AUTODESK
CONSTRUCTION CLOUD™

The Ultimate Guide to Benchmarking Construction Workflows

Table of Contents

Introduction

Building a skilled team of construction professionals simply isn't enough to stay competitive in today's market. The world's best construction firms spend a lot of time benchmarking and adjusting their workflows.

Why do workflows matter so much in construction? Much like in manufacturing, small errors and delays made during a complex building process add up quickly. Construction teams need to measure and quantify their workflows so small problems don't escalate into significant schedule delays and cost overruns. But how should a team go about the benchmarking process?

The Power of a Digital Construction Strategy

Digital strategy can no longer be a subset of the broader business vision of a construction firm—it needs to remain front and center of every major company initiative. Construction companies may have historically lagged behind other industries in the implementation of digital strategies, but it's time they catch up.

For construction, the benefits of implementing a winning digital strategy are clear. McKinsey reports that digital transformation[1] in construction could result in[2] cost reductions of 4–6% and productivity gains of 14–15%. With such benefits, it's a wonder so few engineering and construction firms have embraced digital construction tools so far. A study from EY Global[3] found that, as of 2017, only a quarter of the companies surveyed reported having clear digital strategies.

Many companies are overwhelmed by their options, busy with ongoing projects that leave little time for internal upgrades, and unsure of where to begin. The extensive siloing of data in the construction industry doesn't help. Conflicting file formats, software packages that don't integrate, and user errors can scare off construction teams trying to implement unfamiliar solutions. The best way to see where to focus first when implementing a digital strategy is to assess the company's current workflows. Workflow evaluation might reveal communication problems in one firm and supplier issues in another. From this information, the company can create custom strategy solutions that are both easy to implement and create noticeable results from the start.

What's the Purpose of Benchmarking Construction Workflows?

If you're not used to the idea of tracking performance metrics as part of running your construction business, you might think it sounds like a lot of extra work. However, it's the only way to truly know how well your business is doing in comparison to the competition. Raw data like sales figures don't tell you very much because it's not weighed against other factors like costs, labor, and even customer satisfaction. Benchmarking attempts to quantify important data about the workflow, including how long a worker spends on a task, in order to form key performance indicators (KPIs). KPIs are a lot like your score during a golf game. If you get the ball in under par, you know you're doing well on a course. If your KPI for labor on a particular part of a building is healthy, you're doing as well or better than the competition. Of course, this means you'll need data from other sources to compare your internal measurements against.

Many construction companies first attempt to strategize their workflow by using internal benchmarking by itself. Competitive benchmarking is the process of seeing how you stack up against other companies performing the same work. It can only work if you're gathering plenty of accurate data about your construction team and how they work. This won't be accomplished simply by asking them to fill out forms or report their own work. You'll need a complete digital strategy solution that integrates benchmarking opportunities. By digitizing the communication and planning part of the workflow, you'll immediately gain most of the information you'll need for competitive benchmarking.

But how can you decide if a task should optimally take 5, 10, or 20 minutes if there's no external data to compare against? You might decide that 10 minutes is optimal while the competition does the same task in just 3. With the cumulative nature of construction, these little factors all add up to the final numbers of delay or lost profit on the project.

Once you have the data gathered by benchmarking, you can leverage the power of artificial intelligence (AI) to go even further. Turn project data into actionable intelligence to identify, quantify, and mitigate risk. Automated machine learning and AI algorithms analyze critical project data and identify important trends and risk factors—highlighting them before they become more costly problems as the project progresses toward construction. Products like Autodesk Construction Cloud™ empower teams to predict, prevent, and manage risk with data as the backbone.

It's all about using the information your digital construction tools are generating for project management and benchmarking. Information on past projects allows contractors to actually see how they performed, beyond the typical success metrics of margin, safety, and client satisfaction. This helps contractors answer the question "how and where do we improve?" It could be as simple as trying a new tool, standardizing a practice, or changing to a closer supplier. The companies that embrace these opportunities for streamlining will not only benefit personally, but blaze a trail forward in the industry.

