

The Future of Supply Chain

Balancing the Benefits of AI & the Health of Our Planet

[00:00:00] **Regenia:** [00:00:00] The future of supply chain is gonna continue to be complex, which drives the need for us to adopt technology and to really emphasize sustainability and resilience in everything that we do.

[00:00:12] **MarySue:** Supply chain women have superpowers. They apply holistic thinking to solve the problems of tomorrow. And we all know that AI raises the stakes exponentially for companies. Supply chain thinking can bring AI adoption into equilibrium with decarbonization targets, and that's very exciting.

[00:00:32] **Richard:** I'm Richard Howells, and this is the Future of Supply Chain. A podcast where we discuss hot topics, best practices, and the latest innovations in today's global business. And I'm joined by my wonderful co-host Oyku.

[00:00:44] **Oyku:** Hello, everyone. I'm Oyku Ilgar marketer, blogger, and podcaster in the supply chain and ERP area at SAP. In today's episode, we will be discussing the results of a new white paper from the Women's Leadership Center at Williams Bay about how to balance the benefits of AI with helping our planet. And to do so, we are joined by Mary Sue Barrett and Regeina Sanders. Hi, Mary Sue Regeina. Happy to have you here today. Let's kick things off with a quick introduction from you. Regeina, you wanna go first?

[00:01:11] **Regenia:** Sure. Thank you so much. I'm really happy to be here with you all today. So, Regeina Sanders, I'm a supply chain partner at EY. I've been in the supply chain space for the last 25-plus years, mostly in the manufacturing industry. I am currently the managing partner of EY's operations in Atlanta. And, very much excited to look at this topic, especially given our current state of affairs with the environment, but also the huge demand that we have for AI, and just really helping people to understand what the implications are for us to make sure that we're being responsible.

[00:01:50] **MarySue:** Hello, I'm delighted to be joining you. I'm a public policy person, have spent my career doing that. And people tell me I'm a super connector. I've [00:02:00] worked both nationally for sustainability and infrastructure issues. I've had a long-time affiliation with the Brookings Institution as a non-resident senior fellow, and I ran an organization in the

Chicago metro region called the Metropolitan Planning Council for 25 years. That's where I got to know Anne Drake, who is the driving force behind the Women's Leadership Center. At the time, she was CEO of DSC Logistics, and she became a key leader on my board. So the center, which Ann is bringing to life, is being designed by starchitect Jeannie Gang. It's in a gorgeous area called Lake Geneva, which is about 90 minutes from Chicago, and it's there that the Women's Leadership Center will host convenings of women solving global problems like the one we're talking about today?

[00:02:48] **Richard:** Great, thanks. And maybe you could tell us a little bit about the research as well at the high level, and why you decided on this particular topic as your first research for the [00:03:00] leadership.

[00:03:00] **MarySue:** Absolutely. As we've done input sessions over the last couple of years with high-impact women. No surprise. The topic of AI has come up at every single one, and some version of sustainability and attaining greenhouse gas reduction targets has also circulated. And so it was sort of a natural hot topic. We're a startup, so we're new and we're trying to introduce ourselves, but we have two aims. We wanted to offer insights and this white paper. Outline six action steps that any organization can take to be proactive. I hope we talk about those. And then secondly, we wanted to introduce the Women's Leadership Center to thought leaders and to future partners because we're opening our doors roughly a year from now in mid-2026. And we want to send out a signal that we're interested in meeting women who wanna change the world. So the hypothesis of this paper was that. AI and climate goals were on a collision [00:04:00] course, but by talking to our advisors, people like Regeina and the 13 women that we interviewed, we actually learned that they don't have to be. And the key difference is if humans thoughtfully intervene. So that's really the definition of excellent leadership is figuring out that balance between risk and rewards. In the paper, we use the term responsible AI quite a bit, and what we mean by that is. It's just at the convergence of getting the right balance between science, technology, innovation, and social responsibility. It's a tall order, but I think we've brought some light and some thoughtfulness to this topic.

