

The Future of Supply Chain Podcast

Episode 8: What is a Smart Factory? With Mike Lackey

Mike Lackey: And I always tell people when you look at sustainability, yes, there's the social side of it, but there's three things you look at: what are the challenges, what are the needs, and what are the outcome that you want? Yes, you want to be viewed as that green company, but you know what I challenges is how do I do it profitable?

Richard Howells: Welcome to the Future of Supply Chain podcast. My name's Richard Howells. I'm the Vice President for Thought Leadership for SAP's ERP, Finance, and Supply Chain Solutions. And I'm joined by my co-host Nicole.

Nicole Smythe: Hi everyone. I'm Nicole Smythe and I'm a blogger, podcaster, and marketer in the Supply Chain area here at SAP. So today we're joined by our guest, Mike Lackey, to discuss smart manufacturing's role in the future of supply chain.

So welcome Mike. Thank you so much for joining us today. It's so great to have you on the series. So if you could take a moment to just introduce yourself, give some insight into your past experiences, and what you do today.

Mike Lackey: Absolutely. Nicole, thanks for having me, Richard, good to see you guys again.

So my name is Mike Lackey. I'm the Global Head of Digital Manufacturing here at SAP. All the solutions that touch the shop floor, this digital transformation we're talking about, our customers are talking about, smart factories, factory of the future, intelligent factories. You know, these are solutions that help make that happen.

I have a long history in Manufacturing. I grew up as an industrial engineer with plants I was responsible for here in the US, in Arecibo, Puerto Rico, in Europe. And so now to come back and be able to work on technology and applications that's changing what I used to have to do a stopwatch or, you know, a spreadsheet and things like that is, is pretty incredible. And seeing the impact that we're having on companies is really exciting these days. So I love this opportunity to talk about this topic.

Richard Howells: That's great Mike, and thanks for spending the time with us. So we'll start with a broad question: what are some of the top priorities and business challenges that manufacturing executives face today?

Mike Lackey: You know, Richard and Nicole, we're in the world of disruptions. Business doesn't stop, but it seems like every time you turn around, there's some type of disruption and it's affecting business and how they can navigate or how the direction they can give to navigate around these disruptions is leading to the business impact. I mean, they got stakeholder pressure coming at them. They have the employees, right? And then they have their customers. So, those are the big things that the executives are thinking about.

I used to keep a list of disruptions so I could bring it out. Today, I just get up and read the news, I got about five or six I can talk about it.

You know, I was with a customer just a few weeks ago, and their plant, their brand new plant, 'the plant of the future', is six months behind because they can't get pipes for the sprinkler system in the plant.

And without that, they can't get the compliance to get approval to finish the building. And, you know, those are the little things that I have the solution to my problem, I just can't get the plant built.

And, you know, so it's little things - it's every time I turn around, there's a disruption. So that's the biggest thing, and at the front of all this is, how do I meet my customer demand? How do I better service my customer? That's what the boardrooms are thinking about. And they're talking about new business models, you know, products as a service, what's the future of our business gonna look like, and can my operations keep up with that? That's what we're seeing at the board level.

Richard Howells: It's interesting, Mike, the general answer to most problems these days is, oh, we have a supply chain issue. The pipe's not available to finish their manufacturing site, for example.

Mike Lackey: It seems like everything is a supply chain issue, right? And that's why we're having these podcasts and working about how can we help, you know, our customers navigate that. And look, that's the beauty of this, right? There's disruptions, but like I said, the business doesn't stop. How do I navigate around that disruption? We talk about, you know, risk resilience and sustainable supply chains. Well, at the end of the day, that's about navigating disruptions, the minimal impact, and that's the way we're thinking today. It's the world of disruptions. They're not going away.

Nicole Smythe: Mm. Literally. And I know, Richard can even attest, there's this word now that they put out called 'perma-crisis', you know, where we're in a constant state of crisis or disruption, like you said. So a lot of companies now are building that resilience or that sustainability into the infrastructure of their factories, quite literally and figuratively.

But, over the years, we've heard a lot of terms describing Manufacturing: Industry 4.0, Industry IoT, Factory of the Future, Smart Manufacturing, just to name a few. So, in your opinion, what are the key dynamics of a smart factory and what should these manufacturers consider when creating the factory of the future?

