

The Role of AI with Predictive Maintenance and Lubrication

Dallen Davenport

Great. We have more individuals joining now. Okay. Alright. Well, I think we'll start a few seconds early and get this kicked off. Thank you everybody for joining us today, and we would like to, you know, just remind everyone that we will. Be taking the next hour of this time for this webinar and really excited to dive into this topic of the role of AI with predictive maintenance and lubrication. We'll be recording this session as well, and Also, we'll be giving some time toward the end for some Q and A however, for those who are new to Zoom or Just need a quick refresher. There is a q and a bubble, a little button there so you can post your questions, and you're welcome to type those in during our webinar, and we will make sure to talk about those at the very end.

Dallen Davenport

So, I will without further ado, we'll go ahead and get started, and just want to, first of all, you know, kick things off with some introductions of the panelists whom we have here today, some of you have probably been here before. My name is Dallen Davenport. I'm a senior success manager here at Redlist, and just excited to be here with this awesome group that we have today, maybe, Rich and Charles and Logan, maybe in that order, if you don't mind, would love to give you a minute to personally introduce yourselves as well.

Rich FitzHarris

Absolutely. Yeah. I'll go first. Rich Fitzharris. I'm a global director with Artha Wear-tech. Background in engineering chemical with MBA. I've been an SME for about 20 years in oil, gas, chemical, and mining, in and around asset integrity, and so I'm just excited about the topic today about AI, predictive maintenance and lubrication, and how it can affect your bottom line, and how critical it is for safety and protocols. So as we go through this, if there are any questions you have, we'll be happy to answer them at the end, but please type them into the chat. That's a bit about me. Onto you, Charles. Thank you.

Charles Yerkes

Alright. Thanks, Rich. My name is Charlie Yerkes, and I have been in the mining business for a little over 25 years, Primarily in the lubrication and lubrication equipment side of that business. Really happy to talk about Redlist and how that can be incorporated into Mining operations, asset management, and lubrication of an area of this presentation that I will focus on, and again, happy to have you join us. I'm looking forward to it, and Logan, you wanna jump in?

Logan Stinger

Sure. Thank you. Logan Stinger. I am the chief technology officer with Redlist. I have been in the tech space for about 20 years, developing high-quality software for customers from both a custom development standpoint as well as a product standpoint. Currently leading the dev and engineering, efforts for Redlist in building out the Preventative maintenance and predictive maintenance, software platform that we're gonna be talking about today.

Dallen Davenport

Perfect. Thank you so much, everybody, and it's just exciting each time when we get the group together, just we have a lot of good firepower here and lots of experience and knowledge. So Looking forward to the topics and insights that each one of us is gonna be sharing today, and just a little bit now about our companies of who we are, Just a quick intro to Redlist. So Redlist, we have been around a little over the last 10 years now and have, you know, a pool of over, you know, 67100 users doing various activities around. Their PM one, in lubrication, tracking, you know, from a mobile application to the cloud-based to complete and stay on top of their compliance, their reliability, keep it making sure that productivity at their At each of their sites for their rolling stock and fixed equipment, are as reliable and safe as possible, and you know, really excited about The hot topic of AI because this is something that as you can imagine, not just only technology companies like us are very interested in, but Everyone as a whole is looking at ways and seeing how do I get, artificial intelligence, you know.

Dallen Davenport

You know, how can we lean into it and leverage it for our companies, and I know a few logos, you know, here that we've been working with is, you know, the DARTs, the Cascades, the Georgia Pacific of the world, and so on and so forth. So, really excited about who we get to work with and very excited about, having Artha Wear-Tech on this presentation today as well. I would love to just give a moment as well for, just kind of an introduction about Artha Wear-Tech. Rich and Charles, if you'd be if you'd be so kind.

Rich FitzHarris

Absolutely. Thank you, Dallen. I'll jump in. This is Rich. Artha Wear-Tech has over 10 years as a global partner with a lot of big players, SAP, and a few other large integrators worldwide. We've got over 250 successful installed projects, as I said, over 10 years in the business, and here to bring all of our use cases. We're based here in North America as well as in India and Asia. We can support a global effort as you move forward with your assets globally, we can support that as well, and you'll see in the latter part of the presentations, that we can help with the licensing of the software. We can help with the installation of the software. Can help with the support of the software. So the end-to-end support as we go through and you see how AI predictive maintenance and lubrication It's a high-value message. We can help support that delivery as well. Charles, any comments about that? Are you good?

