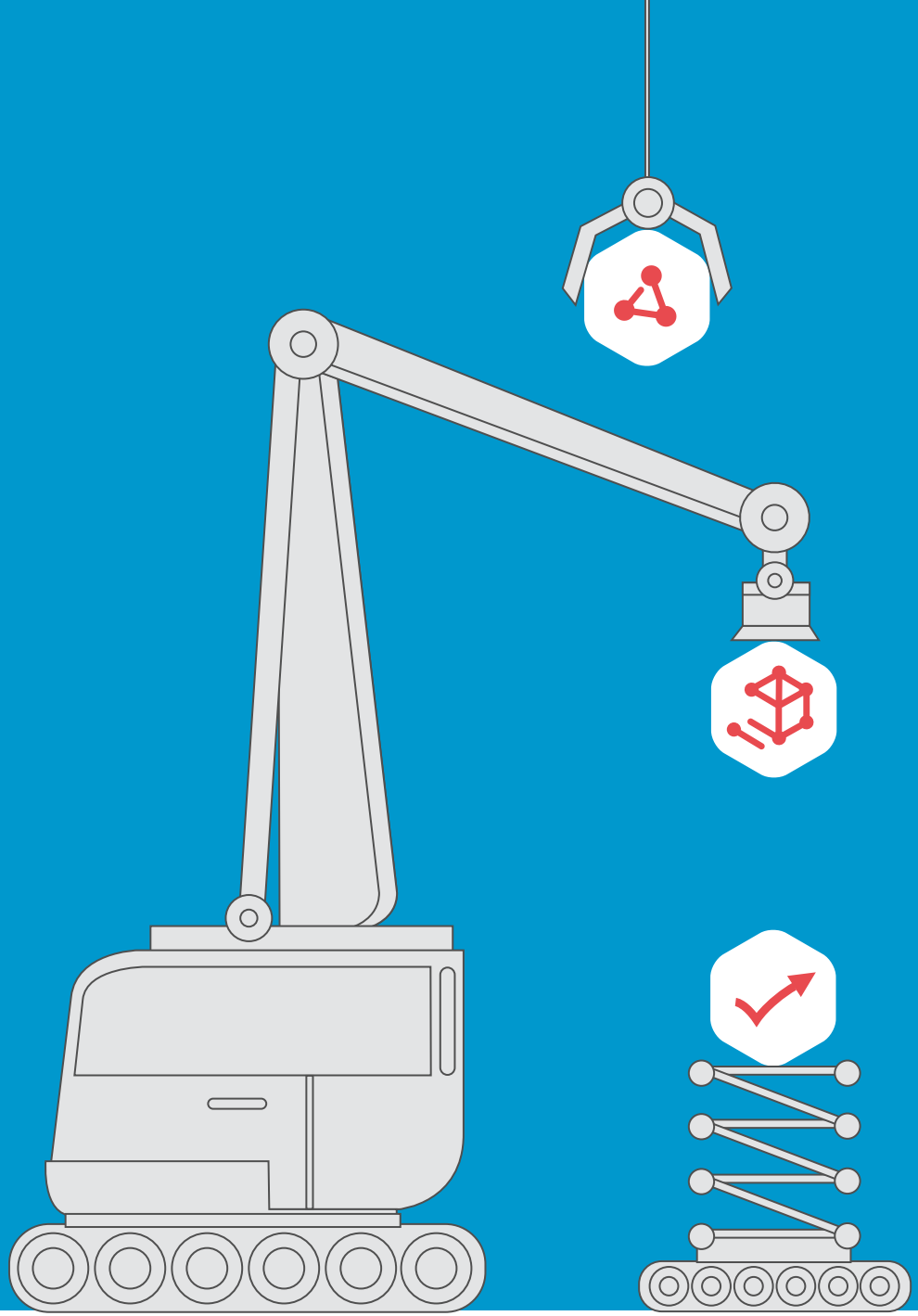

Project Management in Construction

The Need for Better Technology

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Project Management in Construction

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The construction industry has been slow to embrace new technology for managing projects … but it's beginning to catch up. Even though most construction companies use some type of software to help manage projects, many general contractors and other firms still rely on cumbersome processes built around paper and spreadsheets, or on software that can't keep project stakeholders updated in real time.

This manual process can leave gaps, allowing inefficiencies and excess costs to creep in. Being weighed down by old, inadequate technology can also prevent firms from gaining deeper insights into their operating processes so they can improve them.