Mike Lackey: You know, Nicole, every customer I talk with has got some initiative. Now, Industry 4.0 gave us principles of what the fourth industrial revolution's gonna look like. But I, you know, I hear the Smart Factory, Factory of the Future, Intelligent Factory, Live Factory. You know, they all have a term of what that future's going to look like. And it's being driven by the changes in their business. Okay, look, you know, you've got changing economic conditions every day, right? You've got shifting customer demand. And then you've got a consistent drive or constant drive for operational efficiencies to improve your operations.

So look, there's three things I think when we talk about the Factory of the Future and these initiatives. First of all, it's about you gotta be connected. Right? We talk automation in the shop floor being connected, but I'm talking about connecting to your ecosystem and the enterprise. Transactions happen on the shop floor that have an impact on your business. And the business needs to understand what the impact is, and that plant needs to understand what the impact is.

You know, we talk about I gotta scrap 50 units today. You know, they're defective. Okay... Is that \$5,000, that 50? Is it 500,000? What is the impact? Oh, by the way, they were all for our biggest customer. Okay, what's that impact? You know, now, I can go and find, I have my other factory. That's 600 miles away that can actually fill that other 50 today. What's that impact of additional logistics cost? Labor cost? All that has to come together.

So number one is you've got to be connected not just at the plant level, but the plant with the rest of the enterprise: your suppliers, your customers, your financial data, your supplier data, that all has to come together. And that's what gives you visibility, visibility into the business impact. And I think that's one of the things that we do really well here at SAP is we bring that business context to what's happening on the shop floor and take what's happening on the shop floor and bring it to that business context.

The second piece is really intelligence. Intelligence, in, at that factory. And that's really how you are driving to eliminate that risk of disruptions, right? How quickly can I change what's in production? How quickly can I have multiple processes? Can I run multiple orders or multiple products on the same production line? So you're seeing this huge level of intelligence that's coming.

You know, I walk into a lot of plants and they'll tell me, Mike, this is a brand new plant. Everything's automated. First machine I see was built in 1972. Yeah, you're not getting a flat file off of that. Right? But that's where this IoT comes into. We're able to reach out to our partner ecosystem, bring sensors, put it on that machine. You know, I think the one that comes to my mind was at this plant in Canada was a big automotive producer. We put 40 sensors on there, next thing I know, it became a smart device.

I always say, you can't make smart products in a dumb factory, right? Well, everything has to talk, because, before that, that plant manager said, so how do you monitor this? Or how do you use this? He goes, when it breaks, we fix it - now they're predictive. Now they can do the maintenance, keep it going, and they just made that plant more intelligent. I think they went from something like, you know, really high OE of 96% efficiency to 98, just by making that one machine intelligent.

And then the third is, really, flexible automation. You cannot be single threaded. You know, you can't have: 'I run this product in this factory and I run in on these lines'. You have to have flexibility. If you've got 40 plants around the world, those 40 global plants have to work as one, meeting on all your customer's expectations. And that's where you build the responsive into it.

Those are what we're seeing the big changes here of what that Smart Factory or Factory of the Future. If you want to add another level to that, the structure, you know, we used to build plants is all based on a linear flow. You know, Step 10, 20, 30, 40, 50. Now it's modular - you may go Step 10, 20, then it may go to Step 50, then it may come back to 30. And, so, we have to think differently on how we design products and then how we build products and what that factory needs to look like. And that's what we're seeing a lot. That's how you really get that Smart Factory, Factory of the Future: using the Industry 4.0 principles to build that out.

Richard Howells: So you talked about connecting to the enterprise and to the ecosystem from the plant, having intelligence in the factory and visibility into the business impact, flexible automation and modular manufacturing. So, if that defines a smart factory, how are technologies helping? How are manufacturers leveraging digital technologies and Industry 4.0 best practices to create this smart factory?

Mike Lackey: Well, you know, the good thing is, like I said, the ecosystems coming together and today equipment is a lot smarter than it was in the past, right? And then we have industrial IoT that tend to take old stuff. I probably have people, they say this and gonna laugh, and goes, 1972? We wish our

equipment was made in '72. Some of it's made even before that. But we can still make an intelligent, right? Not as intelligent as what's coming up.

