

A man wearing an orange hard hat, a grey shirt, a striped tie, and an orange safety vest is holding a white tablet. He is standing in front of a large, multi-story building under construction. The building has many windows and balconies. The man is looking at the tablet and smiling slightly.

# The Top 3 Technology Trends Disrupting Construction and Real Estate



## Making an Investment That's Worth Your While

Although most construction firms utilize technology, much of it is used to manage projects and ease the burden of back-office tasks. When it comes to investing in cutting-edge technology, or even a tool like a customer relationship management (CRM) platform, it all comes down to whether the firm has the money and time to do so.

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We know how it is. It seems like you either have the time to take on a new tool or technology application during a slower period but not the budget to invest in it, or you have the money but you're too busy with projects and jobs to research, invest in and implement any kind of solution.

Then there's the added fear of a failed implementation, which gets amplified by any past experiences you may have had in not being able to get the adoption you needed. As you know, a failed implementation makes investing in technology even riskier – but it's also **why change management is so vital**.

Yet regardless of time, startup costs and managing change, many construction firm leaders are beginning to see how much technology can actually help save money, attract and retain qualified employees and grow their firm. But even those who are still unaware of some of the benefits have experienced pressure from large businesses that are forcing contractors to utilize their specific technology to allow better collaboration and analysis.

It's coming from the customer experience, too. Cutting-edge technology is being offered to clients, from investors to building occupants, but construction and real-estate firms traditionally haven't taken advantage of the same or similar technology internally. That's starting to change.

So, the construction and real estate industry is due for what could be called a technology revolution. Three trends have emerged that are bringing with them some pretty big benefits.

## Trend #1: Optimizing the Basics

While some firms have gotten away with implementing a few tools here and there, they're going to find it more and more difficult to stay competitive without utilizing a more comprehensive and integrated technology system.

This is the era of digital transformation. Siloed technology solutions are beginning to hinder productivity more than help it. They are in no way as effective as solutions designed to work together to help create improved efficiency and productivity across your organization.

The first of our top three technology trends, optimizing the basics, essentially refers to using tools that allow you to do basic functions faster – from improving field data collection, reporting and operations to automating accounts payable. At its core, optimizing the basics comes down to blocking and tackling. Email, mobile devices, data centralization, process automation, the cloud – when all of this works together, it helps ensure a lot of your day-to-day work and priorities are taken care of.

How is your organization collecting data? How are you using that data? Optimizing the basics requires putting together a well-rounded system that can provide you what you need to become more efficient and make better decisions, faster. But what kind of tools can eliminate technology silos and give you

the integration, automation, data analytics and management capabilities you need?

### Eliminating Siloed Tools With CRM

You know much of the construction and real estate industry revolves around relationships. Building them, maintaining them, leveraging them to create new relationships – it means every piece of your organization that comes into contact with clients is another touchpoint that can strengthen or weaken a relationship.

CRM gathers all of your client information in one place, making it easy for each staff member to know what projects a client is associated with, how successful the firm has been in winning that client's bids and even how your firm communicates with the client (e.g., email campaigns, direct mail, sales phone calls, etc.) and how often. Too much or too little contact could damage a relationship.

When you rely on disparate tools like Excel to track all of this, you gain a huge number of different versions of the same document, and none of them are up to date. But with a CRM, everyone accesses the same, real-time information and inputs new information into the same place. And it's not just client data – it's all information related to projects and bids.

CRM allows the people involved in a project – developers, architects, subcontractors,

property owners, suppliers, and managers – to work on the same system and track the progress on a project or a bid. With this enhanced communication, visibility and collaboration, you can better manage scheduling and workflow, track equipment use and collect data (e.g., time, quantities and other project-related data) right in the field. You can stay on track and on budget, gathering information once and passing it along automatically to the systems (e.g., payroll and financials) that need it.

And what increases your chances of winning a bid more than being able to demonstrate performance to prospective clients? With CRM, you not only see the results of different projects but also become better able to

project future performance because you have this collected data from past projects. A single source of integrated data improves business intelligence by providing analytics based on your entire operations. Giving real-time data about things like performance and budget to business leaders improves decision making and, combined with streamlined processes and communication, leads to greater profits.

So, from winning bids to streamlining communication to managing projects, CRM is an integrated tool that touches every area of your business, and it succeeds by optimizing the basics of what your employees do every day.

## Wipfli Connect for Contractors

If CRM sounds like something that fits your organization's needs, you can gain even greater benefits by leveraging one tailored for construction firms. From targeting and prospecting, to bid submission and management, through job completion, Wipfli Connect for Contractors provides one organization-wide interface – tailored to the construction industry.

Built on Microsoft Dynamics 365 for Customer Engagement, Wipfli Connect for Contractors consolidates silos of information to get everyone on one page with improved communication, access to real-time data and fewer manual processes. [Click here to learn more](#) about how Wipfli Connect for Contractors helps prevent costly oversights, reduce errors and streamline workflows.

## Trend #2: Prefabrication

Our next trend might have you saying, “But that’s been around forever!” Yet the truth is, firms are starting to realize more and more how prefabrication done right can help them save time and money.

