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Big Data in Construction



John Edwards, Technology Journalist & Author
4/2/2013
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One doesn't have to burrow too deeply into just about any major construction project's master schedule to uncover a treasure trove of big data. Without much effort, it's possible to discover multiple terabytes of data related to building materials, equipment, employees, and events.

Given the fact that major building projects require an elaborate coordination of manpower (as can be seen at National Institute of Building Sciences' [Project Planning, Delivery, and Controls page](#)), equipment, materials, finances, and business and legal documents, the value of big data analytics to construction firms should be instantly apparent. Yet, surprisingly, many large building contractors have yet to take advantage of big data analytics. Many firms are still coordinating projects with nothing more than Microsoft Excel spreadsheets installed on their core systems. That's unfortunate, because as useful as spreadsheets are they don't give managers the ability to scrutinize large pools of data for insights on how to manage projects more efficiently. Such knowledge can help managers bring a big project to a speedy on-time conclusion with fewer snafus and at a lower cost.

The need to know

Big data analytics help construction firms keep projects on time and on budget by providing insights based on data generated by various sources, including job sites, suppliers, accounting teams, human resources systems, and various types of collaboration tools, such as email and text messages. As more business tools and communications systems are connected to big data apps, construction firms will gain

increasingly accurate insights, allowing managers to create schedules that are more efficient and better able to accommodate last-minute changes. With big data's help, a manager might be able to see, for example, that a critical job site delivery is about to be delayed. Rather than wait until the delivery time has actually been missed, a manager with advance knowledge of an upcoming late shipment may be able to obtain the necessary materials from another source or reassign workers about to be idled by the late delivery to other tasks.



Could Big Data decrease holdups in construction?

Big data can also help contractors work more effectively on a project months before the first nail is hammered into place. Project managers need to acquire as much information and insight as possible in order to know how much to bid on new projects. This knowledge can be obtained from big data sources and apps that help managers to learn more about potential customers, suppliers, past projects, and the industry and market factors.

Final thought

An aversion to [data management platforms and analytical tools](#) and related software tools runs deep in the construction industry. Companies that have long relied on spreadsheets and project management applications are often reluctant to tap into emerging technologies like big data, which are often viewed

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as being "risky" and "faddish."

Big data software vendors working to convince skeptical construction firms to adopt big data analytics face a formidable task. Yet, eventually, big data's power to save builders time and money will become apparent to a growing number of companies, and lingering opposition should gradually disappear.

Related posts:

- [How 'Big Data' Overcomes Pitfalls in Intuition](#)
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— John Edwards, *Technology Journalist*

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Saul Sherry, User Rank: Blogger
4/4/2013 | 9:52:58 AM

Re: **Spinning Money off this...**

I could see an opening for flexible and dynamic data sharing too, where the tools used to plot overspends etc are linked into suppliers stock prices etc... you'd end up with a system which benefited both parties and created a much more dynamic view of shifting costs.

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legalcio, User Rank: Exabyte Executive
4/3/2013 | 1:40:35 PM

Re: **Spinning Money off this...**

Exactly @Saul. Name a construction project that didn't have overruns? The Big Dig in Boston was budgeted at around \$3 billion. It came in at around \$14 billion. The supply chain for something like the new World Trade Center complex is enormous. If the use of Big Data could shave 1% of construction costs the savings would still be huge.

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Saul Sherry, User Rank: Blogger
4/2/2013 | 12:49:16 PM

Spinning Money off this...

I'd like to point to the otherside of the park on this one, and say if you managed to get all that data and planning information in one space (and move it to adjust delays etc.) it would be worth an absolute fortune as a pitching aid to suppliers, service providers etc.

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