



KEEPING BOOTS DIRTY:

**TOP 5 PREDICTIONS
FOR THE 2023 CONCRETE
INDUSTRY**

**CONCRETE
CONTRACTOR®**

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As we venture into 2023 with gloves on and work boots tight, let us take a look back at the last year. It often helps to evaluate the challenges, look at how the industry has changed, and get a better understanding of what worked (and what didn't). Of the many, the major challenges contractors had to face and work through included material price increases, material availability, as well as skilled labor shortages pretty much across the board.

Concrete Contractor connected with Maria Davidson, CEO and founder of Kojo for her insight into this past year and what 2023 will look like.

Apart from on the forefront of material data, Davidson has been a council member for Forbes magazine since 2022 and recently wrote about ways to reduce construction waste.

Davidson explains her top five predictions for 2023:

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MY TOP FIVE PREDICTIONS ARE:

- 1.** We're seeing General Contractors (GCs) increasingly wanting to take on more self-perform work and larger organizations buying up smaller ones to leverage more economies of scale.
- 2.** With the uncertainty around the economy going into 2023, contractors are going to be even more careful around their margins. We're already seeing people buying more materials in advance and getting more granular with their planning. In an uncertain environment, contractors need to be better protected against potential headwinds.
- 3.** Contractors will expect access to more data in real-time. That includes knowing when their materials are arriving in real-time and knowing how they're tracking against their estimates in real-time.
- 4.** I'm also seeing developer expectations around transparency continuing to grow. Developers will increasingly want more transparency and work more directly with trade contractors.
- 5.** We're going to see the demographics in the industry continue to shift at an accelerated rate. You asked me about how we can plug the 650,000 worker gap in the industry (Editor's Note: This question is asked below.)—an important part of that is having more women join the industry!



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5-20%

Kojo's data shows that construction material purchases have an average variance of 5-20% between vendors.

Q. Can you talk about where that data comes from?

That data comes from our Request The Quote module. To take a step back, what Kojo allows our customers to do is to get multiple quotes from multiple vendors really easily. And the focus for us there was especially over the last two to three years, seeing that contractors couldn't rely on single sourcing, single sourcing from a single vendor anymore, because it was just too risky in terms of one making sure that we're getting the best price, but also knowing that that vendor would actually have those materials available. And so as we allow people to get multiple quotes, we've seen a huge amount of data on the variance between those quotes. And that's where in our data, we've seen a 5-20% swing is very common on different materials.

“When we look at high demand, there has definitely been a dampening in residential construction but commercial construction continues to be extremely strong.”



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One of the things that is also interesting is that there's a lot of variance in materials in terms of one product resolving its supply chain shortages, and the inflation around that product and other products becoming worse. Right now, what we've seen when it comes to concrete and to cement, is there have been huge shortages and price spikes. That's been a particular area for us that we've really been focused on — helping our concrete contractor customers manage the difficulties that come with that.





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Q. WHAT DO YOU THINK IS CAUSING SUCH A VARIANCE IN THE PRICE OF MATERIALS?

When we look at the shortages that have been going on, specifically with concrete and cement, a lot of that comes down to high demand, and rising prices of core inputs. When it comes to concrete, that core input is cement prices. When we look at high demand, there has definitely been a dampening in residential construction but commercial construction continues to be extremely strong. And with the government legislation that was passed last year spurring the growth of infrastructure, we're seeing that on the commercial side.

Contractors are constantly telling us that they just can't find the concrete supply that they need and that there is a big mismatch between supply and demand on that side.

The second factor—the rising prices of core inputs—is heavily driven by issues related to production and transportation. When you look at both of those, you have issues like low water levels in the Mississippi River creating limited movement for cement and other heavy industrial materials. In some parts of the country, winter storms, for example, in Texas, complicated

cement production. In other parts of the country like Ohio or Indiana, you actually had milder winters, which meant that there was unprecedented demand for cement. Cement producers weren't able to build up that inventory that they usually do in winter months.

Then, on the transportation side, you see highly volatile oil prices and an increased need for truck drivers and for cement carriers, all creating disruptions. According to the Portland Cement Association, you have 43 states currently reporting supply shortages of cementitious materials. We've actually seen cement suppliers actually place allocation caps on concrete producers, which limit the amount of cement that they can purchase and limit the amount of concrete that they can produce.

That's where working with multiple distributors can be incredibly helpful. Because if any of them are facing these type of caps, or aren't actually able to meet the demand, you can make sure that across the various projects you're working on that you can map out where the concrete is coming from, and make sure that you have the right amount of supply to meet the project that you're working on.

And, of course, make sure that the distributor has the type of cement to make the concrete that they actually need because often it's specified to be one specific mix.