Prefabrication has a bad rap with consumers because they think it means that their building is going to look just like a bunch of other buildings. Yet what prefabrication really involves is assembling components such as framing off-site and then installing them on-site. With advances in technology, it’s easier than ever to design a unique building that can be partially assembled off-site using prefabrication.

### The Rising Popularity of BIM

Building information modeling (BIM) has become quite popular for many reasons, but one big benefit is that it’s now the main driving force of prefabrication. BIM’s ability to analyze building designs and plans prior to actually starting work in the field means you can perform much earlier clash detection, potentially saving huge expenses and costly delays in having to fix clashes during construction. Instead, 3D modeling allows everyone to see where, for example, the building’s support structure could clash with the intended placement of HVAC or IT infrastructure and solve those issues before construction begins.

And because BIM allows the building design to be finalized and carried out without future changes, it enables far more prefabrication than was possible in the past. Construction firms can be more confident they can produce assemblies off-site to exact and unchanging measurements, thereby improving worksite productivity and boosting savings.


Additionally, with advances in manufacturing and the digitization of architectural plans using BIM, the parts you need can be not only created to exact and controlled specifications using robotics but also labeled with QR codes that make assembling the components even faster and easier.

### Contractors Can Benefit, Too

It’s not just builders who can benefit from prefabrication. A great example of a contractor benefiting is in electrical. Electrical contractors install electrical boxes, overhead lighting, wiring, sockets and more. A certified electrician requires a certain level of experience, expertise and corresponding pay, so if you can make the process of installing electrical boxes and other components more efficient, you could reduce their time on-site and thus reduce your costs.

Prefabrication allows you to put together the majority of an electrical box off-site so that it gets delivered preassembled, making installation much faster and requiring the





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certified electrician to be on site for far less time.

### Hiring and Retaining Skilled Workers

Prefabrication doesn't just save your firm more money. It also enables you to hire and retain skilled workers. Prefabrication can be done at the same site for job after job in a controlled environment, so it eliminates travel, weather delays and other inconveniences of being an on-site construction worker or contractor. For those on-site workers, prefabrication increases the speed of construction, as well as decreases delays and the amount of manual labor they're performing. Prefabrication also allows construction employees to work around subcontractors, further saving time.

All of these benefits are attractive to potential employees and are benefits that help retain current workers.

### Meeting Demands for Sustainability

The U.S. Chamber of Commerce reports that four out of five contractors say their customers are requesting they use energy-efficient materials in their projects.<sup>1</sup> With an ever-increasing push to go green, you'll find that prefabrication is one great way to do so.

Because building materials can be recycled

in a controlled environment and there's incredible precision and predictability to what's being produced, prefabrication produces little to no waste of materials. This not only increases a project's sustainability but also allows your firm to promote to prospective clients that you follow green practices.

### Getting the Technology Right

Technology, of course, enables prefabrication. BIM has increased its popularity; robotics in manufacturing make it easier, faster and cheaper to do; and enterprise resource planning (ERP) systems allow you to track how much of each material type you have, how quickly you're using the materials and when you should order more.

Right now, there isn't one technology that does it all for you, from BIM to materials tracking to the actual prefabrication, but as more and more construction firms begin utilizing prefabrication, the demand will rise and technology will follow to meet that demand. But the ability to utilize prefabrication is currently there for many construction firms who are willing to put in the effort to reap the rewards, and that's why it's one of our top three trends in the construction and real estate industry.

<sup>1</sup> “Workforce Challenges Continue to Impact Construction Industry as 9 out of 10 U.S. Contractors Report Skilled Labor Shortage,” U.S. Chamber of Commerce, June 2019, <https://www.uschamber.com/press-release/workforce-challenges-continue-impact-construction-industry-9-out-of-10-us-1>, accessed March 2019.



## What Is Blockchain — and Why Is Everyone So Excited About It?

Want to learn more about blockchain before we dive in? [Click here](#) to find the answers to common blockchain questions — from what it is, to common misconceptions about it.

### Trend #3: Blockchain

For our third and final trend, we're looking ahead — but maybe not as far ahead as you think — at a rising trend in construction and real estate: blockchain. In fact, three different blockchain business use cases for the construction and real estate industry are on the horizon, bringing three distinct benefits.

#### 1. Eliminate or Reduce Litigation Expense

We tend to think of blockchain as still being this far-away technology (aside from its cryptocurrency applications), but smart contracts, which employ blockchain technology, really aren't so far away. And because the single biggest expense in any litigation dispute is the cost of discovery — gathering the real data and contracts to support the case — blockchain could have

a huge impact in reducing that cost for the construction and real estate industry (more on this later).

First, we need to break this down. Because blockchain is an immutable database/ledger, it can be utilized to store information, safeguard it from being lost and prevent it from being tampered with. Smart contracts on blockchain can be used to code the terms and conditions of a construction project across multiple systems and contractors, with the added ability to self-execute on these terms and conditions.

