# Episode 129: Discussing the WEF from Shock to Strategy paper with Kyle Winters

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**Richard:** I am 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. In today's episode, I'm joined by Kyle Winters from the World E conomic Forum to discuss a recent World Economic Forum report From Shock to Strategy. Building value chains for the next 30 years, which is a topic that, I [00:01:00] dunno how we'll cover in half an hour, but Kyle, great to have you on and looking forward to talking to you today.

**Kyle:** Thank you, Richard. Thanks for having me on for you and the SAP team.

**Richard:** No problem. Let's kick it off with a quick intro from you about yourself your organization and the background of the paper.

**Kyle:** Yes, of course. Thank you. Kyle Winters, I am a lead on what we call the Center for Advanced Manufacturing and Supply Chains at the World Economic Forum. We are broken into 10 thematic centers that cover everything from nature and climate topics, nightlife, economy, sports and entertainment. To the home that I live in, which is the Center for Advanced Manufacturing and Supply Chains we easily like to call it if it's made or if it's moved. We enjoy having a, purview in it. And we cover topics in that kind of auspice from technology adoption, people-centric transformation, sustainability with a focus on net zero to resilience where this kind of piece of work is housed. Particularly we run a network of what we call global future [00:02:00] councils, which are kind of internal think tanks that we compose of leading experts from academia,

civil society, public officials and then industry experts really bring them together to cover a range of topics over the course of about a year to a year and a half of which I help run the council that looks at topics on value chains and resilience, which is the kind of end product that produce this paper.

**Richard:** From the findings of the paper, what were the main disruptions and driving forces that we're seeing across global value chains at the moment?

**Kyle:** maybe taking a step back when the council came into light for its 2023, 2024, kind of cohort, they really wanted to start to anticipate. What were the kind of driving forces or what was behind disruption and what would continue to spark disruption. That increase in intensity and frequency of disruption that we've become so acquainted to in the supply chain world and really figuring out what would continue to drive that [00:03:00] into the year 2040 into the year 2050. So through a very interactive exercise, the cohort came up with about eight driving forces. That would continue to produce uncertainty and then tied specific uncertainties to them. So to give a little bit of a recap on that, we have everything from consumer behavior and expectations, climate disruption, global relations and trade, regulatory complexity, technology evolution, cybersecurity, workforce and skills, social equity. You can see very encompassing and then specific uncertainties that accompany each, so about three uncertainties that the council at large said will continue to be kind of front and center at the conversation of value chain configuration for the next 20 25 years.

**Richard:** That list of eight, maybe we can unpack a few of them. The report highlights a shift from globalization to regionalization of supply chains. So what are the main business benefits and risks of this new approach, and how might it affect competitiveness and [00:04:00] resilience?

**Kyle:** Yes, of course. So, I think what's really fascinating, we've seen this with some of our other work streams, at the macro level, right? There's a little bit of ongoing, what we call rhetoric versus reality to set the stage. So right now we're seeing about 92% of our kind of senior level partners acknowledging that they are anticipating or in the process of regionalizing their manufacturing footprint. I think on the other end of that spectrum though of this kind of surveyed pool of our partners only 28% really aim to have for region operations fully by 2030. So we take a little bit of an expanded view here on not just that 2030 milestone but what do we seem to have by 2040 in the mid-century mark by 2050? Some of the benefits that we see in terms of this kind of approach to regionalization, to dual sourcing is the increased ability of resilience, right? Regional clusters, being able to reduce exposure to these global shocks and supply disruptions that we keep waking up to almost day in and day [00:05:00] out. Ideally we have

this idea of right enhanced collaborative. Collaboration where our proximity of this kind of regional footprint fosters better coordination among manufacturers, suppliers, and logistics providers. With that, there's this kind of embedded idea of faster response times. Regional hubs being able to quicker adapt to local market demands, disruptions and contexts. And then I think on the other end we have to keep in mind the sustainability imperative. Shorter supply chains can help to reduce emissions and support more of our kind of aims towards circular economy initiatives. I think on the other end of this though, there are a few risks that have to be acknowledged. Regional hubs may develop kind of unique standards, complicating global trade and regional alignment on the back of this the increasing of trade complexity for regional kind of disputes and tariffs that can create volatile environments as we're currently seeing play out now and then the potential for inefficiency. We're losing, or there is a [00:06:00] potential of loss of economy of scale and increased costs if regionalization isn't optimized. So I think when we. Take a little bit of a step back and look at the impact of competitiveness and resilience in this context of regionalizations. Companies that can diversify their supplier networks and adapt that in region four region operations, have that potential at a high level to increase the resilience and competitive advantage. But a lot of that success is kind of dependent on balancing that regional agility with the understanding that global integration isn't going anywhere.