[00:04:39] **Richard:** That's great. Thanks for the introduction, and let's get into this discussion about responsible AI, because we talk about AI a lot in this podcast series. I don't think we've had an episode where the topic of AI hasn't come up in the last 18 months. And of course, AI can be developed and deployed with [00:05:00] innovative solutions to address environmental chall, the environmental challenges we face. But at the same time, AI is driving a large increase in energy, water, and mineral consumption. And as you said, it's up to

us to display AI responsibly and ethically to establish the guardrails and insist on transparency of what the impact of leveraging AI is on the environment. So, what did the research find as the AI's impact on energy, water, and mineral usage specifically?

[00:05:30] **MarySue:** You are right, Richard. It is ubiquitous in this conversation. Hopefully, if anyone out there needs convincing, our paper provides a little bit of fodder. We cite some information about the natural resources overall doubled about every three and a half months, and that's been true for a decade. And specifically, we dive deeper into energy, water, and minerals, providing both some access to insights from experts and also some infographics. [00:06:00] So, on energy, the large language models that we're either choosing to use or that pop up in front of us and are forced to use, those require about 10 times the power of a typical search. Every search. 10 times the energy of water. It's estimated that up to 1.7 trillion gallons of water will be required globally just two years from now. That's some data from the World Economic Forum and minerals, many types, but specifically lithium, cobalt, and nickel. The mining of those products are needed in greater supply can be done sustainably, but it creates geopolitical pressures that can ripple. So those are some of the things that we highlight just to kind of set the stage to say, this is why human leadership is required.

[00:06:47] **Oyku:** We all use OpenAI, right? And the CEO of OpenAI joked that saying, please and thank you to ChatGPT actually cost the company millions of dollars in electricity bills. So it costs to be [00:07:00] polite. Because every extra word in the query requires more computation, and also, as you said, which means more energy, minerals, and that adds up fast with millions of users interacting every day. It's a funny way to highlight a serious issue, but AI uses lots of power, and as it gets more popular, the environmental impact grows. So, how are companies dealing with AI's environmental impact, and what strategies can businesses use to prevent AI's carbon footprint from being more of a benefit than a hindrance?

[00:07:33] **Regenia:** So I'll jump in there. Um, there are a couple of things. I look at it, and our white paper calls this out very nicely. There's some direct impact. And there are some indirect impacts that I'd like to just kind of talk through. So one is when it comes to things like monitoring, things around climate change, the amount of rain and areas getting, we can use AI to help us with those types of monitoring of things that are really impacting the [00:08:00] climate. So that's kind of like more of a direct impact. More on the indirect side, though, is that we can use AI to optimize, and when I say optimize, I'm thinking specifically about the supply chain. We can optimize trade routes, and we can

optimize how we are linking carriers to freight operators. We can leverage it in terms of as big consumers of it, we can talk about and maybe even dictate where data centers are located, making sure that data centers are perhaps located in an area that is going to minimize the impact that it has on the climate. So there are a lot of different ways that we can leverage AI to be part of the solution to make sure that we are still optimizing how much of an impact we are to, putting more greenhouse gases into the environment. But we can also use it operationally in how we operate and those things that actually might [00:09:00] cause more pollutants to go into the environment. So those are some things that we call out in very specific terms in the white paper.

[00:09:08] **MarySue:** And a number of the people that we were fortunate to interview talked very much to that point Regina just made about how their companies are either contributing to the tools, or the monitoring, or the solutions, because using more electricity by itself is not a problem. It's what are the sources of energy powering our expanded grid? For example, our experts who contributed their ideas and their track record to this paper. We talked to Microsoft, who gave us some insights into their 350 data centers today, which, of course, are going to be increasing, and how those are being fueled with renewable energy. We highlighted a tool that Google has developed, with some science-based centers called Flood Hub. And with recent events in the [00:10:00] US has had very catastrophic floods. This tool can allow many days up to a week. Prediction on river edge flooding can be lifesaving. Earth Knowledge is another tool that we highlighted. It's got a global digital twin, which is very valuable to places like the state of California in predicting and responding to wildfires. So when you think about the impacts of climate, it's about the supply chain. It's about preparing for natural disasters. It's about getting. Ready for extreme weather, and AI can be an enormously useful tool to get ahead of that.