So, this world of standardization, and automation, and being able to connect and get data. I don't think it's a world about collecting more data, it's about collecting the right data and understanding that impact.

And Richard, look, the cloud's made a big difference. The fact that you can innovate much faster, you can roll out, you can connect those 40 plants. Or, Richard and Nicole, we got one plant with 392 plants. I mean, they've been trying to standardize those plants for the last five years. The cloud's going to help 'em on that. Okay? So I really like what cloud technology's doing in the innovation, but man, machine learning, to be able to not just look at the report on the data of the past and the data that you have today, but now to predict what it could look like in the future. I love the fact that it's learning from, and you bringing automation and artificial intelligence into it, and you bring these two things together, now you can start predicting the future and get ahead of it, right?

I mean, look, we have some of the best solutions in the world, and what's our biggest challenge? Staying ahead of what our customers need. So we're all a part of that machine learning. But when you get into the plant, you know, the human eye can really only see so many data points, and you can put a digital camera and you can pick up a thousand data points per second and find defects that you may not find at that operation, but when they get at the end of the production line, it's now you've got a rework issue, you've got more cost. So, that's a lot of what we're seeing.

I love 3D printing, additive manufacturing. I think that's becoming more and more part of production versus just a science project over here to the side. I love where that's going. It simplifies the supply chain, it reduces risk, it allows for innovation, you don't have to hold a radius or anything. Your design capabilities are free, we just unhandcuffed the developers to really design the best product possible because they're not limited. So I love that one at well.

So I think there's just a lot of technology out there that is really gonna change the way supply chains running, the way Manufacturing is. And I love the fact that, you know, we are at the forefront of it and we're working with, some really, some innovative customers and some really innovative partners to bring that to the market.

Richard Howells: We've had this data historian systems in Manufacturing. Manufacturing was the first place to have big data manufacturing plants. It's now the ability to leverage that big data, I think, is the big switch now.

Mike Lackey: You know, Richard, everybody talks about big data. We were the cool kids 40, you know, 40 years ago. We're the cool kids now, right? Finance and everybody's catching up with us. But you're right. It's about the right data and understanding what that data, who was it? McKinsey did a study, Nicole, I think we were talking about just a few weeks ago, that 70% of the data collected in manufacturing is not used. You know, and now all of a sudden, with the big data initiatives out there, we can analyze all that data and bring it more and more. And that's how you drive out inefficiencies and that's how you become, you know, relevant, just not today, in the next two years, five years and 10 years. And that's the way our customers are thinking.

Richard Howells: And that big data, you said 70% of it wasn't used, but now with machine learning, it can identify patterns that we could never identify with the human brain.

Mike Lackey: Absolutely. And that's what technology's doing, it's making not only the smart factory or the intelligent factory, but the intelligent enterprise and really bringing intelligence. I always said this, companies do a great job of getting the right people in the room to make a decision, but those people don't have the right data. Right? Now, all of a sudden, we're making those people more intelligent because we're getting the right data in their hands at the right time to make that right decision. That's how you do a digital transformation.

Richard Howells: And so far, we've talked a lot about agility in the manufacturing site and resiliency to disruption. But, if you look at SAP's corporate website and many other companies corporate websites, sustainability is right there as a mission statement or objective. To be carbon neutral by a certain date or whatever. So, sustainability's top of mind and supply chain sits right in the middle, both as a major contributor and problem and also an area of opportunity to reduce your emissions, to reduce your waste. And manufacturing sits right in the middle of supply chains.

So what's driving sustainability initiatives today and how are they impacting Manufacturing?

Mike Lackey: Look, this is a simple statement for me. Sustainability equals profitability. Yes, there's a social responsibility to go green, right? There's an environmental responsibility. You know, you want to do sustainable sourcing, you want sustainable operations, but at the end of the day, we have to balance the sustainability with profitability, right? But we think they're different, and yeah, you can go too far to the sustainable side, but when you do it together, with customer demand and the profitability, they're connected.

