

00:00:04:23 - 00:00:27:13

Unknown

That's the right response. So what am I going to talk about today? So for me, when you're implementing systems and different types of technologies, there's, there's this two things that that play a role in trying to implement new systems. And one of them is fairly common. People talk about it a lot of this technical debt piece.

00:00:27:15 - 00:00:50:06

Unknown

I was at a, at a conference much like this one in Florida earlier this year. Rethink, and a CTO got up on stage and was was telling a story about technical debt. And, he said a CEO went away to a conference like this and came back and said, hey, man, we got to implement AI, like right now, let's do AI.

00:00:50:08 - 00:01:13:02

Unknown

And he says, look, I don't know if we're ready for that, man. First, we got to go implement an ERP. CEO stops and says, I'm not interested in old technology, man. We need a I. I don't want to do the old stuff. I want to invest in new technologies. And so it's sometimes difficult to talk to people about in order to go forward, you got to you got to clean up your debt.

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Unknown

You got to make sure you're solid. And just the definition here of, of technical debt is, is this. Trade offs you make during the development to prioritize speed over long term quality. So what does that look like. So it might look like, I've got my MYP material resource planning module. I've got my CMS, but I'm not going to make them talk to each other.

00:01:39:14 - 00:02:00:07

Unknown

So when the planners are planning the production runs, they don't know when the maintenance guys are going to go perform their maintenance. It's fine. They'll talk to each other. I'm sure they'll talk to each other. We don't need to wait to go live. We can. We can let that integration fall behind. Or maybe what we're going to do is we want to integrate our our LMS so we don't know what operators are qualified to run, what processes.

00:02:00:11 - 00:02:15:05

Unknown

So when we're doing our planning and schedule, we don't know who to have in the right place. These are all pieces of technical debt that start stacking up. They start preventing you from going to the next level of technology. And I think that's what a lot of people are looking at right now. And they start looking at AI.

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Unknown

We've talked a lot about garbage in, garbage out. It's not necessarily garbage in, garbage out. It's its ownership. It's useful data. I would I would say you may want to pause and ask yourself, why are we comfortable with garbage data in our current state, and why cleaning up that data is going to make us use it going forward?

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Unknown

We don't necessarily maybe have a culture that uses data yet. Otherwise, we would have cleaned up our data. We wouldn't have garbage data to pump into these systems. Maybe something to think about. So after that, that conference, I started thinking about the technical debt that I was facing. I clicked on, we just gone live with our our new ERP system.

00:02:54:01 - 00:03:26:09

Unknown

We chose Evercore and it was a multi-year struggle and fight every step of the way. Now, if anybody's been part of a ERP implementation, but it is not a fun situation. And what I realized wasn't necessarily technical debt we were fighting. It was this like resistance to change. It was trying to get people to get their data in a place where we could put it into the new system, and they weren't understanding the whys.

00:03:26:11 - 00:03:44:22

Unknown

And they were asking, well, it's always been good enough this way. Why are we doing it that way? And so it wasn't necessarily technical that I didn't have a lot of cleanup work to do, getting systems to connect. People were very comfortable taking the time to do it right. It was this idea of cultural debt. And this isn't something that was unique to this isn't a unique thought, right?

00:03:44:22 - 00:04:07:23

Unknown

I was sitting at the conference thinking about it, and I came back and started doing research and was a lot of people talking about it now. There was a conference out in LA a while back, and one of the leaders of SAP started talking about this instead of technical debt. Now it's an accumulation of outdated, misaligned and neglected organizational values and behaviors and norms that limit your progress.

00:04:08:01 - 00:04:33:08

Unknown

So if you're out there trying to implement a software and people are pushing back on you, you have some cultural debt to go address and that's the idea that I want to talk about, is focusing on the people. Then you focus on your processes and then the technology implementation. It's almost like a vacuum. They if the people understand the data and there's a culture around data, they're demanding these things.

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Unknown

People we I heard one guy earlier today was talking about we're we're using Apple Maps. And really, you know, we're using technology to find our ways around places. Why are we not using it to find our ways around the shop floor? People want technology. They know how to use technology. That's the new workforce. You just have to make the use case and it's not.

00:04:53:19 - 00:05:05:11

Unknown

So that's just these two ideas. Cultural debt. Technical debt. Now we start talking about the new workforce.

