IlLUminate Blog Transcript: Zach Zacharia on What's Happening with the Supply Chain Now?

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ANNOUNCER: 00:00	[music] This podcast is brought to you by iILUminate, the Lehigh Business Blog. To learn more, please visit us at business.lehigh.edu/news.
JACK CROFT: 00:13	Welcome. I'm Jack Croft, host of the iILUminate podcast for Lehigh University's College of Business. Today is December 16th, 2021. And we're talking with Zach Zacharia about what has been a disruptive year for the global supply chain. We'll also dive into what the latest Lehigh Supply Chain Risk Management Index suggests are the biggest risks facing supply chain businesses in the first quarter of 2022. Dr. Zacharia is an associate professor of supply chain management and director of the Center for Supply Chain Research at Lehigh. Lehigh Business Supply Chain Risk Management Index, or LRMI for short, was developed in 2020 by the Center for Supply Chain Research at Lehigh University and the Council of Supply Chain Management Professionals. Zach teaches graduate and undergraduate courses and supply chain operations management and logistics and transportation. Welcome back to the iILUminate podcast, Zach.
ZACH ZACHARIA: 01:17	Thank you, Jack.
CROFT: 01:19	Now it certainly has been an eventful and, to say the least, challenging year for the global supply chain. It's made headlines on an almost daily basis while becoming a go-to punch line for late night talk show hosts like Stephen Colbert.
STEPHEN COLBERT: 01:34	There're also shortages of wine, which explains-- I feel the same way, which explains your suburban mom's new T-shirt, "Don't talk to mommy until someone has resolved the kinks in the global supply chain." [Additional audio from "The Late Show with Stephen Colbert," Dec. 3, 2021.]
CROFT: 01:48	So before we dive into the LRMI for the first quarter of next year, I'd be curious to get your perspective on what you see as some of the main things that went wrong for the supply chain in 2021.
ZACHARIA: 02:01	There are a lot of things that have sort of contributed to some of the increased risk that the supply chain professionals that we surveyed gave us some feedback on. And I think the number one issue is labor. When people were able to work from home or they were required to work from home and when the government came in so that they gave some subsidies so people could continue to work from home or choose not to come back to work, that was a significant shift in the economic pattern because now companies had to look at ways to attract customers back. They had to look at things like better pay, better working conditions. They couldn't so easily use the threat of firing someone because there were so many people anxious to get jobs. So that changed the dynamic quite a bit.
ZACHARIA: 02:56	In fact, some of the executives I talked to told me that the older people who are not necessarily retirement age are just leaving the company because they don't want to deal with some of the vaccine issues and COVID fears that they have and younger workers who companies are trying to hire want flexibility before they commit to working. So all these things. The labor area of the economy has shifted tremendously

over the last year, and that has ramifications throughout the supply chain. Clearly, supply chain disruptions are becoming much, much more normal. Suppliers are not getting enough parts, they're not getting enough labor to produce the parts. And that's also sort of reverberating throughout the supply chain. And another factor I'm sure you're aware of is there's a huge logjam of container ships in the Port of Los Angeles.

ZACHARIA: 03:57

This morning, I looked, it has now reached 101 ships waiting to unload. And these are gigantic container ships holding thousands of 40-foot containers. Just think of one 40-foot container and how many bicycles or how many Christmas toys or computers or more sophisticated items could fit in a container and just imagine that they're all stranded. And some of the executives have told me that the price now for shipping containers has gone three, four, five times what it used to be and the lead times have increased tremendously from what something used to take 23 days to ship from China over to California, it still takes the same amount of time, but now unloading can take weeks. So this may take second quarter, definitely past the first quarter, to clear this kind of a logjam. So this is a huge issue. I know one of the things we'll talk about a little later is about truck driver shortages. And all these factors have made this past year very interesting and, shall I say, interesting going forward.