You think about this: if I have to produce a thousand parts and I have to run 1100, okay? So I just had to order a hundred x-ray set of components from another 300 suppliers who had to manufacture those, use more energy, get them on a truck, a plane, a boat, maybe all three, a drone, you know, and get that to me. Then I had to receive it, bring it into my processes, I had to run a hundred extras so that added more, you know, that's waste. And that adds to sustainability. So when you start by combining those two things together, you realize that's where profitability comes in.

And listen, customers today want to do business with companies they consider green. Okay, that's the customer side. Now, how do you get to that social responsibility? Because you think about sustainable operations, operations that can get you through the distractions, right? They're repeatable. They lose less energy.

I can tell you this, 6, 8, 10 years ago, plant managers had to report carbon footprint once a year. The CO2. Annual report. That's all they cared about. And then, you know, five or six years ago, there's a quarterly report. Well, today it is part of their key KPIs. They report on it daily because they can't control energy consumption, you know, prices. It's summertime, right? Energy companies, it's like gas. Anytime there's a holiday or gas prices go up, right? It's kinda like energy goes up when peak times happen so the better they can manage that. Look, when I was in Manufacturing, we had a machine that was the heart of what we were manufacturing, you couldn't manufacture product without it. But it took it like 40 minutes to crank, once you turn the switch on, to get it ready to go. We left it on 24/7. Because, what if it went down? Today, you what I would do? We'd have people come in early and make

sure it's up and running, so when the shift started and things like that. So, we think more like that because, again, it has an impact on our business.

And I always tell people when you look at sustainability, yes, there's the social side of it, but there's three things you look at: what are the challenges, what are the needs, and what are the outcome that you want? Yes, you want to be viewed as that green company, but you know what I challenges is how do I do it profitable? And if we start bringing those together, and you start seeing the needs, those three things bring it together. So yes, you're not gonna talk Manufacturing or, the Factory of the Future or, the Smart Factory or, digital transformation without having sustainability as a key part of it. It's just the norm today.

Richard Howells: My favorite quote so far: sustainability equals profitability. You touched on the KPIs that need to be measured now and I think, more than ever, manufacturing and supply chains is a balancing act - balancing cost efficiency, resiliency, and sustainability. So what are some of the top KPIs that people need to track today and what are some of the best practices across global operations?

Mike Lackey: Wow. You know, Richard, you, talked about the balancing act. Earlier this year, I sat down with a customer and we talked about their processes, how you delivering on your customer demand and your orders? They said orders? We don't build the orders, we build the parts; we build whatever we have the parts to build and go back to the customer and say, I know you wanted this, but would you take this? Nevermind that, their biggest competitor's distributor is like 20 kilometers down the road. And they said, I can give you something closer. You know? So look...

Richard Howells: Moving from 'make the demand' to 'make from supply'.

Mike Lackey: Yeah, exactly. Where do I have the parts to make, you know? And they were laughing, but then they got real serious. And I said, you're kidding me, right? No, we're dead serious. This is what we've gotten to with the disruptions in the supply chain. So that balance acts important.

So Richard, the better visibility, and we'll talk about KPIs, but the better visibility you can get into demand, and you can get into your suppliers and their availability, and then you can get it into production, the better you're gonna be able to respond. Right? You don't want to run orders that aren't complete. You want to deliver what the customers want. So long as we keep the customer in mind. So, the number one KPI that a plant manager or VP of Ops is looking at: actual versus plant. if I had to produce 10,000 units today, did I produce 10,000? Then there's first pass yield. So there's a quality component. If I had to produce 10,000 units today, did it take me 10,000 or did it take me 10,200? You know, what did it take and what was that extra cost? And this is all focused on the customer, right?

The actual versus plan: I'm delivering on my customer's expectations. Then there's the quality piece: if I'm doing it at the highest quality, then I'm very efficient, which means I'm being very sustainable and I'm not using a lot of excess energy. And then there's the worker safety: there's always a worker component of it, you know. How am I keeping my workers safe? Am I keeping my workers trained? That's another big piece of it. And then, of course, there's the cost: manufacturing's a cost center, each plant it's own, and you got a standard cost and you have to adhere to that standard cost. Now when you can come under it, yeah, you're doing really well, but you had expedite to get these parts in because we're being told this order's required, or they're going to throw us out as a supplier, and all of a sudden, your standard costs go up. How do you balance that?

