

The Evolution of Business Intelligence



If the Rip Van Winkles of construction management have taken a snooze when it comes to business intelligence, they are in for a surprise. Today's information and decision-making are not the same as they used to be. The last 50 years of business technology have developed at an astounding pace—so quickly that it is hard to keep up.

Construction business owners traditionally worry about work quality, reasonably priced and current insurance, timely estimates and a host of other urgent issues. It is easy to see why many aren't focused on the flow of information. They are busy building.

However, the way a company approaches the flow of information is a good indication of some other factors:

- + If the leadership is open to new ideas
- + How tech-sophisticated the company is overall
- + If the company operates with a long-term business plan

Companies that realize the importance of these issues have a better chance of differentiating themselves from the competition. They are more likely to understand that the steady flow of information leads to a steady flow of cash.

Up-to-date, accurate information with intelligent systems in place to interpret it set companies up for success. And that means more revenue and business growth.

How did we get here?

In our digital age, there is more information available than ever before. Information that seemingly multiplies overnight—every night. For the data to be effective, it must not only be up-to-date and accurate; companies should have systems in place to interpret it and provide meaningful feedback.

To understand today's business intelligence solutions, a little history should provide context.

After World War II, construction in the United States became a booming industry. In the following years, skyscrapers became the norm. The Eisenhower highway system was designed. Infrastructure was built throughout the country. It was a good time to be a construction business owner.

Industry leaders realized they were not capturing important data. When computers became available, the initial challenge was to store information in a common repository, quickly, and to keep it up to date.

1960s and before: In these decades, office and home computers were unheard of, but strides were made in larger arenas, such as NASA. The discoveries of the 1960s led to the rapid development of computing that characterized the next half-century.

1970s: Some offices had adopted the use of computers, but not many of those were in the construction industry. Construction business owners were more likely to own an Atari system for their home. Atari made the first successful computer game possible with Pong. Meanwhile, back at the office, files were found in folders and on desks, organized in filing cabinets and analyzed by company leaders without computer assistance.

1980s: Homes, businesses, schools and every other corner of America joined the PC revolution in this decade. Computers and their clunky hardware were ubiquitous by the end of the 1980s. Computers entered the construction business marketplace, with some reluctance and a little suspicion from those consumers. And, in the late 80s, the internet was born.

1990s: This was the era of the spreadsheet, when owners and managers could see more data at

once, and organize it in various ways to assist in decision-making. Excel grew in prominence to become indispensable software for any business. Now there was not so much a set of tools for owners, but a generic spreadsheet and the opportunity to correlate information.

2000s: Reporting was now provided via computer dashboards with interactive and graphical elements to turn data into relevant information. This turning point allowed owners to analyze and interpret volumes of data—but without any true assistance from their software. The software provided information in numerous formats, but it was still up to the human to study it to make decisions.

2010s: This decade has been full of rapid change and it's not over. It's been ruled by the Industrial Revolution 4.0 and by the emergence of the Internet of Things. What was millions of pieces of data has become billions of pieces of data, and organizing and understanding it is increasingly difficult.

Business owners are left asking, what do we share, with whom, and when?

Software helps companies sift through the clutter. Mobile technology and on-site laptops bring people in the office and in the field closer, creating an environment that encourages collaboration. Getting information in, processing it and keeping it well managed enables more productive work for the entire team.

Keeping with the times

Today's technology provides access to real-time intelligence so business owners can manage better.

Some examples:

- + **Drilling down.** If a project manager is concerned about a specific crew on a specific job, daily time cards are available for anal-

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Revolutionary technology at work in the construction industry



1970s and before

Files in folders and on desks, organized in filing cabinets and analyzed by companies without any computer assistance.

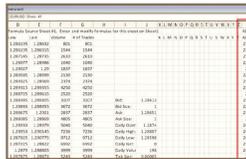


1980s

Computers entered the construction business marketplace throughout this decade, changing the way information was stored and seen.

1990s

The era of the spreadsheet, when decision-makers could see more data at once, and organize it in different ways to make decisions.



2000s

Reporting now provided via computer dashboards with interactive and graphical elements to turn data into relevant information.



2010s

Emergence of the Internet of Things, drones and other innovations that work in tandem to take information to intelligence, where technology offers solutions.



Today

Information stored in the cloud where workers can access via mobile devices from anywhere. Intelligence delivered in real time, and predictive intelligence provides alerts to possible upcoming issues.



Future

What's next? Artificial intelligence? For today, humans are still designing the systems and making the decisions. In the future, decisions could fall to AI.

ysis. If a crew doesn't show up, managers are notified and can act.

- + **Safety first.** Sensors can monitor employee heart rates and the proper use of safety gear, and managers are notified when something goes awry.
- + **Make the best estimate.** Everyone in construction knows that any profitable job begins with the estimate. A good estimate requires good information from subcontractors, on costs and amounts of materials. When this information is correctly in the system, every project begins with the best chance for success.
- + **Equip for success.** Where is your heavy equipment and where is it being used? Software organizes and analyzes for optimum scheduling and results.
- + **Set priorities.** With the mammoth amount of data available, owners can focus on key performance indicators. Vital information is front and center.
- + **Fly high.** Incredible new technology is emerging at ever more rapid rates. Drones and other innovations now work in tandem to take information about project status and inventory and supply usable, understandable data to decision makers and end users.

These examples illustrate the ways business intelligence can improve business—in terms of cash flow, profit, efficiency and communication.

Where it's going

Information stored in the cloud provides workers with access via a mobile device from any location. Intelligence is delivered in real time, and predictive intelligence provides alerts to possible upcoming issues.

But, convenient access to information is only part of the equation. In the end, there is no replacing human intuition. Business intelligence is not Artificial Intelligence. There are no robots or Hal computers making decisions for business owners. With the right software, people are provided with predictive alerts, and analysis to run their business in a way that promotes success and growth.

So, if it is your business, you can't afford to snooze. The onus is on you to keep up with technology and innovation.

When you learn to turn data into information, and information into useful intelligence, then you have everything you need to make informed decisions, and quickly.

If you are lagging behind, it's time to wake up and get started.