And that's where contractors face huge margin erosion when it comes to inefficient procurement. We've had some of our customers tell us that if they miss a concrete pour because, for example, that concrete company isn't actually able to get them the exact mix that they need, or maybe it's that there have been delays tied to other trades or other delays, they've had to call that concrete producer and say, "We need to push the concrete pour out."

Given the tight schedules that they run, in some cases, it's months before you can schedule your next concrete pour. And for contractors that eats a huge hole into their bottom line. Not only does it mean they can't get the work done and get paid for the work they're doing, but in many cases, contracts carry penalties for not getting work done on time. That becomes extremely costly.





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Q. DO YOU THINK THE SUPPLY CHAIN DISRUPTIONS WILL ALLEVIATE ANYTIME SOON? OR IS THIS THE NEW “NORMAL”?

What we’ve seen is that the new normal is this seesaw effect, where as soon as the supply chain disruption gets alleviated for one type of material, the next one spikes up. Take lumber as an example, which this time last year was the biggest problem that a lot of contractors were facing when it came to materials. From conversations that we’ve been having with contractors, this seesaw does seem to be the on-going normal that as soon as one material gets fixed it causes a problem with another one.

That means that contractors going into 2023 need to be even better planned and even more careful around their contracts than they’ve had to be before. Because honestly, there’s no way to tell which material is going to have issues next. That’s where you need to make sure that you are agile and you are resilient as a company.

Q. WHAT DOES KOJO’S DATA SHOW ABOUT MATERIAL ORDERING? BASED ON THAT DATA, IN YOUR OPINION, HOW FAR OUT SHOULD CONTRACTORS BE ORDERING THEIR CONSTRUCTION MATERIALS?

Right now, contractors are ordering further and further in advance. In fact, what we have increasingly seen is that once an estimate is put together, contractors will bid off of that estimate. And they will try to lock in prices for as many of the line items as they possibly can at the beginning of a job.

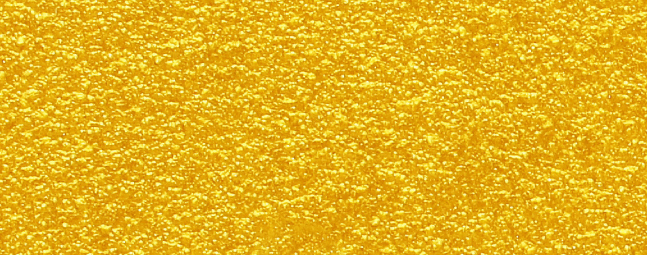
Through that process, they’re able to learn who has walked and what prices they could potentially get. If anyone has unexpected back orders, they can go and they can quickly issue another purchase order

and figure out where they can get something in time.

We have also seen contractors increasingly face contract challenges where if they’re not able to pass on the additional costs that might be unexpected, they will have to face the brunt of those issues. A lot of contractors are actually writing that into contracts— making sure that they have protections in case there are unexpected shortages so that they don’t end up seeing an enormous amount of margin erosion on their end.

When it comes to how far in advance contractors should be buying materials, honestly, earlier the better at the onset of the job, especially going into 2023. Contractors are going to have to watch their margins even more carefully. You have to know what options you have. You might also use that to consider alternative materials to portland cement or think about whether you can have precast concrete as an option. Really make sure that you are downside protected.





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Q. My bet is a lot of contractors feel pretty powerless if their supplier just doesn't have the material needed. How can technology help contractors take more control over the supply chain?

That's what technology is all about. It's taking away that feeling of powerlessness and it's replacing it with a feeling of being empowered. Because where I think technology can play a huge role is helping contractors be margin protected. From the very onset of a job, it's helping them have that estimate bid out so they know what materials they can lock in prices for and they know who has what. Subsequently, it's allowing them in real time to track that progress against that estimate. They need to know how much they spent compared to how much they thought they would spend. Or how much the quantity that they had originally been budgeted for, have they already ordered.

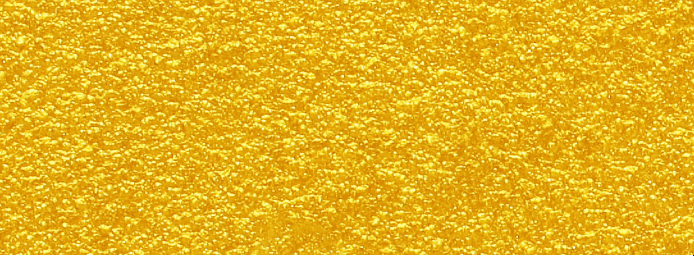
Next, it's actually saving them time, because one of the big things that we haven't talked about is that there's also a huge labor shortage in the industry. Associated Builders and Contractors, right now estimate that there are about 650,000 people missing from the industry. That means that contractors need to make sure that each and every person who is currently on the jobsite is using as much of that time doing actual work and not slowed down by things like needing to figure out which materials they don't have, which materials didn't arrive, or where materials are. Time is money. And you want to make sure that as much of your field time is actually being spent with hands on tools, doing the work.