[00:10:39] **Regenia:** The only other thing that I'll add to that, too, is something that Mary Sue said, just kind of prompted me to think about, it's visibility. I mean, we talk a lot about increased visibility and if we can have more visibility, that allows us to be. A lot more apt to be proactive in some of these measures. And even to the point of the [00:11:00] actual equipment that powers these data centers. I have several clients who are involved as original equipment manufacturers of some of the gensets. These are actually used to fuel the data centers. They're looking at leveraging AI to optimize and better build their products so that engines that they're producing can actually be smarter engines to leverage renewable fuels to emit fewer gases and pollutants into the environment. So, it's almost a circular type of effect. The users. Have a great opportunity as we point out to be part of the answer and making sure that when we are leveraging AI, we're doing it in a responsible way that takes advantage

of the benefits of AI, but also limits the challenges that it might be introducing broadly to the environment.

[00:11:55] **Richard:** It's always interesting to have these conversations, and you mentioned visibility, Regeina, because [00:12:00] we've done this podcast for two years. Is, and we've been talking about resiliency and how to improve resiliency in turbulent times, how to become more sustainable. And the answer always comes back to, you've gotta start with the data. You've gotta start with visibility into that information. Because you can't manage what you can't measure. So that's a perfect point. I wanted to quickly talk about both sides of this equation. The benefits of AI in balancing against the environmental challenges. So, what are some of the use cases that you are seeing for AI and helping address sustainability goals and mandates that are being set by governments, by regions, by companies for their own sustainability goals?

[00:12:41] **MarySue:** There are the requirements, and some of them for the EU are coming online for reporting in 2026. 2026, so extremely soon. But I think if we view it as just a burden and a check the box. We're missing an opportunity for innovation because the reporting and the visibility [00:13:00] that we just talked about can actually open up cost-saving and business opportunity, business development opportunities. For example, when you bring these forces of sustainability and AI into equilibrium. You begin to consider options that may not have been on the table before. One example would be shared facilities, including data centers across institutions. We talked to the top sustainability rep at Duke University, and they talked about how a cluster of educational institutions and other users were pursuing data center development on a joint development basis. There are also AI simulations that can run the numbers and do predictive forecasts on HVAC, on smart lighting, and on renewable energy alternatives. These are all things that maybe before we brought this into focus, society brought this into [00:14:00] focus. They were not a high, as high a priority, but. Again, AI enables the sort of evaluations that would be harder to do than in the past. And that does open up business development opportunities and bottom line, cost savings.

[00:14:15] **Oyku:** And how do we balance the challenges of tracking the environmental impact while leveraging the benefits of AI?

[00:14:22] **MarySue:** By looking at your fleet, your energy grid costs your data center future needs and forecasting what is needed, but also the partnerships that are required to deliver those. So, utility partnerships. I know Regeina, when we talked to you for this paper, that was one of the things you highlighted was the importance of industry collaborations and partnerships. So I think balancing the

benefits requires sort of throwing out the rule book, and looking at, well, we know we're gonna need data center development. Does that mean we go on our own? Or does that mean some sort of creative partnership with [00:15:00] utilities and other users in the geography? So bringing it into balance means we stop looking at this as AI is a benefit and sustainability, compliance is a cost. They are actually both things that can benefit businesses.

[00:15:19] **Richard:** I am sure there's a way of sharing the data in some cases as well, because why four companies ask the same question when you could ask it once and share the results.

