

Immersive

# Outlook

Third edition

March 2023



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# Foreword

Some organisations are more equal than others. Supply chain disruptions, the epicentre of many a business conversation today, have brought this truism to light. Industry leaders contend these disruptions – which originated with the pandemic – are here to stay. For organisations with the wherewithal to invent and innovate, that doesn't spell bad news. Resilience and agility combined with sustainable operations have helped these organisations double their profits, exceed customer expectations and simultaneously enable the seller ecosystem.

Evidently, resilient supply chains hold the key to business success, a fact also evinced in PwC's 26th Global Annual CEO Survey. Nearly 50% of India CEOs are concerned about supply chain disruptions. The survey underlines that given these disruptions and rapidly changing customer demands, 67% of India CEOs are adjusting supply chains to mitigate exposure to geopolitical conflict and are concurrently looking at reinventing their companies over the next five years with the required investments in technology and people.

This third edition of Immersive Outlook, then, turns its attention to the supply chain ecosystem. Our contributors look at the future trends, elaborate on the art of building resilience, the importance of sustainability and reduction of Scope-3 carbon emissions, and explain how connected and integrated supply chains can propel growth. In all of this, data is perceived as the centripetal force that helps deal with variables, counter uncertainties and build resilience.

'The supply chain game at the end of the day is a data game. All technology that we build is to collect the data at every stage, collect it in time and then, on the basis of the data, trigger certain actions that will eliminate anomalies,' emphasises **Sandeep Deshmukh**, Co-founder and CEO of ElasticRun, India's B2B ecommerce platform for rural India, in an online interview with **Vivek Prasad**, Markets Leader. For ElasticRun, the pandemic resulted in a shift in trajectory from a complete network shutdown to 10x growth owing to a massive spike in business. This unicorn has consolidated all its supply chain elements onto a single platform and as it went about its business, it transformed lives, spurring social inclusion and financial wellness of those at the bottom of the pyramid.

In another video interview, **Akhil Saxena**, Vice President, Customer Fulfilment (APAC, MENA and LATAM), and WW Customer Service, Amazon, tells **Sudipta Ghosh**, Data and Analytics, and Industrial Products Leader, and **Kunj Vaidya**, a Chartered Accountant, ‘Seamless data which flows through different parts of the supply chain to provide end-to-end visibility is a piece that many companies are now working on.’ Amazon, he says, has a laser focus on the customer, middle mile and last mile connectivity to transform the way that India buys and sells. For Mr Saxena, sustainability is an opportunity, while alliances are a necessity to play together and come out on top. Mr Saxena also highlights the role of the Central and state governments in helping scale up and strengthen the backbone of supply chain operations.

The remaining three articles in this edition touch upon other supply chain aspects. In **Paradigm shift in supply chain management**, **Ajay Nair**, **Somick Goswami**, **Vishal Nanavati** and **Anurag Sehgal** trace the trends that account for the current supply chain headwinds from increasingly conscious buying practices to seeking enhanced customer experience and buying environmentally sustainable products. As the article throws light on the way forward, it discusses why several companies are taking measures to decouple their supply chains by building higher buffers and backward integration, establishing strategic partnership with critical suppliers and recalibrating skills to propel a future-fit transformation in anticipation of tomorrow’s demands.

**A five-step approach to building a resilient supply chain**, authored by **Sudipta Ghosh** and **Nitin Soundale**, focuses on building resilient supply chains that can weather multiple disruptions and unknown risks while balancing customer service and efficiency. Elaborating on the five-step model of Define, Anticipate, Assess, Analyse and Act, the authors explain why it is important to build redundancies in a supply chain without significantly impacting costs and service levels across it.

Last but not the least, in **Reimagining tomorrow’s supply chains**, **Ajay Nair** and **Saurabh Jain** provide a sneak peek at the supply chains of tomorrow that will need to be customised, autonomous, integrated and powered by data and technology to serve new customer channels, and adjusted dynamically to new scenarios. Integrated supply

chains, they underline, are used by businesses to match supply and demand, and give the cooperating parties the same ability to agree on a common understanding of the projected demand as done by an enterprise’s sales and operations planning processes. The parties are thus able to spot possible production or transportation capacity gaps and recommend alternative network resources to bridge the gaps.

We hope you find these critical insights on the various dimensions of the supply chain ecosystem of relevance to your business. Reach out to us if you would like to have a more detailed discussion on any of the aspects we have touched upon.

**Vishnupriya Sengupta**  
Director, Markets



# Transforming the way India buys and sells

For **Akhil Saxena**, Vice President, Customer Fulfilment (APAC, MENA and LATAM), and WW Customer Service, Amazon, supply chain disruptions have provided an opportunity for growth. In an insightful conversation with **Sudipta Ghosh**, Data and Analytics, and Industrial Products Leader, and **Kunj Vaidya**, a Chartered Accountant, Mr Saxena provides a 360-degree view of the supply chain ecosystem aimed at serving the buyer and enabling the seller



**Sudipta Ghosh (left); Akhil Saxena (right)**



## Excerpts from the interview

**Sudipta Ghosh:** Hello everyone! Welcome to the next edition of Immersive Outlook. I'm very pleased to have my colleague Kunj joining me today, and we are going to have a fairly insightful discussion with Akhil Saxena. Akhil looks after customer fulfilment operations and worldwide customer services at Amazon. Given the fact that we are seeing so much disruption along with so much promise and growth, this promises to be a very exciting session for all of us. So with that I would like to begin the conversation. Akhil, first of all, thank you for joining us today. If you can tell us a little bit about your journey – particularly from the perspective of growth and some of the learnings and challenges in your journey so far – that would be great.

**Akhil Saxena:** First of all, thank you for the opportunity. I've been with Amazon for almost ten years now – almost from the time we started our operations in India. And I think our mission has always been to transform the way that India buys and sells. With that as the backdrop, I think a lot of the work that we have been doing is by keeping the customer at the centre of all conversations and then working backwards to invent and simplify for them.

So how do we look at the interests of the customer? Whether customers are people who sell on Amazon – the sellers – people who buy on Amazon – like you and me – or people who provide services to us, or who buy services from Amazon, I think the challenge has been a blessing in disguise because it's an opportunity for us to grow rapidly – and growth is a good problem to have. I think the big piece for us was to build a very strong team with experience. E-commerce is still very nascent in the country, even after 10 to 15 years. Therefore, building a team of professionals who have a lot of exposure to e-commerce operations was the first big opportunity and learning for us: How do you scale [up] that team? How do you build that team?

The other piece I would say is the infrastructure, say when you want to fulfil the needs of different kinds of customers from different parts of the country, how do you build the infrastructure? The journey of infrastructure building has been very exciting for us. To build this infrastructure, you have to do it in a manner that you are able to predict what cube an inventory is going to occupy. So books would have a very different cube versus mattresses and sofa sets, and dining tables would be very different and so on. Therefore, storage systems would have to be built accordingly. So we build the supply chain in different segments.

