

A photograph of three construction professionals—two men and one woman—wearing hard hats (blue, white, and yellow) and looking intently at blueprints spread out on a wooden surface. The background shows the wooden framework of a building under construction.

sage 300
Construction and Real Estate

Technology Integration

*the difference between making a profit
or a loss in construction*

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Summary

Historically, the construction industry has been hampered by inefficiencies that have held it back from reaching its productivity potential.

Through a combination of limited technological capabilities, integration of systems, and to some degree a lack of willingness amongst different construction industry partners to fully collaborate with each other, the construction industry has fallen behind other sectors in its ability to drive accountability and efficiency.

In an industry where margins are tight and job variations are frequent, the ability to identify, measure and do something about changes to a planned project will be the difference between making a profit or a loss.

However, the industry is now rapidly becoming more technology-led and is in a position where market forces, compliance, and technology advances are propelling change within the sector.



From fragmentation to integration

From residential to civil developers, and from estimating to facilities management, the construction industry has always been fragmented in the way it communicates and conducts business.

Until recently, most business technology advances have been designed around office-based work practices, where users of computing technology are typically office-based.

But construction is a field-based industry. From managing director to bricklayer, construction demands field work where there is usually little support available for desk-based computing. A shed on a building site with limited internet connectivity is not a great enabler for efficiency. Only in recent years has the introduction of mobile devices and technology solutions enabled construction workers to do 'normal computing' out on the job.

In previous years, some builders have benefited from industry fragmentation, as they could negotiate better with their supply chain if everyone was in the dark. Technology is now driving industry transparency. The transparency offered by integrated technology systems can result in a single source of the truth for construction businesses, helping decision makers to fully understand what is happening in their organisations.



Why

does integration matter?

Many construction operators will be familiar with the inefficiencies often encountered at each hand-off point in the construction process. Technology integration can help improve things:

Using estimates to establish a strong foundation

Estimating is one of the hardest functions to automate and get right in a construction project. Yet effective estimating provides a benchmark for control in a given project so it is crucial this element is done correctly and efficiently through the aid of technology. Estimating involves identifying all the different components required in a project, and when integrated into an accounting system, these different components can be summarised into cost codes and transferred automatically into a project costing system. Once estimates are made, there is clarity around how much a company should quote for a job. The ability to view project details to a point where business can map an invoice against a work item to see whether it is over or under budget early and throughout the project is critical. When done right, estimating provides a construction company with a strong platform from which to plan and complete a successful project, on time and to budget.

Effective procurement

Whether negotiating with sub-contractors to do work or purchasing machinery, construction companies have to meet project deliverables while balancing budgets. Integrated costing and procurement systems allow businesses to work out whether each procurement contract will help them make a profit or a loss.

Accurate and timely tracking of purchase committed expenditure is critical in managing costs & project profitability.

Accurate invoicing

When approving invoices for payment, a project costing system allows a business to measure the original estimate, variations, commitments and purchase orders. A company needs to be able to quickly and effectively measure actual and committed expenditure and how it is performing against planned budget. Integrated systems provide a point of control that saves money.

Once a business knows the cost on a job and knows how the job is tracking, it can pay based on agreed terms at the right time. In an integrated system an invoice relates directly to its assigned commitment, job and the budget, tying the whole process together seamlessly.

The system creates a synergy of people, process and technology.

Cash flow is king

In the construction business, cash flow is king. A company could have fantastic ideas for the future, a perfect estimate and be making plenty of money on an accrual basis, but if it runs out of cash, it dies. Forecasting and cash flow analysis is critical, and is enabled through integrated technology systems.

Accurate forecasting

Forecasting using an integrated system provides more transparency and can help key decision makers of a company get more accountability and integrity from the forecasting process. It helps ensure risk mitigation before things get out of control.

How can integration help the construction industry?

Single source of truth

In the past, the heads of construction businesses always struggled to know what to believe. Their estimator would tell them one thing, while their project manager would tell them another and reconciliations would never agree back to project forecast or work in progress.

Technology forces transparency into the system by fully integrating different departments and stakeholders. It enables the provision of a single, reliable ledger from which a business can proactively forecast future profits, losses, and cash flows early in the cycle. Importantly, it can also provide early warning signals if things are going wrong on a job, which wasn't possible before.

Collaboration

The ability to collaborate is a major benefit for the construction industry. Moving to a collaborative, integrated system enables construction companies to operate in new ways. For example, a request for proposal could be entirely managed using collaborative tools, or a business could invite sub-contractors to place bids on certain parts of a project and all information could be shared and captured electronically. Enabling different parts of the industry to work together through collaborative web-based tools will create huge efficiency improvements.

Going paperless

Every construction project has a set of documentation that follows the progress of the project. That documentation runs through many sets of hands, particularly when variations occur. If this documentation is in paper form the probability of it getting lost is enhanced. Using a document management and internal collaboration tool can allow a full workflow of document approvals, and can also provide a secured vault for all electronic documentation, with documents for a project stored against the relevant parts of that project.

A project manager is on-site at a multi-story building that's being constructed, and he's received a claim from one of the sub-contractors who is stating 25% complete on part of the job. The project manager can view the real-time status of the job on his handheld device and can then make an assessment as to the actual status of job completion. If he sees the contractor is only 15% complete, then the project manager can process that while out in the field, rather than having a document raised and submitted through to accounts, which also runs the risk of getting 'lost in the mail'.

Mobile technology and technical integration aids paperless operation. A sub-contractor can submit a progress claim, an invoice, and a picture of the job through to the company that's responsible for the project. The invoice and picture get scanned electronically into the system, and then routed through a workflow back to the project manager for approval. He/she can annotate the document, which can then be sent back to the accounts team, who can adjust the amount that's paid and process it seamlessly through the system.

Making the change

to integrated technology systems

The implementation of next generation business management solutions is the way for construction companies to improve and increase their efficiencies.

Improvements through supply chain integration, mobile connectivity, clarity in estimating, accurate procurement, clear timing schedules, effective management of machines and assets onsite, simplified claims processing, improved risk and compliance management, and having one single source of truth can all be achieved through technology integration.

However, construction companies need to accept the need to embrace a new collaborative way of working, and that integrative technologies will improve their efficiencies.

The industry needs leadership and well considered change management to achieve this. Implementations should be done in considered, practical ways, with businesses taking into account their staff and the culture of the business. Commitment to the system from senior leadership is also critical to drive successful transition to a new way of working.

Harness the power

of integrated systems

Companies in the construction industry are coming to realise the imperative to do more with less, and start managing assets, suppliers, compliance and risk in a multi-company environment.

Operationally, if a business can control its job costs, it can improve profit margins. The construction industry is so fragmented that one of the key capabilities it needs is supply chain integration and computerisation to make it more efficient and to get real-time clarity on what its actual job costs are.

Using cloud and mobile technology will enable the whole industry to better collaborate and work together seamlessly.

Transition from

fragmentation to integration with

Sage 300 Construction and Real Estate

Sage 300 Construction and Real Estate is today's most complete construction management solution that helps businesses manage projects and/or real estate properties with confidence, precision and efficiency.

Sage 300 Construction and Real Estate is a fully integrated enterprise solution designed for commercial, civil, residential and facilities management construction businesses, with built-in functionality to provide total integration through all levels of an organisation: accounting, job cost, project management, estimating, payroll, procurement, document management, service management, and property management.

For more information, go to www.sage.com/au/construction



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