

Member Communication Experience

Getting Started With AI and Automation in Construction

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A STEP-BY-STEP GUIDE FOR INTRODUCING TECH AT A MANAGEABLE PACE

Artificial intelligence (AI) and automation are transforming the construction industry, offering contractors new ways to improve efficiency, reduce costs, and enhance safety. However, many contractors feel hesitant about adopting these technologies due to concerns about complexity, cost, and implementation. According to the Deltek 45th A&E Clarity Study, 55% of firms expect to lose market share within three to five years if they fail to progress significantly in digital transformation.

The good news is that AI and automation can be introduced gradually and strategically, making the transition smooth and manageable. This article is a step-by-step guide to help construction managers and contractors get started with AI and automation without feeling overwhelmed.

1. Identify Areas That Benefit Most From AI and Automation

The first step in adopting AI and automation is to pinpoint specific areas where these technologies can have the greatest impact and set clear objectives of what you hope to achieve, such as increased productivity, improved safety, reduced costs, or enhanced precision. Start by assessing common pain points in your operations:

- » **Administrative tasks** like payroll processing, invoicing, and contract management can be automated to free up valuable time and reduce human error.



- » **Scheduling and project management** can be optimized with AI-driven software that predicts delays and suggests better resource allocation.
- » **Safety monitoring and compliance** can benefit from AI-powered cameras and wearable devices that detect potential hazards in real time.
- » **Equipment and material tracking** using automated inventory management systems can prevent shortages and over-purchasing.
- » **Quality control inspections** can be enhanced with AI-driven image recognition tools that detect defects and inconsistencies before they become costly issues.

By focusing on areas that consume the most time or are prone to errors, contractors can see immediate improvements with minimal disruption.

2. Start Small With Simple AI-Powered Tools

AI and automation adoption doesn't have to be an all-or-nothing approach. Instead, start with easy-to-implement solutions such as the following:

- » **AI-driven scheduling tools** that analyze worker availability, job timelines and weather forecasts to create optimized schedules.
- » **Automated invoicing and accounting software** that reduces paperwork and ensures timely payments with minimal manual input.
- » **Time-tracking apps** that allow workers to log hours via mobile devices, automatically syncing data with payroll systems.
- » **Drones for site inspections** that capture high-resolution images and create detailed progress reports without requiring supervisors to be onsite constantly.
- » **Chatbots and virtual assistants** that can help answer routine questions from workers and clients, improving communication and reducing administrative burdens.

These tools require minimal training and investment, providing contractors with a low-risk entry point into AI and automation.

3. Leverage Industry-Specific Software Solutions

Rather than adopting generic software, look for AI and automation tools designed specifically for the construction industry. Some examples include:

- » **Construction management platforms** that integrate scheduling, budgeting, and compliance tracking into a single dashboard.
- » **AI-powered bidding software** that analyzes past projects to generate more accurate and competitive estimates.
- » **Predictive maintenance systems** that use AI to detect early signs of equipment failure, preventing costly breakdowns before they happen and saving thousands of dollars in repair costs.
- » **Quality control AI-powered systems** can be used for quality control, analyzing data from sensors and cameras to detect defects and ensure that construction meets specified standards. For example, AI can analyze images of concrete pours to detect cracks or inconsistencies, allowing for immediate corrective action.

Using industry-specific solutions ensures that contractors get relevant features tailored to their unique needs, making the implementation smoother and more effective.

4. Partner With Technology Providers for Comprehensive Support, Training, and Data Security

One of the most significant hurdles to successful AI adoption is navigating the learning curve and ensuring smooth integration with existing workflows. Furthermore, the increasing reliance on data within AI and automation systems necessitates a strong focus on data security. To overcome these challenges, contractors should strategically partner with software vendors and technology providers that offer comprehensive support, training, and a commitment to protecting sensitive information, such as the following:

