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Tapping into Better Business Intelligence

5 Ways Integrated BI Contains Cost, Manages Risk and Improves Margins in the Construction Industry

Business intelligence is out there in the construction industry: applications, infrastructure, tools and best practices that enable access to and analysis of information to improve decisions and performance. But large-scale contractors are losing a lot of money because they are not tapping into all the business intelligence available to them. Experts put the potential loss of revenue from failing to leverage this asset in the billions of dollars.

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>
> *— JB Knowledge 2016 Construction Technology Report.*

That's because construction firms, on the whole, operate at extremely low profit margins, averaging just 2.1%, according to the Construction Industry Institute. Consequently, contractors are especially susceptible to problems with cost management, scheduling/collaboration and risk management. These problems often lead to unnecessary rework, which accounts for an eye-opening 20% of a project's contract amount, the CII reports.

Even if rework were just 5% of total expenditures in the construction industry, that's still a staggering $62 billion in lost revenue — revenue that experts say could be recaptured through integrated business intelligence.

"Builders are completely missing the daily analytics that could reduce job site error, waste and inefficiencies," say the authors of the JB Knowledge 2016 Construction Technology Report.

Meanwhile, the industry as a whole suffers from an intractable productivity problem. If that problem were addressed, the industry could boost value added by an astounding $1.6 trillion, in part through better project management, execution and business processes, or in other words, if contracting firms had better business intelligence, according to the McKinsey Global Institute Report.

Consider the report's finding that labor-productivity growth in construction has averaged only 1% a year over the past two decades, compared with 2.8% for the world economy and 3.6% for manufacturing. The reason for the lag is that construction firms incur excessive overruns in cost and time, the report concluded.

WHY MORE CONTRACTORS AREN'T LEVERAGING BI

Better business intelligence, or BI, could improve profits and productivity, but only half of all firms are tracking information at all, according to a McGraw-Hill study. That study found:

- Only 37% of workers can access information outside the trailer.
- Only 37% use cloud services to share information.

Furthermore, firms aren't investing enough in information technology to help implement BI. The JB Knowledge report found:

- The percentage of companies spending 1% or less of annual sales volume on IT continues to grow, from 45% in 2015 to 70% in 2016.
- Only companies with more than 100 employees and more than $50 million in annual sales are likely to have a dedicated IT department.

Some companies mistakenly think they are leveraging BI because they're using apps or other stand-alone software. But that technology often serves only to silo data, making it difficult, if not impossible, to access and analyze for actionable insights. Even more firms are stuck in the outdated use of manual data entry, spreadsheets and CSV files, which are more limiting when it comes to sharing and optimizing data.

The JB Knowledge report found:
- 49.2% manually enter data.
- 44.7% use spreadsheets.
- 31.9% use CSV files.

"Since 2014, the number of builders relying on manual entry for data transfers continues to rise, along with the use of spreadsheets and CSV files," the report's authors lamented.

The bottom line, experts say, is that failure to capture BI with an integrated solution is costing construction firms untold millions in lost productivity. Capturing, sharing and reporting all that data can help contractors better manage cost, risk and collaboration — not to mention increase profits.

HOW BI IMPROVES MARGINS

Here are five ways integrated BI optimizes cost containment, risk management and collaboration to improve margins:

1. Provides a global view of projects past and present.

Contractors who aren't using integrated BI don't have a bird's-eye view of their current project — or past projects. That means firms have to use their "gut" when bidding on projects or making determinations about projects rather than insights and strategic data.

"Data plays a big role in each phase of the project," said Kiran Penaka, BI product manager for Viewpoint. "As an organization, you want to be smart about the decisions you're making in each of those areas, and having data to make those decisions makes you that much smarter."

With BI, firms can:

- ▶ See how accurate past bids have been as well as where the market is headed to make more accurate bids.
- ▶ Ensure that data are no longer siloed in apps or reports that must be manually concatenated to make sense of them.
- ▶ Get a unified, 360-degree view of the business.
- ▶ See trends across projects to make strategic business decisions based on actionable insights.
- ▶ Predict how future jobs will go based on insights into past data.