There's a fresh supply chain, there's a large and bulky supply chain, and then there's a normal consumer business supply chain.

So once you've built those integral pieces and have this storage, how do you fulfil the orders? We need to keep finding ways to innovatively fulfil orders in a manner that can provide speed and reliability to our customers.

Hence, there are three elements for us to think about. One is a large selection and, therefore, storage spaces. The second is speedy and reliable delivery for our customers and, therefore, transportation and logistics. And the third is the convenience and security of buying online. I think those were the pieces that we worked our way through.

In logistics, I think we did a lot of work. When I promise that if you order in the next 2 hours and 15 minutes, I'll give it to you tomorrow, we are already taking into account many things about where you are. Where is the inventory? What is the flight, train, bus or the truck that I can put the shipment on? Will you be at home when I come to you? Will you pick up the phone when you are in a meeting and I call you to say I'm going to deliver it? And the fact that it's a promise for a definitive time. I think building those capabilities was the most exciting part of it. There has been a lot of learning, and a large part of the

learning has been how you operate in a market which is predominantly cash on delivery.

How do you operate in a market where the address quality is not very great? You build pseudo addresses or address systems, and then say a cluster of buildings is an address in our systems. How do you now deliver to that address? And the piece is about ecosystems that can work with us. Therefore, how do we leverage the ecosystem in which we operate – whether it is the mom-and-pop kirana stores or the entrepreneurs of India who want to be a part of the growth story? I think those were some of the key challenges and opportunities that we encountered.

**Sudipta Ghosh:** Akhil, it was absolutely fascinating how you explained the complexities of the entire supply chain, particularly connecting buyers and sellers. And also the fact that you are actually promising to deliver a certain shipment to a certain customer within a specific time frame. We do a lot of research in terms of looking at the trends from a CEO perspective every year. According to our recent Annual Global CEO Survey, more than 50% of CEOs in India are actually very worried about the disruptions which are happening around them as well as the disruptions which

**are affecting them in their own organisations. Given the fact that you are juggling so many variables and the last mile is not getting simpler by the day, it would be great to hear some of your thoughts and experiences around how you are dealing with some of these disruptions, which have become more of a norm rather than an exception?**

**Akhil Saxena:** Yeah, that's a great question. I think these disruptions are here to stay. They're not going away in a hurry for sure. The last two-and-a-half years of COVID-19 have taught us how disruptive things can get, and supply chains are being impacted by it globally. You look at any kind of supply chain – for example, right now, the supply chain in semiconductors is so significantly impacted that manufacturing everything from a small camera to a car to automation is getting impacted and delayed. So that's not going away.

And I think the piece for us would always be B2C. How can our supply chains be more resilient, how can they be more agile, and are they providing us with an opportunity to invent and innovate? I think those are the three big questions, I would say. So from a resilience perspective, looking at our supply base and saying, 'Where is that supply base? Is it close to the point of consumption? Is it close to the point of the customer, and is there an opportunity to either find alternatives and substitutes or move the supplier base closer in terms of stopping imports and being more self-reliant?' I think that's one big issue right there.

The second question is end-to-end visibility in supply chains which allows you to keep track of your shipment from point A to

point B. But if you lose visibility of that shipment, you don't know when you're going to get it, and that adds to the anxiety and stresses the supply chain. Therefore, that end-to-end supply chain visibility is going to be a very important thing for anyone.

The third question is flexibility, right? How flexible are you? So how quickly can you change your manufacturing practices? How quickly can you change your formulations? If you are into manufacturing cosmetics... colour cosmetics products which have raw materials which are replaceable, then I think that flexibility comes in very quickly, and that's going to be required.

Another question is, How do you become more self-reliant? Atmanirbhar Bharat is a great way to say how we do it ourselves, how we do it in a manner that we don't depend too much on imports, but we could do it on our own. So I think we just have to embrace that.

**Kunj Vaidya:** I wanted to pick up from your first answer, when you talked about your vision to transform the way India buys and the way it sells. I think we should add the way India distributes as well. And picking from that and self-sustainability, you just launched your cargo airlines, and that's a big move. What prompted that? And what are some of the big factors that you considered?

**Akhil Saxena:** I think we have been working with a lot of partners in the airline industry, and we'll continue to partner with others as well. I think we saw the opportunity to serve our customers much better. Our primary customer base is growing in India. Customers are Unrelenting. They



want to get more and more and more in terms of speed – if it used to be two days, then it's one day now. If it was one day earlier, it's the same day now. And in the case of same day, they want things in an hour – and so on. So people want everything faster. And how do we give our customers a great shopping experience where speed and reliability both go hand in hand?

One of the things we realised is that by having our own network of operations in the air, we would be able to serve our customers and cut off ordering times to a later hour because we'll have more flexibility on the routines and how the aircraft are routed. We saw this benefit in North America and Europe. We've been doing this since 2016. Now, we have almost 110 cities and 110 planes that we operate globally. So the benefit for us has been to partner with other people in the airline industry and take advantage of their experience and knowledge in running a plane, bring in our expertise on network design and customer cut-offs, and therefore have more visibility on the shipments.

The second thing is factoring in a delayed customer promise. This means you can order something later in the day so that you can get the shipment the next day. I'm not dependent on commercial carrier airlines which have a 5:00pm cut-off versus saying I can depart this at midnight and still it will be in Delhi at 4am in the morning.

**Kunj Vaidya:** So a little bit like vertical integration is what we see, and more and more of those areas that come within your control. That way, you have more visibility. And you mentioned that as part of disruptions as well. So what are



**Kunj Vaidya**

**some of the other large areas of investments that you are looking at three to five years from now?**

**Akhil Saxena:** I think I would step back and say that the investments are all focused on the customer. What does the customer need, and is the customer, as I said, a seller or a buyer working backwards from that piece? The investments are likely to be in the area of technology. We build our own software, and we write our own code for solutions for our customers. So these investments would be to fulfil demand with speed and reliability, as I mentioned.

**Kunj Vaidya:** What about long-term management?

**Akhil Saxena:** I think investments are going to be more focused on what our customers want and how we serve those needs – whether they are sellers

or buyers, or provide services to Amazon or take services from Amazon. So in my mind, we could segment these investments into different areas. One would be in terms of how to bring in technology which allows faster reliable delivery, a larger selection, visibility to customers, and a better way to browse the net and the shopping pages. This is being done across all e-commerce companies.

Similarly, for technology to fulfil orders faster, a good example would be to check how countries can bring in robotics. Do you bring in the full suite of robotic products, or do you bring in what is relevant to the country, what is affordable to the customers and what will work there? So I think automation is a big piece there. The second piece is infrastructure, where all this automation is likely to fit in – whether it is warehouses, and if so, what kind of warehouses should be built? Should they be small buildings in the heart of the city? Should there be large buildings outside the cities?

