Resilient Edge: A Business Vitality Podcast from Deloitte

SPECIAL EDITION EPISODE 5 — Mitigating risk with smarter supply chains

TRANSCRIPT:

Vijay Sharma (00:00):
Welcome to the special episode of Resilient Edge. I'm your host for the session, Vijay Sharma. And today we're delving into a topic that has become key for businesses worldwide, how to create resilient supply chains that can withstand disruption. The past few years have illustrated some vulnerabilities in global supply networks, from natural disasters to geopolitical shifts and evolving customer demands. The need for agility and supply chain robustness is very clear, but resilience isn't just about bouncing back. It's increasingly intertwined with sustainability and planning ahead. Companies are recognizing that a resilient supply chain is one that is environmentally attuned and transparent. It's better for the planet, for business driving innovation and attracting talent, and building trust with customers and investors alike.
(00:43):
Today I'm talking to specialists that represent leading organizations at the forefront of technological innovation and strategic thinking in this space to help navigate this complex and important landscape. Joining me are Sophia Mendelsohn, the leader of a sustainability at SAP. SAP is at the heart of countless enterprise operations globally, and their insights into how technology can help drive sustainability and resilient supply chains is invaluable. And John Lenahan, the head of Global Commercial Services at Esri. Esri is a global leader in geographic information systems software, location intelligence, and mapping. Geospatial data offers a unique lens through which to understand and mitigate supply chain risks, and we're eager to explore its transformative potential. Let's dive right in. Let's start with the big picture here. Maybe Sophia, if we can start with you.

Sophia Mendelsohn (01:35):
Sure.

Vijay Sharma (01:36):
As a leader in SAP, you're really uniquely positioned to see how some of this disruption in global supply chains are impacting organizations in our lives. There's a discussion around digital transformation that can help these supply chains. Can you talk to us a little bit about what it means beyond just complying with regulations and actually transforming supply chains through digital technology?

Sophia Mendelsohn (01:58):
Sure. Well, first, let's start with what we mean by disruption, because most of the time I think folks thinks it means, I can't get exactly what I want when I want it. And I would add on another layer to that definition. Disruption is blindness. You cannot see what is happening in your value chain, and you cannot surface data to address it. You don't know where the delay is coming from. You don't know which supplier is having issues, and you don't know what skew or container it's going to affect, so it's not just about moving a supplier from one place to another to respond to tariffs. It's about having constant visibility at the asset or transportational level to what's happening, being able to zoom out and zoom down whenever you want.

Vijay Sharma (02:51):
You bring up a really interesting point because the lack of visibility itself causes so much disruption and panic in people and enterprises throughout the world. Can you think of maybe a recent example that you've come across in SAP or just outside in the normal, talking to your customers that you've really seen this manifest where visibility has played a key problem or role in decision-making within an organization?

Sophia Mendelsohn (03:21):
Sure. Well, first of all, I panic too when I don't have control and visibility, so we're very empathetic to the leaders who go through that. And I can cite really countless companies that are coming to us and saying it's no longer acceptable to estimate our carbon or really any unwanted externality or pollution in some generalized estimated level. And so right now there are a number of organizations, especially CPG companies, anyone facing into a consumer market that want to be able to attribute either a cost or a positive attribute down to the literal product level and be able to say, I'll make a decision about recycled content or virgin content and material into a specific product for a specific market based on exactly who I want to sell that product to.

Vijay Sharma (04:19):
Can you talk a little bit maybe about how SAP thinks about circularity and helps measure some of that?

Sophia Mendelsohn (04:25):
Sure. Ultimately, what technology enables you to do is test before you invest. That, especially with AI, we can now go through a series of material R&D options, a series of design options, and imagine if you will, literally shifting the scales or shifting the buttons on a speaker for what you want to optimize for speed, quality, recycled content, fees, green margin, and then landing where you need to before you begin to build and invest.

Vijay Sharma (05:03):
You touched on AI, but before we go to AI-

Sophia Mendelsohn (05:06):
I can never not touch on AI.

Vijay Sharma (05:09):
John, I want you to weigh in here. We've talked about visibility. You can't have visibility without location intelligence. It's become so critical in the way-

John Lenahan (05:18):
Absolutely.

Vijay Sharma (05:19):
... we see things today. It's not only what, it's where and where and when too, so talk to us a little bit about what you're seeing through your lens around geospatial and location intelligence in terms of securing supply chains.

John Lenahan (05:35):
For sure. And I think where and when, Vijay, that's a great way to put it. Cueing off of what Sophia was saying in terms of an example, I want to talk about a large multinational coffee company and a realization they had about 10 years ago. They were concerned about the risks to their high quality

coffee growing regions around the world, so how do they figure out how best to secure those and make those resilient? And they used where. They used location intelligence, they used geospatial to identify the areas that were of most critical value, but then also those areas that were at most critical risk.

(06:17):

And then now they have these targets and they deployed a team of agronomists, and then they created very site-specific remediation and mitigation plans for the areas that were of most priority, so they knew where their supply was coming from, they knew how important it was to their business. And now they understood how to employ the right procedures or the right methods to secure and make the supply chain as resilient as they could, ultimately safeguarding their supply. That's a really good example of how location is fundamental to supply chains and compliments other technologies like ERP to just add to the insight and the awareness.

Vijay Sharma (07:03):

You see a lot of the operational data coming through SAP and the intelligence and the location intelligence coming through, so how would you see both of these domains really converging in the future? Because when it comes to supply chains you can't really drive impact without anything that both of your companies do.

John Lenahan (07:26):

From my perspective, I often think of ERP as the engine of a business.

Sophia Mendelsohn (07:31):

Oh, thank you.

John Lenahan (07:33):

Decisions about sales and insight on sales, materials, the entirety of business decisions. And then from a geospatial perspective, how do you compliment that and how do you really allow some of the supply chain managers and some of the business leaders to see where they're going with the ERP data? And that's the natural fit for geospatial, is to really take and enhance the ERP data, bring location and help them see how it fits into the geospatial context.