Charles Yerkes

No. I would just add that I think we're fortunate to be surrounded by the IT people that we do have here at Artha Solutions. I'm more, on the on the hardware side, the lubrication side, but the integration that this team brings together to tie in, The Redlist and Artha Wear-Tech two existing systems like SAP. It really brings it all together, and I look forward that, we'll get to that point here as we go through this presentation.

Rich FitzHarris

Spot on, Charles. Thank you. The next slide is the service portfolio. As I said, We've got over 10 years of over 300 installed clients worldwide for information management. Comes around executive planning and strategy we can bring to the team A value, the data management, we're talking about how to get

the data from the field up into the ERP, and the full life cycle management of your asset is critical, and then analytics, we can help you with the analytics and how that looks, and we'll go through some slides, Redlist of what the analytics look like for predictive maintenance and preventive maintenance, and then last but not least, we can support that full, that full environment end to end. So the Artha Wear-Tech Redlist team on the call today is a winning team. Thank you.

Dallen Davenport

Thank you so much. Thank you for that introduction, and so just, you know, Kind of an agenda of what we'll be covering in the upcoming, minutes for the hour is, obviously, we've introduced ourselves, but we really wanna talk about The shift that AI is making, or you could say the impact that AI is making and the shifts that various industries Our driving towards to implement their or you know, their solutions into with a companion like relationship with AI, and then we'll also hop into, you know, talking more about how do we enhance, you know, our data, What are the ways and one are the strategies and the phases of progression of where we are at least and how we handle Our maintenance and predictive maintenance, especially, you know, how are we going about doing that, and what are some things that we should consider to allow us to leverage AI in the best way possible, and then we'll also take a portion today of our time to talk about, some upcoming Things that as far as, Redlist goes and the things that we are looking to do to make sure that AI is a that companion and help to you in order to gear up for the best Dallen for your predictive maintenance and Also, prescriptive maintenance approaches, and then we'll leave some time at the end for a q and a thank you. Great. So we'll just hop right into it, and Rich, we'll let you kind of we'll let you start.

Rich FitzHarris

Sure. Absolutely. You know, I was at an event last week with SAP and Clique in Orlando, several thousand large thought leaders came together for a week, and something they said that was important, it's about industry 4.0. They in 2024, between 20 and 30 percent of all IT budgets will have AI inculcated with them. So there'll be a KPI for AI in all IT budgets. So what that is industry 4.0 is here, and this is the definition of what we what is industry 4.0. If you just Google it, you can see this. But it's automation, how you digitize your assets. It's the big data from that automation, which is cloud computing.

Rich FitzHarris

It's autonomous. You've heard about autonomous trucks and mining and all the above. This is also coming down to the shop floor. IoT sensors, for predictive maintenance and all the other condition monitoring. For your belt your bearings and all the above, and then the data management, how you make that large pool of new data into Actual results, that's the analytics. So this industry 4.0, as we start today on this presentation, that's the broad category. Now we're gonna come down and show you how it works in predictive maintenance and lubrication. But AI is here. It's part of your budget. It's part of your KPIs. We would like to help work with you On that thought leadership forward. So thank you. Next slide.

Dallen Davenport

Thank you for that, Rich and an interesting thought with that is Because it is going to be or has already become a part of your budgets, you know, thinking about who your suppliers are, whom you use it, you know, to, you know, source whatever products or services that you have. It's worth the questioning to

ask what they have currently and or what they're planning to have as far as including AI in their offering. So it's very much something that is becoming a part of this ecosystem, and because it's part of your budget, part of the purchasing process would be, you know, making sure to ask that question.

Rich FitzHarris

Absolutely. This is the next slide of that previous slide. What does an Industry 4.0 Plant look like? This is just an overview, but you can see all the processes, and all the incoming and outgoing flows, all have IOT sensors. Everything is digitized. Everything is virtual and talking to the ERP. So This is an example of a small plant with industry 4.0 best practices, but this is how AI can impact the supply chain, feedstock, Temperature, pressures, and optimization of the best utilization of the compressor, and or the energy consumption. So This is a real-time smart plant. The easiest way of thinking of it is that this is what AI can do, and this is what Industry 4.0 can do. Redlist does this along with Artha Wear-Tech combined. This is an example of the future state of your plant. Okay? Next slide. Awesome. Thank you.