**Richard:** You hit the word that I use a lot in this in this podcast. The whole concept of the balancing act, and in this case, the balancing act of costs versus agility and risk resilience. But another one that's coming up and one of the eight categories was the whole concept of sustainability and and regulatory compliance. So how can companies keep up with the ever changing and increasingly complex framework of regulations, especially [00:07:00] when we talk about, different regions and localization and the different regulations to region?

**Kyle:** You're spot on. Particularly when our cohort was looking at the uncertainty that is processed four regulatory complexity right this idea that fragmented regulatory landscapes across geopolitical and industrial boundaries will persist. Limited support for effective implementation at the industry partner level, particularly as we go down the value chain for our tier one to tier five suppliers. And then the unpredictability of investments driven by regulatory changes, not having that uncertainty or that certainty for longer term. debt payback on our investments. When we look at how companies are responding to or would anticipate to respond towards regulatory complexity, moving into that year 2030, 2040 mindset. It's helping to develop agile governance models that navigate these kind of fragmented regulations ? Being able to operate in those. Multi region environments, a lot of [00:08:00] that is dependent or we're seeing

a dependency on investing in kind of data-driven compliance monitoring. Having those digital platforms to automate and streamline regulatory adherence and updates. A lot of it also is dependent on this engagement and cross industry and cross-border collabor. Collaborations with the node and the idea of harmonizing kind of standards and reducing complexity across that supplier base. Part of this is also dependent, especially as we get into the sustainability conversation on emphasizing transparency and the role that third party vendors play in verification to bridging those gaps that some of our suppliers, have with emissions and social. Compliance data. And then last but not least looking at kind of leveraging incentive based regularization to encourage innovation and compliance, right? How is government incentivizing, right? The idea of kind of carrots not sticks when it comes to being able to put forth innovation or foster [00:09:00] innovation.

**Richard:** As you're talking, it's the thing that's bouncing around my head is how all of these things are interrelated as well. Because the next one I wanted to bring up was, consumer behavior and expectations and their expectations are related to regulatory concerns or sustainability concerns. They're related to ensuring they get the right product at the right time and reducing the risk and having more agility to enable that. I have the same question around the consumer behavior and expectations. How do we make sure we predict sense and keep up with this changing consumer demand?

**Kyle:** I think it's so fascinating, right? Again, to go back to that kind of survey I talked about, that has kind of connotations for regionalization. We did very similar questions when it came to prioritization of kind of customer value or customer value driven operations. And we see that right? 60% of senior executives rate customer value as one of those priorities that is driving their supply chain configuration. But again, that reality, when we look at 2030, only [00:10:00] 15% can really cite tangible actions taken to simultaneously strengthen the performance, resilience, and sustainability in the perception of their customers. So I think when we really look at kind of like the leaders in this space. We're seeing that they're really turning towards the adoption of advanced analytics and AI driven demand sensing to improve that forecasting accuracy, using that kind of realtime data integration to support, regression models for both existing and new products. And I think a really important conversation around that new product creation is also right, bringing in your suppliers building that kind of end-to-end supply chain visibility for proactive responses in the material that you're using in sourcing, and just basically down to the configuration of the product at large.

**Richard:** Yes, that improved visibility is usually the answer to many of the challenges. A company is facing, whether it's increased sustainability initiatives, reduce risk, having that visibility across those [00:11:00] multiple nodes of the supply chain is a key driver.

**Kyle:** And exactly as you're saying right? There's so much of this that is interconnected. If it is looking at right customer demand or customer centricity? Is it looking at regulatory alignment? If it's looking at sustainability? A lot of this does boil down to exactly as you're saying, that that visibility across the value chain.

**Richard:** Right. we've been talking a little bit about reducing risk and one of the big risks that we've been seeing increasingly is the risk around climate disruptions. So how can climate disruptions or how can manufacturing and supply chain have a better strategic response? How are you seeing that evolving from 2030 and beyond?

**Kyle:** I think one of the really exciting things that we're seeing right now is that for the first time in kind of our macro research we're seeing consistency in leading organizations by market share, prioritizing sustainability. Their supplier vendor selection. So [00:12:00] for me that's like two big thumbs up right there, right off the bat. With that being said, climate disruption is impacting manufacturing and supply chains in, in very tangible ways. We see Hurricane Aaron right now. Taking place in the Atlantic with commercial shipping routes being completely rerouted around the area that I call home, right? the eastern seaboard of the us. So weather events, even if they're not disrupting kind of physical assets, are creating these production or logistics kind of hindrances. I think some of the strategies that we're seeing that are being adopted in the Gear up for 2030 are around kind of the adoption of circular economy principles. This idea of kind of cradle to cradle product design, what we called in some of our workshops, like the Evergreen approach, and then being able to utilize, , that real time monitoring, AI driven kind of energy management to optimize the resource use. In the production lifecycle. And then right there, there is a, an earnest conversation that's being had around strategic location planning [00:13:00] in the context of mitigating climate risk when looking at greenfield selection sites as well.