And therefore, the topology will depend upon what the customer needs. How quickly do you want to fulfil? Not everything has to be fulfilled in the next hour. Not everything can wait for 15 days, right? So you have to find the right way of serving customers. So there's a lot more in terms of warehousing design. The e-commerce industry has allowed investments in the country to raise the bar on the warehousing grade.

The third piece of logistics, and this investment that we talked about, is also a great investment in helping the infrastructure of the country. It is strengthening the middle mile. It's strengthening the backbone for our operations to move from point A to point B. And thus, any investment that we make in infrastructure is going to help the country. Therefore, investments over the next three to five years are going to basically serve as a boost for not just e-commerce but many other industries as well.

Within those, I would bring in internet of things (IoT) and analytics. Like, for example, for a fresh business, when you're buying vegetables, we use vision systems to determine what is ripe and what is not. That's one small example of how you could now start using different technologies. During COVID-19, when we had to do social distancing, we used a distance assistant. We built a technology based on vision to identify whether people were able to maintain the two-metre social distance that they were supposed to, and triggered an audio alarm with a red mark on the floor as a camera to say, 'Hey, the distance is being compromised, so move apart.' That's the future of many of these pieces here.

**Kunj Vaidya:** One element that I picked from this is the multiplier effect. This is not only for you but how it will strengthen the country's infrastructure, which we have seen over the last ten years of your presence in India. This has propelled so many new areas – new companies, new industries and the whole ecosystem.

**Akhil Saxena:** Absolutely! And you should see the ancillary industry development that's happening. So, for example, when we have a warehouse in a place, there's a bus to bring people to work. That's an advantage for people who want to bring in a transportation service. It provides a fillip to the trucking industry in that area. There are people who come in and do operations in security, housekeeping, gardening, etc. There's a network of suppliers who are now going to get us the packaging material that we need. I can't move from Delhi to Chennai. It won't make sense. So I will build a corrugated manufacturer base around Chennai so that I can supply it locally. And that is a virtuous cycle of positivity.

**Sudipta Ghosh:** You have been a digital-first and AI-first organisation. What will be some of the specific things which you think have brought in differentiation – like giving an estimate of when something is going to be shipped or reliably connecting the physical flow of the supply chain with the information flow of the supply chain? It would be great to hear some of your perspectives on what you think has been very successful and also about some of the new things that are going to come up.

**Akhil Saxena:** I would think about data being the first piece – that is to say, how do you use all the data that is available to you, and how you use that to serve customers more efficiently. And if data is available but is not connected together, it's hard to make much out of it. Therefore, how do you have seamless data which flows through different parts of the supply chain to provide end-to-end visibility? I think that's a piece that many companies are now working on and have succeeded in ensuring an end-to-end visibility into.

The second piece is in terms of how automation comes into play, which allows us to automate tasks which are repetitive and can be done with machines. And then, the human intelligence which goes behind writing the code and managing those machines. So I think the piece about how you handle stuff inside a warehouse is another area where future development is likely to happen.

The third piece is logistics. We talked about airlines. We talked about how it is an important part of the middle mile for us and why it is good for the country. But we have been working with the railways since 2019, to say how do we use some of the passenger trains, which are high-speed express trains, to go and move from point A to point B? So by using a Shatabdi train, how do I move from Delhi to Chandigarh



by 11:00am? And that's a four- to five-hour journey. But using trains and the railways is a great example of how we are now partnering with the ecosystem. I think some of those partnerships are also going to become very visible and very powerful because we connect a physically existing infrastructure with what the future holds for us or what the future needs for us are. The other piece is about using artificial intelligence (AI) to enable a small seller who's making bamboo handicrafts in Assam sell his products across the country. How do we enable that person, that seller, to be tech savvy so that they can still put up a picture of their product and sell it on Amazon? I think some of those would be great enablers for the business there.

**Kunj Vaidya:** I can see alliances playing a big factor here, right? Just collaborating with so many stakeholders.

**Akhil Saxena:** 'No one is good at everything' is one of the things that I learned very early in my life. And we have to find the people that we can partner with and play with their strengths and play together. I'll give you an

example. In India, the address quality is very poor. So you might see in a remote city saying, 'My house is a blue house behind the signal next to the bank.' That's the address. That's exactly the address that gets printed on the shipping label. And I might not be able to find my address based on geo codes and latitudes and longitudes. But there is a local kirana store who's delivering to the house of this person every single day. They're bringing the milk and bread and sugar every single day. Therefore, even though I'm not good at finding an address in that place, that person is really good. That person knows when the customer is going to be home because the customer works. And when they're buying from the store, they also have some kind of credit.

So this shopkeeper or the mom-and-pop store has credit reliability. Customers trust them. They know when the customer is going to be available, and they know where the customer lives. So for me, when I have an address issue, I want to go and leverage the power of this mom-and-pop store. That is why we innovated and built India's first programme called 'I Have Space', where a mom-and-pop store can actually deliver packages on behalf

of Amazon with no investment. This is an extra income for them. So it's a win-win for us. I find somebody who knows how to deliver in that area and this kirana store or the mom-and-pop store can make more money without any additional investment.

**Kunj Vaidya:** It's another example of the multiplier effect.

**Akhil Saxena:** Multiplier effect, and you are contributing to the economy. And that allows us to win together. I think this the kind of partnership that is scaling up rapidly. We do this in almost 400 cities now.

**Sudipta Ghosh:** And when we are talking about these partnerships, what we are also seeing is that there is an increased focus from a sustainability perspective, and it is also getting measured and tracked and even rewarded in many cases in the external world. How do you see the focus on sustainability panning out going forward?

**Akhil Saxena:** I would say sustainability is the right thing. It's the right thing for our planet, our customers and the country. So I would not take that as a constraint, but I would instead ask, How do you use this as an opportunity to invent and innovate?

So Amazon has been one of the first signatories to the climate pledge, which basically said that we should look at zero carbon emissions by 2040, ahead of the Paris Accord, which said 2050. We have been working on this in many spaces. So one area is about electric mobility, and I'll talk



about India for a minute to say in 2020, we made a commitment to have 10,000 electric vehicles (EVs) as part of the delivery fleet by 2025. We are well on track on that flight path, and we will meet that goal. This was over and above the commitment of 100,000 EVs that Amazon made globally. So this India piece was separate and, on top of that, similar. So we have worked with many players in the market. You would have seen some of the announcements being made to see how we are partnering with people who can provide us. It could be two-wheelers, and it could be three-wheelers. We look here at four-wheelers, and we are finding out whether it is from point A to point B within the city, or if it can be from city A to city B because long distances have a much larger payload as well.