Sophia Mendelsohn (08:09):

And I think about forests when I think about ERP and geospatial, we have multiple companies, some in tires, some in coffee, some in wine and beverages. All of them want to source materials that are

compliant with future EU regulation and then be able to drive a premium or a margin with their own customers from that better sourcing. And the only way to really do that is to have good geospatial data. You've got to get down to the field level. It's time to go from estimates to actuals because otherwise it will always sound like greenwashing to our listeners.

Vijay Sharma (08:53):
And that's such a good point. I assume when you say forests you're talking about the EU deforestation regulation, EUDR.

Vijay Sharma (09:00):
If you look at a company and they're sourcing from a farm, you need the pictures of the farm over a period of time, to make sure it's not encroaching into surrounding forests. And then you need to come back into your enterprise systems, and take that information and make sure it gets to your freight forwarder. So that's not easy. So it requires kind of the coming together of different worlds, your world, John, and Sophia, your world.

John Lenahan (09:27):
Another example I wanted to add that kind of really shows the power of the relationship between geospatial and NERP, is we had a large manufacturer, and they had a dependency on rubber to produce this one handbag they were making. When they started to map and visualize where these suppliers were located, what they realized was that not only was their primary supplier in one specific region of Vietnam, but their secondary and their tertiary supplier were all in that same region. All three of their suppliers were all subject to the same extreme flooding.
(10:08):
So their plan B and C were no better than their plan A, and it just kind of drove the point home for them, about what they were missing.

Vijay Sharma (10:15):
I mean, we can sit here and we talk about geospatial and kind of the ERP technology driving this, but when it comes to reality and some of the organizations, your geospatial experts are kind of super smart guys sitting in a part of an organization, your ERP tech is with the CIO or CTO, how do you actually make the change to come through and bring this information together? So it's not that one person who by chance found out that backup plan one, two, and three are all exposed to the same problem. Give me your opinion on, really, how do you make that change happen?

Sophia Mendelsohn (11:00):
There are moments in every listener's company, when the board and CEO are making a multimillion, if not a hundred million or billion dollar decision, and the key for the listener, would be to know when those moments are upcoming or happening, because that is the time to say to your CIO, and to say to the leader of your geospatial organization, "Too much money on the table right now to not talk, people."

John Lenahan (11:27):
I mean, another thing that I often think about, is starting small, and starting with what you know. Because sometimes you can be overwhelmed by the enormity of trying to bring geospatial to business systems, that maybe they're not familiar. And I think just starting and opening the CEO, or the C-suite or others' eyes to the possibility of seeing it on a map, and the value and the additional insight that can bring. But sometimes it's scary, and it's hard to get started, so trying to be cognizant of that, and just slowly working it in and bringing that to the forefront.

Vijay Sharma (12:05):
So maybe let's shift topics to AI, and talk a little bit about where you see the potential of AI coming into resilient supply chains. John, let's start with you.

John Lenahan (12:15):
So where my mind goes, is naturally kind of geospatial AI, or we call it GeoAI, and it's a form of machine learning, and it's something we've been doing for decades. But bringing kind of automated image analytics to those fields, and understanding how those fields are changing in real time, so that you're providing that insight, whether it's identifying, at a very precise level, risk to flooding, or how healthy a forest is. But doing that in a way that the information is being fed to the users, you don't have to be these deep kind of geospatial analysts kind of, but you're really using AI and using the power of the computer.

Vijay Sharma (13:00):
Sophia, how are SAP looking at those processes? Because it drives so much value to our customers, that the spend will more than pay back for itself.

Sophia Mendelsohn (13:12):

Right, look, it's a three chapter story, and in the first chapter, you're in R&D, you're in the lab, and you have quite literally tens, if not hundreds of thousands of product declarations from your suppliers, each claiming to have some sort of sustainability attribute, like certified palm oil, or a lack thereof. And normally you hire a small fleet of interns to read those documents, and they have a relatively high margin error. Now, instead, embedded in your ERP system, you can use the AI to ingest hundreds of thousands of product claims, scan them, read them, determine accuracy, and apply them to what claims your sales folks, for example, could then make on a product.
(14:03):
You can then take that same data set, take that same information, no matter what form it came in, and transfer it to any type of regulatory compliance. Gee, the AI is now reading this regulation, let's match the requirements with this regulation, up to what all these product compliance statements are saying. And I'm going to immediately suggest how you should comply with this regulation, I can fill out the form for you, and things you should do day to day in your business, on your shop floor, to stay compliant. And that's just chapter one.

John Lenahan (14:36):
I love that example. And building on it, you've identified, using AI, some of the areas where you want to further evaluate, analyze, imagine, then using that geospatially, enabling it, and identifying those targets, where maybe you can use technology to verify or evaluate what's going on on the ground, with imagery. Or to deploy actual field verification, because you need to do it.

Sophia Mendelsohn (15:02):
That's fascinating.

John Lenahan (15:03):
And it is just a really good way to take the ERP data, the analysis you're doing from a product lifecycle perspective, and then targeting some of the activities that you can do further, as a supplier, as a corporation.

Vijay Sharma (15:17):
It's fascinating. A lot of people think about AI as a threat to jobs, and they don't see the flip side of that, where it could be such an enhancer. A few years ago, we did a time and motion study internally at Lloyd, around how we use AI to review contracts, because there's so many projects we do that require review of thousands of contracts. And at the time, it took about three hours to go through a

contract, as a human being, extract all the key terms from the supplier contract, and kind of read them and analyze the form. Using AI, we're able to reduce that down to 15 seconds per contract, just to do the drudge work of reading and extracting things around it. And you could take that 15 seconds and redeploy the time, the three hours, to actually have the person focus on quality. They're coming back to this concept of a resilient supply chain, even the back-office stuff, or the things we think about as drudgery, taking the time to get through that stuff away, and focusing on quality and insights, are just going to help companies go through the roof.