00:05:05:13 - 00:05:22:15

Unknown

I forget where I was flying into, but this was a number of years ago, and it was a rainy night, much like last night coming into Salt Lake. And I went and jumped in the Uber, and I was talking to the driver. Just talk about his life. He just gotten married. Just had a kid, and he was talking about driving for Uber.

00:05:22:17 - 00:05:40:08

Unknown

Is that you support a family off Uber? He's like, well, actually, you see, my my land. You're here. I actually work for Frontier Frontier Airlines. So what are you why you why are you driving an Uber? It's like, well, when it's raining or too hot outside, I just call in sick and drive Uber. So that's the new workforce.

00:05:40:10 - 00:06:02:14

Unknown

They're really comfortable working a gig economy. They're really comfortable calling in sick to their steady job and drive an Uber for a while because the cultures have shifted. Right now, we've got a culture of, well, we were profitable, just not as profitable as we told people were going to be. So we're going to cut some people so we can hit that top line number.

00:06:02:15 - 00:06:23:10

Unknown

That's the culture that people are used to seeing. So why would they have the same type of loyalty to the companies? So you start having this revolving door effect. So now you're stacking technical debt. Cultural debt, revolving door. So how do we ever gain any kind of traction. What's going on? I thought it was a, you know, really interesting question.

00:06:23:12 - 00:06:43:15

Unknown

What's your name? Melissa asked a very interesting question and something I saw a lot. Why do I have to go back to the same factory and teach them the same thing over and over and over

again? And I would say it's probably a situation of cultural debt. It really depends. I can't tell you that's exactly what you're facing.

00:06:43:17 - 00:07:02:07

Unknown

But as an engineering leader in my company, it drives me crazy when I walk into the engineering offices and their desks are a mess. And I know they just came from telling the operators had to find us their area right. Why do you not practice what you preach? So that's the way you can tell you have some cultural debt when you see the signs up all over the factory.

00:07:02:07 - 00:07:27:20

Unknown

Safety first quality starts with you. The slogans don't match the actions. Yeah. Safety first. Unless the orders late quality starts with you. Unless you can push it through. And then specter can't find it, then go for it. Right. So having that culture where it starts at the top and comes its way down, you start setting those expectations. I think a lot of us probably have an expectation for people to fill out trip reports, you know, hey, I went to the machine.

00:07:27:20 - 00:07:52:02

Unknown

This is the work I did. They have to fill out their paperwork. How many of us are going to go home after this conference and fill out a trip report and tell people what we learned when we went and did this conference? I think that's how we start changing some of the narratives. Does anybody this is the point where I asked for a volunteer from the audience, and I learn something from this morning session.

00:07:52:02 - 00:08:06:10

Unknown

I think I could probably ask someone to come up here and open up their wallet and have me all their money and have them sit down and they'll do anything you ask them to do. But I figure I'm not wearing the red dress. You guys just tell me to go pound sand when I do what I say. But no, I'm.

00:08:06:12 - 00:08:14:05

Unknown

What have you guys done to combat this revolving door effect? Anybody have anything?

00:08:14:07 - 00:08:29:12

Unknown

Light. In light of the historical moment, you guys. Just kind of on page to help local market.

00:08:29:14 - 00:09:06:09

Unknown

If you get one. Yeah. Like that one that's, you know, looking at our benefits packages and how they were tailored toward kind of the old guard because there's a lot in there for, you know, involuntary, you know, sick leave and or, you know, you get hurt. A lot of those older benefits cost company a lot of money. One thing my company just did is we started, an auto lease reimbursement so you can elect out of some, like, the disablement and kind of I got hurt on the job insurance and we get reimbursement on your your vehicle lease.

00:09:06:11 - 00:09:15:12

Unknown

So it's just offering understanding that you're trying to attract a different type of group. And in order to attract that group, offer something different.

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Unknown

All right. Well, I'll share a little story of how I addressed a culture shift. So I lived here in Provo for about a decade. There's a company down the street. It's called fast food systems. Fast food systems manufactures hydraulic fittings, cabling, stuff for mines, for refilling, mining rigs. We use a lot of CNC machines. My responsibility there was to take an order from a sales guy, order material program.