[00:15:29] **Regenia:** Yeah, I mean, to that point, it's a good one. We have to look at this as a connected ecosystem. This is not a linear problem to solve. Everyone has a role to play here, and the partnerships that MarySue just brought up are really important to making sure that we are baselining where we are. We're recognizing the different roles that everyone can play. We know who the stakeholders are, and we are sharing things in a much more transparent way. Which can be a hurdle. But I think that, if everyone has the ultimate [00:16:00] goal, which is to be responsible users of AI, that can be a rallying point. And I think that there are several of the experts that we talked to that really spoke to that as something that could really, you know, make this a reality versus something that we're just talking about.

[00:16:15] **Richard:** I want to get a chance to talk about the six recommendations for action that the paper has. Because I think that's, obviously the most important takeaway because it's, it's the, the guidance that it gives for companies. So let's start with the first one. How should companies realign their corporate strategies? To make sure that it includes the responsible implementation of AI?

[00:16:37] **Regenia:** So I can take that one. So first and foremost, I think it's important to establish some clear governance frameworks. There's gotta be policies and guidelines that sort of hold the company accountable, and there's things that need to be, that can be communicated in an easy way to their partners. Second of all, as I previously alluded to, stakeholder engagement and [00:17:00] stakeholders in this sense. It's not only the individuals that are part of the company, but it's their customers, and it's the regulators. It's that whole, again, ecosystem of people that need to be engaged. Transparency is also important to making sure that we have the right data and that we're allowing people to understand how the decisions are being made and what the implications of those decisions might be. And then. We also need to keep this whole continuous learning loop because AI is moving fast. We're talking

generative AI one day, and you know, later we're talking about including causal factors into how we can make AI more human-like. So, there's gotta be some continuous learning and adaptation in order to make it work. And constantly assessing what the risks are because, you know, we live in a very dynamic environment. There are disruptions all the time, and AI is gonna need to be able to pivot with a lot of those disruptions, that [00:18:00] happen. Lastly, and probably more importantly, is to make sure that there's some alignment with corporate values. Every organization has its set of Guidelines or corporate values that they adhere to, and whatever they're doing around AI and adopting it and working with their partners, there needs to be some alignment there with what those values are.

[00:18:19] **Oyku:** Right. And how should or how can we measure the impact of AI? What tools should we put in place to track and report the impact of AI?

[00:18:28] **Regenia:** First and foremost, we've gotta establish some baselines and agree upon what the performance metrics are. Having those key performance indicators, so that we can address the effectiveness and the impact of what we're doing, is critically important. There's also. The consultant in me is gonna always bring up an impact assessment framework. I think that it's important for companies to have their own impact assessment frameworks. There are a number of data platforms that are out there and analytics tools that can be used to really analyze the data [00:19:00] and its effects on business operations. Having dashboards so that you can have and communicate the visibility that's needed. And then. When you have the dashboards, create a mechanism by which people can provide feedback on what they're seeing. I think those are all the different types of tools that can really help us report on the impact of AI across multiple dimensions to different audiences.

[00:19:26] **Oyku:** And what system innovation should companies be looking at to address sustainable tech around the whole supply chain?

[00:19:32] **Regenia:** When it comes to systems innovations, right? I almost consider AI as a system innovation itself. But I mean, there's automation, there's robotics. We talk a lot about data-driven decision makingmaking sure that our supply chains are collaborative and looking across the end-to-end. And I think that cybersecurity is something that we haven't brought up, but it's something that is critically important to think about when you're talking about systems [00:20:00] integration. And you're talking about systems innovations. There are supply chains, as you know, and all of these mechanisms become more digital. The importance of cybersecurity is gonna continue to grow. We also know that AI is really only as good as the data that it ingests, right? So we have to be

aware what some of those challenging players that are out there might have some ill will towards the ultimate goal. You gotta be aware of those types of things when it comes to cyber. Being ready to embrace any new technologies that come about that can increase how we're using AI and how we're leveraging even new data that we can get into making some of the decisions.