Sophia Mendelsohn (16:32):
Well, that actually brings us perfectly to chapter two. I see those we actually thought would be most impacted, being some of the first to benefit, any factory floor, any shop in anyone's supply chain. There's a person who is paid a certain amount of money per hour to get a certain amount of stuff done, and ultimately judged on their operational efficiency in that unit of time. So if we imagine that person walking through a factory, and they see a safety issue or a quality issue in a product, they're immediately now faced with a choice. A, I could do my job that I'm getting paid to do and be rewarded for it, or B, I could stop everything I'm doing, screw up my colleague's schedule, walk 10 minutes to the field office, hope the right manager is there, hope they give me the right form, submit the safety form, and wonder if anyone does anything with it.
(17:26):
Or, if I have my mobile version of my ERP with embedded AI, I whip out my phone ... which I probably wanted to do anyway, right? Whip out my phone, talk right to SAP's business AI agent Joule, report the safety incident, and be done with it. And then on the back ends, the AI uptakes that information, takes it straight into an environmental health and safety system, which are the things running the people that run supply chains, and says, "Hey, this is what I saw. This is my recommendation. This

Sophia Mendelsohn (18:00):
This is how I'm going to document it. Here's what I think you should do next, and here's any possible training I think you should do as well.

Vijay Sharma (18:06):
Now, if my brain recalls, you had three chapters in this.

Sophia Mendelsohn (18:11):

And the third chapter is ultimately a chapter about design efficiency. We know that the cost of materials is only going one way, and that is up. And we know that the availability of natural resources is only going one way. And very unfortunately, for many reasons, that is down. There is a double imperative for a supply chain owner, a COO, to sit with their CPO and say, "Hey, we got to get with R&D, and we got to ask them to use AI to do simulations on how we can design our products and maybe add additional services to make sure that these materials come back to us." And we can call it circular, and we can call it responsible. We can call it closed loop, but ultimately we're going to call it control.

(19:06):

This is the control economy. This is the verticalization we've seen in so many other parts of the supply chain that AI now enables. You find the right material. You design for it. You manufacture it differently, and you can use your data and technology and, of course, your ERP system to know who you sold what to and then how to get it back in a reverse supply chain and ultimately bring it back into your planning and resourcing.

Vijay Sharma (19:33):

Right. And I love the examples that you bring in because it really tells the story of sustainability in a more holistic way. It's not just about doing good, which it is, but it's also about sustainability and efficiency. Being sustainable ultimately is being more efficient, and being more efficient will drive profits to companies and have more control of your own future and have more control of your supply chain.

(19:58):

On AI, John, I'm going to ask you for one more example here. It's around the what-if analysis. And I know at Esri you are focused a lot on digital twins and shipping lanes, for example, and helping a lot of your customers with what if something happened to a specific location. What are your alternatives? Could you talk a little bit about that ability? It's almost a crystal ball that you're bringing to the table, bringing location and AI and enterprise data together.

John Lenahan (20:29):

Absolutely. And I think, to start with, digital twins, what does it really mean? It's creating a digital version of what you see in reality. When you think of what we've been doing in a geospatial industry for years, it's creating a digital twin of the world.

Sophia Mendelsohn (20:44):

Wow, that is such a wonderful way to put-

John Lenahan (20:48):
Right?

Vijay Sharma (20:48):
Not complicated at all.

John Lenahan (20:49):
Not complicate-

Vijay Sharma (20:49):
Coming back to we're just replicating the world.

John Lenahan (20:51):
We're replicating the world. And in doing that, really providing the opportunity for smart people, whether they're managing the supply chain to make decisions, like you said earlier, Sophia, testing out those decisions and validating in a digital world so that they can prove out that it's going to work, that it's going to have the impact they hope for or not.
(21:12):
In the case of the one customer you're referring to, which is a large kind of multinational financial institution, they were looking at how to model out the shipment of goods globally and disruptions to those goods at ports around the world and what would be the downstream effect of disruptions at a given port on the affected nations. Really focused on small nations that might not have the same kind of resources at their disposal.
(21:49):
We built the digital twin that modeled all of the ports. It took data from the ERP and understood the shipments that were going from point A to point B everywhere. And then we were able to model out the flow of goods. And we were able to look at the flow dynamics and create this simulation. If something happened in the North Atlantic that disrupted the shipment of goods for seven days, let's say, what kind of impact would that have on economies around the world? Very interesting. Very [inaudible 00:22:19]-

Vijay Sharma (22:19):
And what alternate ports would people have to use, and how would they have to scale up and on and on and on?

John Lenahan (22:24):
How could they redirect shipments to get to the end point in the same way? And all of that can be done in this digital reality or this digital twin version of the global shipping network.

Sophia Mendelsohn (22:35):
Right. Imagine if you could do that at home. If you don't make dinner tonight ...

Vijay Sharma (22:40):
Moving on a little bit around what should companies do in the short term, it's daunting. It's not something ... If you go through and say, "I want to recreate my company online," or, "I want to recreate my life online and do all the what-if analysis," and it's really daunting. It's not something that everybody's going to take in one fell swoop.
(23:01):
What are two or three things that you would encourage companies and executives and people to do to start edging into that direction? Sophia, maybe we can start with you.

Sophia Mendelsohn (23:12):
Sure. Well, two problems we should all be aware of happening right now. The first is that this is a window of opportunity that is already starting to close. This is not an open door. AI and how we form and shape AI and how we train models ... Of course, we'll continue for many years into the unknown and foreseeable future, but now is the time to influence how that's going to be done.
(23:38):
The second problem statement is the gap between the business user, which is you, dear listener, and the developers and the decision makers on AI is way too wide. The call to action I would really implore our listeners to do is run, don't walk, to your C-suite colleagues. Find out who is in charge of the application of investment to AI and ask to sit at the table with your technology providers, with me, and say, "This is where I actually make or break my P&L. These are my risks." Let's not just chase minute efficiency and paperwork, which I actually happen to love and things, and it add up to billions of dollars, but let's make sure from the beginning we're including the right data sets around

sustainable supply chains into the models using the same syntax. That's a fancy way of saying tagging all the data the same. So that when your CFO asks her margin agent, "Hey, where's the best place to sell this particular product? What's the market I can optimize for margin?", and they actually get the right answer because they also have the supply chain and sustainability data.

