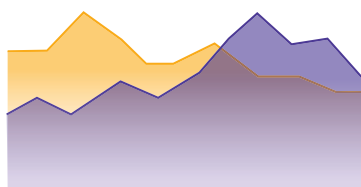


Digital technology innovation

The route to improved productivity in engineering and construction



● Product A ● Product B

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Executive summary

With construction industry-related spending accounting for more than 13% of global GDP at \$11 trillion,¹ employing 100 million people directly,² and forecast to exceed \$16 trillion by 2028, the engineering & construction industry is simply too important to be allowed to stagnate.

The engineering ingenuity and design capability of the industry should be applauded, delivering innovative projects, some difficult and tremendously complex, using the same operational processes that were used decades ago. The industry faces numerous challenges, with low productivity being a key driver for change.

There are several elements that must come together for the industry to fully embrace an essential paradigm shift that will enable the construction industry to innovate how it operates over the decades to come.

The stimulus for change begins with the mindset of industry and business leaders, stakeholders, clients, and central and local governments across the entire ecosystem. Before industry-wide innovation becomes the “new” way for construction companies, we all need to be fully aligned to a common understanding that innovating business models and investment to support operational innovation is no longer just an option—it is now a do-or-die imperative.



¹ Statista, [Global construction expenditures 2014-2025](#).

² World Economic Forum, [Shaping the Future of Construction A Breakthrough in Mindset and Technology](#).



So, what's the incentive?

Firstly, poor productivity is not any one single problem. There are many factors contributing to poor output, including poor planning, labor productivity, adversarial relationships within the supply chain and between contractors and clients, low investment in technology, and lack of repeatable building elements.

Central to many of these contributing factors, is labor. For the most part, construction is still dependent on manual labor to deliver projects. For this reason, improving labor productivity attracts significant attention.

To offer some context, a report by McKinsey & Company, still relevant in 2024, suggests that construction sector labor productivity growth averaged 1% a year over the past two decades, compared with 2.8% for the total world economy and 3.6% for manufacturing. If construction productivity were to catch up with the total economy, the industry's value-added productivity could rise by \$1.6 trillion a year, or put another way, it would cover about half of the world's annual infrastructure needs and boost global GDP by 2%.³

This best practice guide will focus on eight opportunities construction companies can leverage to innovate working processes and drive measurable outcomes for the betterment of the entire ecosystem.

³ McKinsey & Company, [Reinventing construction through a productivity revolution](#).

Opportunity 1: Digitize your workforce

Despite the increasing uptake of emerging and transformative technologies, the construction and engineering industry remains heavily dependent on human resources. With an ageing workforce and shortage of skilled personnel, attracting and retaining the next best engineers and managers is a crucial need. It is essential that companies adopt modern and robust business systems to support the entire workforce across all operational and project-based disciplines.

A recent World Economic Forum report confirms these fears.

The WEF report highlights:⁴



The continuing volatility of workforce demand and composition



The scarcity of skilled labor, driven by demographic shifts



The demand for new and broader skill sets at all levels, driven by the surging sophistication of technology

⁴World Economic Forum, [8 ways the construction industry can rebuild itself for the 21st century](#).



Make talent management a strategic priority

Traditionally, workforce management in construction wasn't particularly scientific, with hiring and firing following the peaks and troughs of the global economy. That approach goes some way to explaining why the industry is faced with a real challenge in securing the newest and brightest talent available, particularly when faced with competition from other, much more glamorous industries.

According to industry reports:

42

is the average age of construction workers in the US⁵

2 million

additional construction workers will be required in Europe by 2030⁶

The first step requires companies to manage workforce planning as a business-critical function, with the right technology to support it. Thinking strategically about the company's future demand in terms of quantity and competencies, and the likely availability of those skills to systematically plan recruitment, retention, and training.