Where to Focus Your Digital Construction Strategy and Benchmarking Efforts

Of course, the average large construction firm could come up with hundreds of different potential KPIs to measure and track. Yet spending time on largely meaningless statistics will only make it harder to notice the numbers that do count. A joint research report created by Autodesk and Dodge Data and Analytics revealed seven distinct KPIs[4] that construction and engineering firms agree are most important for benchmarking:

Requests for Information (RFIs)

RFIs are an essential communication tool for the entire construction team and anyone else involved, but too many of them create delays or halt progress altogether. Many RFIs can be eliminated simply by improving workflows and communication methods. By breaking down silos and redistributing access to project data, you can eliminate many RFIs just by allowing team members to access accurate information on their own. Since every RFI needs to be reviewed and answered in some way, eliminating even a small percentage of them saves time. Even if the number of RFIs stays the same, implementing the right technology to streamline the RFI process can reduce delays and unnecessary costs.[5]

Change Orders

It's common for an RFI to turn into a potential change order, and seeing how well the change order process is managed is another essential KPI to track. Construction companies of all sizes and specialties should track this metric in some way. Poorly managed change orders can lead to rework and customer dissatisfaction. Teams can utilize a construction management platform with cost management capabilities to improve change order tracking across the entire approval process and view details of cost item impacts as well as historical reference points.

Construction Documents

A single construction project can generate hundreds of individual documents between the various RFIs, change orders, plans, drawings, inspection notes, comments, and more. Keeping track of all these documents is often as much work as the actual construction of physical materials. Lost and outdated documents slow the construction process and result in waste and rework. Benchmarking efforts should measure both how well documents are managed and what's done to minimize excessive paperwork. Track

how often errors are caught and how long it takes to proliferate an updated document to keep track of this KPI. Finally, include tracking of document storage and destruction to ensure no sensitive information is at risk of theft or loss.

Scheduling

Scheduling isn't a process that happens once at the beginning of a construction project. For effective and efficient labor management, cash flow projections, material orders and delivery, and much more, it's essential to update the project's schedule regularly and each time a major change is made. Don't forget about the impact of a scheduling conflict or slippage on the project's budget.

Data is essential for proper scheduling, along with seamless communication systems that connect core team members with subcontractors. Without the right data, you won't be able to reflect upon the progress of a project or compare it against the remaining work that needs to be completed. Unfortunately, 47% of construction managers are still using manual systems for data collection according to a report from TrackVia. Manual

scheduling can take hours each week, especially if managers have to coordinate the work of dozens of different departments and subcontractors. Using software that supports both the scheduling process and connects it directly to up-to-date project data makes more efficient use of valuable management labor.

Inspections and Safety Issues

Safety issues on a construction project don't only impact workers on the job site, but can also impact anyone on the surrounding properties. Issues can arise years down the road after the project is completed, yet the construction firm will still be held responsible for negligent work. Benchmark your company's handling of inspections and safety issues to ensure you're not putting the entire company at risk. When it comes to utilizing software to manage safety and/or inspections, more than half (53%) of general contractors report using it on at least half of their projects. If you're in the half that aren't using software for this purpose, it's time to get started.

Closeout Processes

Closeout and handover is one of the most challenging parts of the construction process. Without proper documentation of the design and systems of the structure, it's much harder to hand over ownership to the final tenant or manager. Punch lists help finish out the details for higher customer satisfaction and less time lost in the final stretch of a project. Yet trying to track these fine details and small jobs by hand is a major challenge. Construction software not only makes it easier to manage myriad punch lists, but it also allows you to track the KPIs of this part of the project. Don't fall behind at closeout.