Dallen Davenport

Rich. So the question is, how can AI unlock the steel industry's full potential? We'll talk about a few industries. We'll start off with steel. You can also click the link below to see more of this case study. But, really interesting things to kind of see that are on the horizon. There's a huge focus in the steel world and the space to, like, Rich had just, shared and alluded to that there are there's a huge need to put more smart sensors around the plant so that there is more real-time, you could say, consumption and digesting of the data across all of the critical components at your site, and then also with that, being able to leverage AI to trigger your operational and maintenance tasks, bringing together those things that are going to help.

Dallen Davenport

Your, you know, your production teams to keep moving and keep, you know, in you know, be more efficient and safe, but also on the maintenance side unveiling. Maybe trends that existed previously that they were that the team wasn't aware of, but now they can go ahead and tackle, and then obviously, we know that if equipment productivity is good and also machinery is running optimally, you can have improved quality of the product. So quality control is another big part of this focus where AI is a big factor in trying to make sure that not only is the machine going to be working well, but the product that is being produced is also of top quality, and also, you know, just some of the impacts for the for in the steel industry from studies shown of what can one, what outcomes can be achieved when implementing AI is being able to Reduce raw material input costs by more than 5 percent improve your bottlenecks by more than 6 percent which is huge, and also increase Your end to end productivity yields by more than 15.

Dallen Davenport

Percent So interesting things to think about that in the ins in the steel industry, just you know, we think about. Maybe one segment of the business, but how it, in the end, is going to relieve a lot of these pressure points, you know, helping find these insights that that we as humans just can't comprehend on our own, and then also in the pulp and paper industry, there's a big shift for, predictive maintenance to be driven by AI, and the ways that AI is helping transform that is, Again, getting to more of smart

manufacturing. There are so many points of data at a facility when it comes to, you know, each critical component and how each of those is supposed to be working, and again, you know, using that.

Dallen Davenport

AI computing power to take that information, in a much faster and efficient way to see how things are going to eliminate human error is really where these savings are being achieved, and also, you know, being more of a real-time operation, being able to see the condition of the equipment, but also predicting, you know, with that data, hey. These are the things that we need to be paying attention to and staying on top of. You know, that that real-time factor is so key, and then also, you know, detecting anomalies and you know, as we know, trending data. But again, using it to We become shift from more of a reactive state to having AI help pro provide recommendations and forecast problems more than being you know, being more proactive, right, in helping prevent those premature failures, and then also just an example here, we have a more specific example too in the world of mining, and you know, the Barrick Gold has published this, publicly to the public to see or to relay the findings that they're having as they've implemented AI, and they you know they recognize that.

Dallen Davenport

Moving from reactive to preventative is great, but they also knew that there were inefficiencies with that because 82 percent of their machine failures were occurring at random times, and they needed to make sure that they could turn that to be more of a predictive operation, and Ultimately, a term that they've coined in their article as being more prescriptive. Right? So not only forecasting, hey. This is what could happen, but getting to the level where AI is combined in the predictive strategy makes it so that. These recommendations from AI and these prescriptions, you know, for lack of better words, are. It's going to make it to where people are, not even that much more ahead.

Dallen Davenport

There's even a quote, that was given by. A member of the team here where Ted Olson in the article, was saying, now we can be one, step ahead of failure, and be more proactive. So the feeling of knowing that they can be a step ahead and knowing that these are the things that we can avoid. So one of those impacts they had was that Barrick Gold was able to, in this study, save over, you know, half a million, and but just by being able to detect and improve areas around engine failures, suspension failures, and brake failures. So they were able to reduce the number of those failures by 30, percent. Which is pretty amazing.

Dallen Davenport

And so those practices can you know, if implemented correctly and set up properly, can make they can turn things around, for the better, and those margins are just so critical. So just to kind of lay it out here, you know, as each of you is looking here at this screen, there are different phases in the evolution process of where you might fall, and you know, we all know that reactive is probably where a lot of, a lot of groups begin as they get started or it's just been how things have been done and for such a long period of time, and so, just to note it to note that whatever phase you are in, moving from reactive to preventative or preventative to condition based to predictive, and ultimately prescriptive. There are steps that you can take to incorporate AI to improve that. I'll pause quickly here, and Charles or Rich or

Logan, and anything else you'd like to add on just some of those things we've I've shared on just those industry insights?

Rich FitzHarris

I'll make a quick comment, then I'll turn it over. The one, end of the extreme is reactive. That means something happened, something broke, and now you have to fix it. You have an unplanned shutdown, highly cost of costly, and also, the safety is an issue because now you're not sure how it affects the value chain, and the other side is proactive with prescriptive, and that's the prescriptive goal in being proactive to change out those hoses, change out those belts, Change those other bearings before they fail, before there's a safety problem, before there's a supply chain problem, and tying that into your plan outage so that you have the best time down for the most time up.