The other piece that I would say is solar, and we have worked very extensively on both onsite solar and offsite solar. Most of our warehouses now have a solar panel on top – wherever space permits – or we go for offsite solar

as well. Water is an important thing for us. All our new buildings have been designed over the last seven or eight years to have water-harvesting systems to say that, look, water is precious for countries like India or the Middle East, and therefore we need to design our buildings in the right manner from day one. Energy efficiency, et cetera, is common practice, so I will not talk about it. But packaging is another area where a lot of our customers have provided us with feedback, and that's something that we have been continuously working on and will continue to work on. You would have a suite of boxes and packaging material where you would try to fit all of them and optimise space. So we use a lot of machine learning (ML) and data analytics to constantly keep looking at optimising the size of the box.

Imagine if you were trying to ship out a mobile ten years ago – the mobile phones were smaller, and you made a box, and you designed a box saying, 'Oh, ten different varieties of mobiles will fit in that

box.' But with the different sizes of phones coming now, those boxes are relevant. So somewhere, if you don't use data analytics to come in and say the box sizes have to change to now accommodate a larger screen size and the 12- or 14-inch tablets, how do you build the box suite differently? You do it based on what is available as data, what the customers are buying, and you try to optimise the same. So what we have been focusing on is working with AI and ML to identify how you constantly keep looking at the box wheels.

Similarly, with the elimination of single-use plastic in the middle of COVID-19, we eliminated single-use plastic in all our operations. It was hard because you have plastic in so many places when you do packaging, but now, today, we've already done that part of it. You look at the amount of recycling that we have in packaging material. In India, for example, all our vendors are expected to bring in 100% recycled corrugated material. So our corrugated boxes are made from 100% recycled material. So

there's a lot of work that we are doing in the packaging space. Single-use elimination packaging material, reducing the size of shipments, etc. And some of you have actually got shipments. We just have your name and the eco-friendly label saying, 'This has no external packaging.' And that's an opportunity where we are working with vendors or manufacturers to say – you already have a corrugated box that is protecting the inner product. If you could just make it a little bit more efficient in terms of transport worthiness, then I don't need to put another box around the box. And that's the partnership that we have with many vendors, to say how we can design e-commerce-ready packaging so that you don't need to overpack it again. I think there's a lot of opportunity in this space, so it's also an exciting space to work in.

**Sudipta Ghosh:** I quite agree with you that this is an opportunity to not just look at from a compliance perspective but actually to differentiate in terms of how you move closer to your customers and how you can be more responsive – socially responsive – that is. And customers are actually going to appreciate that. They may not mind paying an extra rupee or two because they are probably thinking that it is being done for a good cause because you are doing it for the sake of the environment.

**Kunj Vaidya:** In every single operation, every single aspect of your business, there is so much interaction with external factors. And if we were to bring in one of the largest external stakeholders beyond your customers and vendors, it is the

**Government. What are some of the areas where you believe it would be good to see some of the investments amplified from the Government's side in order to really help further shape the evolving nature of e-commerce or commerce itself?**

**Akhil Saxena:** I think when I talk about transforming the way India buys and sells, we can't do it ourselves. We have to build these partnerships. And the Central and state governments of India have been very helpful and conducive for us to run our operations. If you look at the National Logistics Policy (NLP) and GatiShakti initiative, they're both so important for this industry – whether it's manufacturing or e-commerce – because they build the logistics infrastructure, allowing it to scale up as a global network. The piece about execution is one that we continue to work on. If you look at the two policies, NLP and GatiShakti, one is about creating infrastructure, and the other one is changing our systems and policies, right? Similarly, this whole piece of unified visibility of transportation and data is a great place where literally, I think, seven ministries and 100 apps are all coming together in a one-operation platform so that there's end-to-end visibility.

All of these are great initiatives, and I think they will empower not just the e-commerce industry but also manufacturing and any other kind of industry in India. So I would say the partnership is strong, which is why I said we also work with India Post. They were the first carrier we used in the beginning.

We work with the Indian Railways, and we work with warehousing corporations in terms of warehousing and stuff like that. So there are a lot of partnerships

that we have built. And I think the Government is also changing its policies based on what we need. So, for example, women in night shift operations in a warehouse weren't very common. Today, we have many state governments who have now changed their policies to bring in women in night shift operations in a warehouse. They were okay to do it in customer service operations, etc. But in warehousing operations, that's a new thing that the Government and many state governments have introduced. Similarly, governments have changed their policy to say, 'What can we do with transportation? What can you transport?' Railways have now worked with us together to say, 'How do you have cargo on a passenger train?' Like Shatabdi. Shatabdi was used to move people from point A to point B very quickly. But they changed the policy to allow e-commerce. So I think the partnership is great. We are working together. There's a lot more to achieve together, which is what makes the future so exciting.

It's a question of partnerships – of winning. It's a question of us being able to explain the requirement and benefits. And the Government has been very progressive and supportive. That's the reason we have been scaling up. It's not easy unless you have the support of the Government.

**Kunj Vaidya:** Excellent. Very nice to hear, and very heartening to see such progress.

**Akhil Saxena:** Thank you very much for the opportunity.



# Paradigm shift in supply chain management



According to PwC's 26th Global Annual CEO Survey: India perspective, nearly 50% of India CEOs are concerned about supply chain disruptions, and around 67% India CEOs are adjusting supply chains. **Ajay Nair, Somick Goswami, Vishal Nanavati** and **Anurag Sehgal** trace the trends that account for the current supply chain headwinds and throw light on the way forward.

## From just-in-time to just-in-case

Supply chain disruptions have never been a rarity. The global pandemic however threw light on a few issues that were not quite top of mind for business leaders in the past. Later with the geopolitical conflict, inflation and macroeconomic volatility making headlines, supply chain disruptions have become the epicentre of many business conversations.

PwC's 26th Annual Global CEO Survey that polled 4,410 CEOs between October and November 2022 across 105 countries, of which 68 were from India, indicates that supply chain tops the priority agenda for most CEOs. Nearly 50% of India CEOs are concerned about supply chain disruptions, and around 67% India CEOs are adjusting supply chains to mitigate exposure to geopolitical conflict.

Supply chain management is now witnessing a paradigm shift from just-in-time to just-in-case. Businesses have realised that supply-chain disruptions are a constant and it is imperative to adopt a holistic approach to manage risks as opposed to taking a pointed approach for a specific disruption. Until 2019, short-lived and/or local disruptions related to the flow of materials and goods due to a supplier's constraints, traffic disruptions and site downtime were common. These disruptions resulted in various mitigation approaches such as supplier portfolio optimisation, alternate sourcing, implementation of supply chain planning and visibility technologies.