Vijay Sharma (24:59):
One thing I love about both your companies is you are making AI more accessible to people. It's no longer the domain of a coder or a database administrator or a geospatial specialist, but you can go into both of your technologies and ask it to do what you just said.
(25:18):
Talk a little bit about how you're seeing that democratization of AI as it comes to resilient supply chains because that's almost a game changer. Bringing that to the everyday person so that they can see the risks.

John Lenahan (25:35):
Absolutely. And I think by leveraging AI, and as you said, Vijay, democratizing the use of location intelligence, making it easy, asking simple questions of a map without having to know exactly how to press a series of buttons to perform a pretty complicated spatial process. That is the way that you bring kind of the spatial to the rest of the organization. And something Sophia said. Two things. One was, I'm not putting words in your mouth, but the idea of bridging, kind of reaching across the table, for different users, whether it's the programmers and the business users, but also seeing geospatial or location analysts at that table, too, and using AI as a way to bridge that.
(26:22):
And then the second point you made that I wanted to bring up is this all hinges on data. And we feel strongly and believe that AI is much more powerful when it knows where. Bringing where to all of the AI processes that are running the world and will be running world even more so moving forward just gives it even more insight in terms of making those decisions and opening kind of opportunity.

Vijay Sharma (26:52):
John, coming back to what you just said, that is a great example of bringing AI to life and using

Vijay Sharma (27:00):
Using it in supply chains. Using that technology, what would you advise companies and people to do to make supply chains more resilient?

John Lenahan (27:10):
Well, the first thing is start. Start small and begin kind of mapping and visualizing what you know. You have all this data in your systems. You have the opportunity. And building a digital twin, doing this advanced kind of analytics and predictive analytics, requires you to have that base. One of our organizations that we work a lot with, we were amazed to find, they're a Fortune 500, that they had 15 different ways to capture addresses, and all the addresses were different. So there was no way they could actually get a holistic picture, holistic map of essentially their business.
(27:51):
So first thing is capture and map and visualize the base of what you know. But then you have to build those connections. You have to understand that there's connections between each point along your supply chain and your value chain. And understanding the flow, understanding what goes from here to there, that's captured in the ERP, but the transport of that provides insight into what could happen to it along the way. Is it going to be on time? And that's something, once you build out this network or this digital twin of your supply network, a digital supply network, you can start to do some of the scenario modeling. You can start to stress test certain points along the supply chain. Going back to the concept of you have multiple suppliers in the same region, how do you identify that and de-risk one supplier by looking at how can you distribute your supply sources?

Vijay Sharma (28:51):
So start with maybe your most critical part of your supply chain-

John Lenahan (28:55):
Absolutely.

Vijay Sharma (28:55):
... or product chain and figure out, just map that and start there. And then you see the value, and build and build and build.

John Lenahan (29:01):
Yeah. And you're going to learn from it and you're going to get buy-in. And people are going to say, "Why can't we see this across all of our product lines?"

Vijay Sharma (29:08):
Sophia, what about you? Same question. What advice, two to three things to start companies on a resilient supply chain?

Sophia Mendelsohn (29:15):
So I would say two-step game plan. The first is connect and the second is distribute. And so you absolutely want to make sure you are connecting all the information in your ERP. If you have multiple instances in your multiple ERPs with your geospatial data so that they're all tagged, they're all using the same syntax, and they're all in the same business language. So you can draw on them as one data set.
(29:43):
The second part is having the knowledge to distribute what happens in your supply chain over your ledger. Your supply chain is where the profit is made, it's where the risk is held. And we want to make sure to connect the information between the office of the COO and the CPO to the office of the CFO by transferring that information to the concept of a green ledger or otherwise, which of course all happens through your ERP.

Vijay Sharma (30:14):
You heard it here folks. Very, very actual complex technology brought down into simple terms and simple first steps. I want to end on a fun question. What is your everyday sustainability moves that you're making to make your lives more sustainable? I'll go first. Since moving into the city, I've given up a car. I don't own a car anymore. And also I've consolidated my shipping, my purchases into kind of once a week type things. So to reduce the use of packaging. So that's mine.

John Lenahan (30:46):
Those are big changes. That's good. Mine might not be as impactful, but every week I use a city sponsored compost program. So all of my food scraps, anything that we don't eat, peels, you name it, go into the composting bin once a week. I put it out to the street, they pick it up. Come springtime, we get access to great healthy kind of compost put into vegetable beds and kind of create that food circularity that we were talking about earlier.

Vijay Sharma (31:15):
How about you, Sophia?

Sophia Mendelsohn (31:16):
Look, for better or worse, I'm corporate through and through. I swear I was born that way, right? And I would say those things, and ensuring that sustainability is built into your geospatial analysis strategy and your ERP system, is my personal contribution, and I think the listener's greatest impact.

Vijay Sharma (31:37):
Well, thank you very much. I love those answers. Thanks for joining us on the Resilient Edge today. This has been a fascinating and highly informative discussion, covering the importance of sustainability for resilience to the transformative roles of ERP, AI, and geospatial data, and some actions companies could take in the short term. The message is clear, resilient supply chains are sustainable supply chains. I'm Vijay Sharma, special host of Resilient Edge, a Business Vitality podcast, paid and presented by Deloitte, and produced for Deloitte by BBC StoryWorks Commercial Productions. Thanks so much for listening. We'd appreciate a review on your podcast app. Bye for now.

