

How Project Controls Improves Infrastructure Project Outcomes

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In the context of infrastructure projects, it can help in the following ways.

Provide a Baseline Set of Data For Current and Future Planning

Plans provide the structure against which to assess, track, and adjust elements of a project as it progresses, with the goal of winding up near the initial baseline by project's end. Where can you get this baseline information? By turning to historical data from previous projects or phases of an existing infrastructure project, you can plan out similar projects or subsequent phases with more certainty.

deliver those projects on time and within budget. It's going to come down to project controls.

Project controls is the set of processes and systems used to measure and monitor performance throughout the life of the project. Its main goal is to ensure that projects are completed

So, for example, if there are issues with one phase, that data can be used as a point of comparison when planning out other phases of the project. Having access to and analyzing past data on how things played out before will give you an idea of what to expect, and serves as a guide when developing budgets, timelines, and risk registers. Of course, projects are dynamic in nature, but with project controls in place, you're better able to control anticipated risks and respond quickly to problems as they arise, making it easier to maintain budgets and schedules and meet original expectations.

Accurately Track Progress Against Key Performance Indicators (KPIs)

Every decision, every proactive and corrective action taken, and every forecast are based on the performance data continually gathered throughout the project life cycle. To manage infrastructure projects effectively all that data has to be tracked properly, and that's been an arduous process when traditional tracking methods are used. Project controls is making this much easier to get a grip on from a data management and processing perspective.

Among the most critical KPI data points to monitor are cost performance index (CPI) and schedule performance index (SPI). These can be calculated and reported on using the widely accepted earned value management (EVM). EVM is regarded as a reliable method to help you know how these two metrics are working together, where exactly your project stands in terms of its schedule and cost and understand how they're performing compared to what you planned for.

Identify Risks and Their Causes Early On

A well-managed infrastructure project will typically have a strong focus on risk management. That's why project controls starts at the planning stage so you can take an anticipatory approach to risk — identifying and managing risks from the outset and preventing them from negatively impacting budget and timeline. This applies to both design and data. With respect to design, project controls avails the visualization capabilities of 3D modeling (building information modeling,

or BIM) to spot design clashes and errors, and experiment with design variations and even proposed changes to evaluate their potential effect on costs and schedules or even other parts of the structure.

On the data side, look at past project performance metrics to analyze the type, frequency, and severity of risk factors throughout the build and ultimately on project outcomes. Identifying risks early on isn't limited to the planning stage; it's also about detecting them early as they emerge once construction is underway. This is where CPI and SPI rise to the occasion. Their real-time responsiveness to internal and external risk factors highlights evolving trends, potential risks or concerning issues sooner — when they're easier to address and mitigate before they become problematic.

Forecast Potential Cost and Schedule Impact of These Risks

What happened in prior projects that can provide insights now that's indicating where the project is likely headed and where action may be required? How might a proposed change, whether suggested or required, impact costs and schedules? Project controls enables you to take a proactive approach to addressing all of these scenarios.



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