And, now, we're seeing a lot of CO2: I've got to report my carbon footprint, that's a big part of what corporate wants to see so I can be the most efficient, the most productive, but if I have the highest impact on the environment, you're being held accountable there as well. And it's energy, it's water, it's those things coming together.

And I think that's probably the biggest change we're seeing out there is that sustainable part that's coming to my key KPIs.

Richard Howells: It's interesting because the first few that you mentioned, actual versus planned, it's eliminating waste. First pass yield is eliminating waste. The quality of the product is eliminating waste. And worker safety is a sustainability issue; and the worker safety one, you mentioned at the start, when you first went on plants, you had stopwatches and paper. And the first time I went into a plant, I remembered the big sign with the 'blank days' since last incident. And every day somebody wrote in the number of days since the last incident, and it was a disaster when it went back to zero.

Mike Lackey: Oh, Richard, you're right. The number one KPI you'll see in a plant is days without incident. And now it's a digital board, so Richard's telling you a little bit about those days. But I tell you, again the companies that are committed to it... I was in Korea, an auto supplier, and you come through the gates, and you go through security, and there's three flags in the courtyard: the Korean flag, the company flag, and a flag that represents days without incident; and they were on Day 121 and they get to 130, it would be a record, and there would be a big event for the employees. So every employee that comes through that gate, is seeing that, and that's a commitment to your employees in your workforce. And that was the most impressive I've ever seen, right?

But, today, we talk about this a lot, North American Manufacturing Info Days, is that you got to do a better job of planning cause the sooner you can get that demand signal, and sooner I can get the orders and plan for it, the sooner I'm giving my suppliers more time to deliver, and then I get into Manufacturing, but it doesn't stop once it's manufactured. The longer I have to hold that part, there's a holding cost. Okay, I committed to the customer, four days and production was done in two days, but the logistics didn't pick it up to the fifth day, I still didn't deliver on customer expectations, so tying logistics into that is another big part of that supply chain of how you have to bring it all together to be successful. You can't have your plants and your operations siloed and you can't have your supply chain siloed. Manufacturing has to be a part of it, and it has to be connected with the logistics, and it has to be connected with planning, and you have to connect it with how you manage your assets probably encircled by sustainability, right?

Nicole Smythe: Absolutely. Well, you know, you touched on worker safety and of course machine learning and technology. So now, kind of combining those two together, we talk about smart factories, but within those factories, they're still the workers. So, with a lot of these plants and these workers, they've been at these sites for years, some even decades, you know, they start their career in manufacturing and end it in that same factory. So with much of their expertise coming with that hands-on equipment, what strategies do you believe would be best to ensuring that these workers are not only empowered in understanding this new technology that's being rolled out within these factories, but also being an advocate for it? Because, you know, with them having so many years of experience, they absolutely want to make sure that their voice is heard because they're going to be the ones that are handling it. So how would you go about making sure that they feel like they're a part of a bigger purpose in that sense?

Mike Lackey: You know, Nicole, you just hit the 800 pound gorilla in the plant, right? Companies can't find workers. They can't retain them. And these workers of 35 years are walking out in groves. I read yesterday on Industry Week that they're predicting 50% of the manufacturing workforce in North America will walk out the door this year.

Nicole Smythe: Really?

Mike Lackey: 50%. Okay, let's just drive to automation. So how do we keep them? When you've been at it for 35 years, Nicole, I've been walking the plant with plant managers and, all of a sudden, they'll hear something... your first two indications that a piece of equipment's going down is sound and vibration. They will hear something and they'll have me escorted back to the room. He says, the plant's about to go down, I've gotta get ahead of this. Okay, they just know.

The bigger problem is this new generation of workers do not want that. They do not want to have to listen. They want it in a device. They want technology. The technology that they have in their social life, they want it in their work life. And so that's the big thing that we have to do to attract the future. I mean, we had SAP, we're under a lot of pressure and I tell you what, we've made a huge step forward in to make our UIs intuitive and use technology that's similar to what they're using their social life.

