

Data and insights for construction

Leveraging AI and automation to improve
client experience, empower employees, and
optimize operations



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State of the environment

In the construction industry, successful digital transformation requires artfully integrating and leveraging data, technologies, and solutions to shift with trends, strengthen competitive edge, increase resiliency, and improve operational efficiencies.

Automation, Machine Learning (ML), and Artificial Intelligence (AI) have significant roles to play in digital transformation strategies for construction firms. By embracing these solutions, firms like yours can transform and modernize while still delivering an excellent client experience.

The data tells us...

70%

of firms surveyed are planning, piloting or adopting some digital workflows and processes.¹

Nearly

50%

of firms surveyed say software tools will help simplify and automate processes, improve tracking and increase project visibility.¹

50%

increase of green qualifying projects by 2024.¹

\$4.51B

The estimated market for AI in construction by 2026.²

41%

of the current US construction workforce is expected to retire by 2031.³

Sources:

¹ www.truelook.com

² www.globenewswire.com

³ "The next normal in construction," McKinsey & Company

Overview

In this eBook, readers will understand how the right technology and the right data can empower construction firms to transform. You'll learn how automation and artificial intelligence can support challenges in three key areas: experience, empowerment, and optimization.

For the C-suite

Discover how transformation and automation can empower efficiencies, reduce costs, protect workers, improve sustainability, scale delivery teams, and ensure visibility across all operations.

For data stewards

Discover how transformation and automation can deliver enhanced client experiences and engagement, empower team collaboration, ensure data is readily accessible, improve productivity and safety, and resource effectively.

Key challenges

- Embrace Industry 5.0* and bring together people and technology for solutions that protect the planet
- Strengthen client loyalty and satisfaction
- Ensure worker safety and overcome unexpected challenges with real-time data and insights
- Modernize infrastructure and break down siloes with data consolidation
- Improve efficiencies and productivity to decrease costs and increase margins, executing projects on time and on budget
- Connect with colleagues for better collaboration

***Industry 5.0** is a focus on the interaction of human intelligence and cognitive computing. This principle places a high priority on human-centricity, sustainability, and resilience. Together, humans and advanced technology can achieve new levels of productivity and perfection.

Microsoft for construction

As your firm prepares for digital transformation, you need a strategy that supports sustainability while enhancing client experience and satisfaction. You also need the right tools to modernize your operations and technology environment as well as the right solutions to empower, retain, and protect your teams.

Microsoft has the resources and expertise for your success.

Microsoft Dynamics 365 for construction

The construction industry requires understanding large amounts of data across operations and projects. With the right solution, you can analyze this data, discover key insights, and operate more efficiently—enabling you to execute projects on time and on budget, while mitigating risk. Make use of automation, ML, and AI technologies to better serve your clients and ensure consistent, sustainable experiences.



AI, machine learning, and automation

As firms begin their digital transformation journey, industry trends suggest that artificial intelligence (AI), machine learning (ML), and automation can play a role. For construction firms, this is no different. When these accelerators are at play, we see three distinct outcomes that drive towards business growth.

In this eBook, we'll look at three outcomes—improving client experiences, empowering your people, and optimizing your operations. Discover trends and challenges in the industry as well as how to leverage technology for a data-driven digital transformation.

Industry 5.0 in Construction:

In construction, firms are driving toward Industry 5.0. Inspired by this principle, leaders are embracing the value of dividing tasks between smart machines and their human talent—empowering their people to work strategically alongside this technology towards more sustainable results.

EXPERIENCE EMPOWERMENT OPTIMIZATION

Experience

Clients today expect enhanced experiences and tailored projects with unique features and results—while still maintaining low TCO. They value sustainability and seek options for smart, buildings, energy efficiency, and adaptable structures. Client satisfaction is incumbent on projects being delivered on time and on budget. They also want intuitive, digital interactions.

By leveraging the right data, project management, and communication solutions, your team can identify ways to tailor projects and offer personalized features while maintaining margin and staying competitive.

Real customers, real impact

A company dedicated to designing smart buildings needed a solution to help technicians access data for better post-build optimization services. With Microsoft Dynamics 365, they could gain real-time insights and fix problems before clients even knew they existed.

Solutions

- **Collaboration and project execution:** Data and technology help your team understand client expectations and project demands from the start of ideation to project completion. Manage goals, milestones, and KPIs and monitor project status to stay on track. Empower your people and the client to work together, enabling all parties to lean into their unique skills for ultimate project success.
- **Data insights:** Intelligent data and automation deliver insights faster so your team can develop tailored, sustainable, flexible, and adaptable designs. Generate plans that meet clients' complex project needs while factoring in potential elements that could erode margin.
- **Efficiencies:** AI and ML improve both energy and operational efficiency to boost client satisfaction while increasing sustainability, margin, productivity, and design quality.
- **Industry 5.0:** Smart solutions enhance sustainability and productivity by bringing together the best of your people and technology. Create more resilient projects, meet sustainability regulations, and decrease emissions—ultimately delivering better results for clients and sharpening your competitive edge.