00:09:48:19 - 00:10:12:04

Unknown

The machines, set up the machine, do the tooling kit, make the parts, send the parts out for coatings, and then deliver it to assembly. And I had a, you know, several CNC machines and some machinists that reported to me right across the street. There's this big company called Flowserve. They have a bunch of CNC machines and a bunch of machinists, and they also had a bunch of signs, one there, there and there.

00:10:12:05 - 00:10:36:19

Unknown

They listed all their fancy benefits and how much more per hour they would pay than my guys. So what ended up happening was I'd get a new machinist in, I teach him a few things, and he would jump across the street. So I was in this constant revolving door situation where I would bring a guy on. I'd get him just right there where I could, you know, not be answering the phone in the middle of the night anymore.

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Unknown

And then he would leave and it's next guy up. So after 4 or 5 of these, you start to change your culture, right? So I started saying, look, I'll just do it all. You call me. Don't worry. If something goes wrong, just call me. I'll answer the phone and troubleshooting over the phone. There was no FaceTime, so it was like they're trying to explain it to me, but they don't know the terms.

00:10:58:01 - 00:11:26:08

Unknown

And so I would just end up going back into work all the time. And that was the culture I built. It always went through me. I solve all your problems. And about this time I started, my Six Sigma black belt project and, you know, black belts. Nothing more than creating standards and standardizing processes. And so I started looking at the systems that I was putting in place and the processes I was putting in place, and realizing, what I needed to do was set these people up for success.

00:11:26:08 - 00:11:44:16

Unknown

Right? If I'm expecting them to come to me all the time to solve the problems, then why am I surprised that I'm spending all my time at work? So the first thing I did was I looked at the measuring system. So we're taking measurements. And if you're a machinist, you can use all sorts of different types of tools to get really reliable measures.

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Unknown

You're used to using different types of measuring tools, and you're very capable of getting good results using those. But if you're you were a machinist, you I'm sorry, you were a mechanic who came from an auto shop, and now you're trying to learn to be a machinist, kind of doing a mid-life career change, or you're just out of high school.

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Unknown

You're not going to know how to use a pair of vernier calipers very well. You're going to struggle. So what could I do to make that variation in the system lower? How could I change the system? So I started looking at better and better tools for measurement, not better in the fact that they took better measurements, but better for my system, which was a bunch of untrained people who didn't know how to use the the complicated measuring devices.

00:12:23:20 - 00:12:42:21

Unknown

What types of systems could I get that anybody could go and use? Start changing that expectation, start changing that culture of you. Come to me, I fix your problem here. These are the tools, and these are tools that I know you can use to solve your problems. From there, we started getting into SPC tracking. So statistical process control.

00:12:42:22 - 00:12:58:17

Unknown

So we're saying, hey, I want you to take that tool that you now know how to use. That's that's good for you. I want you to measure this ID groove and I want you to put a plot, put a dot on here. And as that dot moves, you know, seven of them in a row, it's time to change the insert over jumps above this line right here.

00:12:58:17 - 00:13:18:04

Unknown

It's time to change the insert. And just working with them. Now some people took to this and some people didn't. So I was able to use that revolving door to my benefit. I rolled this out on nightshift with the brand new guy that I brought on, because he didn't know any better. I didn't get any pushback from him.

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Unknown

I said, this is what we do, this is how we do it. So using that revolving door to your benefit, saying, hey, this is how it's always been. You know, if you're running into some resistance from some people, they're like, I don't I don't see the value in that. Go where there is no resistance, prove the value there first.

00:13:33:07 - 00:13:47:16

Unknown

So working with those guys, we started to get a lot of value out of it because typically what they would do is they would they set the machine up, they filled a bar feeder up and they'd go to lunch, they come back from lunch and the machines crashed because the insert were out. Now they could track their insert life.

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Unknown

They knew when they could go take a lunch, take a longer break, they wouldn't come back to a big mess, had to do a bunch of tool changes and rehome the turret and all the stuff. And so from the one shift, it spread across all the shifts because everybody started to see the value in it. The next step was I know how to program and read G-code so I can look at the code and say, okay, that boring bar is going in this size of a hole.

00:14:09:17 - 00:14:31:10

Unknown

It's going in that far. That means I need this size and this length and this insert. And if you can read G-code, you don't need to have a setup sheet. But again, I'm taking people off the street who don't know how to code. I don't know how to do these things and expecting them to do that work. So how could I make it easier for them to do their job again, not expecting them to come through me, but giving them tools to be able to do their job.