**Richard:** I wanna merge together two of the, eight strategies or challenges, and that's the technology evolution in cybersecurity. Because cybersecurity is becoming a top concern for supply chain leaders, especially as their systems move to the cloud and they leverage additional technologies like AI. What are

the biggest vulnerabilities and how are companies addressing them to protect an increasingly digital and interconnected supply chain?

**Kyle:** You're spot on, on the interconnectivity between this conversation on cybersecurity vulnerabilities and the increase of technology. There was a big debate that we had, I remember in one of our kind of council meetings about what the adoption rate of quantum will be in manufacturing, and I was very surprised to see the pushback from the industry partners on the call that quantum will take [00:14:00] a much longer time to adopt. The manufacturing process because of the vulnerabilities that it will bring. We'll see a much quicker profusion in finance, for example, than in manufacturing and how it may lag there because of this risk with cybersecurity. And I think it really speaks to kind of the expanding attack surfaces due to the increase of digitization in the manufacturing and logistics process. We're increasing the kind of opportunity for emerging threats across the supply chain while we're also looking at this problematic area of right weaker cybersecurity, particularly among smaller suppliers. But the posing of that creates a risk across that value chain. I think when we start to look at some of the mitigation strategies, right? It's first and foremost embedding those cybersecurity skills into workforce education and empowerment. A little bit of a longer return there, but I think so crucial from what we heard across that upskilling and reskilling journey. It's kind of additionally, Developing [00:15:00] transparency, risk reporting, governance and compliance frameworks. So we're not operating in different kind of regulatory schemes? That adoption of scalable platforms that utilize real-time monitoring and data across different regions. And then a lot of this is tied to right, how can we start bringing in more and more cryptography? AI, machine learning, and even blockchain to detect threats in real time so we can have those responses simultaneously.

**Richard:** That's an interesting one. I mean, I think cybersecurity of your suppliers will be part of the selection criteria moving forward because you are only as strong as the weakest link as the saying goes.

**Kyle:** Entirely. Entirely. And what is the responsibility too, of kind of the broader ecosystem, right? Your larger OEMs, your kind of governance partners to ensure that those vulnerabilities are being mitigated for at the kind of smaller end node.

**Richard:** I wanna move on to the next section of the paper, because the paper discussed three pillars of [00:16:00] future ready value chains and it talked about integrated sustainability. End to end collaboration and technology adoption, which we've touched on all of those three a little bit, but let's go into a

little more detail and take them one by one. Sustainability's at the forefront of many, if not all geographies. With EHNS regulations around emissions, circular economy that you've mentioned, decarbonization and ultimately designing products with end of life in mind for that, with that circular economy. Then we, then you have the human rights and fair labor and pay practices from a social perspective. So what advice would you give companies on how to integrate sustainability into the business processes?

**Kyle:** Yes, of course. So when looking at kind of integrating sustainability, we're seeing kind of embedded ESG principles across all kind of business processes and units, particularly as we start stretching that horizon out, knowing that gonna be a key [00:17:00] kind of conversation, whatever you call it the ethical responsibility per se. If it's not ESG in your business kind of processes and units with a particular focus on things like greenhouse gas emissions, reductions, decarbonization, the ever increasing emphasis on the circular economy, and that idea again of kind of cradle to cradle design. I think that there's also an important node here on prioritizing, right? The social sustainability, right? Human rights, fair labor practices and then ensuring kind of supply chain governance is there to back it all up. On that kind of third note, including your ethics, your anti-corruption compliance and emissions accounting.

**Richard:** The next one was around collaboration and. Again, this shows the interrelation of all of these things because you need collaboration to improve sustainability because you're reliant on suppliers or contract manufacturers, logistics service providers, and ensuring that they're [00:18:00] compliant. So what is the role of a strong business network in the supply chain of the future?