Rich FitzHarris

This is the value that AI can bring, and this is the value of Redlist, and we're tech coming together to give you that data, that field data so you can go from reactive to prescriptive as fast as possible, as efficiently as possible. That's my thoughts. Charles, your thoughts?

Charles Yerkes

I would give you my thoughts about the mining industry 3 that we have advanced quite well, and the condition-based phase and the predictive phase are very commonplace now. I think AI has a tremendous role to play in both of those phases, and then the prescriptive, which I think is Perhaps a new term or a new phase, if you will, and one that I believe the mining industry will embrace as we move forward.

Rich FitzHarris

Thank you, Charles. Awesome. Thank you for that.

Dallen Davenport

Yeah. It is exciting to think about the level of. What prescriptive means, and I'll think it's fascinating to consider how a lot of the experience we have, you know, even with predictive, it's very insightful. We can make decisions off on it. But now to leverage AI to provide those recommendations because it has looked at way more patterns than we can understand on our own. You know, those are the kind of things that we can lean on and say, oh, even taking the emotion out of how we may feel about this decision, you know, let's also include the AI recommendations in into the process. So a little bit, you know, about Redlist too as far as, you know, connecting this ecosystem of data.

Dallen Davenport

You know, with Redlist being a tool that, you know, your lubrication and reliability teams and maintenance teams can utilize to have the right instructions and know, you know, at the right frequency, at the right time, the right place where to work on those critical machines to keep your production lines running or your, you know, your haul trucks running at a mine or a shovel, for example. We have in here what's called the integration hub. So there are whether you're already starting in your

journey of Getting sensors connected, capturing oil analysis, vibrational analysis, you know, or you know, UE systems, whatever it may be. There is a place in here where Redlist can help tie that into a system that, not only comes from, you know, A scheduled, hey.

Dallen Davenport

Do these things every 3 months or whatever, but we can start to pull that data into the system and use it to make sure that We do become more predictive in that way, and we'll talk a little bit later in the presentation too about some of the things that Redlist is working towards to allow AI to even boost your efforts even further. But just wanna call it out here that. If there are things that you have questions about and wanna have a conversation on and say, hey. I'm already using this. Can this tie in? You know, we're always happy to help you kind of see the vision of where that could lead your team in the future, and secondly, we also have The this you could say just to list down some of these main tools that help pull this data together.

Dallen Davenport

So with analytics, you can kind of see on this image here is a huge thing, and it's something that we strongly believe is what can help Change, any culture and help teams have the actual facts of where improvements, and energy should be focused on, and then also on the right side, there's just kind of a list of those features that, that the Redlist Mobile app and on a computer web app pro provide for, you know, scheduling the your maintenance and also capturing Data through digital inspections, and as mentioned a little bit ago, through sensors and integrations, capture you know, tracking your inventory Amounts, staying at you know, making sure that those costs are controlled as well, and then also other safety features, making sure that If there are any, lockout procedures or JSAs or you know, toolbox, chats, you know, the say incident reporting, you know, you can Really pull all of that together, to make sure that that your team is also communicating the safety aspects of the platform, and then obviously, just managing your workforce and making sure everybody is, is compliant on in the efforts that they're making to just combine that into one place.

Dallen Davenport

We could call it the enterprise asset community. Right? Just all those machines that are being utilized at your site, pulling you know, having all the right tools to make sure that the human element is successful and also that the machinery is reliable, and then obviously, what we're talking about today, leveraging AI to take that even further.

Dallen Davenport

And, Rich or sorry. Charles, let we we'll give you a minute now as well to tap into some additional lubrication strategies and thoughts.

Charles Yerkes

Sure. So the mining industry is set for some real advancements in change in terms of lubrication, one, should say. I think that when you read different corporate sustainability reports, you'll find a lot of time allocated towards sustainability, which involves the environment, and the companies, you know, want

to reduce their environmental footprint, try to reduce the Environmental reporting requirements that they're faced with, and so what I think that leads us to is Some lubrication ideas and lubrication concepts that Arthur is pushing very, very hard.

Charles Yerkes

And that would be in the area of biodegradable lubricants, Which I believe, Dallen if you could just flip that slide one more forward. Yeah. So, New technologies will make us more productive, biodegradable, eco-friendly oils and greases. Sustainability, again, is the word of the day, and the concept, of course, the target is to reduce the carbon footprint and reduce the amount of reportable waste. I believe in my experience with the minds that I deal with, this is a very, sensitive subject at the corporate level, and we'll soon be making its way down to the mine level as well. It's a bit of a pain point.