[00:20:44] **Richard:** So in supply chains, we rely on a network of companies. We rely on our suppliers. We rely on our logistics service providers, our contract manufacturers. So, how can we ensure sustainability [00:21:00] across this business network? Because we talk about Scope one, Scope two, and Scope three emissions, and Scope three emissions are usually about 80% of a company's business, and they're outside of their organization with their suppliers.

[00:21:15] **MarySue:** Yes. That's such a critical point. A lot of what Regeina just walked us through were the internal leadership requirements. It involves the C-suite board. All of the operating functions, and then we get to the supplier network, which is vast and needs to be part of the same team. So the answer is really quite simple. It's about setting clear, high standards and consistent ones. So you need to communicate and communicate again and again with a lot of repetition. What's important, it's about values. It's also about. The systems that you expect them to transition to for that kind of transparency and [00:22:00] visibility, and rewards that go with those expectations. So what are the incentives for suppliers to be, maybe, indicated leading innovators? Creates a little bit of competitive pressure in a healthy way, both for that supplier and for the company procuring it. The work that McDonald's has done with its vast network in influencing the standards that suppliers are held to. So there are many companies that do that. And, you know, first in class innovators who can show the way for others.

[00:22:35] **Richard:** I'm assuming it's increasingly part of the selection process for suppliers as well, to make sure that they're compliant with your policies and procedures from a sustainability perspective. The fifth area is around federal advocacy, and you mentioned, MarySue, that your focus is, or your expertise is, on corporate policy. So, it'll be interesting to get your point of view here on how companies should get engaged in federal [00:23:00] advocacy.

[00:23:00] **MarySue:** Corporations, not all of them consider public policy part of their purview, but I think they're missing the boat if they take that attitude that's for someone else, that's for the trade association, that's for someone who has a full-time lobbyist. It's really for everyone. And I don't say this just in the US context, although, we are in the heartland, based in Chicago and the new

home of the Women's Leadership Centers nearby, but, across the US, the EU, the, ASAN, the Association of Southeast Asian Nations, each one of these collaborative bodies is an opportunity to shape policy. And really, who better than those who are driving the economy? So it's not a conservative or liberal slant to this. It's really documenting these incentives, which maybe were piloted and put in place with a sunset to them. It's so important to document where they're making a [00:24:00] difference or where they need to be tweaked and improved. With the federal transition, in the US, from the Biden to the Trump administration, landed right in the middle of the Inflation Reduction Act, with a number of significant energy incentives for manufacturing fleets, et cetera. Where are they working? Where are they not working? What needs to happen to improve or sustain those so that they don't just sunset? I think it's both about looking at the landscape today, but also how it can be improved. The technology players have long understood that a regulatory-free environment is not necessarily the best one. You want some guardrails, you want some rules of the road, and industry ought to be at the table to shape those public policies.

[00:24:50] **Oyku:** So the last recommendation was to build cross-industry networks, and my question is, is there any way for companies to get involved in cross-industry [00:25:00] networks to boost their sustainability?

[00:25:03] **MarySue:** Yes. I think this goes hand in hand with getting in the game on federal advocacy or international advocacy. The opportunities to work in cross-industry networks are really blown wide open, and it's almost a requirement now. Regeina's insights about the cross-industry partnerships, whether it be in a supplier network or with energy suppliers, are really critical. There are existing manufacturing and trade associations to come to the table. And they're looking for leadership. It's important to say it's not someone else's job, and that if there's an unintended consequence that you're struggling with as a supply chain solutions provider or as part of that ecosystem, it's really up to you to come to the table or create the table. Sometimes the table's too small, and that's really so in line with the Women's Leadership Center. That, [00:26:00] and Drake's business was built on forming those partnerships to bring innovative solutions at DSC Logistics. When she sold her company and stepped into this phase of philanthropy, leading to the Women's Leadership Center, it was really bringing those same values to bear. So what we did with this paper and what we're outlining here with these six recommendations for companies, boards, suppliers, industry groups advocacy tables is really emblematic of the kind of problem solving we hope to do on a whole variety of problems affecting the supply chain and others. But this is one where you just can't be on the sidelines.

