Five Ways Big Data Improves the Way Your Construction Company Operates

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Planning for complex issues is something every construction company has to do for a project. However, even the most adept general contractors can run into unavoidable difficulties that throw off project planning.

The big questions are how can construction companies lessen the impacts of issues that spontaneously arise? And how can general contractors predict when there might be problems?

If you are a general contractor that wants to reduce problems before they happen, you can leverage analytics to make sure your projects run as smoothly as possible. To help you succeed, we've outlined five ways big data can improve the way your construction company operates below. But first, let's talk about what big data is and what it means in the construction industry.

WHAT IS BIG DATA IN CONSTRUCTION?

Big data in construction refers to the huge quantities of information stored in cloud-based systems that select people can access from any location at any time, from general contractors and developers to subcontractors and individual tradespeople. Big data can come from people, computers, other software, and more.

For example, a general contractor mines data from the project timeline, materials used, and the subcontractors on the job. If
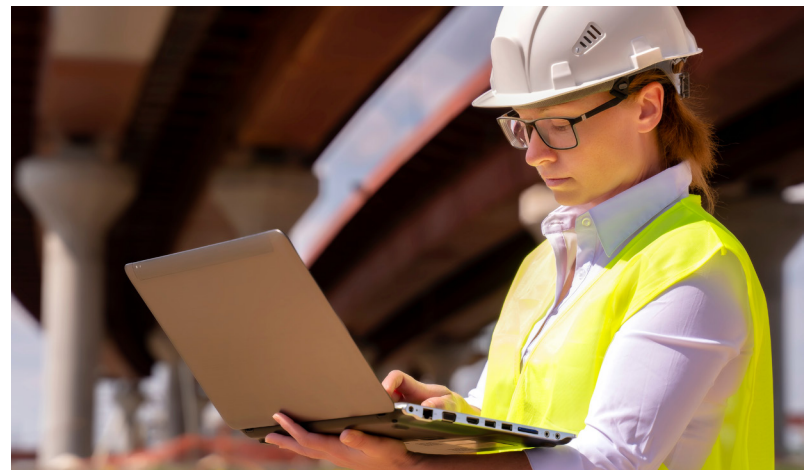
any materials are backordered, the analytics software will note the back order and suggest alterations to the project timeline.

1. MORE ACCURATE QUOTING AND BIDDING

Even before your crew lifts a single shovel of dirt on a site, big data can help your construction company generate more accurate quotes, bids, and estimates. Analytics software can easily find information from previous projects and take into account the current prices for materials and bids from subcontractors from your trade partner pool so that you can understand the size and timeline of a project to provide an accurate quote and bid for a project. A full platform can even fill in standard forms necessary to complete a full bid, saving your planning team time and money when competing for projects.

(Standard forms include requisition forms, contractual agreements with tradespeople and business partners, and logistics forms to send to transportation companies for deliveries.)

Because big data helps you produce more accurate cost estimates, this will lessen your risk of going over budget and spending more time on correcting problems in later stages of a construction project.

2. REDUCES HUMAN ERRORS

Material waste and correcting errors on construction sites account for 35% of construction costs, according to Forbes. Not only will big data reduce your costs (making your bids more competitive), but it can also increase your profits by reducing these costly errors.

According to Transparency Market Research, construction waste worldwide will total 2.2 billion tons by 2025. Digital tools, used from the beginning in the planning phase combined with lean construction and manufacturing, can reduce waste by giving suppliers plenty of advance notice to have materials and equipment on-site when needed.

Big data can align architectural plans and engineering diagrams with site studies and necessary materials to alleviate potential problems before they happen. As a result, project managers and site superintendents can make decisions about potential issues sooner in the project timeline to lessen the impact of potential difficulties. It's always easier to correct something before it happens rather than having to redo something, causing even more delays.

3. IMPROVES TIMELINES AND HITS DEADLINES

Hitting deadlines is the key to keeping a construction project moving forward. When utilized by crews on- and off-site, project management software can alert teams to potential delays, complications, and schedule changes along the way. Teams can input or automatically upload data that the software can use to assess the situation at hand.

For example, a truck delivering precast concrete beams might break down on its way to the site. Although the beams are undamaged, it will take crews 36 hours to safely get another truck to the breakdown site, transfer the beams using a

special crane, and then get the new truck to the site. A project management platform fed by big data will note this problem and adjust timelines and deadlines while informing all parties of the change.

4. MITIGATE RISKS TO WORKERS

Big data, when utilized from the planning phase on construction projects, can help teams identify potential risks and problems at the site.

For instance, the platform analyzes productivity of labor and equipment and then informs project leaders of potential delays, possible fatigue, or too much equipment on the site. If teams are rushing to get projects done and there are too many people or too much equipment on the site, it can cause even more delays, slowdowns, and worker fatigue when dealing with safety issues and overcrowding versus having the room for equipment, materials, and workers to move efficiently through the site. If any injuries occur, the project stalls even more.

5. FOSTERS PREDICTABILITY THROUGHOUT A PROJECT

Big data systems in construction use advanced algorithms, artificial intelligence (AI), and machine learning (ML) to provide crucial information and insights from the beginning of the planning phase.

Platforms can identify potential issues with coordination of resources, labor, equipment, potential problems on the site, and even seasonal weather changes that teams can address before issues cause delays and cost overruns.

Find the right construction software for your company

It's difficult to anticipate all the issues that might crop up during your construction project, but big data makes it simpler to review trends and predict supply costs, materials needed, and have things running in a cost effective and efficient way.

About the Author

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About the Article

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