To eliminate these gaps, construction companies are starting to more closely track projects and clients. They are implementing technology—especially mobile devices and end-to-end tracking software—to better evaluate, refine, and streamline their processes.

According to a survey by Software Advice, 94% of construction firms use some kind of software to help manage projects. They are adopting technology to achieve two essential benefits:

- Save time, effort, and money by streamlining operational efficiency.
- Make more money by quickly and easily acquiring new clients and providing them with an enhanced customer experience.

The challenge is to adopt the right new technologies while making life as simple as possible for your workforce in the field.

Big or Small? Different Headaches for Different Firms

What should companies be doing to gain these advantages?

To find out, we talked with James Cosman, partner at VeilSun, a professional services organization that helps businesses in construction, healthcare, and banking improve their operating processes. James has spent more than seven years working with construction and engineering firms to "help companies envision perfect processes for themselves and then translate that into technology."

In James' experience, most construction firms fall into two buckets:

1. **Large contractors that have problems tracking individual projects, especially in relation to key milestones.**

   These firms often already have large customer relationship management (CRM) applications in place to help handle client relationships, yet they still rely on spreadsheets to fill in the gaps on individual projects.

2. **Local or regional companies that need help managing clients from end to end.**

   These companies are missing a comprehensive process that gives visibility into all phases of a client relationship, from sales through project management to costing and accounting.

Cosman says that companies of all sizes are looking to reduce time and effort by eliminating or streamlining labor-intensive processes. For the smaller firms in the second category, improved efficiency in CRM functions can also help close more deals, leading to higher revenue.

The most common mistake firms make is giving in to a fear of technology. When you've done something the same way for a long time, there can be resistance to changing that process, no matter how inefficient. This problem can affect any company, but it's especially pervasive in the construction industry.

According to Gartner[1], construction has ranked dead last among all industries in terms of IT spending for the past few years. Whether large or small, construction firms invest an average of just 1.1 to 1.6% of their annual revenues into IT—about one-third of the average IT investment for firms across all industries.

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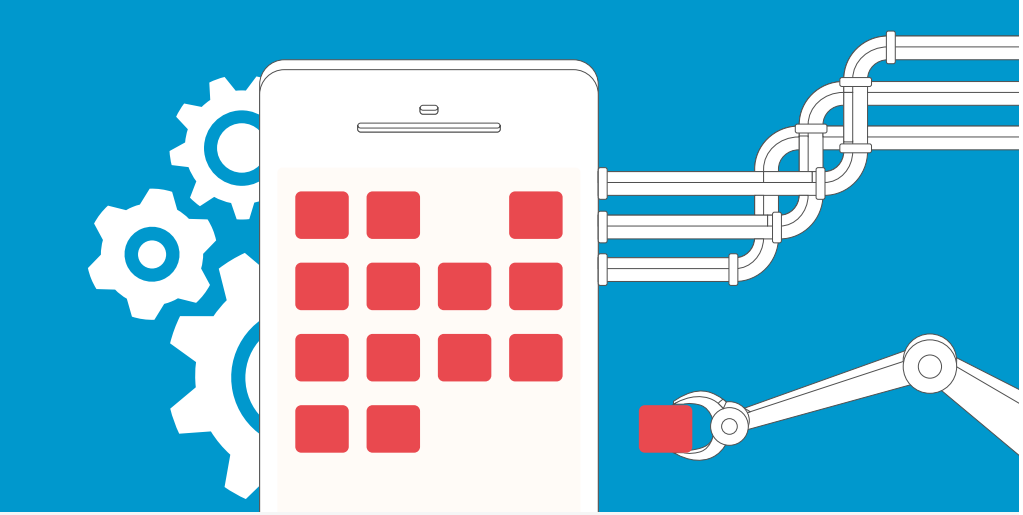
James Cosman
Managing Partner at VeilSun

[1] Gartner IT Key Metrics Database 2012



Improving Every Project Phase with Technology

The right technology can improve operations for many different parts of the business and across the entire project lifecycle.

Cosman highlights five key areas that are particularly important for general contractors, construction managers, and other firms.

1. Project Management

Key Needs:

- Real-time updates that keep up with project changes
- Clear visibility on multiple projects' progress
- Insight into how changes affect the work sequences

Many construction firms manage their projects in silos, relying heavily on spreadsheets, paper and email—an approach that inherently leads to waste. Newer SaaS solutions can keep everyone abreast of changes on the fly. A project manager visiting a work site can use a mobile device to adjust schedules on the spot, immediately enabling other stakeholders to make informed decisions with the latest information. For instance, if a framing crew has a two day delay, the project manager can instantly adjust schedules for the contractors that require finished framing. Even better, foremen and supervisors can use the same mobile app to track the status of their own crews' work even when the project manager isn't on site.

