

Connected Analytics Trends in Construction

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Construction is experiencing its own information age. With technology adoption on the uptick across the industry, there's more data than ever being collected from the jobsite. And there's been a corresponding need in understanding how to apply that data throughout the project life cycle. This helps explain the growing interest in connected analytics – the sharing of data for more timely and informed decision making, mitigated risk and improved productivity.

As connected analytics continues to take hold in the industry, several trends have emerged that point to its relevance and value.

MIGRATING TO CLOUD TECHNOLOGY TO CONNECT DATA AND PEOPLE WITH CONNECTED ANALYTICS

Data is and should be the focal point of the industry's digital transformation. Its proliferation has been a sure sign that construction companies and project owners are seeing the importance of collecting it. Not only that, they understand it only has real value when the right people have not just timely access to it, but the ability to act on it. That came through in InEight's 2021 Global Capital Projects Outlook survey, in which half of respondents ranked connected analytics among their top three software priorities. It's a promising trend for an industry that until fairly recently was slow to adopt advanced technologies, let alone to connect the data dots.

That said, construction has increasingly been relying on the



cloud to facilitate this connectedness. But it's more than just an enormous virtual filing cabinet putting project data within immediate reach of onsite or remote project team members and stakeholders. Construction companies have been using it as a secure platform for inputting and sharing data, tracking performance metrics, and collaborating in real time about data trends. And the technology itself also serves as the foundation for other critical tech-based capabilities that are proving to be indispensable to capital projects, including integration, risk mitigation and mobile access.

GOING MOBILE TO INCORPORATE FIELD DATA FOR IMPROVED PRODUCTIVITY

Mobile technology brings connected analytics straight to the

jobsite. Because where data is needed is just as important as when.

Thanks to mobile apps, the inefficiency of filling out hard copy paperwork and schlepping to and from a job trailer to retrieve or provide job task information is becoming obsolete. With nearly everyone having a personal smartphone or at least access to a jobsite tablet, apps have been making it possible to collect data from each task and every corner of the construction site. Leveraging the ability to upload details for timesheets, safety and quality inspections, and commissioning, for example, has empowered those out in the field to have more control over and be more accountable for their job tasks.

Construction companies are seeing the benefits of going mobile in the form of reduced data entry time, far fewer errors resulting in improved project performance accuracy, and faster issue resolution that can head off unintended delays or cost overruns.

INCREASING RELIANCE ON PERFORMANCE METRICS FOR RISK MITIGATION AND DATA-DRIVEN INSIGHTS

Much of construction performance involves managing risk. That's where performance metrics come in. Two metrics in particular, cost performance index (CPI) and schedule performance index (SPI), measure a project's financial and schedule efficiency, respectively. And mobile access has made it possible to collect the data points that feed into these ongoing measures.

These metrics are highly responsive to internal or external risk factors – such as severe weather, supply chain issues, or lack of contingency planning – that affect the project. That's why contractors have been paying more attention to these CPI and SPI values, relying on them as an alert system, or an extra set of eyes that can see a developing risk. It can be monitored by build phase or in context of the overall project. It's this analysis of trends in the real-time field data that have provided contractors the opportunity to course correct, if necessary. When their numeric values fluctuate outside their normal operating range – whether a sudden steep turn or a gradual slope – it could indicate cost or schedule veering far enough off course to require attention before it worsens.

These same CPI and SPI metrics make it easy to keep an eye on overall portfolio performance, indicating which projects


are over- or underperforming. In fact, taking the concept of connected analytics a step further, they're providing contractors and owners insights about current projects that can be applied to future projects. For example, an internal or externally occurring risk factor that impacted the CPI or SPI for one project could foreshadow a comparable effect on a future similar build.

MOVING TOWARD SINGLE-VENDOR INTEGRATED SOFTWARE TO BETTER LEVERAGE CONNECTED ANALYTICS

Construction companies have been making a gradual shift toward single-vendor integrated offerings that are able to share one database, where all data is connected among various project functions – from estimating to commissioning and everything in between. Why? Because using single-point solutions from multiple vendors – long relied on to produce and process data to carry out their individual functions – isn't as efficient when it comes to sharing or processing that data among each other. Their systems may not play well together or use the same data or file structure. And that's been leading to extra work and time devoted to re-keying in details from one program into another, which can further compromise data accuracy.

The integrated approach is perhaps the highest form of connected analytics, and even has the benefit of being able to leverage an entire project's worth of data for future projects.

SHARING CONNECTED ANALYTICS WITH PROJECT OWNERS FOR INCREASED COLLABORATION AND TRANSPARENCY

Owners have increasingly made it known they want to be in the loop on progress, especially since they're often offsite. And who can blame them considering that their large capital projects involve so much cost, time, complexity, and risk? They want a degree of project certainty. And that comes from having visibility and confidence in the project data. Because connected analytics is real-time analytics, contractors are letting these numbers give owners a synopsis of the project through access to software dashboards or receiving regular progress reports. Contractors are finding this openness builds owner trust in the contractor's ability to manage the project and can even strengthen rapport between them. 



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