So, the senior people have a big place at the table because they've been doing it for so long and everybody knows that person knows. But when that person walks out, we're not retaining what they know. We don't have it digitalized. And you know, that's where the technology piece comes into it.

So, I think the bigger question is, what does it take to get this next generation a shop floor worker? First of all, I can tell you that every year I go to the World Manufacturing Summit, which is a spinoff of Davos, they have government municipalities, they have universities, and then they have about seven to eight big companies that supply solutions, right? And SAP's one of 'em at the table.

And we talk about it, it takes all three. Our education system has to change. Number one, a lot of kids don't want \$300,000 in debt. You know, they don't wanna go to college, but they don't wanna be in a boring job. They always wanna be learning. They always want to be advancing. So we have to make the technology available to 'em that'll attract that next generation. Okay. And then we have to reward them. I mean, used to your reward, I got that paycheck, I'm going out tonight. Or, you know, end of the shift, hey, we made our numbers. The generation today want immediate feedback that they're doing things that are making an impact and doing things that are contributing.

So, you know, I really think that getting the technology in the hands of the worker at the point of work is key to going forward here, right? That person, 35 years, you know, we gotta do a better job of internships and training together so they can learn. Bringing technology with what this 35 year old veteran knows, right? Well, how'd you know that's about to go down? You didn't hear this. Picking up sounds that the human ear can't hear well, 35 year old person can hear, but most of us can't, but put it on a smart device. So the alarm's going off and what it's doing is not only telling that new worker that, or that the new person in charge, but it's telling the whole community: I need maintenance out here, I need the supervisors out here, I need my other industrial engineers out here, in all hands on deck and everybody's getting the same data. And so I think that's the big challenge. And that's why you're seeing Industry 4.0 and the smart factories bring a new level of flexible automation.

Okay, and so the worker of the future is gonna become more technical which is gonna drive more challenges and make them more conducive, they want to be a part of it than, you know, just putting things in the box.

I was at another plant, and the plant manager said, see that person right there, they started two weeks ago, they're on the packing line. He goes, they will be out with back problems in six months. I go, why aren't we addressing? He goes, we're trying. He goes, we just can't automate fast enough and I have to keep the line going. And those are things we have to take out of the mix here. I get it. You're standing all day, you're doing that labor. There's some jobs that they're hard on the human body. And we got to bring that new level of flexible automation and balance the two.

So I think the workers of the future are gonna be more excited about being in manufacturing. And the governments have to come in here when you give those subsidies to open that semiconductor plant in Ohio, it's not for 10 years. Okay. Okay, it's that plant is going to be around. We're going to continue to invest. Okay. That's the big thing. So that's where it all comes together. We have to innovate faster to attract a new generation. Our education system has to change to provide them more hands-on technical experience. And our governments have to make a bigger commitment cause manufacturing drives the economy.

Nicole Smythe: Absolutely.

Mike Lackey: I'm a little passionate about that, so we can talk about that for more. So

Nicole Smythe: Well, no, it's great cause being Gen Z myself, and then, or on the cusp of it, I'm still not totally sure what generation I fall within, but...

Richard Howells: I can't remember what generation I am so.

Nicole Smythe: But I studied supply chain in school, so you know, I got the fundamentals of manufacturing, but still, I'm only a couple years out of college, but I still didn't learn that whole technology aspect of manufacturing.

You know, you kind of learn that as you go, or being at SAP, this is where I've got the most knowledge, this is where I've learned the most. But if I just came straight out of it, I wouldn't really have too much expertise in the field, you know? So, I think it is important not only at universities, but also at these trade schools as well, because I think they can be heavily utilized as well in those manufacturing sites too.

So I think it's changing not only the way of manufacturing in the future of these factories, but also like you said, leading up in the education to get those new generations into these smart factories

Mike Lackey: Nicole, what I love talking with you, you've been exposed to so much, you know, in a short period of time here. And that's what we kind of have to do with that next generation.

