is perhaps best demonstrated in the Integrated Project Delivery (IPD) method. Projects that use IPD are known to have fewer change orders and cost variances as a result.

SOLUTION

Team members can reduce the effect of unforeseen changes by leveraging their collective past experience and using historical project information. Artificial intelligence (AI) modeling solutions can use such data to forecast (and potentially prevent) the same problems on current projects. A good project or Program Management Information System (PMIS) can help teams identify trends and determine the most likely outcomes based on specific project conditions. Most modern risk management solutions are quite good at this as well. While data are key here, conducting robust preconstruction planning can also help mitigate the chance of unforeseen circumstances affecting construction. In addition, waiting for complete design documents and a proper constructability review reduces the chance of these conditions affecting a project.



Communication breakdown

Poor communication costs the industry an estimated [\\$17 billion a year](#). Successfully completing a construction project while controlling costs requires effective team communication and collaboration. Without a high level of knowledge sharing and real-time access to project data, projects are more likely to experience delays or increased costs. Team members must proactively share all relevant data to ensure all parties are operating with the latest information and can make educated decisions based on the same inputs.

This is particularly important in the area of construction drawing issuances and revisions. Working from the wrong issue number or revision can result in costly mistakes and rework. In fact, statistics show almost half of all rework is due to a lack of communication among project stakeholders and poor project information. According to a survey by PlanGrid and FMI, rework costs more than [\\$31 billion](#) annually. The same survey identified the top three causes of miscommunication as unresponsiveness, an inability to collaborate effectively, and a lack of a common communication platform in addition to the ability to share project data efficiently.

SOLUTION

Providing a single communication portal for team members to use for the entire duration of the project, from planning to occupancy, reduces the chance that an important correspondence or communication is missed. Selecting program management software with document management capabilities can greatly enhance teams' ability to keep track of project communications. In a shared solution, team members have access to common documents, project correspondence, and all other relevant project documentation, such as budgets and change orders. Permission sets and security features ensure that system users only have access to the data they need according to their role. Owners providing this software as a cost-benefit to their project teams typically observe greater collaboration, more effective communication, and reduced unresponsiveness in their construction projects while reducing the chance of costly miscommunication mistakes.



Final thoughts

Construction project teams face many challenges when it comes to cost control. Fortunately, owners can mitigate many of these challenges by implementing a cloud-based collaborative program management solution. Project teams often rely on manual processes to track and control costs. These manual processes can lead to inaccurate information and delays while team members wait for information to be compiled. Implementing technologies like document management, automated workflows, and AI-driven analysis can help teams reduce errors and quickly access the information they need at any time.

Often, each team member has their own system to track and report on the costs for their portion of a project. When this happens, data often must be pieced together manually to get a high-level overview of program health. An integrated system that allows all team members to track costs in one location gives everyone access to a single source of truth.

Construction costs continue to rise due to pandemic material shortages and labor crises. Even short delays can significantly impact the cost of materials and labor. An integrated program management system helps teams forecast costly delays and keep projects on schedule.

All projects are susceptible to changes caused by unforeseen conditions. Whether it is mistakes in the design or existing conditions, these changes can be expensive. By leveraging information from past projects, AI allows teams to predict potential problems before they happen, allowing teams to plan ahead of time.

Communication breakdown and a lack of collaboration can significantly impact project schedules and costs. Collaboration is easier and more effective when all team members have access to the necessary data and documents. A shared communication portal facilitates this process and helps prevent miscommunication.

Aurigo offers a suite of products to help teams reduce costs and create effective plans with software that is easy to configure and easy to use. For more information on how Aurigo can help your team, [contact us](#) or [schedule a demo](#).

About Aurigo Software

Aurigo builds software that helps build the world. Aurigo is an AI-native company that helps capital owners connect planning, construction, and operations in a single environment, improving decision-making and execution. Trusted by over 300 organizations across infrastructure and facilities, Aurigo manages more than \$450 billion in capital programs, with over 40,000 projects throughout North America. Aurigo is a privately held U.S. corporation headquartered in Austin, Texas, with global offices in Canada, South Africa, and India.

Learn more at www.aurigo.com

Schedule a demo

Schedule your demo today to learn how Aurigo Masterworks can help your organization streamline information, accurately track, forecast, and prioritize projects and help you save time and money.



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