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Nate Fuller

THE
MOBILE
WORKFORCE
PODCAST

Mike Merrill:
Hello and welcome to The Mobile Workforce Podcast. I'm your host, Mike Merrill, and today we are sitting down with Nate Fuller. Nate is the founder and director of Placer Construction Solutions and in today's episode, Nate and I are going to discuss the lag that many construction leaders are experiencing in digital solutions adoption, especially at the job site level, and why construction has inherited this problem from a project structure and how companies can best deal with this. So, thank you Nate for joining us today. Looking forward to the conversation.

Nate Fuller:
Yeah. It's great to be here. Thanks, Mike.

Mike Merrill:
Awesome. You bet. So, when we talk about the digital adoption term, why is that important to the future of construction and what are we really talking about here?

Nate Fuller:
Yeah. Well, I think... You know, construction companies love the idea of data and they love the idea of making data-driven decisions in their business. But, there's a big challenge in construction around how do we acquire that data. How do we get that data? How do we use that data in a meaningful way? And, it's important because every other industry has been transformed or is undergoing a transformation and I think we can all sense the fact that construction has lagged a little bit. So, being able to figure that out and do that on a business by business basis is especially challenging in construction. There's some unique challenges I think that the industry as a whole faces. But, there are some ways to do it and that are unique to construction and ways to do it that make it work on a company by company basis. And, I think a big piece of that is understanding the nature of the business and understanding your field workforce.

Mike Merrill:
Yeah, and bringing up the field workforce... When I think of construction companies that I've visited with and been to their offices around the country and even internationally, some of these companies are pretty large and have pretty dynamic and sharp people in the office and IT infrastructure, even software engineers, programmers. I mean, there are some of these companies that are doing some really powerful things, but I think where the wheels fall off the apple cart sometimes, it's out in the field like you mentioned. Why do you think that is and what do you think we could do to address that?

Nate Fuller:
Yeah. I mean, I think the biggest challenge is this field-based nature of construction and also the fact that it's project-based. So, what ends up happening is you have a project. Particularly for larger construction companies, that project could last a year, maybe two years, maybe three years. Once the project is completed, all of the people on that project are kind of dispersed to the wind and go to a new project. And so, it's really hard from a continuity of implementation perspective to draw that line across the business because the people are constantly on the move. I mean, mobile workforce, right?

People are constantly on the move, moving on to new projects, and so any technology solution that is applicable on one project may or may not be applicable on the next. And so, we come up with a lot of point solutions that are addressing specific pain points within specific areas of the project delivery, but again, that continuity of implementation across projects becomes really challenging because the projects change and the people on those projects are constantly changing.

And so, what I focus on with my work is really understanding who the people are in the business and getting a good understanding of your field workforce

and what their needs are and what their interests are and highlighting those specific individuals within the field teams that we can lean on for improving digital implementation and digital adoption.

Mike Merrill:

Yeah. That's a great point and I think we've got really two swim lanes going on here. I mean, just because something's really amazing for the office and very powerful doesn't necessarily mean the field end of that is going to be viewed the same. Right?

Nate Fuller:

Exactly. And, you know, there's a huge gap in construction between the office and the field and I think it's larger in construction perhaps than in a lot of other field-based industries. You know, it's a geographic gap. It can be a cultural gap. And, oftentimes, what ends up happening is you'll have folks in the office making procurement decisions around specific types of technology without a really clear understanding of what the field needs are. And so, there's a gap between the decision makers in the office and the folks in the field who are ultimately going to be the end users. And so, the construction companies that do technology and do digital adoption well are the ones that have a really innate understanding of their field teams and what their field teams need.

Mike Merrill:

Yeah, that's a great point. You used the word understanding and I think that's something that we need more of when we're trying to bridge this gap. Obviously, you've got digital adoption as a term that we hear quite a bit. What do you think the best approach is to help companies to really adopt these products that are digital in nature?

Nate Fuller:

Right. You know, it really depends on a business by business and a company by company nature. So, one of the other really unique things about construction is just how fragmented it is. I mean, we're talking about the fact that 90% of construction companies have less than 20 employees and as far as that level of fragmentation, there's really no other industry on

the planet that is that fragmented. What that means is that when we talk about construction, we're really talking about a lot of very big industry sectors and a lot of different companies of different sizes. And so, it's really... From the startup's perspective or a technology provider's perspective, understanding that construction isn't just this big monolithic industry I think is the first step. You're not going to create a solution that is a silver bullet that's going to solve every problem for every single construction company on the planet. It's just not going to happen because there's way, way too many nuances and caveats for each of those companies within this very fragmented space.