Empowerment

Your people are your most important asset—but many construction firms are facing skilled labor shortages. To attract and retain talent, you need to invest in your team. Provide solutions that protect them and empower them with the information and skills they need for success. By investing in your people, your firm achieves higher industry standards, which can set you apart from competitors.

Using Microsoft's powerful applications, you can optimize your team's skills, capitalize on their talent, and protect them on projects—all ultimately boosting their productivity and satisfaction.

Real customers, real impact

A company with workers spread across six locations needed to maximize results and remove silos so their teams could deliver over 1,000 projects each year. With Microsoft Dynamics 365, they leveraged a central platform to design all project processes to be sustainable, dynamic, and available for all teams no matter where they work.

Solutions

- **Collaboration and project execution:** Access to data anytime, anywhere enables your contractors and subcontractors to work together in real time across dispersed job sites and distributed teams. Complete projects more efficiently by integrating project management with automated and synchronized processes and controls.
- **Resourcing:** By maintaining worker profiles with the right technology, you can effectively forecast talent needs, budget, and plan assignments quickly. Ensure the right worker with the right skill is scheduled for the right project—reducing inefficiencies, bottlenecks, and wasted time.
- **Safety:** With increasing requirements for work-site safety as well as new health and safety procedures, access to project and employee data ensures your team can make safe decisions as they work. With AI and ML tools, you can monitor and share information across work-sites and teams. Identify risks and prevent issues before they happen.
- **Attraction and retention:** Skilled labor shortages and retirements are draining construction talent. Attract new employees with cutting edge technology and improve retention by empowering and protecting your team.

Optimization

In the construction industry, digitization is low. A highly fragmented and complex construction ecosystem also presents challenges. So as your firm faces tight margins, you need ways to optimize operations. With a holistic view into all tasks and access to key metrics, you can complete projects on time and on budget. Ensure your people, processes, and equipment are working efficiently through the design-build process.

Using the right technology, you can optimize operations making strategic assignments, improving site mobility, monitoring processes, and boosting sustainable practices—all while saving time and reducing costs.

Real customers, real impact

A construction company needed consistency and visibility across teams and locations, especially as they grew. With Microsoft Dynamics 365 and improved access to data, they could capture leads, automatically schedule tasks, and manage inventory—all which led to efficiencies across the organization.

Solutions

- **Industry 5.0:** Automate manual processes and optimize resources to support sustainability goals and requirements. Use data for clear insights to proactively improve project execution and make structures more flexible and adaptable.
- **Efficiency:** AI can harness algorithms and ML can predict useful patterns, increasing efficiency for your team. By leaning on these tools, your team can focus on their most worthwhile work while removing time-intensive tasks.
- **Cost reduction:** Automating repetitive, time-consuming tasks and streamlining day-to-day processes translates to higher engagement, productivity, and maintaining margin.
- **Project completion:** Access to the right data keeps all contractors and subcontractors on the same page so projects can be completed faster and on budget. Automate processes and leverage a unified platform so your team can focus on the most critical project tasks. Real-time data can alert you quickly if a project is not being executed as planned.

Microsoft Dynamics 365 for construction

As your firm prepares for your digital transformation with automation, AI, and ML, Microsoft Dynamics 365 has the solutions you need to drive success.

Microsoft Dynamics 365

Microsoft Dynamics 365 solutions can help your firm tailor client experiences, empower your team, and optimize operations. With automation, AI, and ML tools you can streamline operations and reduce complexities.

- Lean into client and project insights to understand their evolving needs and enhance experiences.
- Protect and schedule your team with applications and information to ensure their time and talents are optimally resourced.
- Grow margins and use time and resources efficiently by accessing real-time data to understand operations end-to-end.

Business Development	Project and Job Execution	Onsite Field Operations	Workforce Management	Reporting and Compliance
Pipeline Management	Resource Management	Worker and Crew Time	Absence Tracking	Policies and Rules
Bid Management	Material Planning	Task and Activity Tracking	Injury Tracking	Organization Control
Quotation Templates	Equipment Management	Equipment Utilization	Payroll Administration	Interco. Transaction
Cost and Margin Analysis	Project Management	Incident Tracking	Union Worker	Project Manager Dashboards
Budgeting and Forecasting	Work Breakdown Structure	Material Consumption	Prevailing Wage	Site Supervisor Dashboard
Change Order	Requisition Management	Sub-Contractor Mgmt.	Onboarding, Offboarding	Workflow and Approvals
Project Correspondence	Billing and Invoicing	Expense Management	Skills and certification	Document Controls
Document Management	Retention	Field Services	Worker Development	
Contract Management	Revenue Recognition	Maintenance and Repairs		
	Procurement	Commissioning		

One Microsoft Solution

Expand your digital transformation with Microsoft. Optimize and refine your operations with a suite of fully-integrated, powerful, industry-leading business applications and solutions to meet your firm's needs.


Microsoft's complete suite of solutions gives you the key building blocks to support the entire engagement lifecycle from business development and sales, to contracting, resourcing, project planning, execution—and beyond.

Drive greater value for your clients and efficiency in your business with Microsoft.



Next steps

Contact your Microsoft representative today to learn how you can get started on your digital transformation

 [See what's possible with Microsoft](#)