You asked me what's best practices... a factory in Austria, I mean literally outside of Vienna, two hours through cornfield, in this giant factory. And it was impressive. They had robots working next to humans, right? Copying whatever. And I've seen that before, but what was most impressive, outside the break room was a glass door in another room, and I asked him, he goes, oh, that's our Innovation Lab, every employee has to spend an hour a month in that room. You go through it and it's talking about what

they're trying to do from a manufacturing standpoint, from a business standpoint. It showed lean concepts. It was educational. And they had a computer in the middle where they took tests, but they were interactive test. I go, okay, these guys get it. They went the final mile. A lot of companies innovating does that, and you asked me how does a shop floor worker get a seat at the table with innovation? Oh, that there. They walk outta that room and they've got ideas and at the end of it, how can we be better?

Nicole Smythe: Yeah, exactly.

Mike Lackey: I love this place. I mean, a lot of corn out here, you know? Then all of a sudden there's this giant factory and I walked in, I go, this may be the coolest factory I've been in in a long time cause they went the extra mile for their employees.

Richard Howells: And they'll keep those employees as a result of it.

Nicole Smythe: Yeah.

Mike Lackey: Yeah. You know, it's funny, they're right on the border of Germany, so they felt they could go into Germany, steal the automotive innovation expertise, but bring it back and do it their way. And I will tell you this, that plant, although it's got a high labor cost, is the most efficient plant in that company. And they have over a hundred plants.

Nicole Smythe: Wow. Well, it goes to show, I mean, with our generation, we grew up with video games and videos and you know, YouTube and things like that. So it is kind of bringing in our personal life and what we enjoy doing outside of work and bringing it into our daily life to it at work. So...

Richard Howells: Gamification.

Nicole Smythe: Yeah, absolutely. We just like to be entertained. That's all it is.

But Mike, you just mentioned earlier too, our Manufacturing Info Days. So recently, you know, I saw a great presentation there. I'm sure you saw it too, about the Smart Press Shop and how they've completely transformed their factory into a smart factory.

So what have they done that other companies you think can learn from?

Mike Lackey: You know, I love those guys. Next time we're in Germany, we're gonna get another tour. You, you gotta walk through that plant to really appreciate it.

Well, first of all, it's a joint venture between Porsche and Schuler. And Schuler makes a lot of the equipment, Porsche, so it's automotive, and Porsche thought differently.

They said, you know, I'm gonna partner with someone who has that flexible automation knowledge, right? And they built a greenfield plan, and they had a number of goals. First of all, I love the fact that they thought about what the outcome needed to be, and what their business gonna look like in the future. And they said, okay, we're gonna start with a clean slate here. You know, the blank canvas. We're not gonna be handcuffed.

Number one: they wanted a paperless plant. They want it to be a hundred percent digital, because if it's digital, we can collect the data we need to drive inefficiencies out and to maintain that high level of operational efficiency. So I love that fact.

Number two is they wanted a hundred percent traceability. They are stamping out body parts for Porsche and for other customers now. Okay? If there's a defect that you cannot pick up when it gets painted, it gets magnified, and when it gets painted, the cost just doubled on that part. So they wanted a hundred percent traceability. They're one of the ones that we went in and put the vigil inspection with machine learning that were learning from the inspectors, but then were able to multiply that and pick it up. So that was a big part of it. They also wanted to run small lot sizes as cost efficient as they did with big runs, because they're responding to what demand is and they don't wanna have a bunch of parts. They said once they got that demand signal, they went and run the parts for that vehicle that they had to order from. So they really thought about this, what flexible processes do I need so that I can switch on the dime and make a part for this one, then make a part for this car. Different sizes, different dimensions. So their setup was automated. I mean, literally, it's in a matter of seconds. So that was a big part of it.

And they wanted to be green. They're using a hundred percent green energy.

So they ticked all the boxes: risk resilient, you know, sustainable, risk averse. I mean, they just got it all, but they understood where they saw the future of manufacturing going and they build a factory that would grow with it and be flexible, and they had the right partners. They came to us because they wanted to be in the cloud. They wanted that innovative. CapEx versus OpEx, right? They wanted to be able to roll it out as they grow and more and more factories come online, they wanna be able to roll it out faster. They'll come up with new ideas, right? They came up with that visual inspection. Well, every 90 days we're doing a new release. We were able to respond in 60 days, you know, two releases, we had it in there for 'em. And it's things like that that really drove them to be different, and that's why I like those guys.