The concerns are not just about the quantity but also the quality of the skilled future workforce. The construction and engineering industry is undergoing a digital transformation, through a number of disruptive technologies such as building information modelling (BIM), internet of things (IoT) sensors, big data and analytics, generative AI (GenAI), machine learning (ML), 3D printing, virtual construction, and autonomous equipment—all of which are driving the need for a radically different set of skills.

⁵ NAHB, [Age of Construction Workforce](#).

⁶ ITUC, [More than two million workers will be needed in the construction sector in Europe by 2030](#).



Leverage technology and innovation

By embracing innovation and new technologies, companies make themselves future-ready in terms of operating models. Additionally, innovation and new technologies can help them meet the talent challenge. The new generation of talent expects to use modern, cloud-based, and innovative technology. It's simply viewed as an essential tool to support them in their day-to-day jobs, and as a tool for personal development.

Increased automation, offsite construction, collaborative tools, and smarter planning will help to drive up productivity as well as reduce time spent on site, both of which are widely accepted as key to industry transformation.



Health, safety, and wellbeing

The health, safety, and wellbeing of a company's workforce is critically important for all business owners, stakeholders, and executive boards across the industry, and throughout the world.

Not only does a safe and healthy work environment directly correlate to a happy and productive workforce, but workplace absence due to mental health issues or injuries costs the worldwide economy billions every year in lost time, claims, disputes, and insurance premiums.

Workplace injuries and illnesses can have a detrimental impact on organizations. Investing in technology that improves productivity and enables a quick response to problems is critically important to maintaining the health and wellbeing of your workforce. To reduce safety risks, companies need better visibility across their people, equipment, and the environment. To help people operate more safely and make sure work is planned effectively, you can use technology to identify hazards, provide permits and safety instructions, specify lock out/tag out processes, and mandate personal protective equipment (PPE). Technologies such as drones, virtual and augmented reality, and wearables such as sensors, can monitor fatigue and environmental conditions. Some technologies even monitor for sudden changes in posture, which might indicate a trip or fall, and can alert the necessary people as quickly as possible. All of these modern technologies will drive down the rate of workplace injuries and illnesses, while driving up productivity.

The data captured by these technologies can be analyzed to provide important insight into trends, both good and bad, and enable employers to take preventative actions as opposed to acting reactively.

Between 2021–2022 in the UK,
workplace injuries and illness
resulted in:

2.2 million

lost working days⁷

In the United States:

9.6 per 100,000

fatality rate for the construction industry in 2022⁸

\$13 billion

spent on costs related to work injuries annually⁹

These numbers are not the exception, but instead highlight the importance of innovating work processes, so the entire workforce can attend their place of work, with the knowledge that their employer is doing everything possible to provide a safe and healthy environment.



⁷ Project Safety Journal, [Construction's H&S Record Versus Other Industries](#).

⁸ Construction Dive, [Construction fatalities rose 5% in 2022, BLS says](#).

⁹ Safety Management Group, [The High Cost of Ignoring Safety in Construction](#).

Opportunity 2: Optimize project planning and execution

It is perhaps an over generalization to say that planning and scheduling of construction activities helps companies complete projects on time and within budget.

During design and conceptualization, the majority of projects will be planned and scheduled to support the most optimum delivery method, but the initial design and conceptualization phase is not the issue—the challenges arise as the project begins the construction phase.

Once the project commences construction, the number of different companies involved rapidly increases. Each stakeholder is likely to have their own view of the project and will have prepared their own schedule to reflect the scope of activities they are responsible for. In addition, the supply chain is responsible for delivering the materials, plant, and equipment necessary to complete a specific activity. Depending on the type of project being constructed, even the weather can impact if a specific activity is able to start and be completed as scheduled, regardless of whether the key labor, materials and equipment are available at that time.



There are many different elements that need to come together in order for a project to be delivered on time and within the budget. In many cases, the project schedule soon becomes a statement of progress to date, and no longer a key tool for managing the most optimum, economical utilization of the resources available in the least possible time.