But due to the pandemic, there have been disruptions on a global scale, on numerous fronts and for an extended period of time. The unprecedented turn of events have wiped out many businesses, brought significant changes in customer preferences and buying patterns, reshaped business models and people's ways of working. Further, mass shifts in workforce, trade disputes and geopolitical conflict have doubly impacted the supply chain ecosystem, at times leaving permanent scars.

The costs of supply chain disruptions so far have been significant. In 2020–21, when the

farmers' protests persisted in north India, ASSOCHAM estimated a daily loss of INR 3,500 crores to the economies of Punjab, Haryana, Himachal Pradesh and other interconnected economies<sup>1</sup> Retail stores incurred heavy losses having to shut shop for months. In the global landscape, the Suez Canal blockage in 2021 is estimated to have cost a direct loss of USD 54 billion in global trade.<sup>2</sup> The real economic impact on countries is expected to be much higher as prices of crude oil products and gas soared amid the blockage. India, which is heavily dependent on imported fuel and has a large merchandise trade deficit, experienced a 10% (approx.) increase in freight rates for several months as the canal has been a major route for oil transport.<sup>3</sup>

Despite these global headwinds, India's exports showed a growth of 16% between April and December 2022 compared to the same period in 2021 and the country attracted stable foreign direct investment and investors were keen to include India in their supply chain diversification strategies.<sup>4</sup> The Economic Survey released in January 2023 highlights the government's forward-looking approach towards infrastructure augmentation through initiatives such as PM Gati Shakti and National Logistics Policy. This

is expected to further enhance India's cost competitiveness and export performance in the near future. The government has also responded to altered supply chain priorities by investing in the Production Linked Incentive (PLI) scheme to connect India to the global supply chain network. With the necessary infrastructure in place, India aims to increase the manufacturing sector's contribution to the economy and become a key player in the global supply chain landscape.

The past couple of years have also made organisations realise that building redundancies in supply chain is more important than efficiencies. This equips organisations to create backup resources – build extra inventory, maintain low-capacity utilisation, use multiple suppliers – to withstand any shock or failure at any point in the primary supply chain.

While the turbulence is likely to continue, there will also be an emergence of new disruptive scenarios.



1 Farmers protest

2 Suez Canal blockage

3 Import freight cost

4 <https://www.indiabudget.gov.in/economicsurvey/>

Following are some of the new disruptions/areas that have been impacting businesses and therefore warrant close consideration:

### Talent disruption

It has been reported that 86% employees across multiple sectors in India plan to resign in the next few months with 61% of employees willing to accept a lower salary or forgo a pay rise and/or a promotion to focus on better work-life balance, health and happiness.<sup>5</sup> Organisations need to build multi-locational supply chain talent hubs and tap into expert business services in supply chain from knowledge services firms as the technology landscape is seeing significant shifts from traditional to cloud-based agile supply chain planning systems offering wider choices.

### Data and technology disruption

According to PwC's Annual Global Digital Trust Insights – India edition, 43% of Indian business executives say that their organisations have yet to fully mitigate the risks associated with remote and hybrid work, while 61% highlight risks associated with accelerated cloud adoption and 55%, around increased data volumes.<sup>6</sup> Cyber resilience is not only key to the survival of businesses but is also a key driver of public trust. Organisations that have made cybersecurity a strategic priority have witnessed less disruption to business.

### Environmental disruption

Fuelled by the pandemic, people and governments are taking tangible steps and moving towards Environmental, Social and Governance (ESG) transformation to address issues related to unfriendly environmental and social choices. The Securities and Exchange Board of India, in May 2021, issued a circular on new reporting requirements on Business Responsibility and Sustainability Reporting for the listed companies making it mandatory for them to disclose ESG risks from FY 2022–23. Although regulators are cautious about pressurising investors, this would eventually become a reality in breadth and depth, as India also emerges as a new global manufacturing hub.

Further, it would be imperative for Indian businesses tapping into international markets to meet increasing ESG-compliant export requirements. Consumers too are gaining awareness, displaying an increasing preference for brands associated with ESG transformation. Therefore in future, ESG transformation would need to be undertaken proactively from the perspectives of both compliance and market share.

### Tax and trade-related disruptions

Tax laws and regulations can alter the cost structure of supply chains, leading to adjustments in sourcing, production and transportation. For instance, changes in tariffs or tax incentives for sourcing from specific countries can cause a

change in production location and increase the risk of supply chain disruptions.

The India perspective of PwC's Global Annual CEO Survey highlights that nearly 50% of India CEOs are adjusting their presence in current markets and/or expanding into new markets, while globally 46% of CEOs are changing their physical footprint in response to geopolitical conflict.<sup>7</sup> Therefore, simplifying and streamlining tax procedures can reduce cross-border trade complexity and uncertainty, leading to a more stable supply chain.

Recent years have seen Indian businesses facing tax and trade-related supply chain disruptions, such as the implementation of the Goods and Services Tax (GST) in 2017. GST's implementation created a unified market for India, but simultaneously led to teething problems such as compliance issues and delays in clarity on input tax credits, causing supply chain disruptions and higher operational costs. Additionally, trade tensions between major global economies have also had a significant impact on businesses relying on imports and exports owing to the imposition of additional tariffs and trade restrictions.

To minimise these risks, Indian businesses may need to implement a robust tax technology ecosystem in the future that allows them to keep a track of movement of goods, and undertake related compliances, both domestically and across borders on a real-time basis. This will enable accurate tax/import duty calculations and reduce compliance risks.

5 Employees trends report

6 Global Digital Trust Insights: India edition

7 26th Annual Global CEO Survey: India perspective



## Transfer pricing considerations

While companies transform their logistics and procurement functions, and re-structure their operating models, a large part of their buy-sell would continue to have an element of related-party trade and services. Transfer pricing therefore has been one of the highlights of legislation worldwide where the respective country's tax authorities make it a point to ensure that their tax bases are not eroded through any manipulative transfer pricing. With the pronounced need to transform the businesses and build resilient and green supply chains, businesses would expect an upfront certainty around their transfer pricing/tax positions.

Over a decade ago, the Indian Government introduced the Advance Pricing Agreement (APA) programme but the pandemic has slowed down its pace of application. It is important for the Government to now take all possible steps to ensure that a larger number of APAs are signed and the time from initial application to final agreement is reduced significantly. Some of the measures could be:

- recruiting more officers internally to run APA programmes efficiently
- adopting a more business friendly approach in negotiating and concluding APAs
- adopting a continuous training and skilling programme for new officers taking charge so that they are well equipped to understand the nuances of advanced transfer pricing such

as supply chain/operating model restructuring, cost allocations, cash poolings and value chain analysis.

## Change in consumer behaviour trends

A primary reason for a paradigm shift in supply chain management is a significant change in consumer behaviour trends across industries. Yet, in these cross-industry consumer trends, there are three identifiable points of commonality:

- A. increased conscious buying practices
- B. seeking enhanced customer experience
- C. buying environmentally sustainable products.