And that's why I was very excited that they came to North America to present what they had done. And they understood their business and what their customer's demand was, and that's what really led them to be innovative in their structure of their factory, in their processes and the systems they put in place. So.

Nicole Smythe: It's great.

Richard Howells: We're coming to the end of the podcast and I have one last question, I think you may have gone a long way to answering this question with that last example, you've given a real world example, but... if you had to summarize in a sentence or two, what do you see the future of supply chain?

Mike Lackey: Well, the word disruption is going to be in this definition somewhere cause I do not see it going away. I, there's just so much out there and the world is changing, right? But what I see that, you know, supply chains used to be linear, right? Your supply chain's gonna change instead of being linear, you're gonna see them be more of a network. Multiple suppliers, multiple sources.

You're gonna see manufacturing get closer to the customer, what I call micro-facilities; I don't see the mega plants going away, but what I do see is that you're gonna see smaller factories throughout the world that are closer to the customer, they're gonna do that final mile production based on that customer's demands and requirements.

So not only is your supply chain gonna be more networked, But you're going to see, uh, more countries become a big part of that supply chain. In Manufacturing, China has a lot of policies around Covid right now, we're seeing India has reaping a big benefit. I'm seeing Thailand, Vietnam, you know, I even saw Malaysia as one of the fastest that's growing manufacturing places. So you're seeing a lot more of that taking place and we're seeing a big move with that onshoring back here in North America. So I really think you're going to see that manufacturing's going to expand and get closer to the customer. I think the semiconductor taught everyone a big lesson, right? You can't be single threaded.

And I think when they do these plants, they're gonna be highly sustainable. They're gonna think about this cause it's not gonna be an afterthought, it's gonna be the forefront of how we build. And you're gonna see supply chains designed for sustainability, okay? Your supply chain is going to be more sustainable. Manufacturing's gonna be more sustainable. And we're gonna leverage, you know, the logistics. No more half trucks, they're gonna be full, no more half planes or half ships. It's really, it is, It's gonna get interesting.

I can tell you one of the best stories is one of our customers went to a subcontracting strategy, like, we can't build our plants fast enough. Got their production running in a subcontractor and their biggest competitor went and bought the subcontractor. So for the next six months, every dollar that they were spending, that was going to their competitors. So that's what I, this is the disruptions we're talking about. We're not just talking about a pandemic or a, you know, something stuck in a ship, stuck in the Suez Canal. It's every day. And being risk averted or risk resilient is going to be a big part of what you're gonna see in the supply chains. Not drive down cost.

Look, I'll just leave you this. One of our customers did this digital transformation, and they became more of a network. Productivity increased 160%, not 10%. We're talking double digits, triple digits, okay? Customer satisfaction. The offshoot of this went up 116%. Think about that. Your productivity went up, you dropped your cost 20%, and your customers are happier than they've ever been before, and your company's overall growth went somewhere between, I think it was somewhere between 12 and 20% growth of the business increased. That's what we're talking about here.

And Richard, that's what we're talking about the future of the supply chain, the impact it's gonna have on business. I tell you this: supply chain and Manufacturing's gonna be strategic. It's not gonna be an afterthought anymore.

Richard Howells: Mike, you are always one of my favorite people to speak to cause you've always got the best examples and the best stories so thanks for a great conversation.

Mike Lackey: Guys, thank you for the opportunity. It's like I said, I enjoy talking with Nicole. She's seen an awful lot in a short period of time, and you know, she understands this impact and that's critical because not only do we have to get to the stakeholders that are out there, but you know, Nicole, your generation is that next, not only the customer, but the supply chain drivers, and changing things, it's just great.

And Richard, you know, you and I have seen a lot and it never gets old. We have the greatest customers in the world. They're innovating and they're pushing us to innovate, and that's what I love about being at SAP and being in Manufacturing.

Richard Howells: Yeah, we, we may be getting old, but the job never gets old.

Mike Lackey: It gets entertaining. So.

Richard Howells: Hey, I'd like to thank Mike again and thank everyone for listening today. Please mark us as a favorite and you can get regular updates and information about future episodes. But until next time, from Nicole and I, thank you for discussing the Future of Supply Chain.