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How to Undergo Digital Transformation as a Construction Company

No matter which path you choose, going digital will help reduce risk, increase ROI, and boost productivity.

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Introduction

Change—an inevitable part of any industry's progress—is occurring at an increasingly rapid rate across the entire construction industry. In a survey conducted by AGC and FMI[1], 58% of respondents reported that they anticipate more change in the construction environment over the next five years than has been seen in the past half-century.

The most conspicuous change is the digitization of processes and information. This digital transformation is reducing rework, enhancing productivity, and improving bottom lines.

Many construction companies are still not yet reaping the benefits of the transition to a digital process. In fact, in a McKinsey survey[2], just 16% of respondents felt that their organization was delivering performance improvements from digital transformation. What digital actually means for an organization, what goals should be met, and how to properly integrate a fully digital solution is often not fully understood.

This guide highlights the key benefits of technology adoption and outlines a five-step plan to help construction companies who wish to transition to fully digital solutions.

The Benefits of Digital Transformation

Imagine this: being able to update an entire team's sheets in real-time without having to wait for a new set to be printed, delivered, and distributed; every stakeholder operating off the same real-time information; and a preconstruction process fully transparent for every party involved. Digital transformation isn't just about cutting down on paper or adopting technology for the sake of technology; rather, it's about dramatically increasing productivity.

By switching to a digital solution, construction professionals will:

Save Time and Increase Productivity

According to McKinsey[3], construction productivity has grown only 1% per year for the past 20 years, lagging behind the economic average of 2.8%. If the construction industry were to catch up to that of the total economy, the sector's value would be boosted by around $1.6 trillion. By implementing a cloud-based solution, construction professionals will no longer have to waste time trudging back and forth from the job site to the trailer or waiting for revisions to get distributed. Activities can be tracked in real-time in a single cloud-based location, allowing every key stakeholder to access important data from anywhere.

Eliminate Rework

Take a look at your last project. How much did it cost you to redo work because of outdated plans? According to a report created in conjunction with FMI and PlanGrid[4], poor data and information cost the U.S. construction industry over $31.3 billion in 2018 alone. A good digital construction solution will dramatically reduce rework because every member of the team will always have the most current information on hand. With tools like sheet compare, you can easily overlay any two sheets to view changes, identify clashes, and review constructability. Additionally, the preconstruction process will be more accurate, cutting down on rework later.

Protect Your Plans

Paper tends to pile up, making it difficult to locate and access documents critical to maintaining a schedule. Even certain digital solutions can fail teams. A file stored locally on one team member's laptop is as inaccessible to others as a sheet of paper on a desk. When documents are stored digitally through a single cloud-based solution, your data and files are protected by SSL security and regular back-ups. Additionally, team members can access documents from anywhere and on any compatible device.

Improve Accountability

The best construction software will timestamp and date all actions, letting you see who did what, where, and when. This will eliminate trying to decipher handwriting to figure out who marked up that sheet and allows for easy recall of information if questions arise down the line.

5-Step Plan to Success

For construction companies looking to benefit from digital transformation, a proper plan is vital. Even the best solutions can have a slow rollout without key preparation. The following 5-step plan will guide businesses towards a cloud-based digital solution.

1. Choose Your New Solution

Deciding which solution to use isn't to be taken lightly—your choices will affect the way your business operates, and you'll be trusting them with your valuable data. First, conduct an audit of all available platforms. Ask other companies what they are using and why. Do some research, list the pros and cons, and be as detailed as possible.

Carefully consider the following:

Functionality:
What will you be using most (e.g., viewing sheets, making markups, and tracking issues)? Figure out what you need, what you want, and what it would be nice to have. Below is a short list of key process indicators identified in a recent study commissioned by Autodesk[5]:

- Construction documents[6]: The frequency with which contractors capture errors, omissions, and/or constructability issues in the "bid set" of construction documents relates to a project's overall performance. Choosing a digital solution that will improve this process is critical.

- RFIs[7]: Requests for Information (RFIs) must be handled easily and in a timely manner. Construction companies should look for a digital solution that makes it easier to ask questions and ensure that projects do not come to a stop due to an inability to submit RFIs in real-time.

- Change orders[8]: Another key indicator of a successful construction project is the frequency with which firms collect and document change orders. Improving this leads to better project performance.

- Schedule[9]: A quality digital solution should allow construction companies to improve their scheduling, including updates to schedules and tracking the impact of slippages.

- Safety/Inspections[10]: A quality digital solution should offer practical solutions that address gaps in a company's safety and inspection process.