CROFT: 05:20

And let's take a look at what we can expect going forward. The risk index, as we've discussed on previous podcasts, is a number between 0 and 100, where greater than 50 suggests increased risk, 50 suggests the same risk, and less than 50 suggests decreased risk. For the first quarter of the new year that is almost upon us somehow, economic risk is rated at the top by supply chain professionals at 88.36. That's the highest risk index number we've seen for any category in any quarter since you launched the index almost a year and a half ago. So what does that tell us and how concerned should we be about economic risk?

ZACHARIA: 06:08

Economic risks being high is critical. And you're absolutely right, it's the highest of any type of risk. So what that's telling you is, is that supply chain professionals who are working in an industry that is always viewed as a leading indicator. If transportation rates are increasing, then the economy is likely heating up because more products are being shipped, there's increased demand and so on. So when there is higher risk in the economy, then you can see that there is increased pressure on inflation, there is higher labor costs, fuel costs are increasing. Clearly, there has been an increased demand chasing after too small capacity. As I mentioned with the cargo ships logjam, lead time is significantly increasing.

ZACHARIA: 07:02

So companies are also keeping extra inventory. Companies are looking at bringing some of this manufacturing back to the U.S. So economic risk being so high suggests to everybody that inflation is a factor that people are getting very concerned about. Labor issues, border delays, commodity price increases, all of these things are factors that are of concern if you're working in business here in the U.S.

CROFT: 07:35

Grouped very closely behind economic risk are transportation disruption risk and supplier risk, both checking in at about 85-plus. So let's take those one at a time. Transportation disruption is something we've heard a lot about lately. But the risk index for that category is actually the only one in the top eight in this report that is trending downward from almost 88 in the fourth quarter. So how much of that has to do with just simply moving past the holiday shopping crunch? And does that downward trend offer at least a glimmer of hope for the new year?

ZACHARIA: 08:17

So that's a very interesting point. We went from 87.8 last quarter to 85.5. But realize that 85.5 is still very high. Looking over the past year, that is the third highest risk value ever. So let's be clear. Transportation is still a very significant risk, however, more supply chain professionals are concerned about the economy, inflation, labor, energy costs. Transportation risk, one of the big factors of that is the truck driver shortage, and it's very real. People have been predicting that it's significant, it's simply going to get worse as more people are used to staying at home and products are getting delivered to your house. So there is that increased demand for truck drivers, but there isn't as much capacity.

ZACHARIA: 09:21

Now, one of the things we have to realize is that the life or-- and this has become very, very apparent is that the kind of way that we are paying our truck drivers is not necessarily conducive for people staying in the industry. There is a sense now that we might have to shake up the way that they get paid because the vast majority of the truck driving companies-- so some estimates, it's about 550,000 or so and about 98%, 99% of that group has less than 10 trucks in those companies, 10 to 20 trucks. So these are extremely tiny companies. And the life of this, the truck driver, they get paid by the mile. Therefore, if they sit at a dock to wait and get loaded, they don't get paid. And if they don't have a new load as soon as they land, that's again time that they do not get paid.

ZACHARIA: 10:19

We have to relook at the way that the economics of this kind of process. So there is some question about getting that to become a little bit more equitable. And maybe we can improve those opportunities so that we get more people to stay in the truck driving industry. Now, the other thing I need to also sort of share, since you brought these numbers up, is that the risk index is really capturing relative risk, not absolute risk. So absolutely, you look and see, yes, there has been a decrease. And absolutely, now the sense is that the supply chain professionals are concerned about other risks that are somewhat greater than transportation, but not necessarily not-- transportation isn't improved tremendously. I think this is still a very, very real risk that people are very concerned about.

CROFT: 11:13

And one point seems obvious, but I'll make it anyways, is talking about how difficult truck drivers' lives and the economics of making that your career now are. I mean, it's never been an easy profession. I mean, it's always had a lot of time away from family. It's just driving huge rigs for long periods of time is not easy on the body. So when you factor in all those things that it was kind of a tough profession to attract people to in the first place, all these other things now are making it-- it seems understandable why it's so difficult to find people to go into it now.