That's where automating processes that are otherwise manual comes in handy. Automating the creation of requisition is automating folks in the field that have to constantly be on the phone calling up the office asking about deliverables or what is actually been ordered. All of that is what technology is here to fix. And we hear—especially when it comes to concrete—that that coordination problem is really complex. You have folks out in the field constantly on their phones, trying to figure out when is stuff actually arriving and what hasn't been ordered, or if it has, they need something else to note it. That is the data that technology can show you instantaneously and help you get back to work.

One of the things that we've also seen is that a lot of people left the industry over the period of the pandemic. A lot of the people currently entering the industry are folks who have grown up using tools like Amazon and Uber and DoorDash. Folks who are used to being able to open up their phones and see when material is arriving. As we look out into 2023, we think that being able to work with modern tools is going to be a huge differentiator for companies being able to attract the best talent and being able to get folks coming out of high schools really excited about the construction industry. I think that perception shift is really important because in order to fix the labor shortage gap, we need to make it so that people know that entering the

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construction industry they are going to be empowered. That they are going to walk with modern technology and are going to be able to do work in a very different way than they could 30 years ago.

A lot of the issues – the supply chains being very complex or the seesaw effect I described (as soon as one material gets fixed, a problem arises with another one) – comes because there was a huge amount of interdependent factors that are acting together when it comes to both production and transportation. Whilst we have soaring inflation, whilst we have the supply chain still recovering from the shocks of the pandemic, we need to make sure that we’re aware of those and to plan ahead and have backups just in case there are unexpected storms or any of the unexpected production disruptions.

When it comes to residential construction, we’ve had rising interest rates and rising mortgage rates. Those have all dampened the demand on that side. At the same time on commercial construction, we’re seeing our customers busier than ever. A lot of our customers do work related to infrastructure and work related to government projects. So, that’s why for them if there is an upper limit to the amount of cement that can be produced but there is no upper limit to the demand—especially now that we’re really looking at revitalizing the infrastructure all over the country, we’ve also seen increasing interest in exploring alternatives to concrete, from fly ash to ferrock to blocks.



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When you think about concrete accounting for around 8% of the world’s CO2 emissions, we’re also expecting to see a lot of innovation in making concrete more sustainable to produce. I think that is going to create a lot more jobs and a lot more innovation. Because given the current production timelines, we’re not going to be able to meet the demand of the future. And we need to figure out how to do that.



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Q. YOU'VE MENTIONED 'TECHNOLOGY HAS LEFT THE CONSTRUCTION INDUSTRY BEHIND.'

WHAT DID YOU MEAN AND WHAT TYPE OF TECHNOLOGY DID YOU HAVE IN MIND?

Historically, the construction industry has been left behind by technology. And that's because most people, as they start off looking to build a technology company, they look to solve problems that they know. And that's why there's been a huge proliferation of solutions in consumer goods. Because all of us know the pain of it, trying to find a taxi in the middle of the night and not being able to or trying to figure out where to go to eat, or trying to figure out where is an affordable place to stay when we go on vacation.

The overlap between people that know how the construction industry works, and people who know how to build a technology company has been very slim. When people set off to build tech companies, they focus on the problems that they know; they don't often know how the construction industry works and just don't solve those problems as often. Historically, you've had the construction industry very heavily under-invested in tech solutions.

Deloitte put out this interesting study where they look at what is the portion of a company's annual revenue that gets spent on tech solutions—the median across the U.S. is 3.3%, but for

construction, it's 1.5%. So, on average, the construction industry spends less than half the median U.S. spend of revenue on tech. And that's also been a further disincentive because a lot of people that build tech companies have historically thought that adoption is just too slow in the construction industry and people aren't going to buy the solution that they build. But there is a huge spur of construction that is going to need to get built over the next 30-40 years to accommodate a growing urban population. Some of the estimates are that we're going to need to add 2 trillion sq.ft. of buildings by 2060. That's the equivalent of putting up another New York City every month for the next 40 years. And that entails a huge amount of concrete. That entails a huge amount of people.