So, really staying focused on one particular part of construction or one pain point within the construction value chain is really important, and even within the construction firm itself, understanding the nature of your business, how your business is making money, what your field teams are doing, is going to vary on a case by case basis as well because... Yeah. Again, you know, it's never the same across different construction companies. So, really, that's step number one.

And then, the second step... Once you've kind of figured out where your pain points are or what processes within the field can be improved using new digital tools or emerging technologies, really understanding who are the what I call field influencers that are going to be instrumental in the adoption of that technology or that point solution that we're looking to adopt across the business. And, those field influencers are really important because those are kind of the... We'll call them the soft power out in the field who are going to help improve adoption and make sure that it's not just rejected at... You know, rejected once it hits the ground. So, identifying who those field influencers are and really leaning on them to get feedback about the product that we're implementing and then also lean on them to help improve the actual implementation is really key as well.

Mike Merrill:

Yeah, and that's very much in alignment with what we see as well. I think we usually take a train the trainer approach, so to speak, where we find those champions and then we try and build around that nucleus and hopefully the stickiness factor goes up and the complaining and the whining about it goes down. It

sounds like you're seeing a very similar thing in your experience.

Nate Fuller:
Yeah, and I think the technology providers have a stake in that as well. I think a lot of the tools that have been historically developed for construction have been these kind of back office tools and there's a lot of reasons for that. I think the field-based nature of construction makes it difficult to get computers on job sites. But, I mean, look, we have these supercomputers in our pockets now so it's not the technology that's necessarily holding us back. It's the ability to use technology in a meaningful way.

And so, I think technology providers... You know, there's a very active, robust construction technology ecosystem that's developed over the past 10 years. You know, these folks really are beginning to step up and understand that the field is where it's at in construction and understanding how to use technology and get technology used in a useful way out in the field in construction is a huge part of the solution to this huge productivity gap that the industry faces.

Mike Merrill:
Yeah. So, when you're talking about these field influencers or embedded leaders, whatever you want to refer to them as, is there a rule of thumb ratio or some approach you try and take to make sure that you have enough coverage?

Nate Fuller:
Yeah. So, typically what we look to highlight is about five to 10% of the organization. So, when you talk about digital transformation... And, this topic can get a little heady, a little too heady sometimes. But, you know, the idea of digital transformation is the idea that the industry needs to really reinvent itself around digital applications and take a more data-driven approach to operations of their business, and in order to achieve that, in order to begin digitizing a lot of the processes within the industry, you know, you need about five to 10% of the business bought into it. You don't need everyone and there's going to be a lot of laggards, right? There's going to be folks that are just... They've been doing it for 50 years and they're not changing

how they're doing it, and that's okay. You know, we don't need to win everyone over.

So, what that means in practice, the five to 10%, is if you're looking at an organization of 1,000 people, you need about 100 folks that are really bought in and helping carry the banner for digital adoption and new digital tools.

Mike Merrill:
Yeah. This is very interesting because that's a very similar ratio to exactly what we see. We think every leader to every five to 10 field people is optimal, so.

Nate Fuller:
Yep. And, yeah. Anyway, go ahead.

Mike Merrill:
So... Well, yeah. So, I think along that line then it sounds like it's just absolutely critical that you get those champions established, that you figure out how to take that approach. What do you do to help make sure that that happens?

Nate Fuller:
Right. You know, it's actually really... It's a really difficult thing to do in construction, finding who those people are, and the bigger the construction organization is, the more challenging it can get. You know, I spent the first nearly 10 years of my career at Bechtel, one of the largest construction companies at least in North America if not the world. You know, helped build out their office of innovation, and I can say from experience that identifying who those individuals are is really challenging and a lot of times what we do is we in construction, because construction is not or has not historically been a very technology-focused industry... You know, what we oftentimes end up doing is take a very construction project management approach to it. You know, bring in a handful, three, four leaders to really carry the banner for technology and then it's essentially rely on those people to take the company into the future.

And, I want to say that that approach falls flat pretty quickly if we're not going out and we're not identifying

all of those other individuals around the business who are going to be kind of our allies in this digital transformation. The challenge in construction goes back to that field-based, project-based nature of the work. Very quickly, what you'll see in large construction organizations is that you lose track of all those people because every couple of years they're on a new project and so highlighting and understanding who those people are can be really difficult. And, it goes beyond just Nate knows 10 people and Mike knows 10 people.

Mike Merrill:
Right. Right.