ZACHARIA: 12:04

Excellent point, Jack. And you're absolutely right. But now, you also have to realize that the larger companies are looking at ways that they can develop routes so that their truck drivers can go back home. For example, one of the companies that I work with really has a policy where if they go out, they will not go for three, four days in a row. They might go for a day, two days, and then they pick another load to come back home. Because the companies have also realized that they have to create those policies because they end up with a more safer truck driver. And the larger companies are doing that. And clearly, that has been important as far as keeping drivers engaged. It's the smaller companies and it's the way that they're being compensated that I think needs to actually change. There's going to be a shift and there has to be a shift in the economic model. And just now you can see that in large warehouses, we're going several, 20, 30, 40 percent higher than the minimum government wage because that's what these distribution centers need to offer. They're looking at ways to make sure that the jobs are constantly being rotated so that people don't get stuck in repetitive jobs. So the companies themselves are learning and putting in processes to make their companies attractive for labor. And I think that's an important factor to consider.

CROFT: 13:45 Now, I had mentioned in the previous question that right up there with transportation disruption risk is supplier risk, which is also above 85 on the index. So what does supplier risk entail and what does that tell us about what we should be looking at in the first quarter?

ZACHARIA: 14:07 So supplier risk, just like the word implies, has to do with safely and easily getting products from your supplier. Clearly, everybody in the supply chain is feeling the stress of not having enough labor, not having enough parts, and many of the raw material suppliers are getting parts from outside the country. Again, as I alluded to, there is the jam of containers and now companies are really looking at what can they do to fix their supply chain and they're looking at ways to try and bring back some of that manufacturing. But again, when you try and bring back manufacturing, where's the capacity? The executives that I talk to say that suppliers want to bring some of that work back, but they don't have enough laborers to do the work that they're currently involved in. So it's sort of a bit of a catch-22.

ZACHARIA: 15:05 Clearly, companies are seeing the chip shortage has, for example, affected many different supply chains that aren't even necessarily even related to chips, to even using chips. For example, let me give you, where you have a seat manufacturer that produces car seats that goes into automobiles. Well, they have nothing related to a silicon chip that you're waiting for from Taiwan, but they can't sell any more seats because GM is waiting for those chips which will then allow them to move the trucks and cars out of their parking lot so that they can have demand and need for more of those seats. So clearly, you have these kinds of ramifications. And I think what has really surprised a lot of people, but we in the supply chain industry were pretty well aware of it, and that is how interconnected all these supply chains are, especially when we look at it in a global context.

ZACHARIA: 16:05 So nothing that you are doing in your area that you think is at all remotely connected to what is going on in-- for example, with that ship that got stuck in the Suez Canal affected a whole number of supply chains. The silicon chip shortage, again, affected a whole bunch of different supply chains. So people are starting to realize that the decisions that they have no control over can directly affect how their particular supply chain is working.

CROFT: 16:43 Now, the next category in the latest LRMI is cybersecurity and data risk, which also, obviously, has been in the news a lot this year with a number of high-profile cyber attacks on businesses and even governments. In fact, the Identity Theft Resource Center found that the number of publicly reported data compromises through September 30th of this year had already exceeded the total number of events in fiscal year 2020 by 17%. So we're pointing to a record-breaking year for data breaches, and that's not a record I think most people would want to see broken outside of perhaps the hacker community. So how nervous are supply chain professionals about cybersecurity and how nervous should we all be?

ZACHARIA: 17:35 So one thing is clear is that all the executives I talk to are very aware of cybersecurity and they also know that when we enable more of our workers to work from home, the propensity of getting hacked increases. But I do want to make it clear that most of the executives I talked to said they've invested in putting a lot of good processes in place. And in fact, one of the companies that are on my council at the Center for Supply Chain Research told us of a specific instance that happened a month ago where they did get hacked. Someone was able to get in through a person's email. It was a phishing attack. And when they got the request for the ransomware, the entire IT department was very quickly able to lock that server out, go back to another server with all the data two hours previous before that ransomware had got in and they were back online, back working in under two hours from when they got the first note about the ransomware.