- Labor productivity[11]: How well coordination and communication, schedule management, and contract document quality are handled all impact labor productivity which, in turn, impacts the project's health.

- Quality and closeout[12]: Finally from this study, how companies are handling punch lists and closeout activities is related to a project's overall performance. A quality digital solution will offer improved processes and reduce wasted time.

Consider the following factors as you begin evaluating solutions:

- Technology familiarity: Evaluate your team's familiarity with technology. Select easy-to-use software that will be enthusiastically adopted by your employees.

- Integrations: Do you already use other systems that integrate with your potential new software? What manual work will the integrations help to automate?

- Customer love: Which companies listen to their users and make regular updates to their apps? What do their reviews say on the different app stores?

- Platform compatibility: Does your team use iPhones, iPads, Android devices, Windows devices, or a mixture? Will your chosen app work on all of the different devices you use on your projects?

- Support: What do the reviews say about support? Is it easy to get instant help? Are there resources (in-person training, consulting, etc.) available to make rollout even easier?

Additionally, companies should consult with functions across the business to ensure that the technology chosen truly is a good fit. According to a recent Autodesk and FMI study[13], a disconnect often exists between the implementation of technology and the people who are using it. In this study, 52% of those surveyed considered the needs of their field staff to be key considerations for choosing technology. However, only 28% of these folks actually received feedback from staff prior to investing in technology. This led to 36% reporting that the technology chosen was a poor fit with existing procedures and processes.

2. Clean and Organize
You've chosen your platform. Now it's time to get everything ready for your new system. How you prepare will depend on how you operate. This can involve everything from purging paper documents and plans to purchasing the necessary equipment for employees across the business.

3. Keep Learning
Unleashing the full power of any tool involves getting to know it intimately. Hopefully, you will have chosen a platform that offers support and training. Now is the time to utilize this, especially if rolling out on a large project or across a company. The right consultant will help you establish company or project-wide standards, naming conventions, and workflows, saving everyone a ton of time in the future.

Ensure that you:

- Consult with your team to decide how you'll use the software to maximize its return on investment.

- Document your processes, so that anyone can refer to them in the future.

- Use all resources available to you (training, consultation, etc.) from your chosen platform, so that you're prepared when it's time to go live.

4. Roll-Out

Once your company has selected a new tool, cleaned house, and learned everything you can, it's time to discover how the new system works in the real world. It's best to start with a single project, learn best practices, and then expand from there.

While using your new software system, record as much as possible, and attach dollar values wherever you can (material costs, labor costs, etc.):

- How much time are you saving?

- How much rework are you avoiding? What were the potential associated costs?

- Where is the software lacking? This is valuable feedback for your software provider.

- What isn't working/what should you have done differently during roll-out?

- Which tools are being underutilized, or not used at all?

- Is everyone on the project team following the standards put in place during training? The more you record now, the easier it will be to evaluate the success of the roll-out later.

5. Evaluate

Evaluation is the most important of all the steps. There's no point continuing to use a paperless solution if it doesn't save you time and money. If you've taken Step 4 seriously and have recorded time and money savings, you might be able to calculate ROI. It's likely you spent money on acquiring the system, training, and roll-out—but exactly how much did you save?

After the project is complete, gather your team for a meeting and answer these questions:

- How much money and time did the new system save you?

- What did people like/not like about it?

- What could you do better next time?

- Did the training and preparation make a noticeable impact on the success of your roll-out?

- What feedback does your team have for the software developers?

- Should your team use this system again or try something new?

- Consolidate your feedback, pass it on to the software company, and make a plan for your next project to make the whole process even smoother.

Conclusion

When it comes to digital transformation, the construction industry has been lagging behind other industries. The lack of investment in technology and a systemic reluctance by both employees and managers to embrace innovations has caused construction productivity to remain flat for decades. However, new technology will save owners time and money, as well as improve transparency across employees and stakeholders.

Although digital transformation isn't easy, the above outlined 5-step plan makes it possible to experience the substantial benefits of transformation without significant risk. There are many software options that will help you improve your productivity and your bottom line, and no matter which solution you choose, going digital will help reduce risk, increase ROI, and boost productivity. The construction industry is experiencing a digital revolution that has the power to influence how construction is managed for the next one hundred years.