[00:26:38] **Oyku:** So, what advice would you give listeners looking to embark on this journey, and how and where can listeners learn more?

[00:26:47] **MarySue:** I can start off on that. Another individual highlighted in our white paper on balancing the benefits of AI and the health of our planet is a Kellogg Northwestern professor. [00:27:00] Her name is Megan Bussy, and she is just kind. Nailed it when she said it's a business opportunity, and this is an AI adoption, and balancing these forces is a business transition opportunity. And anytime there's a transition, there's growth, there's money to be made. I know I work with a water resource recovery organization in the Chicago region. That has been a partner with the Women's Leadership Center. It's called Current Water, and it's just changing our attitude of waste to wealth. There are resources in that wastewater coming out of a manufacturing process. That's just one small example. But the transition to more transparency and accountability means that there are. There are ways to rethink our processes. And I like Megan Bussy's attitude of looking at a business opportunity. [00:28:00] We also talked to Alandra Nelson at the Institute for Advanced Study. She told us that AI is not magic, which is another quote I really like. What she was getting at was that it must be stewarded by innovation and future-focused government governance. In other words, we can't design the systems for what we've already experienced. We have to look ahead at the exponential growth and design reporting and governance, and partnerships so that we're ready for that change. So I think those six recommendations we just talked through. If every institution and every company can look at those and adapt them to their environment and say, What are we doing on each one of these things? Are we doing the same thing we did five years ago? Probably requires another look, and to learn more, they can certainly reach out to us. The Women's Leadership Center website is [women's leadership center.org](https://women'sleadershipcenter.org), and our white paper is available there, but [00:29:00] it's also a place. To learn about opportunities to partner with us going forward. We think women are naturally collaborative and are at the forefront of solving these global problems.

[00:29:11] **Richard:** I couldn't agree more. We're coming to the end of the podcast. We've really only touched on such an important topic, and we will make sure that the links to the Women's Leadership Center webpage and the research paper are included in the show notes. But I have one final question we ask all of our guests. In a sentence or two, what is the future of the supply chain?

[00:29:38] **Regenia:** This is a hard one to capture in one sentence because the reality is that supply chains are gonna continue to become more and more complex. So that's really the future. And that's gonna be the eventual reality of

everything that we're doing, which is why it's important for us to adopt technology. So the future of supply chain is gonna continue to be complex [00:30:00], which drives the need for us to adopt technology and to really emphasize sustainability and resilience in everything that we do. And I know that the Women's Leadership Center is gonna continue to focus on this area and a lot of the adjacencies, as we go forward, to really define what that future of supply chain does look like.

[00:30:19] **MarySue:** The Women's Leadership Center chose this topic because we believe that supply chain women have superpowers. They apply holistic thinking to solve the problems of tomorrow. And we all know that AI raises the stakes exponentially for companies. Supply chain thinking can bring AI adoption into equilibrium with decarbonization targets, and that's very exciting.

[00:30:43] **Richard:** That's two wonderful answers, Mary Sue Regeina. This is a great conversation. It's such an important topic, I wish you great success with the Women's Leadership Center, and I'm just happy that you allowed me to be on this podcast with you.

[00:30:58] **MarySue:** Delightful. [00:31:00] We appreciate it too, and we hope we can have some additional conversations in the future.

[00:31:04] **Regenia:** Thanks for having us.

[00:31:04] **Richard:** You will definitely be invited back, and if you, as soon as you get some more research or you're interested in going into more detail on this research and the feedback that you're getting from it, we'd love to have you back on to discuss it further. As I mentioned, we'll also make sure that we include the link to the white paper *Balancing the Benefits of AI and the Health of our Planets* in the show notes. But until next time, from MarySue, Regenia, Oyku, and I, thanks for discussing the future of Supply Chain.