- » **Hands-on, role-based training** – Ensure that all team members – from project managers to onsite staff – receive tailored training that equips them to use new tools effectively in their daily tasks. This should go beyond basic software tutorials and include practical application scenarios relevant to construction projects.
- » **Ongoing support and proactive troubleshooting** – Establish a relationship with providers who offer reliable, ongoing support to address any issues promptly and minimize disruptions to project timelines. This includes access to technical assistance, troubleshooting resources, and proactive system monitoring.
- » **Customization and integration expertise** – Choose providers with the capability to customize AI and automation tools to align with specific business workflows, project requirements, and existing software systems. Seamless integration with platforms is crucial for maximizing efficiency and avoiding data siloes.
- » **Strategic consultation** – Look for technology partners who can act as strategic advisors, offering guidance on AI implementation best practices, identifying opportunities for optimization, and helping contractors develop a long-term technology road map.
- » **DATA SECURITY PROTOCOLS AND COMPLIANCE** – These factors are paramount to partnering with providers who have robust data security protocols and can clearly articulate their measures for protecting sensitive

project data, employee information, and client details. Inquire about their security certifications, vulnerability management practices, and incident response plans to ensure they prioritize data protection.

- » **Thoroughly reviewing the terms and conditions of any AI and automation platform** – This is crucial to understanding how your data will be handled and protected. For instance, users concerned about data privacy when utilizing AI tools like ChatGPT might opt for a paid subscription, which often offers more control over data usage compared to the free version where data may be used for model training.

By securing a reliable technology partner that provides robust training, support, and customization, contractors can mitigate adoption risks, accelerate time to value, and ensure a smooth and successful transition to AI-powered operations.

5. Educate and Empower Your Team Through Change Management

Workers may be apprehensive about AI and automation, fearing job loss or complicated systems. Leaders should address potential apprehension and foster buy-in among your workforce. To ease the transition, consider these steps:

- » **Communicate the benefits** by proactively explaining how AI and automation will streamline processes, reduce time-consuming and tedious tasks, enhance safety, and ultimately enable workers to focus on higher-value responsibilities that leverage their skills and expertise. Emphasize that AI is a tool to augment – not replace – human capabilities.
- » **Provide hands-on training** and onboarding programs that ensure every employee feels confident and comfortable using the new tools. Offer ongoing opportunities for skill development, and address any knowledge gaps.
- » **Encourage open feedback** and active involvement to create a culture of open communication where employees feel comfortable sharing their feedback, concerns, and suggestions. Involve workers in the technology selection and implementation process to foster a sense of ownership and shared success.
- » **Designate and empower “tech champions,”** tech-savvy individuals, within the team to serve as champions who can provide peer-to-peer support, answer questions, and assist with troubleshooting during and after implementation.

These champions can play a vital role in driving adoption and fostering a positive attitude toward new technologies. When the workforce understands the benefits, adoption becomes much easier.

6. Scale Up Gradually

Once contractors see success with initial AI and automation, they can expand into more advanced applications, like these:

- » Machine learning algorithms to analyze past project data and improve bidding accuracy.
- » Robotics and autonomous machinery for repetitive tasks like bricklaying, concrete pouring, and drywall installation. The tech can improve efficiency while reducing physical strain on workers. For example, Shelby Erectors is using robotics in the field to tie rebar, saving workers from back-breaking work.
- » Automated permit and compliance tracking systems that streamline approvals and ensure regulatory compliance without manual intervention.

Scaling gradually ensures that each new technology is integrated smoothly without overwhelming the business.

7. Stay Updated and Adapt to Emerging Technologies

Technology evolves quickly, so it's essential for contractors to stay informed about new AI and automation advancements. Strategies to stay up to date include:

- » Attending industry conferences to learn about the latest AI and automation solutions
- » Networking with peers in the construction industry to exchange insights and best practices
- » Collaborating with technology providers to receive updates on software enhancements and new features

Adopting AI and automation in construction doesn't have to be overwhelming. By starting small, leveraging industry-specific solutions and involving your team, contractors can gradually integrate these technologies into their operations without disruption. The key is to view AI and automation as tools for empowerment rather than obstacles, helping contractors build more efficient, profitable, and safer projects. 



About the Author

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