References

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In 2018, Autodesk announced that construction would be a key focus area to help our customers on their design and make journey. To capitalize on the opportunity, Construction became its own CEO-staff level organization, Autodesk Construction Solutions. This unique structure is comprised of product development, customer success, marketing, and field operations. The organization is designed to move at the speed of the market and serve customers on a level playing field with other solution providers. Autodesk Construction Solutions offers products that cover the entire construction lifecycle, from design through plan to build and operate, including the Autodesk Construction Cloud which brings together our cloud-based solutions Assemble, BIM 360, BuildingConnected and PlanGrid.

Our vision is to create a vibrant construction industry where predictability and productivity are exponentially increased, while jobsite waste is proportionately reduced. The time has come for platform that will empower an industry transformation. Our mission is to help construction teams meet the world's rapidly expanding building and infrastructure needs, while making construction more predictable, safe and sustainable.
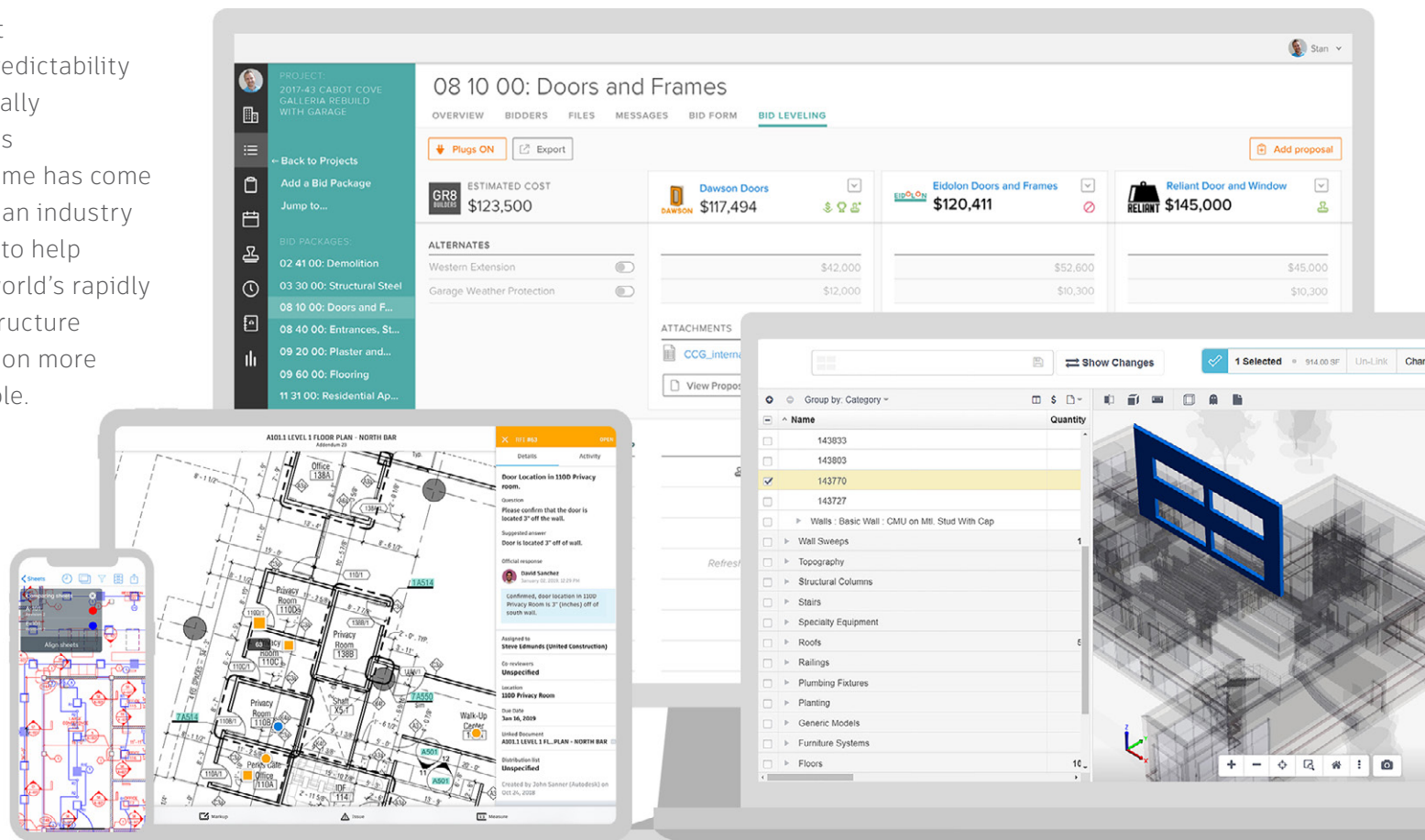
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