Often the technologies used to manage these aspects of the project are handled in silos. Organizations end up with islands of information and the coordination between the various systems is largely a manual process. Due to the volume of information and the level of activities being executed daily, this quickly becomes a time consuming, even impossible task to achieve.

Modern enterprise resource planning (ERP) solutions are designed to support flexible, project-based work breakdown structures (WBS) alongside planning and scheduling capabilities. The system is updated based on actual construction progress, and the key resources required to complete activities are managed seamlessly within the same environment. This allows the contractor to understand the immediate impact of variations, delays due to bad weather, or supply chain issues, and offers construction companies a technological solution to ensure they're agile and able to pivot schedules to mitigate risks such as wasted labor time, wasted materials, and plant and equipment standing idle.





An agile and collaborative approach

Integrated project delivery is an approach that integrates people, systems, businesses, and practices into a process that collaboratively harnesses the talents and insights of all participants to drive better project outcomes, increase value to the client, reduce waste, and maximize efficiency through all phases of design, fabrication, and construction. Unlike traditional construction techniques, integrated project delivery seeks to eliminate the typically adversarial nature of the sector, and instead engender the spirit of “one team” and therefore improves communication, planning and coordination, health and safety, and project delivery.

This approach requires a general openness between all parties, which is neither typical within the sector nor particularly comfortable. One of the main outcomes of optimizing project planning with an agile approach is improving efficiency across the project, instead of within the individual organizational or discipline silos. Improving efficiency of the entire project team can result in significant financial, schedule and safety benefits for the project.



Reduce safety incidents

Current operating processes put a strain on project programs and workforce productivity, which has the potential to affect safety on project sites. Integrated project delivery requires a more collaborative and coordinated approach to planning. Detailed activity and resource-based planning can result in more transparency, improved communication, and greater accountability for safety, while improving key asset utilization and productivity.



Opportunity 3: Leverage big data insights

Big data in construction offers a method to collect, analyze, and apply vast amounts of information to help solve business problems and provide critical insights for future activities. Collecting, sharing, and using the data generated across the complex construction ecosystem is a significant challenge in the industry.

Today's construction firms are starting to adopt collaborative technology to make sure all stakeholders—architects, consultants, engineers, subcontractors, specialty tradesmen, clients, operators, agents, and suppliers—are on the same page and informed with real-time data.

According to Deloitte's recent industry outlook for 2024, the adoption of advanced digital technologies, including generative AI, can lead to substantial improvements in project design, schedule optimization, cost controls, site inspection, safety, compliance, and quality assurance. As the E&C industry continues to embrace these innovations, it is poised to achieve significant enhancements in processes and efficiencies.¹⁰



Easily identify information

Big data enables construction and engineering companies to collect and analyze cost-related information, site-based transactions, photographs, communications, planning changes, and more. The construction industry is awash with data—literally thousands of pieces of information are generated for every project. Without digital technology, it is nearly impossible to identify key data items to enable a swift reaction to potential problems or apply positive outcomes to future projects.



Mitigate risks

Harvesting and analyzing big data from construction projects can help inform about potential risks and problems. For example, by analyzing productivity of key resources such as labor and equipment, big data solutions can inform the project team of potential delays, possible fatigue, and overall project time and cost overruns. In addition, by collecting both structured and unstructured data, it is possible to overlay project-centric information with corporate data to help identify trends. If a negative trend is ignored, the entire business could be exposed to unacceptable risk.

¹⁰ Deloitte, [2024 Engineering and Construction Industry Outlook](#).



Discover the power of predictability

Using big data systems alongside disruptive technologies such as generative AI (GenAI) and machine learning (ML) provides critical information and insight before a project even breaks ground. This allows potential issues such as coordination problems on construction sites, conflicts between different disciplines and trades, and even the weather impact to be addressed before it's too late. Research suggests that 98% of mega projects suffer cost overruns of more than 30%, and 77% of mega projects are completed at least 40% late.¹¹ The ability to pivot based on data insights could make a significant impact on reducing costs and time overruns.



