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4 Ways Dashboards Can Improve Insights and ROI on Capital Projects

It can take years for an extensive capital project to go from its ground-breaking to ribbon-cutting ceremonies. And over those years, there will be the inevitable challenges, concerns and uncertainties to make sense of and navigate, but also opportunities and milestones to celebrate.

Navigating these challenges on a capital project means every day you are faced with a myriad of decisions. Making these decisions means you need answers to several questions that undoubtedly weigh on your mind:

- Can I get up in the morning and know if things are good or bad?

- Is everything on time, on budget and on track? If not, what isn't and why?

- Where do I focus my attention and efforts if several issues are waving red flags?

- Do I have the right data? Is what I'm looking at accurate and current?

- How can I get the insights I need from my data?

Answering these questions confidently can be the difference between project success and setbacks that cost you precious time — and your ROI.

Where do you get the answers? You'll find them in something as simple as a construction software dashboard.

In a nutshell, a dashboard gathers all your project data and summarizes it in visual form — showing you what you need to know at any given moment so you can keep the project on track.

Capital construction software dashboards provide the blueprint for success, turning data into actionable insights that empower efficient and informed decision-making in the world of construction.

Let's first explore what makes construction software dashboards an effective project management tool. Then, we'll look at four ways to use dashboards to gain valuable project insights while protecting and even improving your return on investment. Following are the four ways we'll explore:

1. Leverage real-time project visibility to support better-informed, objective decisions

2. Make the most of predictive data for smoother operations and reduced risks

3. Track resources to better analyze allocation and utilization

4. Share project information with stakeholders to streamline communication and collaboration

What Makes Dashboards Effective Project Controls Tools?

They're painless to use. As far as construction technology tools go, dashboards are among the simplest to use and understand — welcome news for anyone who cringes at the thought of trying to interpret raw data. For something so basic, it is remarkably efficient at delivering data in an organized way and making even the most complex information easier to digest for the technology- or data-challenged among us.

This speaks to their inherent design. Behind the scenes, dashboards are aggregating real-time project data from diverse sources — teams in the field, accounting and jobsite sensors, for example. That data is immediately processed and configured into cleanly formatted graphics within a user-friendly interface.

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They're conveniently accessible. With all project data centralized within the construction software, those dashboard interfaces become the key access points to the most sought-after of that data.

Unifying the data into a hub, or single source of truth (SSOT) turns dashboards into trusted mini hubs, creating confidence in the currentness and quality of the data accessed via the dashboards.

Accessibility is more than just where the data is retrieved, but how. Whether on a desktop or laptop, in an office, or on a jobsite tablet or personal smartphone out in the field, dashboard screens are designed to scale to the device, so information is always available.

They are flexible. As visualization tools, dashboards can be configured to help focus attention on the data that will most affect decisions or actions.

Consider how you want your dashboard views to appear, for instance. Pre-designed templates may be appealing if you prefer turnkey project reporting on specific metrics, or customization may be possible to fit your project or data distribution requirements.

What specific data does each stakeholder audience need? Clients may appreciate high-level, outcomes-based information focusing on schedule and cost adherence. Project managers and contractors need visibility into management-based details such as site crew productivity, key performance indicators (KPIs) trends and emerging risks to monitor and address these factors more closely.

What format is preferred or most appropriate to present specific types of information? Some common formats are bar charts, pie charts, line graphs and S-curves. Customization within these formats — by line style, layout or color, for example — adds clarity and emphasis for better at-a-glance comprehension.

So, what do these attributes enable you to do that can deliver better insights and ROI?

1 Leverage Real-Time Project Visibility for Better-Informed, Objective Decisions

Much of what happens during construction depends on the decisions stakeholders make.

It used to be that manually assembled spreadsheets, personal experience and gut instinct were the foundation for making those decisions. That approach is a tougher sell these days.

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With so much more at stake with modern capital projects, especially given their stricter compliance requirements, tighter schedules and higher price tags, a more objective approach is necessary.