### A. Increased conscious buying practices

#### 1. Digital consciousness – online research prior to purchase

Technologically empowered consumers are most likely to use comparison sites to compare product features and determine product availability. 81% of these consumers have shopped across at least 3–4 channels over the past 6 months, with more than half of them shopping daily or weekly.<sup>8</sup> Often, they use both online and offline channels to

do a product deep dive prior to purchase. Often, these tech-savvy buyers find disappointing information and hence brands need to enhance the product information available digitally including transparency about the ingredients in their products. It is also crucial for brands to build their own digital assets (websites/mobile applications and branded partnerships) with verified information which would reassure consumers, build trust and better their buying and service experience.

#### 2. Health consciousness – desire for a healthy lifestyle

Young, digitally savvy Indians are increasingly prioritising 'well-being' and 'health'. These growing trends influence technology innovators to come up with services and products for a healthy lifestyle.

Therefore, the imperative for brands rests in addressing buyers' demands through technology-empowered health-based solutions that can be modelled by increased R&D efforts to enable quicker and informed decision-making, by recognising and capitalising on trends early on, and by focusing on decentralisation and localisation of sourcing and manufacturing, leading to agility in serving evolving demands.



## B. Seeking enhanced customer experience

### 1. Digitisation journey – no-touch virtual buying

As a result of COVID-19, virtual and digital interactions have seen a rise in demand. Additional services are being offered to enhance the consumer buying experience and ensuring the scoring of a huge 'green tick' in their minds.

Search interest in 'virtual try-on' has reportedly grown multifold over the years. This indicates that people – especially after the pandemic – are more desirous of immersive virtual experiences from brands. One such opportunity is in introducing virtual shopping experiences. Some brands are increasingly focusing on developing a large-scale system of personalised recommendations for consumers to meet demands which are unknown to the consumers, making the user predictable and enabling the brands to trace the current trends.

On the other hand, there are brands that leverage augmented reality (AR) to allow consumers to view products in hyper-reality where they can scan the beauty products and avail discount coupons redeemable during sale.

Thus, the imperative for brands is to develop immersive omnichannel experiences to cater to varying customer demands backed by the right distribution model and powered by democratised data across channels.



### 2. Loyalty is not guaranteed

Loyalty is not guaranteed as people re-examine the brands they support, owing to the pandemic-induced disruptions, which have led to a wide range of industries and businesses scrambling to adapt to shifting customer needs. Today, 62% of India CEOs believe that changing customer demand will impact profitability over the next decade.<sup>9</sup>

Driving the imperative for having more supply chain transparency with an emphasis on inventory management and its diversification is as necessary as the direct redressal of complaints through the incorporation of seamless digitised customer experiences across the buying journey.

### 3. More online buying – more product returns

Growing online purchases by consumers have simultaneously increased online returns. Many of them buy with an explicit plan to immediately return some or all of their items. Therefore, many buyers usually check for the return

policies pre-purchase. If it's a 'no-questions asked' policy, the rate of purchase is higher. Retailers, however, do not always offer free return shipping even though they may be aware that buyers are prone to purchasing expensive products with that policy in place. The imperative then for businesses, in response to returns, is to cost-effectively scale reverse logistics and build localised warehouse capacity to deliver the desired experience.

## C. Buying environmentally sustainable products

### 1. The need to define a purpose

Consumers want businesses to support social causes and are increasingly monitoring the accountability of sustainability initiatives. In fact, 7 out of 9 ESG activities have a direct influence on supply chain components.<sup>10</sup>

Purpose-driven value propositions are not just about marketing. With the rise in consumer awareness and propensity to research the veracity of brand claims, companies need to

9 26th Global Annual CEO Survey: India perspective

10 Industry View 2020 - Consumer Brands Association

prove their commitment to the chosen purpose. This has deep implications across the value chain comprising:

- ethical and sustainable sourcing
- responsible resource use
- emissions
- circular packaging
- responsible marketing and communications.

The imperative for companies is to prioritise what they want their products to represent, the performance management systems they have in place to have transparency across the value chain and how they report their progress.

## 2. Changing product portfolio

Growing concerns about sustainability have accelerated awareness into action following India's 2021 net zero carbon emissions pledge. These trends coupled with the fact that companies with strong ESG credentials enjoy faster growth (rise in profits three times faster than those for whom ESG is not a top priority),<sup>11</sup> greater customer retention and higher investment attractiveness are also prompting companies to adopt sustainability practices for their businesses.

The automotive industry is witnessing a buying bend towards electric vehicles, furthering their supply chain growth as they offer a better driving experience with lower fuel costs, higher

environmental consciousness and government incentives under the PLI scheme. The Union Budget in February 2023, while simultaneously raising import duties on these vehicles, has reinforced these incentives through an extension of concessional import duty for lithium-ion cells and the removal of duties on import of capital goods for manufacturing lithium-ion cells for use in electric vehicles.

Additionally, search interest in 'e-waste disposal methods' has risen by over 110%. This impacts how a product is designed and packaged, influencing the manufacturing and logistics planning of companies.

Thus, to achieve the net-zero targets by reducing, reusing, recycling and removing carbon, it is imperative to reimagine supply chains for ESG considerations across value chains, including ecosystem players (suppliers, distributors, and technology players). This will enhance positive environmental and societal impacts through effective collaborations.

### Incentives for key players in the supply chain ecosystem

The transformation of supply chain is a necessity for businesses in today's rapidly changing market environment. This has also been indicated by CEOs responses in PwC's Annual Global CEO Survey report launched in January 2023. India CEOs underscore the need to include the impact of possible

disruptions in scenario planning and corporate operating models.<sup>12</sup> Outdated supply chain models are unable to meet the demands of consumers and businesses, and with increased competition, globalisation, and technological advancements, companies are also feeling the effects of global challenges and limitations in trade traffic. Furthermore, the monetary tightening in major economies is starting to impact global economic activity, thereby building a strong case for adoption of innovative strategies by the businesses to ensure efficiency, agility and resilience of their supply chains.

In India, the government has realigned its trade policies with the realisation that the free trade agreements (FTAs) can play a crucial role in driving supply chain transformation and provide larger avenues to domestic manufacturers for integration with the global value chains for sourcing and supply. For instance, the recently signed India-Australia FTA allows for duty-free import of key raw materials such as coal, alumina and wool, potentially leading to cost-effective value addition in India and increased competitiveness in exports by industries such as steel, aluminum and fabric/garment. While the government is committed to support value-added manufacturing and exports through the Aatmanirbhar Bharat initiative, reinventing the supply chain is essential for businesses to leverage globalisation and succeed in the dynamic market.