Leverage building information modelling (BIM)

Big data transforms the construction industry as early as the design phase. Data can be harvested and applied to help facilitate the design process. With a proper data analytics tool in place, alongside GenAI, huge volumes of information can be quickly analyzed and used to determine probabilities and patterns that will help forecast potential issues that may impact construction projects throughout the construction phase.

Feeding that data back into a BIM solution can create an even clearer and more accurate overview of the construction process. Integration of big data and BIM is worth the investment, as the long-term benefits are too good to miss. When the data-driven BIM solution integrates with the back office and operational ERP systems, the opportunity to drive further productivity improvements are significant.



Eliminate waste

According to ResearchGate, construction waste is expected to rise to 3.40 billion tons by 2050.¹²

Big data driven BIM solutions in conjunction with ERP capabilities can:

- | | |
|---------------------------------------|---|
| ✓ Cut construction costs | ✓ Reduce rework |
| ✓ Reduce the amount of labor required | ✓ Reduce disputes |
| ✓ Improve quality | ✓ Improve collaboration across the entire delivery team |

Considering the digital technology available today, there's simply no excuse for this level of wastage, both in terms of resources such as materials, equipment, and time. With a recent focus on the principles of lean construction to reduce material waste, companies are turning to analytics tools. These tools provide the entire project team access to real-time information, which enables a more efficient delivery and utilization of materials, plant, and equipment.

¹¹ McKinsey & Company, [The construction productivity imperative](#).

¹² ResearchGate, [Material Waste Management in the Construction Industry: Brick Waste](#).



Improve plant and equipment productivity

Sensors are used on modern construction sites for gathering plant and machinery data to drive productivity improvements. Having these devices attached to on-site operational equipment generates a huge amount of information about the operational performance and utilization of the machine.

Sensor data can show the idle and active times of construction machinery, thus showing contractors how to boost fuel efficiency and productivity and telling them whether it's more cost-effective to buy or lease such machinery.



Maintain a healthy and safe workforce

In addition to sensor-driven data providing crucial insights into the productivity and efficiency of plant and equipment, sensor-enabled wearable devices are having a profound impact on improving workplace conditions for site personnel. Not only can these sensors monitor environmental conditions that affect workplace safety, but biometric sensors within the wearable can monitor the health of the workers. A happy workforce is a productive workforce.



Opportunity 4: Improve collaboration across the supply chain



An outside-in approach

When the word collaboration is used in construction, it's generally describing the need for a more connected approach across all parties involved in the design, fabrication, and construction phases on a project. It is true that collaboration between architects, consultants, engineers, subcontractors, contractors, and other associated parties involved in the execution of a project will have a measurable impact on the overall productivity of the industry, but it is important not to miss the material change that can be achieved by companies that simply collaborate and communicate smarter within their own organization.

There are still a significant number of construction and engineering companies that haven't deployed technology beyond the head or regional office locations, and still rely on manual spreadsheet-driven processes across the organization. On average, 60% to 75% of the construction workforce is mobile, so it's a business imperative to empower each of them with the appropriate business solutions to support their roles and responsibilities.



BIM as the enabler for collaboration

A digitally connected ecosystem connects the supply chain, clients, stakeholders, and the wider communities across the entire lifecycle of a project, from day one through to decommissioning and demolition.

If BIM is single source of truth element of a construction project, it is essential that bi-directional data exchanges exist between it and the core business management solutions. While benefits will still be realized from simply having a BIM model to support the project, the real value will come from leveraging the data contained within the model alongside program and cost related data. This should extend through a digital footprint of the as built information required during the handover and commissioning phase of a project, which then facilitates operational and maintenance activities for the lifecycle of the built asset.

Opportunity 5: Eliminate asset downtime

Today's construction business is tough. Between ever-declining margins and increasingly complex projects, builders must use every tool at their disposal to complete projects on time and on budget. Managing the productivity of equipment being utilized on project sites during the construction process, and equally managing the built asset once constructed are two specific areas where technology can drive outstanding value by way of cost reductions, productivity improvements, and overall extended life expectancy.