"Construction companies struggle with choices of software solutions to manage their business. Most software solutions are enormous, expensive and take a level of corporate commitment that typically ends up with underutilization of the product. Efforts to change whatever business process and workflow that might exist to fit into these products tends to be a long, arduous process yielding results that were not expected. Subsequently, parts of the business process revert back to spreadsheets and paper. This is more of a problem with small construction firms as they do not have the internal resources to implement these very large software 'solutions.'"

D. Brian Cameron
Vice President of Corporate Operations, Cooper Construction Services

The best SaaS solutions make it much easier for everyone to see where the roadblocks are in a project plan, and to understand clearly how each phase of a project leads into the next. That can prevent small missteps and it can also give you plenty of advance warning for more critical dependencies. It will also help you manage key documents to any construction project. You may need to share and get approvals on RFIs, change orders, submittals, and so on with minimum delay. For example, competitive roofing companies now collect electronic signatures from customers using mobile devices, allowing them to track every signature, automatically triggering the next step in the process.

A project manager visiting a work site can use a mobile device to adjust schedules on the spot, immediately enabling other stakeholders to make informed decisions with the latest information.

2. Asset Management

Key Needs:

- Physical equipment and materials tracking
- Keep field staff updated in real-time
- Maximizing ROI while minimizing downtime

Effectively managing equipment and other resources is vital for good project management. It is crucial that you coordinate your workforce, materials and equipment, making sure that crews with the right skills and supplies show up at the right site in the right sequence. Thinking of the earlier example: when the framers finish their work and the plumbers show up, are the pipes and valves they need already on site? You lose time and money when a crew doesn't have what it needs to get the job done.

It's much easier to send a crew to a different site, to call in a different piece of equipment, or order up more pipe when the project manager always has a cell phone handy. Great project management software goes beyond that, helping you avoid mix ups in the first place. It will uncover the hidden consequences when a team hits a delay—or finishes a job early—so that you can consistently route workers and equipment to the right site at the right time. The best crew in the world can't proceed if they have to wait for the forklift they need to move the Sheetrock—or have to wait for the Sheetrock itself.

When you have a clear picture of each project in real time, you become more efficient at finding optimal ways to deploy resources— getting the most out of your assets. More firms every day are using radio-frequency identification (RFID) or barcodes to track materials and equipment. Even before implementing any new solution, you should use any means you can to give project managers real-time information on where assets are deployed.

What you can do today: Make sure that you are closer to tracking projects in real time, by providing mobile devices to your team in the field.

Research carried out by the Construction Industry Institute at the University of Texas indicates that most work delays cannot be traced to crafts workers, but rather to management issues, especially when materials, designs, or equipment haven't arrived at the site on time.

3. Back Office Operations

Key Needs:

- Managing Receipt / Submission of Required Documentation
- Project Costs
- Customer Billing
- Instant visibility into completed work per project
- Labor cost management
- Project ROI

Managing customer documentation such as executed contracts, change orders and their modifications, bonds and certificates of insurance are typical challenges construction companies identify when using, or potentially reverting back to, paper and spreadsheets when their existing solution is too monolithic. Additionally, the same document and workflow issues can carry over to the subcontractor side of things when executing subcontractor agreements, licenses, etc.

Companies often end up losing money because they can't instantly track where their workforce is spending its time. Just like you want to track equipment hours, where your machinery and trucks are deployed, you also want to know what your crews are working on and how long it's taking. Otherwise costs can get out of hand quickly.

Many construction companies still manage the timecarding process using pen and paper as it pertains to labor costs and payroll. Many are hesitant to switch to a digital process, assuming a new system will cost too much to implement. This is actually not true as pen and paper time entries are more error-prone, leaving you vulnerable to overpayment and surprise project costs. Managing the supplier and/or subcontractor invoice approval and payment process can get quickly out of hand if project financial data is cobbled together and presented AFTER a financial period closing. The data is old as soon as it hits the project manager's desk and the project may be far down the road when old data is presented that shows trouble.

According to figures from the American Payroll Association, processing each paper time card manually takes an average of six minutes and creates a 1 to 8 percent error rate for the total payroll. The costs get much larger — totaling several hours per employee per week — when you factor in the time and effort for collecting the time cards, getting them manually approved, and auditing them by hand. In the end, companies overpay employees by 1.2 percent, on average, because of human error. Yet those errors drop by as much as 95 percent when companies use automated time card systems — which also take up much less administrative time than paper systems. Stop for a minute to think about your entire payroll for the past year, and imagine cutting it by 1 or 2 percent simply by eliminating clerical errors.