ZACHARIA: 18:51 What I'm telling you is that companies are well aware of this and have put in a lot of places a lot of processes. I'm sure you're aware of pretty well everyone has gone to the two-step factor authorization. I mean, I'm at Lehigh University using a Lehigh computer and I'm trying to log in to a Lehigh computer system, but it'll still make me go to my phone to authenticate my access. And I think everyone is starting to do that because that's the only way they can try and prevent these kinds of attacks. Clearly, a number of attacks are increasing. And in fact, one of the comments that they talked about was it would be really good if countries, if governments actually started to collaborate to protect themselves from these kinds of attacks. But in the meantime, companies do have good processes in place, but we're going to continue to get more attacks, for sure.

CROFT: 19:49 Now very close to cybersecurity and data risk is government intervention risk, which is at almost 75 and a half. So again, everything we're talking about here so far is somewhere between 75 and 88--

ZACHARIA: 20:08 85.

CROFT: 20:09 --yeah, on the risk level. So these are all very, very high. In terms of government intervention, what are the main concerns about government intervention that you've heard from the officials and the people who take part in the ratings, the supply chain professionals?

ZACHARIA: 20:30 There's some indication that there are some things that are working and some things that are not working. One of the things that is clear is that putting money in terms of the subsidies, in a sense, the equivalent of paying people to stay at home, those were all sort of viewed as problems because large corporations seem to be benefiting from this, but that's led to inflationary pressure and price increase. And then there's also some companies that, even in my own board, have talked about their split on the vaccine mandate. Some companies said that we're following the government lead and we like that because we're mandating vaccines across our country. And then other companies say that my company is across all 50 states and every state has their own mandates and we are not able to do this. So it's really no clear consensus. You have some respondents who've said that we need to stop this overregulation, which is really sort of constricting how companies can actually survive in this economy, and then other respondents are talking about, well, we've got to look at the climate change and sustainability and maybe we need to figure out how to reduce our reliance on oil and these kinds of things. So there's a real mixed kind of responses that the respondents are providing. But clearly, a lot of people are looking at the infrastructure bill as an opportunity to bring some construction back to perhaps increase demand in another area that could be of benefit for the economy as a whole.

CROFT: 22:25 And the last specific category I'd like to ask about is consumer risk, which is number 6 out of 10 on the first quarter list and is at 66.81. But looking back at the third quarter 2020 LRMI, which was the first index you did when it launched, consumer risk was at the top of the charts at 81.8. So in less than a year and a half, it has dropped 15 points, and that certainly seems like good news. So is it as significant as it sounds or are there other factors contributing to that?

ZACHARIA: 23:03 Clearly, it is good news in comparison. And remember the kind of scale I'm using is not a linear scale, so 15 points is a huge difference. The number from 81 down to 66, that is a significant difference. But I think what you're seeing in that difference is that third quarter 2020, supply chain professionals were concerned about demand. We had just got the lockdown, everyone were mandated with staying at home and these kinds of things and a lot of companies were struggling with customer demand. Do they have demand for their products? People were canceling orders. This is where the whole chip shortage really started to take place because all the big automotive companies canceled all their orders. They were worried about demand. Fast forward a year and a half, no one is now worried about demand. There is plenty of demand. There's a lot of customers who want product.

ZACHARIA: 24:03 Now, they're concerned about supplies. The shift of risk is really into, can we produce the products? Can we deliver the products? Can we get the raw materials to meet the demand that we're faced with? A lot of companies have said that if we had more labor and more raw materials, we would have been able to be even more successful. And one other thing that I think is useful in talking about or at least pointing out is the transportation companies, the companies that specialize in the logistics industry have actually done very, very well. They've had banner years. They've never had as much revenue as they have in this past year, year and a half. So they're doing really, really well because there has been this shift for meeting the demand. We're shifting more from bricks and mortar to more online purchases, getting products delivered to our home. So transportation companies, supply chain companies as a whole has improved significantly, and now, no one is really worried about demand. We're all a lot more worried about supply. Can we meet the demand that is being requested?