Labor Productivity

This is the single KPI construction companies tend to focus on the most, and for good reason. However, focusing just on measuring productivity without investigating any of the other KPIs that affect it will only give you a partial idea of what to fix.[6] Labor productivity should be tracked in combination with the many factors that cause lost efficiency. Dividing data on workers calling in sick from lost productivity due to training requirements or worksite injuries will give insight into exactly what's holding the team back. Labor productivity issues are often tied into complex RFIs or hard-to-handle change orders, so link these two KPIs when possible to see how they're affecting each other. Identifying the performance of different team members also helps identify weak points in the group that should be addressed.

What Other KPIs Should You Track?

Add additional KPIs as you identify them as important to your team. Other common ideas include:

- Quality control, including the number of mistakes made on each project and the resulting impact on the project budget and schedule

- Total customer satisfaction with the project, which is often included with closeout KPI tracking

- Cost estimates versus actual costs, allowing you to pinpoint forecasting and supply pricing errors that can eat away at the total profit per project

- Daily, weekly, and quarterly completion rates on projects, determining the total scale of work completed per period

- Profit margins on various types of projects, helping your firm focus on certain sectors that are a better fit than others.

Using software like Autodesk Construction Cloud will help you better track your KPIs to optimize your construction workflows. Instead of adding more manual work to your routine just to track data, choose software that centralizes your data to make benchmarking possible. With Autodesk, you can keep control of your data and make full use of it.

Know Where You Stand

Before you begin creating your new digital construction strategy, it's vital to understand where your company currently stands. Luckily, there's an easy way to check with a free tool from Autodesk.

The tool includes a 15-minute assessment that helps construction businesses benchmark themselves against other companies when it comes to the KPIs that matter most. With this assessment, you will get a personalized report that shows how your team stacks up against others in the industry.

TAKE ASSESSMENT 〉

References

[1] Technology, People, and Process: 3 Pillars of Construction Digital Transformation
     Stephanie Ho, Autodesk, November 18, 2019

[2] Reinventing Construction through a Productivity Revolution
     McKinsey & Company, February 27, 2017

[3] How Are Engineering and Construction Companies Adapting Digital to their Businesses?
     EY

[4] Optimize Your KPIs with Construction Software
     Autodesk, November 4, 2019

[5] Digital Strategy Playbook: Construction RFIs
     Kristen Sylva, Autodesk, January 13, 2020

[6] Digital Strategy Playbook: Construction Productivity
     Kristen Sylva, Autodesk, February 10, 2020

See the Future of Connected Construction
construction.autodesk.com

In 2018, Autodesk announced that construction would be a key focus area to help our customers on their design and make journey. To capitalize on the opportunity, Construction became its own CEO-staff level organization, Autodesk Construction Solutions. This unique structure is comprised of product development, customer success, marketing, and field operations. The organization is designed to move at the speed of the market and serve customers on a level playing field with other solution providers. Autodesk Construction Solutions offers products that cover the entire construction lifecycle, from design, through planning to building and operations, including the Autodesk Construction Cloud which brings together our cloud-based solutions Assemble, BIM 360, BuildingConnected and PlanGrid.