"To make strategic decisions, you really need a tool that sucks up data from a wide range of operations, not just one thing like a punch list," said Aiden Dalley, Viewpoint product marketing manager. "You need a tool that collects data across field operations and does it the same way across all your projects."

2. Uses real-time data to improve efficiency and margins.

Too often, project managers don't know what's happening on a job site until it's too late because they don't have access to real-time business intelligence.

"Many people write down things like employee hours and equipment usage, and then at the end of the week they submit that to payroll," said Barry Frangipane, Viewpoint's product manager, Field View. "But you want that data at the end of the day. You need to see what the trend is. If you have that on a daily basis, you can use that intelligence to make better decisions."

Using BI means firms can:

▶ Have instant access to metrics, such as payroll, to see whether work is being done on budget and where spend can be reduced.

▶ See where problems or bottlenecks are happening and address them immediately, rather than getting information about them weeks later when the problem has eaten into margins.

▶ Better schedule workers and inspectors for more efficient workflow.

▶ Track and mine micro-data on similar projects for better insight and strategic decision-making.

"You need timely information that you can get early enough to be able to make a decision,"

Frangipane said. "And you need to be collecting that information in such a way so that over time, you can mine that data and look for trends across projects, crews, materials, safety and quality. You can easily whittle away your entire profit by not doing that."

3. Creates a standardized reporting method.

Many firms allow project managers and others to use their own software. That leads to disparate reporting, which makes it difficult, if not impossible, to gain business insights or make strategic decisions.

"The construction industry is in a very fragmented state," Dalley said. "There are a lot of cheap-point solutions on the market. They are very good at doing one thing. But it just reinforces these data silos. If you're a systems analyst, you have a real problem understanding how your business is operating."

BI allows firms to:

▶ Ensure standardized reporting that is easily viewed on customizable dashboards and reports.
▶ Get access to data that otherwise might be siloed or unusable.
▶ Bring together office and field data for powerful insights and strategic solutions.

"Having a good BI layer on top of your other solutions means that all activities and all the workflows are being tracked," Dalley said. "The BI tool is analyzing all that information and giving you the ability to report on it — and act on it."

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4. Manages resources (people and equipment) more effectively.

Managing equipment and manpower is crucial to improving profit margins. But many firms don't have a good handle on either because they lack insight into that data.

"BI is crucial in scheduling," Frangipane said. "You've got to do resource planning, and you need proper information to do that. If you don't know, you're really playing with fire."

Employing BI to manage resources means firms can:

- ▶ Avoid project delays with better equipment scheduling.
- ▶ Better predict when equipment needs maintenance to avoid breakdowns and job stops.
- ▶ Track workers' licenses, insurance and certifications to know when they expire and better schedule accordingly to ensure enough labor for upcoming projects.
- ▶ Flag unsafe or poorly performing workers and equipment.

"If there's a safety incident and it gets written up and put in a filing cabinet or defective material that gets sent back but you don't track it in such a way that you can analyze it over time, then you don't have the information you need to make intelligent decisions," Frangipane said.

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5. Monitors risk more effectively.

Mismanaging risk related to safety, contracts, defects, costing and slowdowns reduces profit margins and puts firms in legal jeopardy.

"When I interview project managers and ask them what keeps them up at night, the thing I hear most is the not knowing," Frangipane said.

With integrated BI, not only do firms not miss things, but they also can:

▶ Keep daily tabs on contract requirements, legal restrictions and safety issues by project and locality.

▶ Analyze safety incidents with real-time data to see where weak spots are occurring and be more proactive in preventing them rather than reacting to them.

▶ Hand over complete building data to owners for seamless transfers and to mitigate litigation that may arise.

▶ Analyze suppliers of defective material to make better decisions on future buying and scheduling.

"A manager needs to be able to use one dashboard to get all the information they need to see where the ball is in their court," Frangipane said. "If I have my finance and scheduling and RFIs and safety checks and quality control coming through email, I have no idea what's going on and I'm going to miss things."

Ultimately, embracing integrated business intelligence gives contracting firms access to data that otherwise get siloed or just plain lost. With real-time insight into enterprisewide data, firms can make strategic decisions based on unified BI. In turn, projects can be managed proactively, leading to improved cost containment, risk management collaboration — and higher margins.

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