CROFT: 25:21 Now, as we look at the latest LRMI, are there any other trends other than the ones that we've talked about so far that you've spotted we should be aware of?

ZACHARIA: 25:33 Well, one of the things that has really become clear over the last year and a half is that people are now very, very well aware of the interconnected role of supply chains and the significant role that they play in the economy. I think a year and a half ago, nobody could really even talk about supply chains and what that all means. But now that word is common, everyone understands the role that supply chains play in the economy. And I think that that extra attention is going to improve the way that supply chains will behave, because now you're going to see some sort of endemic or built-in inefficiencies that if we focus, we could really make more efficient and then improve the flow of goods and services across the economy. So I think that's definitely going to happen.

ZACHARIA: 26:31 The other thing that might be kind of a little bit worrisome is that we don't know how much of the demand is completely real. Many of my executives in the board have told me that they are rationing their products because they're worried that some of their customers are simply buying extra product for a perceived demand or a perceived lack of inventory. So there is a little bit of fear that is the demand for sure real or are some of the customers saying, "Okay. Look, I know that I normally ordered 10 products or 10 units of a particular product, but I know that you have been shorting everybody. So let me order 20 and at least try and get to 10 because you might fall 50%."? So there is a little bit of that.

ZACHARIA: 27:35 But the companies themselves who are providing this product are also just as smart and they're also wary of fulfilling all these orders because they need to make sure they meet the needs of all their customers. So there is a little bit of question, is this sort of a bullwhip effect where you have this increased demand that isn't quite there? And then when after Christmas, if the product demand is not there, are you going to immediately have some really big shutdowns? And that is a little worrisome going forward.

CROFT: 28:12 Finally, yeah, since the new year is normally a time of hope and possibilities, are there any trends you see that give you reason for optimism as we prepare to embark on 2022?

ZACHARIA: 28:28 Absolutely. I think that companies are getting better at managing risk. They have more policies in place, just like we talked about cybersecurity. Companies are also getting more flexible with their workforce. They are looking for ways to improve the working conditions that they have. They're looking for ways to retain their employees so that their employees are more productive. There is the sense of this infrastructure bill is going to bring a lot of jobs and perhaps, in turn, bring some money into the economy and improve the economy. And I've always, always been struck by the American psyche for innovation. We are excellent at coming up with new solutions that we have no idea how quickly they're going to happen. But my sense is that and I'm very optimistic that these are problems, but we recognize that supply chains have problems, but I am confident that we're going to find new ways to solve those problems to enable the economy to continue humming and for all of us to do even better in 2022 than we did in 2021.

CROFT: 29:49 Well, on that optimistic note, I'd like to wish Happy Holidays to our guest, Zach Zacharia and to all of our listeners. Zach, thanks again for being with us on iILUminate today.

ZACHARIA: 30:01 Thank you very much, Jack.

CROFT: 30:02 If you're interested in learning more about the Lehigh Business Supply Chain Risk Management Index, you can find all of the reports on the Center for Supply Chain Research at Lehigh website under Lehigh Business, the College of Business at Lehigh. And the latest one will be there and I would especially want to note that one of the things that's been added is the LRMI risk index over the last year, which is a color graphic that shows for the four quarters, the trends, by each category. Zach, real quick, if you could just highlight what this shows people and why they should go look at it.

ZACHARIA: 30:47

The beauty of this new chart that we've just put into this report is that it clearly separates the 10 different categories of risk. And you can see how that risk behaved over the last year. So the oldest data point is second quarter of 2021 compared to the latest data point, which is first quarter, 2022. And because they're all separated and they're color coded, it becomes apparent that economic risk relatively stayed 80 and then all of a sudden jumped to almost 90. For example, transportation disruption jumped around, stayed around 85 for three quarters of a row. And then, you compare it to something like environmental risk that's just above 50 and has just sort of nudged over 60 going for the next quarter. And this graphic in just one picture, it sort of demonstrates how risk in each of these categories have changed in the last year.

CROFT: 31:53

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