For example, say an electrical subcontractor is supplying switch gear and electrical equipment to the project. If they were required to tag the equipment with an RFID

as it is shipped from the manufacturer, it could be tracked as it is delivered and stored. A smart contract allows for payment of the switch gear upon receipt and inspection approval at storage, and then allows for payment for the switch gear being moved from storage, installed and signed off on by an inspector.

The start and finish dates for both these activities are incorporated in the smart contract. If the electrical subcontractor doesn't meet these dates, the smart contract records a flag in the blockchain, upon which the self-execution of the terms can be triggered. Delays to follow-on activities are documented in the blockchain data base. The expense analysis of schedule impacts is already documented in blockchain,

eliminating the need to comb through voluminous project records.

Because blockchain stores all the information involved in a project and the smart contract notes progress, this creates a single source of truth across all parties involved in the construction project, which has multiple benefits (including that cost reduction mentioned above).

First, plenty of data on construction projects gets misfiled, misplaced or even lost, leaving big gaps in the records and allowing for costly litigation to sort out the facts. Blockchain can be designed to keep track of all this information, and secondly it can integrate the data so that bits and pieces of information aren't floating around on

disparate systems (and potentially getting lost).

Third, with the single source of truth it provides, blockchain could drastically change claims and litigation in the construction and real estate industry. How many projects has your firm seen face some form of contract dispute or litigation? Even minor challenges involve costly lawyers and accountants to resolve.

But blockchain – and smart contracts, specifically – presents all the information necessary to show the truth of what occurred. No one can question the facts because they're stored in an immutable ledger that can't be manipulated. Because of this, the two parties will be much more likely to go through arbitration to resolve disputes, and it will happen much faster.

Blockchain's ability to change construction and real estate litigation long-term cannot be understated.

## 2. Raise Capital and Leverage Existing Holdings

Tokenization is something real estate companies are very excited about. In its simplest form, tokenization breaks down the ownership of an asset into digital tokens. The real estate industry is interested in

tokenization because companies could use it to leverage existing holdings without going through an IPO, and to raise capital for new projects.

This is because with tokenization, billions of dollars in real estate holdings could become liquid and come into the secondary market, providing much wider access to the public. Right now, there are a lot of government regulations excluding retail investors from riskier assets such as venture capital and private equity. With wider access via tokenization, plus appropriate regulations, people wanting to invest in these riskier assets could potentially do so.

You could say tokenization is basically here, but it really needs regulators to come in and put some type of guardrails into place to protect investors before it's truly ready. Tokenization started with initial coin offerings (ICOs), which set off a craze but unfortunately resulted in a lot of fraud. The U.S. Securities and Exchange Commission (SEC) even created a dummy ICO site to show people just how easy it is for criminals to put an ICO together and defraud the average investor.<sup>2</sup>

Now we have securitized token offerings (STOs), which is the tokenization we're referring to as having great potential for real estate firms. With proper regulations in place,

both investors and real estate companies are primed to benefit from tokenization.

## 3. Transfer Titles

We're in the digital age, so why is it still so time-consuming to transfer a property title to a new owner? Sure, it's serious business buying a house or another piece of property, but it really doesn't need to take so long, does it?

In reality, 25% of title searches result in title companies having to fix title defects, and title companies pay millions of dollars each year in claims.<sup>3</sup>

However, blockchain's definition as an immutable single source of truth makes it possible to transfer titles much faster, because the process of buying and selling a house can take place over blockchain, and because all the elements involved in doing so are completely trustworthy. Like with smart contracts, the information about the house is stored there, and the conditional clauses (like passing the property inspection) are explained and tracked. You can even pay for the house via blockchain, thus initiating the digital title transfer. Blockchain means far fewer (and potentially zero) defects in the title information, far fewer claims and a far faster process of transferring a title.

## What Can You Do With Blockchain?

Construction and real estate firms don't have to wait and see how blockchain evolves and disrupts their business. Your organization can start building a proof of concept to learn more about how you can leverage blockchain technology. Wipfli has experience with blockchain proofs of concept, as well as Board and leadership education about blockchain and its potential applications.

**Contact us to learn more.**

<sup>2</sup> "The SEC Has an Opportunity You Won't Want to Miss: Act Now!", U.S. Securities and Exchange Commission, May 2018, <https://www.sec.gov/news/press-release/2018-88>, accessed March 2019.

<sup>3</sup> "Title Insurance: A Comprehensive Overview," American Land Title Association, <https://www.alta.org/press/TitleInsuranceOverview.pdf>, accessed March 2019.



## From Catching Up in the Race to Leading the Pack

If you feel like you've fallen behind your competitors in implementing key technology, consolidation can help you catch up. The old trend of buying one technology tool to solve one challenge is long over. It's now about tearing down siloed technology and integrating it across the business for seamless use, data analytics and greater efficiencies.

But you don't want to just catch up to your competitors. Gaining market share means surpassing them. When you invest in the right technology for your business – from optimizing your basic applications to gaining efficiencies with prefabrication to researching how blockchain could help you innovate and stay ahead in your industry – you put your business in a better position to grow and succeed.

Interested in learning what tools would work best for your firm? Contact the technology and construction and real estate specialists at Wipfli for a free consultation.

[Wipfli.com/CRE](https://www.wipfli.com/CRE)