Nate Fuller:
But, those 10 people know 10 other people and those 10 other people know 10 other people as well. And so, highlighting who those individuals are that are kind of the glue within the technology conversation across this huge expansive field-based organization is like 90% of the challenge. So, that's the field influencers approach to doing technology in construction, is highlighting who's the glue that's kind of holding together all of these conversations.

Mike Merrill:
Yeah. I love that term. That's a great term. The glue that holds that conversation together from the technology perspective. I like that. So, when you run into cases where employees are resistant or you don't have… You don't have that buy in from those embedded influencers, what do you do? How do you address that?

Nate Fuller:
Well, typically what ends up happening is that those influencers, those embedded leaders, they're off doing whatever they need to do on their project to get stuff done and so if you don't highlight those individuals and you don't bring them into the conversation, kind of the wider enterprise-wide conversation around technology, they'll be forming their whole little shadow IT department that are out there on projects doing whatever they need to do to get stuff done and there's no enterprise view of that or no strategy behind it.

And so, if you don't know who those folks are, you should because they're going to be out there doing stuff anyway and just getting stuff done because they need to. The project needs to get delivered and they're running at a million miles an hour. So, they're going to exist and they're going to be doing stuff from a technology perspective whether or not it's, quote unquote, approved. Of course, what they're doing is probably necessary in order to get the project completed, so it's not advised to slam the brakes on everything. But, what you want to do is you want to understand who those folks are, kind of what they're doing, what pain points are they solving for through these shadow IT applications and then start begin providing some structure to it and seeing if there's an enterprise approach that we can take to these technology implementations.

Mike Merrill:
Yeah. I love that analogy and I love that you pointed that out. I've never really heard anyone on the podcast speak about it in that way and it also makes me think. While you have people that are, like you said, kind of having their own little IT situation going on, doing the things they want to do, I think there's another group that is almost resistant to the technology and they're trying to force the old school approach that they're used to. And so, you really could have three silos of or three camps in this technology conversation that are all acting independently and operating maybe not in opposite directions all the time because they're moving their project forward, but it definitely doesn't help the whole team win together.

Nate Fuller:
Yeah. Look, I mean, at the end of the day a lot of construction is not digital. I mean, we're building things. We're building real things and we're using our hands and tools to get it built. But, there's a lot of processes out in the field that we're doing that are paper-based currently that could very easily be digitized. Right? And, we're… You know, we're talking about safety audits, safety inspections, incident reports, checklists. So, a lot of the shadow IT revolves around digitizing those processes, and I don't know that there's a ton of resistance to that. I don't think that there's an

old school guy that's like, "No. I'm not going to enter information into the Excel spreadsheet because I'm used to doing it on paper." Like, you know, for the most part, I think people are okay with that.

So, we're not talking about like completely reinventing the way that we're building projects. But, what we're talking about is making it more… Making a more digitized workflow. It's more digitized processes in the field that are going to allow us to be… To work more productively and more efficiently.

So, but to your point, I think there are certainly laggards. There might be some guys out there that just, you know, for whatever reason, are not going to give up their paper and pencil. And, you know, I think… I think the digitized workflows will eventually win that battle.

Mike Merrill:
Yeah, and I see one other thing that we run into and you probably have too is you have people that might actually be trying to sabotage some of these things too because they don't want to change so they're happy when the wheels fall off of something or there's an error or a bug or they can't get a connection or something doesn't save or whatever… Whatever excuse or reason that they may share. What have you done or seen done to address those types of things?

Nate Fuller:
Yeah. I mean, it's easier said than done. In a lot of cases, I just… I typically focus on the folks that are kind of driving things forward and really empowering them and giving them the air cover to be able to do what they need to do in order to begin digitizing these processes. I don't know that that's an easy question to answer. It's really on an organization and organization and a case by case basis. But, I think in general, my philosophy is like let's go out, let's find these field influencers, let's empower them to take chances around use of new technologies and support them in that effort.

You know, as long as we're doing our work safely, right? Let's support them in that effort and see how the chips fall because I think we all know that eventually we're

going to get there. One of these is going to win out. So, I think empowering those individuals is probably the first step and I think bringing like the five… Again, that five to 10% of the organization along with you is really the key to it all.

Mike Merrill:
Yeah, and as I read between the lines from what I just heard you say, it sounds like, and I really like this advice… It sounds like you're saying, "Look, just stay the course. This is going to work out. You just have to keep going." Is that right?

Nate Fuller:
Yeah. That's right. I mean, we're putting bets on different ideas around the business, different individuals around the business who are in touch with field operations and they know where the pain points are and we're putting bets on those individuals, and some of those bets… You know, it's like any bet. Some are going to pay off. Some aren't. But, in the long run, we know that for the sake of the business and future-proofing it, that we have to make those bets in order to be successful in the long run.