Progressive companies have started to use digital time carding for their crews. Either a project manager enters hours for the team, or individual crew members enter their own hours via a mobile device. You may even decide to integrate electronic timecards directly into your HR or payroll applications to eliminate double entry and save even more time. This lightweight, straightforward use of technology quickly pays for itself.

Customer billing and the progressive partial and final billings as it pertains to the Schedule of Values is often managed with paper and email, causing review and approval delays, miscommunications and overdue pay periods. On the other end of the spectrum, implementing a large all-encompassing construction software product that contains an "Accounting Module" may be difficult to implement and administer, or set up in a manner that best fits the construction company's unique process.

4. Customer Relationship Management (CRM)

Key Needs:

- Prospect and customer engagement insights
- Consistent client handling at all stages of the lifecycle
- Accurate sales and services staff evaluation

So far we've seen key areas for improvement once projects are underway. But what about the rest of the customer lifecycle? That's where CRM comes in. Other industries have embraced CRM because it allows them to learn and share information about clients and prospects internally—allowing them to close more deals, more frequently.

Some construction firms are lucky enough to contract with just one client. Everyone else must be more aggressive in their use of technology for acquiring new clients. The most successful companies tend to be very good at attracting referrals. Once a potential client shows interest, they need to be turned into a lead with all activities and interactions with them monitored and recorded. A good CRM makes it easy to do that. Aside from recording all the pertinent information about prospects and their needs, CRMs have reporting tools to make tracking outreach, partner referrals, and more simple.

A CRM can help track referrals as well, and any system you consider must integrate with the referral efforts you already have in place. VeilSun has found that some of the best construction firms serving consumers are consistent about soliciting positive feedback and reviews on social media sites such as Yelp. These companies use automated e-mails that are integrated with and tracked from the CRM system to request ratings.

In its survey of construction firms, Software Advice identified "inaccurate initial project estimates" as the most acute obstacle for delivering a project on budget.

5. Estimates

Key Needs:

- Creation of accurate estimates based on real-time and historical data
- Gaining better control of processes that often push projects over budget

Creating accurate project estimates bridges the gap between customer acquisition and project management. But estimating work is also an area that creates major headaches. Many firms don't have a formal process in place, which can lead to poor project planning, and upset customers.

Conceptually, estimating labor and materials is simple. The challenge comes in getting all the needed data into a single system, enabling the estimator to work from hard facts, rather than intuition and experience. VeilSun points to roofing companies it has worked with as a best practice example.

Using a tablet on site, an adjuster will answer specific questions about the roof—What are the dimensions? How many dormers? How many gutters? —and upload pictures of damaged areas. These uploads can even include satellite imagery. That precise data helps tie the estimate to the real condition of the roof, not to past experience and guesswork.

Having a strong estimating process in place will improve the speed and quality of your estimates, leading to more predictable projects for you and fewer surprises for customers. While having the right software will make it far easier, you can start working on improvements even before then by getting the process right. And even if your estimator can only e-mail pictures rather than uploading them to an automated system for now, a smartphone or tablet can do wonders for collecting all the relevant information.

The same approach you take for gathering information to make estimates at the beginning of a project can be applied at the end during quality assurance, quality control and safety inspections. SaaS solutions allow you to put an inspection punchlist on your tablet, checking off things that have been done properly, while making notes and even including pictures to explain any issues found. Those inputs can be tied to instant notifications, shortening the time it takes for problems to be resolved.

What's Next?

The first thing to do is look at the practical steps you can take even before implementing new solutions.

In many cases, clarifying your processes and tying them to the devices you already have is a good start toward maximizing efficiency. It may also help your workforce get ready to adopt more technology-friendly processes, and to get used to having everyone work on the same technology platform.

Don't stop there, though. The best construction companies are giving themselves a competitive edge by embracing better technology. It's about investing your resources in the tools that will bring the most value to your company. Once you have better visibility into your projects, a piece of equipment won't be left on the sidelines because no one realized in time that it would be useful on a different work site. Good employees won't be stuck collating forms or updating spreadsheets when they could be shepherding projects to completion and landing new clients.

Smoother business operations lead to better business results, and deploying the right technology accelerates that process. In fact, according to James, the true risk for a firm today is "ignoring the technology where other construction companies aren't."

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