

Nina Wollman: One of the things that Jacobs is doing is using edge computing and AI. So instead of having that workforce go out daily and touch equipment and walk the field, walk a mechanical room, or walk any particular asset, now, you've got the sensors out there that are doing literally the leg work, and you're just sitting in a control room, monitoring it. And you've got technologists that understand those algorithms, understand the performance, and understand the implementation of AI, so that information is coming quicker.

Stephen Ludwig: Welcome to Inflection Points, a podcast series from Jacobs. I'm your host, Stephen Ludwig. That was the voice of Nina Wollman, Vice President Global Director of Strategic Consulting. We sat down with her and Vice President Global Operations Management and Facility Services, Steve Meininger about asset management. It was a fascinating discussion of how businesses and municipalities use asset management as a strategic part of their operations to control costs, increase efficiencies, and mitigate risk.

Inflection Points is where we meet the people at Jacobs that help create solutions that deliver a more connected, sustainable world. Just a quick note, we recorded today's episode at a conference, so you may hear some background noise. With that out of the way, it's on with the podcast.

What's your background, Nina?

Nina Wollman: How far back do you want to go background? When I was a child?

Stephen Ludwig: Sure. No, like professional. Are you an engineer by training?

Nina Wollman: No. Actually, I'm an environmental scientist.

Stephen Ludwig: Okay. How'd you become an environmental scientist?

Nina Wollman: School.

Stephen Ludwig: But is there a passion there?

Nina Wollman: Yes. It came from the love of science. It started with loving data and turning into information for decision making, and showing patterns, or finding patterns. I just love that deep dive analytics. But if Steve's in the same position I am, we don't have much time for that anymore these days. So no, now it's just about the people. I love the people, I love the business, I love thinking through the big picture and coming up with new ways to do the same things.

Stephen Ludwig: Great. Steve-



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program that they can just implement and track maintenance activities, where I view asset management more as a process, a process to be able to make the best decisions about how to extend the life of assets.

Stephen Ludwig:

equal and opportunity enabler of good and bad decisions. So it's not about just technology. It's why technology, going back to that starting with why.

I would tell you another one has to do with change management. As organizations are trying to adopt technology or adopt asset management as a principle, you have dynamics changing in workforce, you have dynamics changing in business processes, you might have dynamics that change in policies and procedures. So whenever you have these kinds of changes, people innately are not in tune with wanting change. So thinking about what that change is and how to adopt it, having change management, be a part of any asset management organization is becoming a pretty big aspect.

And I would say last but not least is the workforce development. Workforce demographics are changing. Who's coming into the workforce, what they want in the workforce, the talent that's needed to deliver the work that comes with asset management and the maintenance and operations of assets. Who's going to do that and how they're going to be trained up, especially with the introduction of technology and new processes.

Stephen Ludwig:

So Steve, or either one, please walk me through those four things and how it applies in ... So we're talking in the abstract. So we have why, we have technology, we have change management, we have workforce development. So if I own a building, those seems abstract to me of why I would think about those things or a road or an airport or a wastewater, whatever the thing is. So how would those things apply? Just take one. Let's take technology. You mentioned, Nina, that technology could be a bad decision as well as a good one. Where would that be?

Nina Wollman:

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And there are a lot of philosophies on adult learning that starts with you don't know what you don't know until you realize what you don't know and how do you learn it. And then what you, the learned behavior becomes an unconscious

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Nina Wollman: Or who thought that you would be applying artificial intelligence to help with these kinds of decisions and monitoring performance? Because as we're having these changing demographics and dynamics with the workforce, you need to find a new way to implement technology. And so one of the things that Jacobs is doing is using edge computing and AI. So instead of having that workforce go out daily and touch equipment and walk the field, walk a mechanical room or walk any particular asset, now you've got the sensors out there that doing literally the legwork, and you're just sitting in a control room, monitoring it. And you've got technologists that understand those algorithms, understand the performance and understand the implementation of AI. So that information is coming quicker.

Stephen Ludwig:

have less labor that you need. And like Steve says, our clients are actually looking for us to do different with less, not just more with less. And so this is a way to do different, with AI and changing those parameters.

Stephen Ludwig: So some people are going to see, wow, that's a pretty big upfront chunk of change, but how much money are you seeing people saving from this approach? It sounds like what you're describing, there's significant savings if we invest upfront in these more sophisticated ways of managing what we own.

Steve Meininger: Yeah. Just from a O&M standpoint, we-

Stephen Ludwig: Operations and management. Yeah, mm-hmm (affirmative).

Steve Meininger: Yeah, operations and maintenance, we would typically save our clients 10 to 20% over how they were operating prior to us coming.

Stephen Ludwig: For some organizations, that's probably a massive amount of money.

Steve Meininger: Yeah. Public agencies, private agency, everybody wants to save money. So 10 to 20% of a large budget is a lot of money. That's just the entry to get in the door. And then the expectation is to see additional savings from there.

Stephen Ludwig: Where are you seeing adoption of this asset management approach? What industries are really taking that up and is that limited to North America, or are you seeing it globally?

Nina Wollman: Well, I'll say right now in Europe and Ao(s)5(7(o)4(w)1o)4(neyd2Tm0 gr) g0124.3. 6te agFo





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Stephen Ludwig: Got it. Steve, how about a wastewater treatment plant? How would they plan

Stephen Ludwig: Oh, very interesting. Yeah.

Steve Meininger: Which again, get back to resiliency and just being able to, again, adapt when conditions arise, that we lose power in the airport, we have some emergency of some kind, and managing all the ... We talk about assets, but just managing all the people that are flowing through the airport and how do we move people around when something major happens or power's lost? And there's a lot of complexity to that as well.

Stephen Ludwig: It sounds really interesting. Both of what you're doing sounds really fascinating for the clients and for the company. How important is this to Jacobs? What you're doing?

Steve Meininger: Yeah. I can talk from the long term operations maintenance facility services perspective, critically important to Jacobs as a company in terms of the vision of what we want to be as an organization. We want to have a stable growing platform and having these sustaining services and being able to provide the full end to end solutions to customers, both the front end and the back end and everything in between is a real differentiator for us as a company. And we're smarter on the front-end design and planning phase because we're doing the long term operations and maintenance within the firm. And it's one of the things that our clients really appreciate, is that we can bring that integrated service offering and it's really been a differentiator for us.

And we put it into practice. It's not just words. When we get into say a 20-year design, build, operate water wastewater treatment plant, we bring operators into the front-end design so that as we're making equipment selection, and as we're thinking about the design of the facility, so that it's actually operable, we can drive a lot of efficiency into the long term, true, full lifecycle cost of ownership at the front end and then also at the back end. As that's operating over time, we keep engineering designers involved so that when issues arise, we're making better decisions on the repair versus replace versus is there a new technology out there that we should be consideri

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