Sophia Mendelsohn (32:16):
Thank you. So nice to meet you.

Vijay Sharma (00:00):
Welcome to the special episode of Resilient Edge. I'm your host for the session, Vijay Sharma. And today we're delving into a topic that has become key for businesses worldwide, how to create resilient supply chains that can withstand disruption. The past few years have illustrated some vulnerabilities in global supply networks, from natural disasters to geopolitical shifts and evolving customer demands. The need for agility and supply chain robustness is very clear, but resilience isn't just about bouncing back. It's increasingly intertwined with sustainability and planning ahead. Companies are recognizing that a resilient supply chain is one that is environmentally attuned and transparent. It's better for the planet, for business driving innovation and attracting talent, and building trust with customers and investors alike.
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Today I'm talking to specialists that represent leading organizations at the forefront of technological innovation and strategic thinking in this space to help navigate this complex and important landscape. Joining me are Sophia Mendelsohn, the leader of a sustainability at SAP. SAP is at the heart of countless enterprise operations globally, and their insights into how technology can help

drive sustainability and resilient supply chains is invaluable. And John Lenahan, the head of Global Commercial Services at Esri. Esri is a global leader in geographic information systems software, location intelligence, and mapping. Geospatial data offers a unique lens through which to understand and mitigate supply chain risks, and we're eager to explore its transformative potential. Let's dive right in. Let's start with the big picture here. Maybe Sophia, if we can start with you.

Sophia Mendelsohn (01:35):
Sure.

Vijay Sharma (01:36):
As a leader in SAP, you're really uniquely positioned to see how some of this disruption in global supply chains are impacting organizations in our lives. There's a discussion around digital transformation that can help these supply chains. Can you talk to us a little bit about what it means beyond just complying with regulations and actually transforming supply chains through digital technology?

Sophia Mendelsohn (01:58):
Sure. Well, first, let's start with what we mean by disruption, because most of the time I think folks thinks it means, I can't get exactly what I want when I want it. And I would add on another layer to that definition. Disruption is blindness. You cannot see what is happening in your value chain, and you cannot surface data to address it. You don't know where the delay is coming from. You don't know which supplier is having issues, and you don't know what skew or container it's going to affect, so it's not just about moving a supplier from one place to another to respond to tariffs. It's about having constant visibility at the asset or transportational level to what's happening, being able to zoom out and zoom down whenever you want.

Vijay Sharma (02:51):
You bring up a really interesting point because the lack of visibility itself causes so much disruption and panic in people and enterprises throughout the world. Can you think of maybe a recent example that you've come across in SAP or just outside in the normal, talking to your customers that you've really seen this manifest where visibility has played a key problem or role in decision-making within an organization?

Sophia Mendelsohn (03:21):

Sure. Well, first of all, I panic too when I don't have control and visibility, so we're very empathetic to the leaders who go through that. And I can cite really countless companies that are coming to us and saying it's no longer acceptable to estimate our carbon or really any unwanted externality or pollution in some generalized estimated level. And so right now there are a number of organizations, especially CPG companies, anyone facing into a consumer market that want to be able to attribute either a cost or a positive attribute down to the literal product level and be able to say, I'll make a decision about recycled content or virgin content and material into a specific product for a specific market based on exactly who I want to sell that product to.

Vijay Sharma (04:19):
Can you talk a little bit maybe about how SAP thinks about circularity and helps measure some of that?

Sophia Mendelsohn (04:25):
Sure. Ultimately, what technology enables you to do is test before you invest. That, especially with AI, we can now go through a series of material R&D options, a series of design options, and imagine if you will, literally shifting the scales or shifting the buttons on a speaker for what you want to optimize for speed, quality, recycled content, fees, green margin, and then landing where you need to before you begin to build and invest.

Vijay Sharma (05:03):
You touched on AI, but before we go to AI-

Sophia Mendelsohn (05:06):
I can never not touch on AI.

Vijay Sharma (05:09):
John, I want you to weigh in here. We've talked about visibility. You can't have visibility without location intelligence. It's become so critical in the way-

John Lenahan (05:18):
Absolutely.

Vijay Sharma (05:19):

... we see things today. It's not only what, it's where and where and when too, so talk to us a little bit about what you're seeing through your lens around geospatial and location intelligence in terms of securing supply chains.

John Lenahan (05:35):
For sure. And I think where and when, Vijay, that's a great way to put it. Cueing off of what Sophia was saying in terms of an example, I want to talk about a large multinational coffee company and a realization they had about 10 years ago. They were concerned about the risks to their high quality coffee growing regions around the world, so how do they figure out how best to secure those and make those resilient? And they used where. They used location intelligence, they used geospatial to identify the areas that were of most critical value, but then also those areas that were at most critical risk.
(06:17):
And then now they have these targets and they deployed a team of agronomists, and then they created very site-specific remediation and mitigation plans for the areas that were of most priority, so they knew where their supply was coming from, they knew how important it was to their business. And now they understood how to employ the right procedures or the right methods to secure and make the supply chain as resilient as they could, ultimately safeguarding their supply. That's a really good example of how location is fundamental to supply chains and compliments other technologies like ERP to just add to the insight and the awareness.

Vijay Sharma (07:03):
You see a lot of the operational data coming through SAP and the intelligence and the location intelligence coming through, so how would you see both of these domains really converging in the future? Because when it comes to supply chains you can't really drive impact without anything that both of your companies do.

John Lenahan (07:26):
From my perspective, I often think of ERP as the engine of a business.

Sophia Mendelsohn (07:31):
Oh, thank you.

John Lenahan (07:33):

Decisions about sales and insight on sales, materials, the entirety of business decisions. And then from a geospatial perspective, how do you compliment that and how do you really allow some of the supply chain managers and some of the business leaders to see where they're going with the ERP data? And that's the natural fit for geospatial, is to really take and enhance the ERP data, bring location and help them see how it fits into the geospatial context.