The phrase "assets" is a broad term, covering fixtures, fittings, fleet vehicles, buildings, building elements, roads, utilities, railways, plant, equipment, and so on. Plant and equipment and vehicles equate to a significant percentage of overall costs on a project, both in terms of the rental charges or internal recharge costs based on owned equipment, but also the initial capital purchase. Maximizing the uptime of these assets is crucial. When equipment stands idle, the costs rise, while the equipment output stagnates. A broken-down asset equates to lost labor time, material waste, and ultimately cost overruns.

Plant and equipment are also essential tools in helping companies deliver service management for the operation and maintenance of built assets.

Whether it is a commercial, industrial, or residential building, the transport network, or critical utilities, their effective performance and reliability are pivotal to the way in which we enjoy the built environment within which we work and socialize.

Enterprise asset management (EAM) capabilities help you keep a constant watch on your asset conditions and performance, evaluating data to find key trends and anomalies, and make better decisions based on real-time information, while reinforcing your safety programs and maintaining compliance.





Maximize maintenance effectiveness

Maintenance policies around the world have evolved from reactive maintenance, to reactive and planned maintenance, and now to a more agile, predictive maintenance model.

The ability to leverage sensor-based information provides companies with the early warnings of likely failure points, and crucially enables the project team to take remedial action—whether that means time to locate an alternative item to swap out or the optimum time to repair the fault before it breaks down.

Root cause analysis for equipment and/or parts failure provides insight into problem manufacturers, condition, and productivity performance indicators which will better inform purchase, disposal, and hire decisions.



Well-maintained equipment is safe equipment

Work management, inspection management, and interrogation capabilities can all be put directly into the hands of your workers who are using mobile devices. With mobile capabilities, workers can better understand how assets are performing, work more efficiently, and schedule crews appropriately.

Mobility tools give workers direct access to key information such as asset attributes, history, images, best-practice videos, and maintenance requirements so they can increase the quality and timeliness of their activities—ultimately improving equipment reliability, maximizing productivity, and driving more accurate and timely decisions.



Mobilize the workforce

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Opportunity 6: Learn from the experience of other industries

A recent study published by McKinsey & Company, focuses on “an intractable productivity problem” while drawing on comparisons with other industries.¹³

It is well documented that productivity in the construction and engineering sector lags behind all industries except one—agriculture. As construction productivity has stagnated over decades, other industries have achieved significant productivity gains, much of which is due to operational and technology innovation. For example, some innovations that are now standard practice in the automotive industry such as robots, process automation, exoskeletons, and lean processes, could also benefit construction companies. The construction industry must take a look outside its own “walls” to understand how they can learn from similarly complex organizations.



Design for Manufacture and Assembly (DfMA)

DfMA is an engineering methodology that combines two processes, Design for Manufacture, and Design for Assembly. The two processes when combined are viewed by many, including governments around the world, as being one of the most fundamental methodologies the construction and engineering industry should be transitioning to. Construction projects and materials such as timber and lightweight steel framing, modular buildings, concrete panels, floors, and more can benefit from DfMA.

The approach presents the opportunity to leverage repeatable, standardized components, assembled in a bespoke configuration, and focuses on reducing time-to-market and total production costs by prioritizing both the ease of manufacture for the product’s parts and the simplified assembly of those parts into the final product—all during the early design phases of the product lifecycle. By implementing this methodology, companies can expect to see less wastage, improved product coordination, improved quality, reduced costs, and less rework.

¹³ McKinsey, Reinventing construction.



Offsite manufacture

As previously stated, low productivity has several consequences for the industry, including its impact on profit margins. According to experts, the average profit margin tends to hover around 20%, with average net profit margin for construction companies typically falls between 2% and 8%.¹⁴ Recently, there has been a lot of attention on the opportunity of offsite construction for improving productivity and consequently profit margins. Because of this, the industry is likely to see a rapid creation of facilities to support offsite or on-site prefabrication.