Our vision is to create a vibrant construction industry where predictability and productivity are exponentially increased, while jobsite waste is proportionately reduced. The time has come for platform that will empower an industry transformation. Our mission is to help construction teams meet the world's rapidly expanding building and infrastructure needs, while making construction more predictable, safe and sustainable.
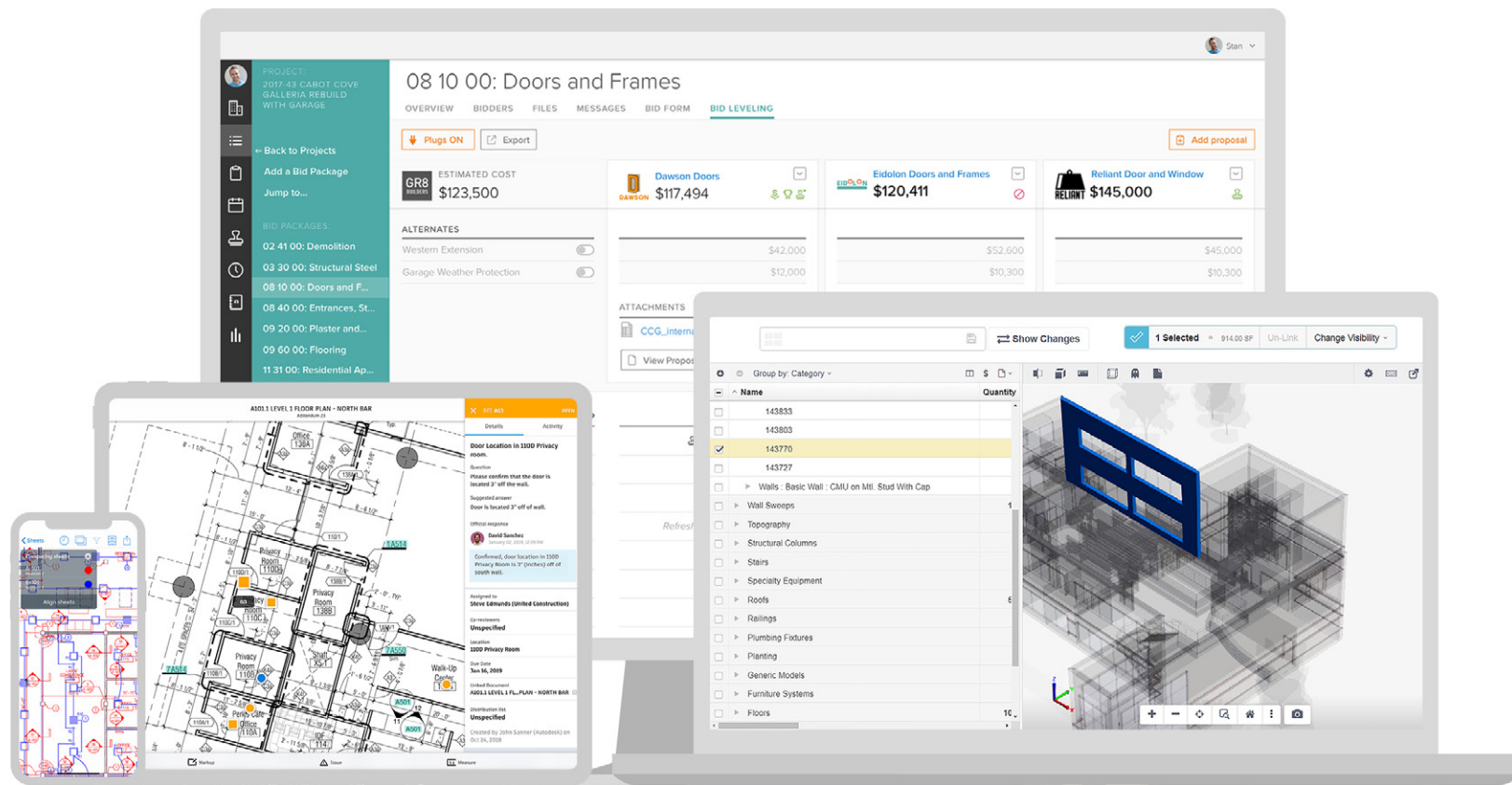
AUTODESK

With Autodesk software, you have the power to Make Anything. The future of making is here, bringing with it radical changes in the way things are designed, made, and used. It's disrupting every industry: architecture, engineering, and construction; manufacturing; and media and entertainment. With the right knowledge and tools, this disruption is your opportunity. Our software is used by everyone - from design professionals, engineers and architects to digital artists, students and hobbyists. We constantly explore new ways to integrate all dimensions of diversity across our employees, customers, partners, and communities. Our ultimate goal is to expand opportunities for anyone to imagine, design, and make a better world.

Connect with ACS

United States
+1 (866) 475-3802
construction.autodesk.com

Australia & APAC
AUS +61 1800 314 435
acs.apac@autodesk.com
construction.autodesk.com/au

UK & EMEA
+44 808 1892 253
acs.emea@autodesk.com
construction.autodesk.com/gb