11 \$4 trillion increase in revenue for businesses placing greater importance on ESG - International Accounting Bulletin

12 26th Global Annual CEO Survey: India perspective

The Indian Government's initiatives around introduction of GST, signing new FTAs, introduction of and continuing emphasis on PLIs have helped businesses to not only attract additional investments for their growth and cater to the changing needs of consumers, but to also plan for redundancies in supply chain with predictive insights gathered through digital intervention.

Parallely, it would also help if other key players in the supply chain ecosystem get necessary support from the Government especially through tax/fiscal incentives. That will further the cause of establishing green supply chains as well as support businesses with larger funds at their disposal in building resilient supply chains.

### Reinventing the supply chain

According to the India perspective of PwC's CEO Survey, supply chains that have in the past relied on siloed functions, limited data availability, manual decision-making and unconnected planning with limited options for customisation are now in for an overhaul factoring in:

- customisation to cater to specific expectations of service levels/product availability/pack sizes
- automation with the use of AI and ML technology that can handle daily supply chain scenarios giving leaders bandwidth to focus only on managing exceptions/extremely critical scenarios

- integration through a supply chain control tower that would provide an end-to-end integrated view across plan, source, make, deliver and return. A control tower helps drive 'one understanding' of issues and time-saving in arriving at a consensus on root cause analysis across teams thereby resulting in productivity and response agility. Further, a control tower is not only about visibility but also helps in identifying exceptions, and management and governance of these through a combination of technology and people.
- institutionalisation of robust tax compliance systems to enable correct tax calculations and reduce compliance risks during the entire process of a product's life cycle whether supplied for domestic consumption or the consumer abroad.

It is evident that building control towers, predictive data models and mitigation plans can help manage such disruptions on an ongoing basis. Companies need to build resilience with alternate sources of supply, multiple vendors/partners for key inputs and transportation, while factoring the associated tax and trade costs. Several companies are also taking measures to decouple their supply chains by building higher buffers, backward integration, establishing strategic partnership with critical suppliers and recalibrating skills to propel the fit-for-future transformation in anticipation of tomorrow's demands.

A structured and holistic approach to establishing a supply chain control tower can fulfil these characteristics by:

- building visibility for today and tomorrow
- developing capability to see real-time or near real-time
- viewing performance as well as risks
- driving accountability and actions
- integrating end-to-end, top to bottom.

It augurs well that Indian businesses are now on the path of innovation to mitigate global supply risks supported by policy changes and public-private partnership under the Aatmanirbhar Bharat mission. More innovation-led developments that model in geopolitical shocks by taking recourse to decoupling scenarios, diversification needs and relocation adjustments, and operating business model shifts that focus on parameters such as increased risk monitoring, data optimisation, adequate factoring of tax costs and rising environmental consciousness could help companies gain a competitive advantage in the long run.

Also contributing to the article were **Saurabh Tewari**, **Vishnupriya Sengupta**, **Mandar Korlahalli** and **Riddhi Malhotra**.





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# A five-step approach to building a resilient supply chain

How do you build resilient supply chains that can weather multiple disruptions and unknown risks while balancing customer service and efficiency? Why is it important to build redundancies without significantly impacting costs and service levels across the supply chain? **Sudipta Ghosh** and **Nitin Soundale** provide some answers.

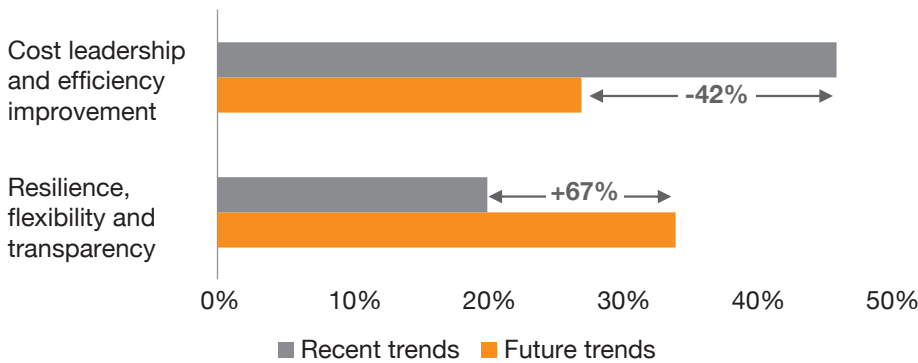
Increased globalisation, complex sourcing needs and diverse product portfolios have enhanced the complexity of supply chains across the world. These factors have exposed supply chains to multiple risks and disruptions, such as trade disputes, health crisis, geopolitical issues, environmental problems, demand volatility, supply shocks and regulatory changes. While efficiency remains the primary focus of supply chain executives, disruptions have prompted a strategic focus on resilience.

Resilient supply chains enable sustainable operations and uninterrupted service to customers. Such supply chains can weather multiple known and unknown risks and have both the agility and ability to recover from disruptions emerging from various sources. Therefore, resilient supply chains empower organisations to deliver continuous and consistent outcomes, resulting in increased trust among customers and other stakeholders across the value chain.

PwC's Digital Factory Transformation Survey 2022 revealed a **67% increase in the number of leaders who believe that building resilience and flexibility is a key driver of supply chain transformation.**<sup>13</sup>

13 PwC Digital Trends in Supply Chain Survey 2022

## Top two priorities for supply chain transformation



Source: PwC Digital Factory Transformation Survey 2022

Megatrends such as climate change, a fracturing world, demographic shifts, social instability and technological changes are causing four types of disruptions from a supply chain perspective.

### Demand disruptions

Unexpected fluctuations in demand occur due to multiple factors such as competition, new product launches, cannibalisation by new products and changing customer preferences.

### Supplier disruptions

Supply disruption due to breakdowns, workforce issues, poor financial health of the supplier, inability to source raw material due to trade barriers, geopolitical conflict or overall commodity-level shortage (e.g. semiconductors), and regulatory and compliance-related issues can impact supply chain performance.

### Logistic disruptions

Logistic delays due to demand-capacity mismatch (container shortages), port congestion, shipping lane blockages (e.g. the Suez Canal blockage), transport union strikes, regulatory changes and customs clearance delays, and force majeure issues can impact the seamless flow of inbound and outbound goods/materials across the supply chain.

### Production disruptions

In-house manufacturing may get impacted due to machine breakdown and factory accidents leading to closures and workforce issues, thereby causing disruptions in the supply chain.

Thus, proactive identification of applicable risks, accurate assessment of the impacts of various disruptions and prioritisation of response are required to build a resilient supply chain.

Our approach to building resilient supply chains is to create a digital replica that can be used to simulate various scenarios for accurate impact assessment based on quantifiable metrics such as value at risk and time to impact (TTI). This helps in identifying the points of failure within the supply chain and analysing the root causes for the same. It is then possible to devise strategic mitigation options – such as integrating an alternative supplier for key raw materials and maintaining a buffer inventory at important nodes. Sensitivity analysis may also be performed to understand the chokepoints of the supply chain for building redundancies without significantly impacting the cost across the supply chain.