It calls for real-time data. Every capital project amasses endless amounts of it. In and of itself, it's useless. Being able to make sense of it all is what drives more strategic decisions to prevent the all-too-common cost overruns and schedule delays that have long hurt ROI.

That goes directly to what makes dashboards so valuable: their ability to monitor and condense that data and continually deliver usable insights.

This is real-time project visibility. It all starts there, with everyone on your team having the up-to-date information they need without the wait or wonder, and in a way that doesn't require copious amounts of time to find and decipher. Knowing what's going on with your project at any given moment helps you preserve the status quo when things are performing well and manage risks by adjusting where things are falling short. You can delve into questions like: How are actual costs tracking against the budget? How far ahead or behind schedule is the project? Are there enough resources allocated for each jobsite task?

Dashboards open up visibility into the answers — data-driven, objective answers. Stakeholders can be more appropriately responsive by

In the realm of project controls, the power of dashboards lies in their ability to transform chaos into clarity, chaos into control, and complexity into simplicity.

leveraging this current project visibility to make quicker, more accurate decisions that can avert potential ROI-impacting delays and cost overruns.

2 Make the Most of Predictive Data for Smoother Operations and Reduced Risks

Effective dashboards should provide real-time and predictive visibility for better actionable insights. You want to be able to gauge ongoing progress and address immediate concerns with real-time data. But you also need visibility into potential issues and identify patterns for future improvement and risk mitigation.

Another way to look at it: there may not be a problem now, but what about next week?

You can get a wealth of predictive insights by analyzing project data, also known as data analytics, especially from prior projects. Think of it as the past informing the future. It can validate what worked and help you avoid repeating past mistakes that can cost you.

When combined with reporting, historical data sheds light on the what, the why and the what happened next. It answers the questions: What worked well that we can continue? What risk factors surfaced? What was the actual impact on cost and schedule? Were there any trends or patterns that indicated a developing risk? And are they something to keep an eye on in future projects?

Incorporating that historical data into your construction software (your SSOT) allows reality-based estimates against. You'll want to zero in on the KPIs from those past projects. Perhaps the most common in use is earned value management (EVM). While widely known

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as a measure of real-time project efficiency, EVM is also a metric-based crystal ball, forecasting against current performance to reliably predict future trends.

Let's start with the current performance. It's primarily based on two EVM metrics — schedule performance indicator (SPI) and cost performance indicator (CPI) — that measure how efficiently time and budget are being used against the estimate. Both are highly sensitive to risk factors from inside and outside the project, with their numeric values rising and falling, generally within operating ranges informed by prior projects. If either metric ventures outside its respective range, EVM becomes an alert system warning of something on the verge of impacting schedule and/or cost.

Construction software dashboards seamlessly integrate these real-time metrics and historical data for a complete view of project health. And from a more strategic perspective, they should also allow you to interact with any of this data to run predictive analyses.

When you want to forecast how specific risk factors or decisions could impact your budget and timeline, experiment with "what would happen if" scenarios directly within the dashboard.

Efficiency, transparency and accountability converge in project control software dashboards, illuminating the path to successful project delivery.

For example, if a swing in SPI or CPI shows no sign of leveling off, how will its trajectory impact outcomes, and by how much? If a project is running behind and at risk of missing the completion date, what adjustments in labor and equipment resources would help improve productivity? If a risk factor that played out in a past project surfaces, how does a proposed contingency plan prevent or mitigate it to keep the project on track?

As different project variables are changed for each simulated scenario, the dashboard displays the corresponding EVM forecast, giving stakeholders an immediate visual understanding of the predicted impact the scenario can have on outcomes. Foreseeing the potential issues and their calculated effect gives stakeholders the information and confidence they need to make the decisions that keep the budget, timeline and ROI on track.

3 Track Resources to Better Analyze Allocation and Utilization

Coordinating the thousands of resources needed to construct large-scale assets depends on careful synchronization and strategy. Naturally, you want to maximize the efficiency of each resource — namely time and cost. It's especially the case for labor, where the supply is critically low, and the costs are high.