Charles Yerkes

Challenge to bring lubrication and sustainability into the same concept or the same conversation. But it's, it's happening.

So this example, this particular slide here is a real-world example of a ball mill. Customer one to increase productivity from 100 tons per hour to 100 and 7, and at the time that they did that, the ball mill kicked back and Temperatures were so high that they were triggering some overtemple alarms and shutting down the mill. This was the only mill in the main production circuit, so it's critical to keep it running. So what they did is they looked for alternatives. They look for ways To increase that productivity without sacrificing the equipment, and to that degree, there was a lubricant, Premier lubricant that was put into place of the old, and I remember It was about 8 p.m. when they restarted that mill on a Friday and came back Saturday morning early to make sure things were running well, and the temperatures on the gear face of the bull gear and the pinion had reduced 44 degrees, and that was very significant, of course, and then the other big change was the differential.

Charles Yerkes

So the pinion on the input side, the pinion was running Much higher than it was on the discharge side to about 33 degrees difference, and after a few weeks, that differential decreased, to 4 degrees. 4 degrees difference between the input side and the output side of that, Of that opinion face. So how do you put a value on that? It's difficult because it depends on the on the product. What are we mining? What's the value of that product? But I think just about everywhere, if you were to be able Say I can increase my production by 7. Percent It's gonna be a big number, and this was possible by, exploring new technology in the field of lubrication, and it paid off in this particular example.

Dallen Davenport

Awesome. Thank you for sharing that, Charles.

Yeah, and another case here as well is, you know, as far as taking advantage of and harnessing, you know, these additional technologies is, you know, we have another a middle manufacturing company where they were. Working to do a major expansion, and they were, you know, with that growth and expansion force to make sure that their goals could be sustained and understanding that they would be

adding on a whole lot more equipment that would you know, they wanted to make sure that they could prevent as much unplanned downtime and You know, unscheduled maintenance events as possible, and so geared towards, you know, improving things. They knew that that they needed to leverage These right technologies take these tip recommendations, to improve their lubrication, and just within the 1st month of doing that, You know, they were able to experience major progress.

Dallen Davenport

They were able to, you know, not very fast and catch through the data that there were, you know, 6 that they were able to give specifically in that 1st month. Sys 66 issues prevented that They were able to stay a step ahead on and estimated that it saved them in that 1st month alone one, 165 1,000, and so just to realize that impact within the 1st month, you know, really just. Gave them some confidence to say, okay. We you know, these technologies that we've added, you know, this is something that we knew we know is an investment now versus wondering if we're we've just, you know, burned a bunch of dollars, and they were able to, you know, make sure that, they had, moving forward, Yeah.

Dallen Davenport

A way to lever it, lean into this technology to know where to focus and stay on top of what, you know, what assets they needed to, focus on the most, but also, maybe also what other things need to just have some replacement done to maintain that sustainability, and so they yeah, and this is another impact they had too. They were able to also reduce their mean time to repair for non-catastrophic events by 97. Percent. So it was just, again, a time factor. So maybe it wasn't.

Major failures, but they were able to just fix these to keep production running and moving forward. So and then obviously, on top of that, something that. You could also make you know, also consider that if these improvements are happening and we're using technology to analyze and know where to improve and focus better on staying on top of, you know, preventing these premature failures. You know, there are obviously. Downstream cost savings from a compliance standpoint as well, and so that's something else called out in this case study of major savings that they just were able to see overall almost immediately by leaning into the proper technologies and moving more into that prescriptive approach. Back to you, Charles.

Charles Yerkes

So in this slide, what we're.

What we're showing here is that there is a market for single-point lubricators. What is what is introduced now in 2024?

PAIN POINT

Is the ability to speak to those lubricators through the Redlist system.

So not only can you put these lubricators on products remote from the main in the mining area, I use the example of a tailings pond, for example. You might screw a single point lubricator on there and forget about it or Not forget about it, but not be able to get all the way out to that location because of, other things that distract your attention.

But with Bluetooth technology, you can have that signal brought through the Redlist program. It goes to the.

The stakeholders via email or text message, and it says look.

Rich FitzHarris

We've reached the reorder point.