Sophia Mendelsohn (08:09):
And I think about forests when I think about ERP and geospatial, we have multiple companies, some in tires, some in coffee, some in wine and beverages. All of them want to source materials that are compliant with future EU regulation and then be able to drive a premium or a margin with their own customers from that better sourcing. And the only way to really do that is to have good geospatial data. You've got to get down to the field level. It's time to go from estimates to actuals because otherwise it will always sound like greenwashing to our listeners.

Vijay Sharma (08:53):
And that's such a good point. I assume when you say forests you're talking about the EU deforestation regulation, EUDR.

Vijay Sharma (09:00):
If you look at a company and they're sourcing from a farm, you need the pictures of the farm over a period of time, to make sure it's not encroaching into surrounding forests. And then you need to come back into your enterprise systems, and take that information and make sure it gets to your freight forwarder. So that's not easy. So it requires kind of the coming together of different worlds, your world, John, and Sophia, your world.

John Lenahan (09:27):
Another example I wanted to add that kind of really shows the power of the relationship between geospatial and NERP, is we had a large manufacturer, and they had a dependency on rubber to produce this one handbag they were making. When they started to map and visualize where these suppliers were located, what they realized was that not only was their primary supplier in one specific region of Vietnam, but their secondary and their tertiary supplier were all in that same region. All three of their suppliers were all subject to the same extreme flooding.
(10:08):

So their plan B and C were no better than their plan A, and it just kind of drove the point home for them, about what they were missing.

Vijay Sharma (10:15):
I mean, we can sit here and we talk about geospatial and kind of the ERP technology driving this, but when it comes to reality and some of the organizations, your geospatial experts are kind of super smart guys sitting in a part of an organization, your ERP tech is with the CIO or CTO, how do you actually make the change to come through and bring this information together? So it's not that one person who by chance found out that backup plan one, two, and three are all exposed to the same problem. Give me your opinion on, really, how do you make that change happen?

Sophia Mendelsohn (11:00):
There are moments in every listener's company, when the board and CEO are making a multimillion, if not a hundred million or billion dollar decision, and the key for the listener, would be to know when those moments are upcoming or happening, because that is the time to say to your CIO, and to say to the leader of your geospatial organization, "Too much money on the table right now to not talk, people."

John Lenahan (11:27):
I mean, another thing that I often think about, is starting small, and starting with what you know. Because sometimes you can be overwhelmed by the enormity of trying to bring geospatial to business systems, that maybe they're not familiar. And I think just starting and opening the CEO, or the C-suite or others' eyes to the possibility of seeing it on a map, and the value and the additional insight that can bring. But sometimes it's scary, and it's hard to get started, so trying to be cognizant of that, and just slowly working it in and bringing that to the forefront.

Vijay Sharma (12:05):
So maybe let's shift topics to AI, and talk a little bit about where you see the potential of AI coming into resilient supply chains. John, let's start with you.
John Lenahan (12:15):
So where my mind goes, is naturally kind of geospatial AI, or we call it GeoAI, and it's a form of machine learning, and it's something we've been doing for decades. But bringing kind of automated image analytics to those fields, and understanding how those fields are changing in real time, so that you're providing that insight, whether it's identifying, at a very precise level, risk to flooding, or how

healthy a forest is. But doing that in a way that the information is being fed to the users, you don't have to be these deep kind of geospatial analysts kind of, but you're really using AI and using the power of the computer.

Vijay Sharma (13:00):
Sophia, how are SAP looking at those processes? Because it drives so much value to our customers, that the spend will more than pay back for itself.

Sophia Mendelsohn (13:12):
Right, look, it's a three chapter story, and in the first chapter, you're in R&D, you're in the lab, and you have quite literally tens, if not hundreds of thousands of product declarations from your suppliers, each claiming to have some sort of sustainability attribute, like certified palm oil, or a lack thereof. And normally you hire a small fleet of interns to read those documents, and they have a relatively high margin error. Now, instead, embedded in your ERP system, you can use the AI to ingest hundreds of thousands of product claims, scan them, read them, determine accuracy, and apply them to what claims your sales folks, for example, could then make on a product.
(14:03):
You can then take that same data set, take that same information, no matter what form it came in, and transfer it to any type of regulatory compliance. Gee, the AI is now reading this regulation, let's match the requirements with this regulation, up to what all these product compliance statements are saying. And I'm going to immediately suggest how you should comply with this regulation, I can fill out the form for you, and things you should do day to day in your business, on your shop floor, to stay compliant. And that's just chapter one.

John Lenahan (14:36):
I love that example. And building on it, you've identified, using AI, some of the areas where you want to further evaluate, analyze, imagine, then using that geospatially, enabling it, and identifying those targets, where maybe you can use technology to verify or evaluate what's going on on the ground, with imagery. Or to deploy actual field verification, because you need to do it.

Sophia Mendelsohn (15:02):
That's fascinating.

John Lenahan (15:03):
And it is just a really good way to take the ERP data, the analysis you're doing from a product lifecycle perspective, and then targeting some of the activities that you can do further, as a supplier, as a corporation.

Vijay Sharma (15:17):
It's fascinating. A lot of people think about AI as a threat to jobs, and they don't see the flip side of that, where it could be such an enhancer. A few years ago, we did a time and motion study internally at Lloyd, around how we use AI to review contracts, because there's so many projects we do that require review of thousands of contracts. And at the time, it took about three hours to go through a contract, as a human being, extract all the key terms from the supplier contract, and kind of read them and analyze the form. Using AI, we're able to reduce that down to 15 seconds per contract, just to do the drudge work of reading and extracting things around it. And you could take that 15 seconds and redeploy the time, the three hours, to actually have the person focus on quality. They're coming back to this concept of a resilient supply chain, even the back-office stuff, or the things we think about as drudgery, taking the time to get through that stuff away, and focusing on quality and insights, are just going to help companies go through the roof.