00:14:31:11 - 00:14:52:07

Unknown

So having this standardized set up card that was really easy to read was a was a big help in getting more of that ownership to them. So now they're able to set up the machine, they're able to run the machine, they're able to understand when things are going wrong through all this changing the system, changing the process. The people started to change.

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Unknown

It's at this point now where I would have been able to implement some digital tools very simply because now, instead of manually writing things down, they could have just used a digital tool, a digital form. Those things weren't out yet, but they were. They would have loved that kind of stuff. One thing I will say is that when you're in your prototyping and iteration phase, it's really nice.

00:15:16:02 - 00:15:37:12

Unknown

Unless you have a wizard and you know some of these new tools we've seen with the AI creation, maybe you can iterate very quickly with your digital tools. You can change forms really quick on the fly if they're paper pet, and you can get those people who, don't create these things often. They can read line one of your things and give it back to you.

00:15:37:13 - 00:16:05:14

Unknown

Have some changes. There's, you get, a lot more ownership if you can get people involved. One thing that, you know, I struggle with as a, as an engineer is I like to see things done the right way. And the right way is just my idea. It's not even necessarily a right idea. And a quote that I find interesting is you'll be surprised how productive people can be doing things their inefficient way.

00:16:05:14 - 00:16:27:09

Unknown

Right? It's to you. It seems inefficient, but they're really productive, right? So try to give people some latitude. Yeah, maybe they come up with a new template or a new way of doing the form that you don't think is the right way, but give them some latitude to own it. Right. It will mean more to you if they own this thing than if you created in this perfect way that you think is perfect, and then force them to use your thing.

00:16:27:11 - 00:16:40:03

Unknown

Try and get them to own it. Try and get them to create it with you. And if it's paper, sometimes it's easier for some of these guys who aren't as technically savvy to create some of these things. All right.

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Unknown

So, so want try and wrap some of this up here. Culture is what you do, not what you say. So if you're out on the shop floor and you're saying one thing, and people walk by your office and they see something different, or they see you have a different expectation for this team than that team, you had a culture shift, a culture issue.



00:17:06:10 - 00:17:17:18

Unknown

I would say that if you're talking about, well, if we put garbage in, garbage out with our data, you don't have a culture that respects data yet.

00:17:17:20 - 00:17:32:16

Unknown

If you had a culture that was ready to use AI, their data would be good already. There wouldn't be this garbage data. They would have data that they understand that they use, that they they're ready to put into a system.

00:17:32:18 - 00:17:38:13

Unknown

Hello. The last point I want to make here is,

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Unknown

For the longest time we talk about projects and digital transformation projects. We talk about, proof of concept. So bring someone out. Hey, come do this proof of concept for me. I want to see. Can you do this? That's not the case anymore, right? Get what? That's the back table of engineering wizards back there. They can do anything you can dream of.

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Unknown

There's no more proof of concept needed with a lot of these digital transformations. If you can dream it up, we can. We can get a sensor and we can get a we can get a report and we can get a power BI and we can do there's no more cons. It's proof of value. Right? You're not looking for proof of concept.

00:18:13:03 - 00:18:36:04

Unknown

We're looking for a proof of value. And I always hesitate when a company tells me that they want to implement an LMS. I want to implement a CMS. I want to implement an ERP because they're just implementing something. A strategy of digital transformation. You should really be talking about the problem you want to solve. I want to solve this problem.

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Unknown

What's the right tool?

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Unknown

Really? Recently, our quality department wanted to launch a quality management system, a QMS, and they launched it and they didn't spend a lot of time talking cross-functionally. And we

ended up with a system that's very difficult to use. They went live and we tried to upload work instructions and they don't load right. Because they wanted to launch a quality management system.

00:19:02:23 - 00:19:24:07

Unknown

They didn't want to find a way to get work instructions to operators, simply because if that would have been the approach, hey, we want to try and get work instructions to the operators in the shop or on a tablet. Okay, you don't need a QMS for that. Maybe it's an LMS. Maybe red list can help me get why work instructions operators if you approach it from what's the problem I want to solve?

00:19:24:09 - 00:19:30:02

Unknown

What's my proof of value? Then you can get much further faster. So thank you.