Charles Yerkes

It's time to come out here and replace the cartridge in this unit and then replace it with a full one so that we can continue for the next 60 days or whatever that number is. So we're taking some very basic lubrication technologies here and bringing them into the Redlist portfolio Via communications on Bluetooth and Wi-Fi etcetera.

Dallen Davenport

Yeah. Thank you for sharing that, and just to add to that, it is It is that communication piece to triggers the right notifications to the right people as well as kicking off workflows to say, okay. There's this work order now that that was, you know, that was that was generated by this notification that that of whatever issues had been identified. So thank you for sharing that. Okay. Thank you for that, Charles, and Something that we'd like to shift into is talking about, you know, what are the things on the horizon? What are some other things that we can get excited about, you know, one, I wanna give, Logan Stinger, our chief technology officer, a few minutes to go through and share some of the things that we have our sights on that we're looking to do, you know, things that we hope can empower?

Every team to be able to set up their predictive and prescriptive strategies, but also, you know, knowing that AI can play a big part in being a support to you, a resource to you to set yourselves up for success, but then also monitor that success. So I'll, I'll pass that over to you, Logan.

Logan Stinger

Thank you, Dal. Yeah. As everybody knows, AI is a really hot topic right now. I think mainly because of the availability that we've seen over the last year. It was something that was a very. Niche subject took a lot of skilled practitioners to pull off well, and now it's something that's becoming much more mainstream readily available to, be implemented into any application, and while there are still some nuances with it, there are the tools and abilities Pull it into two systems like Redlist and leverage it inside of your preventative maintenance through prescriptive maintenance program is becoming much more feasible, and we're working on that technology right now to make sure that we are ready for tomorrow and kind of staying ahead of that curve.

Logan Stinger

This slide, you know, one of the first things that we're tackling is Just making sure that we're helping companies move through the processes from reactive to prescriptive. It is a journey. It's not something that you go from reactive to prescriptive without the in-between steps, and one of those first steps is Just understanding what should be done on equipment and when it should be done. We call these preventative maintenance templates, and Redlist right now houses data for 1,000 different types of machinery, whether it's large haul trucks used in the mining industry to extruders and Conveyors of

processing plants. You know, while each company may produce different materials and products, most equipment That has moving parts is made from the same common building blocks.

Logan Stinger

You've got bearings, obviously, of different sizes and Capacity is there. Got gears, gearboxes, motors, and pumps, and AI is very effective at identifying the commonalities of these components across the wide range of equipment that it's used on and providing recommendations on how to properly maintain those components, and so with the help of AI, we can quickly build out new preventative maintenance templates for maintaining a specific make and model, Make and model of equipment or to audit existing PM templates that you may have to identify gaps or suggest changes in the greases used, the Quantity of said grease, the frequency that the tasks are performed. So gone are the days that you need to, you know, open up a 100-page OEM manual, pull out all the relevant details of what should be done, where it should be done, how it should be done. All of that can be, automatically digested and presented to you via an AI platform that just knows and understands how to maintain equipment and obviously, can adapt over time.

Logan Stinger

This is so this slide here, it's kind of a fast follow to what I mentioned before of being able to audit PM templates. The precursor to that is just being able to, audit your equipment and make sure that you have identified all the areas on that equipment that does need to be maintained. AI has come a long way in being able to quickly identify. Components via image recognition, where before, this was something, you know, we we've seen over the last several years as Face facial recognition has gotten more advanced. We're extending beyond facial recognition and being able to identify very nuanced pieces and components within a larger asset set, and so from a single image or a video of your equipment, AI can pinpoint the components on those images and within those videos and tell you these are the Zerk fittings, and the these are where the bearings are one, and this is part of your equipment that needs to maintain, and so while you, used to have to go into a system and build out the, The entire asset of all of the components and sections that are inside of that asset and the types of task that you want to do on it.

Logan Stinger

Now AI can just look at a single image and say, this is, you know, you know, a single phaser, and these are the bearings, extruders, and the various pieces that are involved here and can identify Each of those components and identify the tasks that need to be done to maintain that that equipment is effective.

Dallen Davenport

Yeah. It's something interesting too. Logan is being able to teach that AI continually as well, right, of what it should be looking at and identifying those items.

Logan Stinger

Yeah. It just gets better. Obviously, in a lot of these facilities that we are using this technology in, the equipment is old, dirty, and greasy. It's hard for even a human to identify where some of this stuff is, and yet computers are getting more and more capable of quickly seeing through the grease and identifying the stuff that's behind it. It's pretty cool. Here's another one. I mentioned those OEM

manuals before, these one-page documents you had to read through to understand how to maintain this equipment. Oftentimes, these manuals are not even maintained very well inside these facilities. You know, you're finding something online. You're taking scans that people had from their phone, pictures that they took out of it from years ago.