Labor productivity has, at best, improved by single digit percentages in some areas of the world, and declined in countries like the US, making it more crucial than ever for the industry to adopt new, modern methods of construction. Even small percentage improvements in productivity could result in improved bottom-line performance.

Companies that recognize the opportunities offsite manufacture and prefabrication offer, and the investment in appropriate digital technology to ensure production, inventory, coordination, and quality, will be well placed to drive measurable outcomes:

- Fewer site personnel required
- Improved quality, due to manufacture/ prefabrication being executed in a controlled environment
- Improved planning and coordination across the entire project delivery team
- Less rework due to better quality and on-site coordination
- Fewer workplace incidents
- Reduction in on-site downtime
- Faster time to value
- Reduced cost and time overruns
- Increased extent of standardized DfMA elements within custom projects



¹⁴ CSI Market, [Construction Services Industry Profitability](#), 2024.



Standardized and repeatable

If all construction companies and projects were homogeneous in nature, the challenges facing the construction industry would be much easier to resolve. Unlike the automotive industry, 95% of all projects are not the same—they don't look the same, don't use the same materials, are located in different places, and vary in intended use. Even the project delivery team changes from project to project, contractor to contractor, and client to contractor.

In one example, a well-known worldwide restaurant chain has developed standardized designs for its new build drive-thru restaurants. Its units are all prefabricated offsite in 12 weeks and then constructed onsite in five weeks, compared to the 26 weeks onsite it used to take previously. The floors are precast concrete slabs, which come pre-tiled with all the services in them, the buildings are already decorated, leaving just the furniture and kitchen to be installed.

Offsite construction doesn't mean it's any cheaper than traditional building, but the standardization of design enables the building to be manufactured in an offsite facility, where quality, material wastage, and multi-service coordination can be managed in a smarter and more efficient way. This method only requires on-site assembly, resulting in a quicker, more sustainable, and repeatable end product. Innovative construction companies implement digital technologies to support this standardization approach, enabling integrated production and project-wide enterprise planning.



Opportunity 7: Leverage the power of technology

For construction and engineering to successfully transform their business models, improve collaboration, increase productivity, and drive up salaries and profit margins, it can't continue to use the old methods of delivery.

New tools are required to support a new way of working. BIM, data analytics, drones, mobile solutions, and collaborative tools such as common data environments (CDE) are becoming more common, particularly in larger construction companies around the world. While these technologies will be contributing to productivity improvements, they are also paving the way for further, more disruptive technologies to be adopted.

The next generation of technology stands to make a truly disruptive difference in the industry. 3D printing, IoT sensors, process automation, robotics, digital twins, cognitive machine learning, and AI have already proven themselves in other industries to be highly transformative.

Modern, cloud-based, industry-focused solutions provide the platform to allow companies to grasp the profoundly positive outcomes that these elements can deliver either jointly or severally.

The real inhibitors facing early adopters of these technologies are a basic lack of knowledge and a limited number of success stories to support the investment. This is a critical constraint, especially considering that construction companies do not typically work with large technology budgets.



Opportunity 8: Make it measurable

Leading organizations in the construction industry are shaking free of the unwanted accolade of being seen as laggards in adopting digital technology. The key is to be clear from the get-go of what represents success, and then measure it, learn lessons, and continue to evolve methodologies to drive the predictable outcomes the industry needs.

There are a number of technological solutions available to support your journey to a new way of working. It is not necessary to overwhelm yourself with too many innovations at once. Choose one or two specific business cases to prioritize and get some early wins under your belt. This will breed confidence throughout the business and will encourage you to carry on. There is still a lot of concern in the industry that any investment in technology is a cash-out process. After all, it's not like purchasing a new Caterpillar 320EL excavator for \$200,000, which can be deployed onsite immediately after delivery to start earning the company revenue.