**Kyle:** Yes, of course. So when looking at kind of that end-to-end collaboration node, right? So your kind of high spectrum being interconnected, value chain, your low spectrum on a think why access your fragmentation when it comes to collaboration, there are kind of three different buckets here, right? It's resource process and sharing real-time interconnectivity, and then that regulatory alignment. Compliance. When we look at that kind of idea of a strong business network. It's enhancing kind of efficiency, agility, and resilience through that kind of value chain coordination, really enabling resources, resources and process sharing, having that knowledge exchange between your suppliers, and really creating what we call like that industrial synergy. As well as kind of putting an emphasis and importance on that real-time interconnectivity with compliance and regulatory requirements? Being able to [00:19:00] update those kind of interconnective nodes and then supporting dynamic demand management and risk mitigate mitigation across the value chain.

**Richard:** Let's talk about the third pillar, then which is technology adoption. From all of the people that you talk to which technologies are you seeing at the forefront of supply chains of the future?

**Kyle:** The debate around technology adoption is twofold, or not debate, but the conversation, right? It's not just about the technology that's being implemented, but it's, are you doing it in an interoperable tech solution manner or are you creating silos of tech solutions? I think. Bearing that in mind, when we look at forefront technology leaning towards that interoperable tech solution, it's looking at automation and autonomy, Are you including drones, robotics, cobots, autonomous vehicles? And are you doing this in a human machine collaborative environment on top of that is really the intelligence and self-learning systems. Ai, gen, [00:20:00] ai, big data, machine learning, quantum computing, in a lesser node that will take on greater life as the kind of years come on. And then underpinning this with kind of connectivity and integration, so the future of 5G industrial metaverse, wearables, and smart devices balanced with real time decision making, predictive analytics, and kind of operational optimization.

**Richard:** I like the fact you referenced the machines working with humans and not necessarily replacing humans because I think that's a very important distinction. That's a fear of especially will AI re place humans?

**Kyle:** The creativity that we'll bring into the workforce, instead of set process roles, having employees that are, are looking across different kind of traditional role sets, greater responsibility, but freeing up a little bit more creativity on the floor or wherever role you may be across the operation.

**Richard:** Exactly the job you, do today may [00:21:00] not be there, but it'll create other jobs. So the second half of the paper provides some great guidance actually, and we'll make sure that we share the link to the paper in the show notes, but you broke it down into three time horizons, 2030, 2040, and 2050. So let's touch on those three. What are the strategies shaping value chains in the next five years up until 2030?

**Kyle:** Maybe just to give a like a little bit of a why we chose those years as well, right? We wanted to have a year that represented an anchor point that, the council saw that manufacturers a lot of orgs have their investment plans already kind of tied up. That they're allowing for further projections to kind of be grounded in current operations and planning. And we really wanted that anchor point to be 2030. Kind of looking ahead we wanted a little bit of a stepping stone knowing that we'd be landing at the mid-century Mark and 2040 felt like a

place that we could explore those future [00:22:00] trajectories and create pathways where 2050 is really that visionary timeline, allowing our council members, the readers of the paper to kind of step out of their incremental mindsets and be a little bit more ambitious with alternatives and a north star for longer term decisions. I think when we start to look at 2030. There were some common themes from leading organizations that came out particularly around those three different dimensions of the value chain that we were just talking about. So in terms of kind of integrated sustainability, right? Using alternative sustainable parts and sustainable raw materials. Defining quantifiable sustainability targets as being a, a real need as you look at your operations into 2030 with that right, reducing your scope three emissions and the kind of implementation plans around that. There was this kind of push, or there still is this push right around growing diversity equity. Inclusion, kind of your business ethics and then investing in that continuing rescaling and upskilling journey for your [00:23:00] employees around the kind of end-to-end collaboration note it was really about, or leading practices around diverse applying supplier networks, especially in context of regionalization to increase that resilience, right? Having nearly all, if not. A lion's share of in region four region operations through reshoring and nearshoring like we talked about. And then applying advanced analytics and customer engagement through demand sensing. And then a little bit of the right expanding supplier management beyond just your traditional tier one approach for the technology adoption. And, really looking at how can you revamp your legacy system. How can you implement network-wide kind of asset visibility technologies? Included in this, right? Is that investment or that initial investment in big data and advanced analytics, right? Introducing those kind of technology hubs that are the north star within your kind of operation systems, deploying real-time kind of [00:24:00] enterprise resource planning for kind of rapid response to disruptions. And then I think on the back of this, right, or the backbone of this is integrating that AI decision making with tools like a supply chain digital twin.

**Richard:** Achieving all of that by 2030 would be quite an achievement to be totally honest. So what's after that? How does that evolve in the next decade?