Logan Stinger

They become hard to digest interpret and understand what you need to do, and AI is good at it being able to extract text, being able to recognize what it's looking at in the schematics, and being able to build the PM programs from you simply just uploading any data that you have from a manual. Even if that is just pictures that you're taking with your mobile phone of the manual, the AI can tell you what that means and build out a PM program for you for that equipment. So gone are the days of you needing to scan through that one-page document. We can let AI do those mundane tasks for us and parse that parse out that data.

Logan Stinger

All right. So with all you know, anytime we talk AI or machine learning, we're talking data. The more data you have, the better it gets at predicting and identifying trends and concerns, and this is something that humans have always struggled with. You know, we may be collecting data from 100 different data points That seem very disjointed to us and being able to recognize the statistics.

Logan Stinger

Trends between those data points, which data points impact other data points, was very time-consuming, Tedious process that now AI is just able to quickly identify and move you from that preventative to that prescriptive, and so, you know, back on that original chart when we talked about, you know, you've got your reactive, then you've got your preventative, then you've got your condition based monitoring. You know, that was where people started going to next with these sensors. As you start putting on sensors, you can start saying, As a sensor identifies this temperature or this vibration or whatever it is that sensor is meant to trigger, then do x, and now AI can look at just the continuous data feed of those sensors and start predicting Based off of the trends I'm seeing, this is the approximate date that this is going to fail, and then take All of your PM programs that have been built out, past work order history, knowing what should be done, what has been done, and start prescribing things and saying, I I'm anticipating that this is gonna fail on February 2nd.

Logan Stinger

I recommend that on January 30th, you go in and perform this type of maintenance and do these types of activities before that ever happens, and you're no longer just doing things on a routine preventative maintenance schedule, but it's able to ingest that massive amounts of data, identify all of those trends and move you into that prescriptive of this is what you should do and when you should do it to ensure that that equipment stays up and running healthy for you.

Dallen Davenport

Awesome Yes. Very, very awesome, and it's just a good fresh reminder that our brains, you know, in some sense, you could say they're a computer, but, you know, really combining the AI supercomputer element to ingest and provide those insights so much faster in an much more powerful way. It's super critical, and thank you for thank you for oh, go ahead, Logan.

Logan Stinger

Well, I was just gonna say you're absolutely right, and I don't I don't think recognizing our limitations is a bad thing. I think that's the gateway to progression. When we recognize where we fall short, then we're able to, inject technology into those areas and say, this is where technology can save me time and money, and that's what we're trying to do here is just be open and honest about ourselves that, there are places where technology can aid us and take us to that next level.

Rich FitzHarris

Spot on. Spot on. Give another example. This is Rich. Is we were working on a cement plant that had some ball bearings, and this is condition monitoring. This is lubrication, and using that Automl, that machine learning capability that Logan just touched on, they were able to predict within a 4 to 6-month Window when that bearing would fail. So do you have enough proactive time to schedule outages, Schedule turn times, schedule the teams to go in there prescriptively, and remove that bearing before the failure occurs, keeping the uptime as much as possible, safety as high as possible, and minimizing that downtime? So it's a real strategic win-win. We're finding a lot of our clients with AI can quickly develop the ROI business case, and that's something else that the leadership will pay us back. How fast will this pay us back, this can do it pretty quickly. So spot on, Logan.

Dallen Davenport

Thank you for sharing that, Rich and Logan. I and just kind of you know, before we continue, just another invitation here is we wanna bring this to the table to help us know what we don't know. Right, and important for all of us, it is probably it is a responsibility for each of us to understand what is out there, start reaching out to different people, ask the questions to finally get to the bottom of what is becoming available, and take on that that ownership of saying, well, if, the bet the more I know about this, I think the more that I'll be able to, you know, leverage, these capabilities that complement in addition to what I can do myself. Right? Okay. Rich, we'll let you continue.

Rich FitzHarris

Absolutely. So as we opened up in the beginning, we talked about industry 4.0 and how the comp the company is moving towards digitizing its assets, bringing them to the cloud, and having machine learning baked into the process so that AI can loop through it. All this generates lots of data. So a lot of our clients are on SAP or the old ECC or S4HANA currently, and they need to bring those assets from the field up and that data to their ERP. So we, Artha Wear-Tech have built a SAP connector with Redlist. So, for instance, we can create assets, edit assets, create work orders, and edit work orders, all in real-time. In either SAP or in the field, it can push real-time back up so that the analytics can be seen, So that the

director of the plant, his chief operating officer, the field operating officer, and the shift manager can all see the same single version of truth.