Mike Merrill:
Yeah, and to your point, if you decide to take no action and continue forward, well, you already know what those results are. That's what you're already getting. Right?

Nate Fuller:
Exactly. Exactly. You know, I really do believe that in the next 10 years, the construction organizations that have technology figured out are the ones that are going to be around. You know, just from a safety, from an efficiency, from a productivity perspective, digitizing our workflows and our work processes in the field is pretty much existential in the long run. You know, I think a lot of companies are going to continue kind of chugging along for the next decade or so and they're going to be successful in the way they've done construction work traditionally. But, I think eventually the future's going to catch up to them.

Mike Merrill:

Yeah. That's a great point. I think one other thing that keeps coming to my mind as we're having this conversation, and I'd love to get your take on it... How critical...? And, this is... I mean, really, for the listeners, I hope they really pay attention to this. How critical is executive and management buy in on these types of solutions? And, when there's a problem there, what happens and what does that cost somebody?

Nate Fuller:

Yeah. Well, I mean, it's, from the executive buy in perspective, I mean, it's crucial. Right? You know, I think any large scale enterprise-wide initiative needs to have the air cover and the support of leadership. You know, I think we can take that to an extreme and I kind of touched on it earlier where I said if we just put a handful of folks in charge of the entire technology mandate for the entire construction organization and fully empower those leadership teams to do everything, then that's also a recipe for failure.

So, it's this mix between executive leadership providing air cover for this transformation of the business but then also kind of that field operations, meeting them halfway through these field influencers and through these embedded leaders and bringing all of that together as an organizational mandate is kind of... Is the key to making it a success.

Mike Merrill:

Yeah. When I hear you use a term like organizational mandate, I mean, that sounds like that's like mission critical, like this is where the ship is going. You got to get on or you got to get off. And, I mean, would you state it in such a firm way?

Nate Fuller:

Yeah. No I definitely think so. I definitely think that the companies that do it well in the next five years are the ones that are going to be around in the next 10.

Mike Merrill:

That's great. I totally agree with that. So, what is something that to you seems surprising that you're seeing out there today that has taken hold and companies are really leveraging?

Nate Fuller:

You know, a lot of it's pretty low hanging fruit, so things like digital drawings. Right? A technology that even five, 10 years ago wasn't widely adopted is becoming more and more adopted. You know, digital drawings are one. A lot of construction companies are beginning to... Especially the larger organizations are beginning to put together what they call virtual design and construction teams within the organization. So, these are folks who have specialty in building information models. So, digitizing the design and then essentially handing that over to the field to build and kind of... And, steering away from kind of this whole paper-based way of doing things.

So, you know, what that does is it really opens up a lot of opportunities for just the way that the project is delivered as a whole. So, across the entire project life cycle, if you could digitize everything from the early feasibility through design through execution to handover, you've basically digitized everything at that point and I think building information models are crucial to that.

But, look, a lot of... Like I said, 90% of construction companies are less than 20 employees, so the vast majority of construction companies are not going to have VDC teams to lean on to do this stuff. So, you know, I think that's where technology providers really need to step up and begin making tools that essentially outsource what a traditional VDC team would do within a large construction organization, and maybe not have all of the bells and whistles that would come with it but provide that access to that, those types of tools, those bim tools, to... You know, that huge base of the construction industry that exists.

But, yeah. Again, it's just... It's the digitization across the entire design through execution and into handover because at the end of the day, we're past the point of handing over a big stack of paper documents to the customer at handover time. You know, we can really begin to hand over digitally and make all of those processes much more efficient.

Mike Merrill:

Yeah. When you talk about handover, one of the things that I've brought up here before in other conversations is you're essentially able to deliver an owner's manual to the new owner of this project. Right? It's all digitized.

Nate Fuller:

Exactly. Yeah. It's all digitized and accessible. You know, you're not sorting through a file cabinet full of specifications and contracts.

Mike Merrill:

And then, also just the safety factor of things like collision detection or not putting things up that you're ultimately going to have to take back down and then re-address a different way because you didn't realize until you actually got the parts and pieces in place that this just wasn't going to work. Right?

Nate Fuller:

That's right. Yeah. So, you know, the clash detection for things like constructibility reviews. You know? Being able to get foremen and superintendents into an environment where they're able to review the design before they bring all the trades in and realize, "Oh, this isn't where it's supposed to be." Or, this trade is clashing with that trade at this time. You can do all of those reviews digitally and remotely and what that does is it ends up saving a lot of time and headache and heartburn on the project once you're out there and these clashes eventually become realized.