Sophia Mendelsohn (16:32):
Well, that actually brings us perfectly to chapter two. I see those we actually thought would be most impacted, being some of the first to benefit, any factory floor, any shop in anyone's supply chain. There's a person who is paid a certain amount of money per hour to get a certain amount of stuff done, and ultimately judged on their operational efficiency in that unit of time. So if we imagine that person walking through a factory, and they see a safety issue or a quality issue in a product, they're immediately now faced with a choice. A, I could do my job that I'm getting paid to do and be rewarded for it, or B, I could stop everything I'm doing, screw up my colleague's schedule, walk 10 minutes to the field office, hope the right manager is there, hope they give me the right form, submit the safety form, and wonder if anyone does anything with it.
(17:26):
Or, if I have my mobile version of my ERP with embedded AI, I whip out my phone ... which I probably wanted to do anyway, right? Whip out my phone, talk right to SAP's business AI agent Joule, report the safety incident, and be done with it. And then on the back ends, the AI uptakes that information, takes it straight into an environmental health and safety system, which are the things

running the people that run supply chains, and says, "Hey, this is what I saw. This is my recommendation. This

Sophia Mendelsohn (18:00):
This is how I'm going to document it. Here's what I think you should do next, and here's any possible training I think you should do as well.

Vijay Sharma (18:06):
Now, if my brain recalls, you had three chapters in this.

Sophia Mendelsohn (18:11):
And the third chapter is ultimately a chapter about design efficiency. We know that the cost of materials is only going one way, and that is up. And we know that the availability of natural resources is only going one way. And very unfortunately, for many reasons, that is down. There is a double imperative for a supply chain owner, a COO, to sit with their CPO and say, "Hey, we got to get with R&D, and we got to ask them to use AI to do simulations on how we can design our products and maybe add additional services to make sure that these materials come back to us." And we can call it circular, and we can call it responsible. We can call it closed loop, but ultimately we're going to call it control.
(19:06):
This is the control economy. This is the verticalization we've seen in so many other parts of the supply chain that AI now enables. You find the right material. You design for it. You manufacture it differently, and you can use your data and technology and, of course, your ERP system to know who you sold what to and then how to get it back in a reverse supply chain and ultimately bring it back into your planning and resourcing.

Vijay Sharma (19:33):
Right. And I love the examples that you bring in because it really tells the story of sustainability in a more holistic way. It's not just about doing good, which it is, but it's also about sustainability and efficiency. Being sustainable ultimately is being more efficient, and being more efficient will drive profits to companies and have more control of your own future and have more control of your supply chain.
(19:58):

On AI, John, I'm going to ask you for one more example here. It's around the what-if analysis. And I know at Esri you are focused a lot on digital twins and shipping lanes, for example, and helping a lot of your customers with what if something happened to a specific location. What are your alternatives? Could you talk a little bit about that ability? It's almost a crystal ball that you're bringing to the table, bringing location and AI and enterprise data together.

John Lenahan (20:29):
Absolutely. And I think, to start with, digital twins, what does it really mean? It's creating a digital version of what you see in reality. When you think of what we've been doing in a geospatial industry for years, it's creating a digital twin of the world.

Sophia Mendelsohn (20:44):
Wow, that is such a wonderful way to put-

John Lenahan (20:48):
Right?

Vijay Sharma (20:48):
Not complicated at all.

John Lenahan (20:49):
Not complicate-

Vijay Sharma (20:49):
Coming back to we're just replicating the world.

John Lenahan (20:51):
We're replicating the world. And in doing that, really providing the opportunity for smart people, whether they're managing the supply chain to make decisions, like you said earlier, Sophia, testing out those decisions and validating in a digital world so that they can prove out that it's going to work, that it's going to have the impact they hope for or not.
(21:12):
In the case of the one customer you're referring to, which is a large kind of multinational financial institution, they were looking at how to model out the shipment of goods globally and disruptions to

those goods at ports around the world and what would be the downstream effect of disruptions at a given port on the affected nations. Really focused on small nations that might not have the same kind of resources at their disposal.
(21:49):
We built the digital twin that modeled all of the ports. It took data from the ERP and understood the shipments that were going from point A to point B everywhere. And then we were able to model out the flow of goods. And we were able to look at the flow dynamics and create this simulation. If something happened in the North Atlantic that disrupted the shipment of goods for seven days, let's say, what kind of impact would that have on economies around the world? Very interesting. Very [inaudible 00:22:19]-

Vijay Sharma (22:19):
And what alternate ports would people have to use, and how would they have to scale up and on and on and on?

John Lenahan (22:24):
How could they redirect shipments to get to the end point in the same way? And all of that can be done in this digital reality or this digital twin version of the global shipping network.

Sophia Mendelsohn (22:35):
Right. Imagine if you could do that at home. If you don't make dinner tonight ...

Vijay Sharma (22:40):
Moving on a little bit around what should companies do in the short term, it's daunting. It's not something ... If you go through and say, "I want to recreate my company online," or, "I want to recreate my life online and do all the what-if analysis," and it's really daunting. It's not something that everybody's going to take in one fell swoop.
(23:01):
What are two or three things that you would encourage companies and executives and people to do to start edging into that direction? Sophia, maybe we can start with you.

Sophia Mendelsohn (23:12):
Sure. Well, two problems we should all be aware of happening right now. The first is that this is a window of opportunity that is already starting to close. This is not an open door. AI and how we form

and shape AI and how we train models ... Of course, we'll continue for many years into the unknown and foreseeable future, but now is the time to influence how that's going to be done.
(23:38):
The second problem statement is the gap between the business user, which is you, dear listener, and the developers and the decision makers on AI is way too wide. The call to action I would really implore our listeners to do is run, don't walk, to your C-suite colleagues. Find out who is in charge of the application of investment to AI and ask to sit at the table with your technology providers, with me, and say, "This is where I actually make or break my P&L. These are my risks." Let's not just chase minute efficiency and paperwork, which I actually happen to love and things, and it add up to billions of dollars, but let's make sure from the beginning we're including the right data sets around sustainable supply chains into the models using the same syntax. That's a fancy way of saying tagging all the data the same. So that when your CFO asks her margin agent, "Hey, where's the best place to sell this particular product? What's the market I can optimize for margin?", and they actually get the right answer because they also have the supply chain and sustainability data.