Rich FitzHarris

So they're all looking at the same prescriptive effort to keep the quality high, safety high, and to minimize any risk. So connecting your field data to your ERP is what we can also help with, and the next slide is another click of this SAP integrator. It's a little bit deeper, and a little more technical, but on the left-hand side, your assets, your work orders, and your reference data can all be fed real-time through the application we built with Redlist and can be pushed just as your iPhone. You could be at a remote job site in Australia and one is remote minds that don't have Wi-Fi. But while you're doing your work order, as soon as you come into the gates of the home office, that data could be pushed automatically up so that you're as real-time as can be expected, and this is an advantage we can bring to the table, immediately, to your company. So you can get the advantages of AI, and you can work that towards the future state of your company. So.

Dallen Davenport

Okay. Absolutely, and thank you, Rich. I do echo that, it is. We are in the age of not having stand-alone solutions. They're for AI to have it. Reach and know that's potential. Right? There is this orchestrated effort to make sure that all of these systems can seamlessly, you know, share information so that AI can access that and even help you go further. Absolutely. Okay. So just in conclusion, you know, we just wanted to, make sure that, we could share and help everyone understand and recognize But regardless of what phase you are with your team on the maintenance side, you know, whether that'd be reactive to Maybe you're already at prescriptive, just knowing that there are opportunities to u utilize AI and start involving other people who or who maybe have more knowledge about it to know, you know, where to take that next step and understanding how big of a key component AI will be and setting up your predictive and prescriptive maintenance strategies and just making sure that, you know, this is something that.

Dallen Davenport

We should all be considering to say, okay. This AI needs to be another critical arrow in my quiver. It's not, is it something I should do? It really should be something that we should understand and make sure that if we, you know if we do incorporate it, we're recommending you do. But if you do incorporate it, it gets orchestrated into the bigger picture of all of your systems that tie together, just as Rich had concluded on These integrations that we talked about with your larger ERP systems, and then also knowing that in the end, this is to leverage and improve your human capabilities as well, making sure that. AI is the tool that can help and ingest, digest, analyze, recommend, you know, massive off of massive amounts of data, that we can't do otherwise on our own, and we appreciate, all of you who have been able to join.

Dallen Davenport

We do wanna keep some time for some Q and A toward the end, but we wanna have, you know, a conversation. For those who are here today, we'd love to continue the discussion about this topic as well as, maybe other items that have caught your interest about, Artha Wear-Tech and Redlist, here

from this joint presentation. All right. We thank you for that time, and we'll, we'll leave the remaining minutes for Q and A for any of the panelists here today.

Rich FitzHarris

You can see the chat. At present, I don't see any current questions, but if you have any, please respond. We'll be happy to respond to you directly. As Dallen mentioned, we're interested in continuing this conversation with you and your leadership team, and we will be sending you this in a PDF form along with the recording so you can socialize it with your colleagues, and we look forward to continuing the discussion with you to see how we can help you move towards AI and have a better outcome for your company.

Charles Yerkes

So, Dylan, if I would, correct me if I'm wrong on this, but we will be sending out the presentation, to the participants as well, and then there's a link to the recording as well. Is that correct?

Dallen Davenport

Exactly. Exactly. That is right. This presentation will be in PDF format. But as you mentioned, Charles, as well, there will be a Recording sent to you directly, but we'll also post it to our website, for anyone who wants to navigate and find that information there, and I'll also call out maybe just kind of AAA self-plug plugin here is, Artha Wear-Tech and Redlist have. Done a few more webinars in the past. We're always grateful to have you, Rich and Charles, here with us, and thank you, Logan. It is great. We enjoy the topics, and you know, so for those who might be interested in hearing what other topics We've discussed.

Dallen Davenport

You can also go to getredlist.com under resources. There is, on our page, a webinar section, and you can find all of those, those details there as well. Excellent. Okay. Well, I don't, I don't see any questions at the moment. But, again, We'll be reaching out to you directly with this information about the presentation after we have it all published. But thank you to those who joined us live, and, we look forward to having you next time. Thank you so much.

Rich FitzHarris

Thank you so much. All right.

Dallen Davenport

Thank you.

Logan Stinger

Thank you. All right. Bye.

Charles Yerkes

Thank you. Bye.