That means being able to analyze those resources — labor, materials, equipment, supplies, facilities, etc.— across your portfolio from an enterprise perspective across multiple teams and projects. Seeing where those resources are over/underallocated or over/underutilized can help you begin figuring out how to move things around.

Dashboards provide this much-needed visibility into where and how resources are being used so you can ensure project outcomes are met and your ROI is safeguarded.

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Where are you adequately covered? Where are resources overallocated that could be relocated elsewhere, and what will that entail? Where are gaps in labor resources that may necessitate paying overtime or hiring extra workers to avoid delays, burnout or shoddy work? Are any resource misalignments going to throw off concurrent or dependent tasks or other scheduled non-labor resources?

To help prevent some of those over/underallocated and over/underutilized scenarios, look beyond real-time data. An ideal place to start is with your data from similar past projects. Based on this historical information, look at how resources were allocated for similar tasks or phases; they should provide some insights into where and how allocation and utilization shortages or excesses impacted project costs and schedules. This is where your dashboards become a planning tool. Use them to run predictive models to forecast where your resource requirements are so you can strategize how to best address them.

As with performance metrics, you can set up an alert to warn when resource allocation or utilization skews beyond boundaries that you set ahead of time, giving you a heads-up to promptly address it.

4 Share Project Information with Stakeholders to Streamline Communication and Collaboration

Lack of information and communication leads directly to operational inefficiency, a direct threat to ROI.

Dashboards help solve this, acting as a tool to facilitate communication and collaboration from a data-driven, holistic perspective.

We addressed dashboard access from a single-point location and device standpoint. Still, there's another angle to consider: opening up access for stakeholders to communicate real-time updates, documents and reports. Shared access is a must among the varied groups of stakeholders — executives, contractors,

Let's start with one of the main strengths of dashboards: the ability to aggregate data as it's received. Everything from workers' timesheets to geolocation wearables to equipment scheduling to digital task completion forms is captured and translated into a chosen visual format for construction managers to evaluate.

While charts and graphs show how resources are currently being allocated and utilized so you can make decisions and redistributions on the fly to match project demands, the right dashboard tool lets you dive as deep into the details as you want or need — from a higher "just the facts, ma'am" level all the way down into the weeds when issues develop.

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engineers, suppliers, architects, managers, etc, who are responsible for keeping projects moving and achieving successful outcomes.

This doesn't mean everyone is presented the same data. Truly effective dashboards will enable you to customize the level of access and detail each role requires. Armed with their own unique data-driven insights, they're better able to contribute to project discussions and collaborate around situations that need to be evaluated and addressed.

However, if a decision maker needs to dive deeper into details to understand the crux of an issue, they can. It's like pulling back the curtain on project status, performance and risks. This level of transparency minimizes the misunderstandings, ill-informed decisions and costly rework that too often negatively impact project outcomes and put a ding in ROI.

With clearer insights enabled in real-time, with visualized project data, diverse stakeholders can more easily and quickly collaborate on the critical decisions and action steps that deliver more successful capital projects.

Incorporating construction software dashboards into capital construction projects empowers you to harness data-driven insights for efficient project management. Real-time visibility, greater predictability, optimized resources and improved communication collectively contribute to better outcomes and increased ROI. Visit Contruent.com to learn more about dashboards and their role in project management.

ARES PRISM Becomes Contruent

In 2023, ARES PRISM was reborn as Contruent, launching a new name with an industry-leading new product, Contruent Enterprise. Contruent Enterprise is a culmination of our award-winning project controls software, full of industry best-practices built in, with the innovation and world-class capabilities of a capital project management software.

Building on its 25-year history, Contruent is the premier capital project management software that is faster to deliver across the entire project lifecycle for complex, mega-construction projects.

Contruent
55 Shuman Blvd. Suite 200
Naperville, IL 60563
+1 630-318-0444
www.contruent.com

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