What we've seen is that there has now been a real renaissance of people in the tech industry, understanding that there is a huge amount of untapped potential in helping empower the construction industry, and helping make it faster, more sustainable, cheaper to build these 2 trillion square feet of buildings. And you've had some incredibly talented entrepreneurs saying, "I really want to devote myself to this space," and "I want to surround myself by folks who've been in the

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space for decades, who can help teach me,” and “who can guide companies as to what are the solutions that need to get built.”

That’s very much the approach that we take with our customers, because we first and foremost, want to understand what is the pain that they are feeling. What can we build for them. I think that has had an amazing reception, because a lot of folks in the construction industry honestly haven’t had great tools to use over the last 20 years. And now that they are seeing tools that are purpose-built to them that have been built iteratively with them, that’s where they’re seeing that these tools are actually easy to use and easy to learn. They genuinely add

value. And those are things that I’m expecting to continue to see more of into 2023.

When I think about technology and construction, that encompasses robotics, that encompasses better tools to do CAD models, that encompasses technology that is used in industrial production to create alternatives to portland cement, that includes apps that help you do everything from materials management to project management to planning your labor schedules out further in advance. “Technology” really is a catch-all term for all of these, and all the ways that they can help make construction workers more productive.

Q. WHAT WOULD BE YOUR ADVICE FOR CONTRACTORS TO ATTRACT MORE HIRES AND START CHIPPING AWAY AT THE 650,000 LOSS OF WORKERS?

A lot of folks that we need to bring into the construction industry grew up with smartphones. They’re used to the convenience of ordering goods from Amazon and getting food delivered with a few clicks. They want to know that they’ll be working with modern tools, that they’ll be making a positive impact on their communities, and that they’ll be learning new skills that can help them grow their careers.

The construction industry needs to do a much better job of getting through to these folks. A lot of people have an old-fashioned stereotype about what working in construction is like. They

don’t realize just how much the construction industry has to offer them. It can teach them skills that are always in demand, engage their creativity, provide amazing career growth, and present complex and interesting challenges to solve.

My advice to contractors is to lean into that. Showcase the amazing projects you build. Get high school students excited about the new tools and technology they’ll get to use. Talk about the diversity of roles in construction. There are a lot of roles like Purchasing, Operations, and Finance that don’t get celebrated nearly as much as they should.



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Q. WITH ONE OUT OF TEN INVOICES HAVING A BILLING ERROR, THERE'S A LOT OF LARGE PROJECTS LIKELY COMING OUR WAY WITH INFRASTRUCTURE REBUILDING. HOW CAN TECHNOLOGY (AND WHAT TYPE) BRING THIS FIGURE DOWN IN 2023?

Automating the invoice reconciliation process is critical. So many of our customers have told us that they used to have to manually reconcile their invoices, POs, and delivery slips to check that the totals matched up. Doing this manually takes a huge amount of time when you're dealing with hundreds of invoices a week, and it's very error-prone. Kojo uses OCR (optical character recognition) technology to automate this. We scan the invoices, delivery slips, and POs that are in our system and within seconds can flag any discrepancies to contractors so that they can make sure they never pay an incorrect invoice.



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Q. WHAT TYPE OF MATERIALS ARE LEFT AS WASTE AND WHAT KIND OF TECHNOLOGY IS AVAILABLE TO HELP CONTRACTORS REDUCE THIS?

In the U.S., the EPA estimates that 600 million tons of construction and demolition debris were generated in 2018 alone. Waste often comes from over-ordering, or ordering the wrong materials, and it applies to all material categories.

Technology can help contractors reduce waste by helping them be better - plan and order more accurately. Using software, contractors can create requests for quotes and purchase orders directly from their bills of materials. They can also track progress against their estimates in real-time. Using Kojo's system, foremen can make sure they request exactly what they need from their purchasing teams with just a few clicks. For projects like hospitals with unique material requirements, they can also use features such as material lists to make sure all materials they're ordering are compliant with specs.



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Maria Davidson,
CEO and Founder of Kojo

ABOUT KOJO

Formerly known as Agora, Kojo started back in 2018. They were focused on solving how the construction world can build faster, cheaper, more efficiently, and with less waste.

They wanted to understand what issues were holding contractors back and the reasons projects cost more than initial expectations. In the beginning, they connected with as many jobsites as they could asking about the most frustrating aspects of the day to discover how technology could help. They wanted to know what they could build that would make it easier for them to do their jobs and have the ability to take on more work.

Today, Kojo is one of the leading procurement platforms enabling trade and self-performing general contractors to take control of their margins by consolidating the procurement process onto one, all-inclusive digital platform. By connecting the field, office, warehouse, accounting teams, and vendors, contractors gain visibility into real-time materials spending and usage, streamline workflows, and increase labor productivity. Contractors have access to a network of thousands of vendors to source the best prices and availability, find cost savings, and reduce material waste.



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