The truth is, some investments may not turn out as intended, but those failures are rarely a result of poor technology, but due to poor project execution, an ill-prepared process, and the lack of defined measurements of success. Rather than refining these investments as needed, many companies jump to conclusions and call it a bad investment, which results in a lack of future budgets being made available.

Many companies have invested in a range of digital technologies such as finance systems, ERP solutions, CDEs, planning tools, BIM, and other disruptive technologies, and are now reaping the rewards of early adoption.

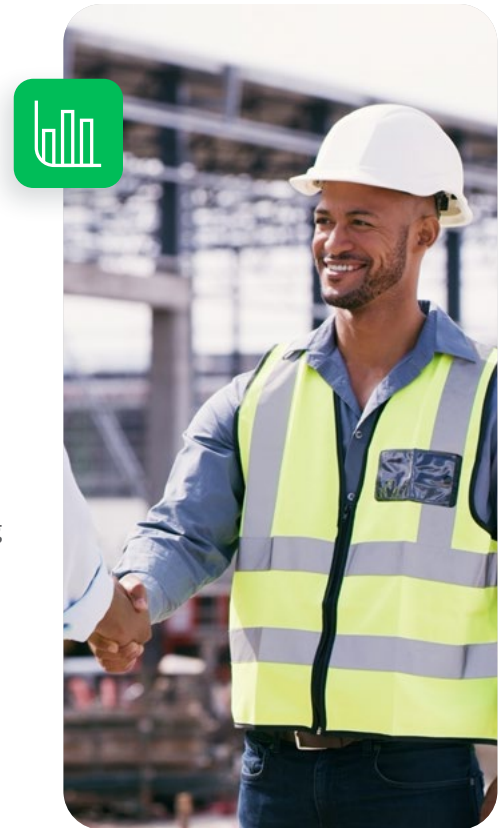


Despite uncertainties around technology adoption in construction, 52% of industry leaders believe that cognitive machine learning and artificial intelligence will become commonplace within the industry over the next five years.¹⁵

¹⁵ Visual Capitalist, [How Technology is Disrupting the Construction Industry](#).

So, how did they ensure positive results? It's essential that project goals and desired outcomes are clearly defined at the start of the project, and that all key stakeholders, including senior management and the vendor are aligned.

This guide has demonstrated the benefits of adopting a more integrated and collaborative relationship between construction and engineering companies and their supply chain partners while delivering building projects. The same ethos should be embraced when initiating technology-led projects. After all, industry-specific technology, delivered with the optimal timeframes and end outcomes in mind, will make a profoundly transformative impact for your projects, your people, the company's profitability, and its reputation. Investment in technical innovation is as much about selecting an equal business partner who will help you achieve the desired outcomes, as it is the software system. Considering the significant opportunity available to construction companies to change the way in which they operate, and an acceptance that such consequential change cannot be delivered without technical innovation, it is fair to state that your technology partner should be the most strategically important connection in your business.



Improved productivity starts with innovation

The worldwide market for construction services is expected to reach \$16.14 trillion by 2028, growing at a CAGR of 8.90%.¹⁶ This will present huge challenges for the entire ecosystem, both in ensuring a sufficient supply of skilled labor and adopting new technologies to drive efficiency and innovation.

The industry continues to be challenged to build ever more complex, iconic, and sustainable structures, which further exacerbates the issues the industry is tackling. With the right strategy and digital technologies in place, companies can and will overcome these challenges. Those who have not started must commit now or be prepared to deal with the consequences.

As stated within this guide, change, innovation, investment, and a necessary paradigm shift will only occur once business owners, executives, and stakeholders recognize and accept that digital technology is a business-critical necessity for driving productivity, efficiency, and bottom-line performance, rather than a cost burden.

We must ensure that the industry's understanding of digitalization is more than just BIM, visualization tools, or data analysis—but instead a combination of many digital technologies that will drive the industry towards a digitally connected ecosystem.

¹⁶ Globe Newswire, [Global Construction Market Report 2023-2028: Increasing Demand for Luxury Homes Bolsters Growth](#), May 2023.



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