Vijay Sharma (24:59):
One thing I love about both your companies is you are making AI more accessible to people. It's no longer the domain of a coder or a database administrator or a geospatial specialist, but you can go into both of your technologies and ask it to do what you just said.
(25:18):
Talk a little bit about how you're seeing that democratization of AI as it comes to resilient supply chains because that's almost a game changer. Bringing that to the everyday person so that they can see the risks.
John Lenahan (25:35):
Absolutely. And I think by leveraging AI, and as you said, Vijay, democratizing the use of location intelligence, making it easy, asking simple questions of a map without having to know exactly how to press a series of buttons to perform a pretty complicated spatial process. That is the way that you bring kind of the spatial to the rest of the organization. And something Sophia said. Two things. One was, I'm not putting words in your mouth, but the idea of bridging, kind of reaching across the table, for different users, whether it's the programmers and the business users, but also seeing geospatial or location analysts at that table, too, and using AI as a way to bridge that.
(26:22):
And then the second point you made that I wanted to bring up is this all hinges on data. And we feel strongly and believe that AI is much more powerful when it knows where. Bringing where to all of

the AI processes that are running the world and will be running world even more so moving forward just gives it even more insight in terms of making those decisions and opening kind of opportunity.

Vijay Sharma (26:52):
John, coming back to what you just said, that is a great example of bringing AI to life and using

Vijay Sharma (27:00):
Using it in supply chains. Using that technology, what would you advise companies and people to do to make supply chains more resilient?

John Lenahan (27:10):
Well, the first thing is start. Start small and begin kind of mapping and visualizing what you know. You have all this data in your systems. You have the opportunity. And building a digital twin, doing this advanced kind of analytics and predictive analytics, requires you to have that base. One of our organizations that we work a lot with, we were amazed to find, they're a Fortune 500, that they had 15 different ways to capture addresses, and all the addresses were different. So there was no way they could actually get a holistic picture, holistic map of essentially their business.
(27:51):
So first thing is capture and map and visualize the base of what you know. But then you have to build those connections. You have to understand that there's connections between each point along your supply chain and your value chain. And understanding the flow, understanding what goes from here to there, that's captured in the ERP, but the transport of that provides insight into what could happen to it along the way. Is it going to be on time? And that's something, once you build out this network or this digital twin of your supply network, a digital supply network, you can start to do some of the scenario modeling. You can start to stress test certain points along the supply chain. Going back to the concept of you have multiple suppliers in the same region, how do you identify that and de-risk one supplier by looking at how can you distribute your supply sources?

Vijay Sharma (28:51):
So start with maybe your most critical part of your supply chain-

John Lenahan (28:55):
Absolutely.

Vijay Sharma (28:55):
... or product chain and figure out, just map that and start there. And then you see the value, and build and build and build.

John Lenahan (29:01):
Yeah. And you're going to learn from it and you're going to get buy-in. And people are going to say, "Why can't we see this across all of our product lines?"

Vijay Sharma (29:08):
Sophia, what about you? Same question. What advice, two to three things to start companies on a resilient supply chain?

Sophia Mendelsohn (29:15):
So I would say two-step game plan. The first is connect and the second is distribute. And so you absolutely want to make sure you are connecting all the information in your ERP. If you have multiple instances in your multiple ERPs with your geospatial data so that they're all tagged, they're all using the same syntax, and they're all in the same business language. So you can draw on them as one data set.
(29:43):
The second part is having the knowledge to distribute what happens in your supply chain over your ledger. Your supply chain is where the profit is made, it's where the risk is held. And we want to make sure to connect the information between the office of the COO and the CPO to the office of the CFO by transferring that information to the concept of a green ledger or otherwise, which of course all happens through your ERP.

Vijay Sharma (30:14):
You heard it here folks. Very, very actual complex technology brought down into simple terms and simple first steps. I want to end on a fun question. What is your everyday sustainability moves that you're making to make your lives more sustainable? I'll go first. Since moving into the city, I've given up a car. I don't own a car anymore. And also I've consolidated my shipping, my purchases into kind of once a week type things. So to reduce the use of packaging. So that's mine.

John Lenahan (30:46):

Those are big changes. That's good. Mine might not be as impactful, but every week I use a city sponsored compost program. So all of my food scraps, anything that we don't eat, peels, you name it, go into the composting bin once a week. I put it out to the street, they pick it up. Come springtime, we get access to great healthy kind of compost put into vegetable beds and kind of create that food circularity that we were talking about earlier.

Vijay Sharma (31:15):
How about you, Sophia?

Sophia Mendelsohn (31:16):
Look, for better or worse, I'm corporate through and through. I swear I was born that way, right? And I would say those things, and ensuring that sustainability is built into your geospatial analysis strategy and your ERP system, is my personal contribution, and I think the listener's greatest impact.

Vijay Sharma (31:37):
Well, thank you very much. I love those answers.

Sophia Mendelsohn (31:40):
Thank you. So nice to meet you. Thank you.

Vijay Sharma (31:45):
Thanks for joining us on Resilient Edge today. This has been a fascinating and highly informative discussion covering the importance of sustainability for resilience to the transformative roles of ERP AI and geospatial data, and some actions that companies should take in the short term. The message is clear, resilient supply chains are sustainable supply chains. I'm Vijay Sharma, special host of Resilient Edge, a Business Vitality podcast, paid and presented by Deloitte, and produced for Deloitte by BBC StoryWorks commercial productions. Thanks so much for listening. We'd appreciate a review on your podcast app. Bye for now.