**Kyle:** I completely agree and these are things that we've identified by working with kind of leading market share organizations to say, what are the steps that you're taking along these three nodes of the value chain? I think when we get to this idea of 2040. The way that we processed 2040 was kind of doing these very intense workshops along each one of the eight driving forces where we had about 90, 90 cards, per whiteboard, and you could select the cards that basically responded to the best on to the best uncertainties for a value chain [00:25:00] configuration across integrated sustainability, end-to-end collaboration, technology adoption and across those eight different scenarios that we're able to

create that are prepon across the paper we saw about, five or six kind of recurring themes. The first being social responsibility becoming more and more a core part of corporate sustainability strategies with businesses increasingly prioritizing fair labor and human rights and community engagement at large. The second being, again, as we discussed, right, that. Regionalized value chain approach, the shift towards regional value chains that boost collaboration and efficiency through local ecosystems. And being wary that this also could lead to kind of fragmented standards that challenge global alignment and complicate trade and sustainability efforts. The third is kind of along the same auspice, right? Harmonized incentive-based regulations are kind of needed to prevent regulatory fragmentation from [00:26:00] hindering kind of coordinated efforts on key topics like sustainability and technology adoption. When we look at kind of that forth, the integration of advanced technologies, this real idea of a self-reinforcing, data-driven learning cycle for continuous improvement that tracks analyzes and predicts outcomes in real time. And then finally on, on the last note, really getting at the conversation that we had about cybersecurity, right? Looking at data security measures. With advanced technology, with kind of robust data security measures, what will be essential for secure real time data sharing across the value chain as we interact with our customers, with our suppliers, and how do we enable that kind of end-to-end visibility to enhance that di decision making that we take from both a collaborative but also agile response perspective.

**Richard:** For 2050, the World Economic Forum basically issued a call to action. And 2030 and [00:27:00] 2040 were stepping stones as well for the call to action for 2050. So maybe you can explain a little bit what that call to action was or is?

**Kyle:** Of course. So framing it for 2050, we have right challenges, opportunities, and then we try to break it down into a call for action or call to action for the different partners that made up this collaborative effort. So when we look at challenges. The first and foremost thing that we were discussing is this operation within our ecological limits. The idea that scarce resources and geopolitical constraints will be a reality in 2050. On top of that, we'll see kind of a, a multi-speed of the sustainability transitions primarily around that regionality and on top of that right a growth of regional manufacturing blocks, which almost exacerbate what we've been talking about. To not just be pessimistic though, i think some of the opportunities that we identified for this mid-century point are really this AI, augmented human workforce ? That human machine [00:28:00] collaboration through the lens of AI. With that the organizing adaptive systems, collaborative supplier ecosystems as a big opportunity. And then the last two being kind of the advancement of novel materials in the production process, and then underpinning this digitally enabled

continuous learning. Throughout our kind of production life cycles when we break it down into the call for action or call to action. I think the big thing that speaks out for industry, it's investing in innovation and keeping this investment alive. Pursuing technologies that bridge global or regional divides based on your operational kind of footprint. When we look at academia, the call to action here is really around developing cross-disciplinary research programs and workforce trainings, helping to embed that upskill and re-skill revolution that will be so crucial to how we kind of progress in the next 20 years. In the policy lens, it's spearheading interoperable regulatory frameworks that [00:29:00] enable kind of sustainability and balance competitive innovation with global cooperation. And then finally, for civil society, it's right, how do you advocate for inclusive technology adoption that also uphold ethical standards across borders, across regions, across collaborations?

**Richard:** This conversation has been amazing to me and as somebody that talks about supply chain all the time. And after all we've discussed, I'm really interested in the last question that I'm gonna give to you and the one that I give to all of our guests, but in a sentence or two, what is the future of supply chain?

**Kyle:** So cut me off here because like you said, to start this off, we could talk about this for hours. So.

**Richard:** I'd love to keep talking about it for hours.

**Kyle:** The collective challenge that we face, the manufacturing operations ecosystem, it's not simply to achieve technical excellence across our future value chains. But it's really to ensure that [00:30:00] manufacturing's evolution serves humanity equitably. The future value chains is hopefully adaptable, resilient, and inclusive. if we do it right, built on integrated sustainability, end-to-end collaboration and the integration of advanced technology and it is all hinging around this idea of multi-stakeholder commitments that ensure that manufacturing drives global prosperity and equity inequity.

**Richard:** What a perfect summary. Kyle, Thanks for a great conversation. This has been really interesting. I'm sure the listeners will love this.

**Kyle:** Always a pleasure. Thank you for having me on.

**Richard:** No problem. Please mark us as a favorite. You can get regular updates and information about future episodes and we'll be sure to include some links in the show notes on how to access the paper. But until next time, from Kyle and I, thanks for discussing the future of Supply Chain.