Mike Merrill:

Yeah, and I like you actually mentioned the heartburn word at the end because even though we like to look at things from a monetary and a scheduling perspective, that heartburn is what can bite you later in different ways and I think there's hidden money there that we lose sometimes because of excessive heartburn. Right?

Nate Fuller:

Yep. Yep. Yeah. Yeah. And, just that efficiency, the process efficiency of being able to bring people in and not be at each other's throat because they're ticked off at the other guy because they weren't there on time

or they didn't know that they needed to be there. You know, being able to really streamline those processes in the field through the use of digital tools.

Mike Merrill:

Yeah, the... Or, the chip on the shoulder because the last project that we ran into this... You know, when I was a builder, I actually had... I took a picture of it. I'll have to look it up, see if I can dig it out of my archive somewhere. But, I actually had an electrician who drilled an inch and a half hole through a plumbing line and fished his wire through it. So, I don't know if it was intentional and he wanted to prove a point. I don't know if it was somebody really truly wasn't paying attention or they had the newest guy that just got hired that day do this. But, it was... It was kind of funny and something we joked about later. But, I have seen those types of things where subcontractors are literally sabotaging each other and causing each other problems over things like that.

Nate Fuller:

Totally. Totally. And, you like to think that people are going to be on their best behavior, but it's not always the case.

Mike Merrill:

Yeah. No question about that. So, we talked about what the low hanging fruit is that you have noticed and that is good to see. What are some of the things that surprise you that aren't happening that you think companies really are missing the boat on and should be spending more time and focus on trying to adopt?

Nate Fuller:

That's a good question. Again, I mean, so much of it comes back to this case by case, business by business perspective and the way that the industry is fragmented. So, it really... It really depends on which part of the industry we're talking about. You know, digital drawings are kind of a no-brainer at this point. I'll be honest. Like, the ability to use something, a service like PlanGrid or Bluebeam... You know, they're all very affordable and very useful. I think the craft genuinely enjoy it at this point and so that's one that's a slam dunk.

Things like e-ticketing is another one. Right? So, you know, electronic ticketing for batch plans and aggregate delivery. Yeah. Those are the two big ones. But then, you know, there's also just digitizing basic workflows, so safety inspections. Right? There's a handful of services out there that allow us to do safety walkdown digitally and very quickly using, again, these supercomputers in our pocket, flag unsafe conditions in the job site and get them resolved quickly.

So, those are the three big ones in my mind.

Mike Merrill:
That's great. So, lots of great information shared today. If you were going to pick one thing that you hope people walk away with after hearing our conversation, what would you have them remember?

Nate Fuller:
You know, I would have them remember to build a technology program around your field influencers and identifying quickly who those embedded leaders are and particularly for large construction organizations, this isn't five or six people. These are dozens of individuals out in your field team who are going to be the soft power that really drive the transformation of your business.

Mike Merrill:
Oh, man. I love that you just said that. I don't think anybody's ever said those words on this podcast to date and I could not agree more. Start with the field, right? And, if you do that, then the office will figure this stuff out. Right? I love it. All right. Well, a couple of questions to wrap up, a little more on a personal side. So, what's something that you've learned to become super grateful for in your professional life?

Nate Fuller:
You know, actually Zoom. I feel like... I feel like a lot of the tools that we've leaned on during COVID... I mean, obviously it's been a very challenging couple of years for us personally and also for the industry. But, you know, the digital tools that we now take for granted are ones that are going to be super useful into the future. So, things like Zoom and mobile communication that

we use in our day to day lives are something that we can also begin to leverage and use in our construction work as well.

Mike Merrill:
Yeah. It's enhanced a lot of things, hasn't it?

Nate Fuller:
Here we are.

Mike Merrill:
Yeah. Right. Touche. All right. So, last question. So, what, Nate, do you think has become what you'd call your superpower in life?

Nate Fuller:
You know, really taking that bird's eye view of a problem and a challenge and working with people out in construction organizations to put together a really robust strategy that's founded in reality that's data-driven, that understands the nuances of construction and the challenges of construction. But, you know, building out teams that are able to actually go out and execute on that and really make a difference.

Mike Merrill:
I love that. That's fantastic. Well, you're doing some great work out there. I've loved this conversation. I think we definitely need to jump on and have some more discussions. I think you got a lot of wisdom to share with the industry and we just appreciate you joining us today for a few minutes.

Nate Fuller:
I appreciate you taking the time. Thanks Mike.

Mike Merrill:
All right, brother. Take care. See you.

Nate Fuller:
See you.