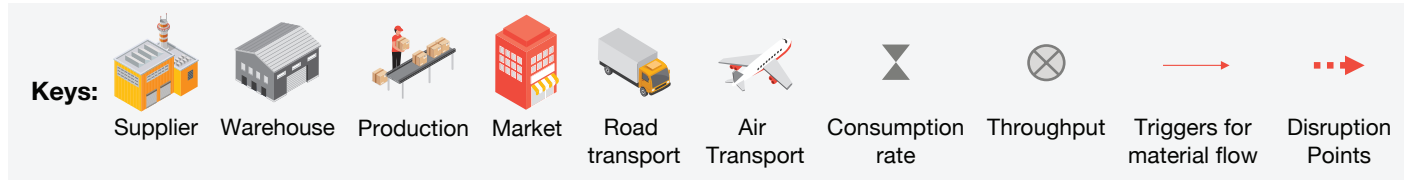
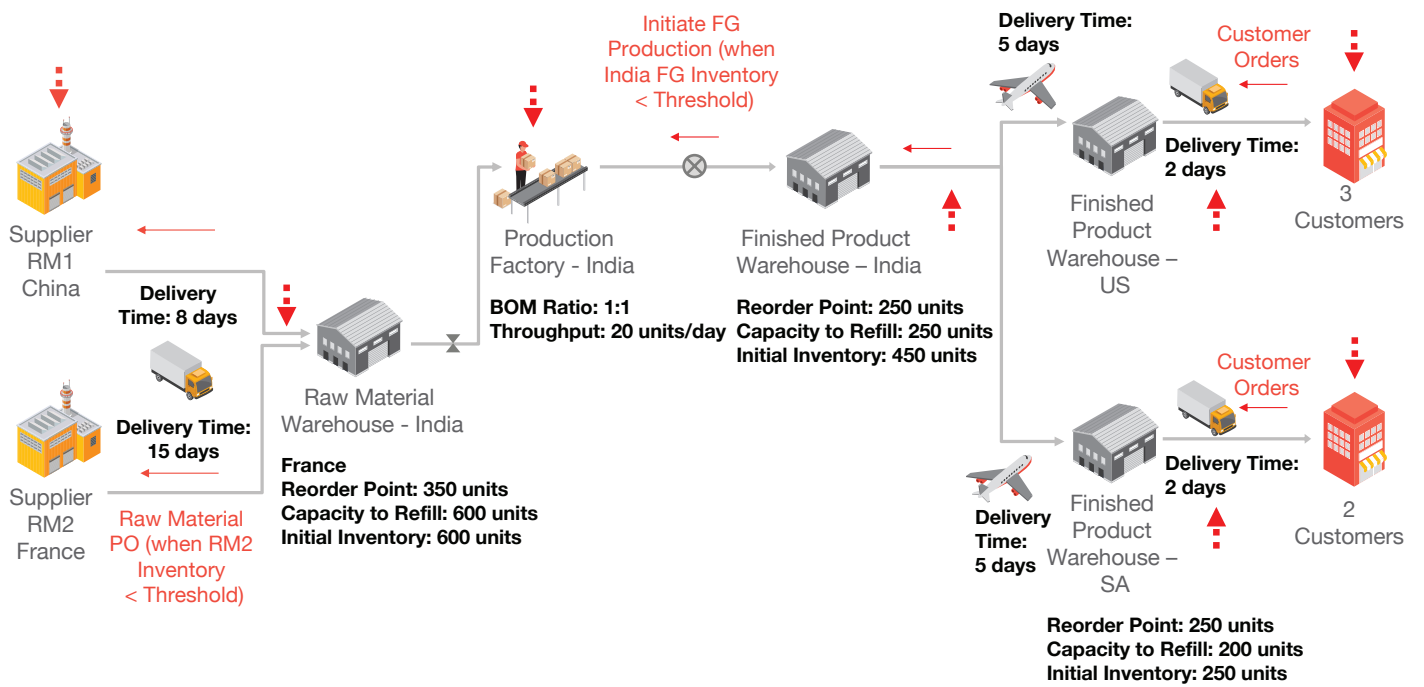
PwC recommends a five-step approach for optimally improving the resilience of the overall supply chain using the example of a global manufacturer. The diagram below represents the supply chain of the global manufacturer.



**Step 1: Define:** Understanding and finding opportunities in as-is supply chains

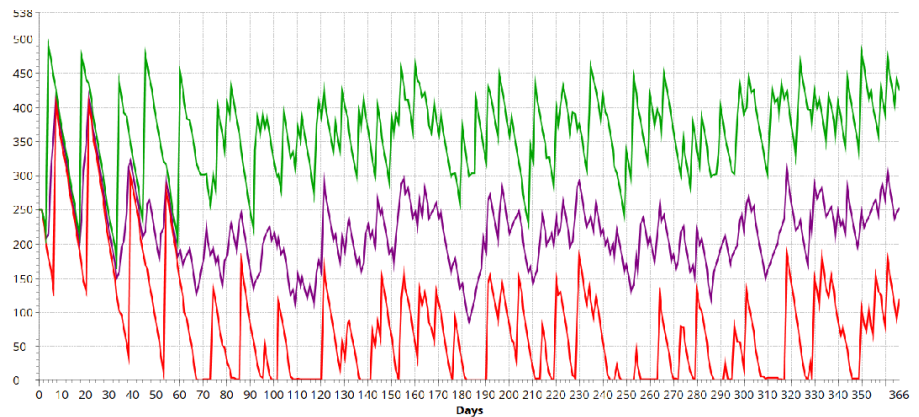
The current state of supply chains can be segmented and simulated to identify the key reasons behind their vulnerabilities and chokepoints. A digital replica of an end-to-end supply chain can be created using advanced data analytics technologies to simulate different supply chain scenarios. The same replica can also simulate the impact of the stochasticity of various policy parameters (such as lead time, safety stocks and reorder policy) on the target key performance indicators (KPIs) like service levels and value at risk.

**Example:** A global manufacturer was facing challenges in managing inventories of its finished products due to regular disruptions and a complex multi-level supply chain structure. This led to large deviations from the acceptable target ranges for its key KPIs – service levels and contribution margin. To fix this, supply chain segmentation and simulations using a digital replica of its global supply chain were performed to understand the as-is supply chain better.





**Finished goods (FG) inventory positions during as-is operations (without any disruptions):** It is evident that digital replicas can help provide better insights into the working of supply chains. The adjacent chart shows the day-wise simulated FG inventory positions at a distribution centre during normal operations.



X-axis: Days; Y-axis: FG inventory at a distribution centre  
 Simulated inventory level: **Maximum**; **Average**; **Minimum**

**Step 2: Anticipate:** Identification of potential risks and disruptions

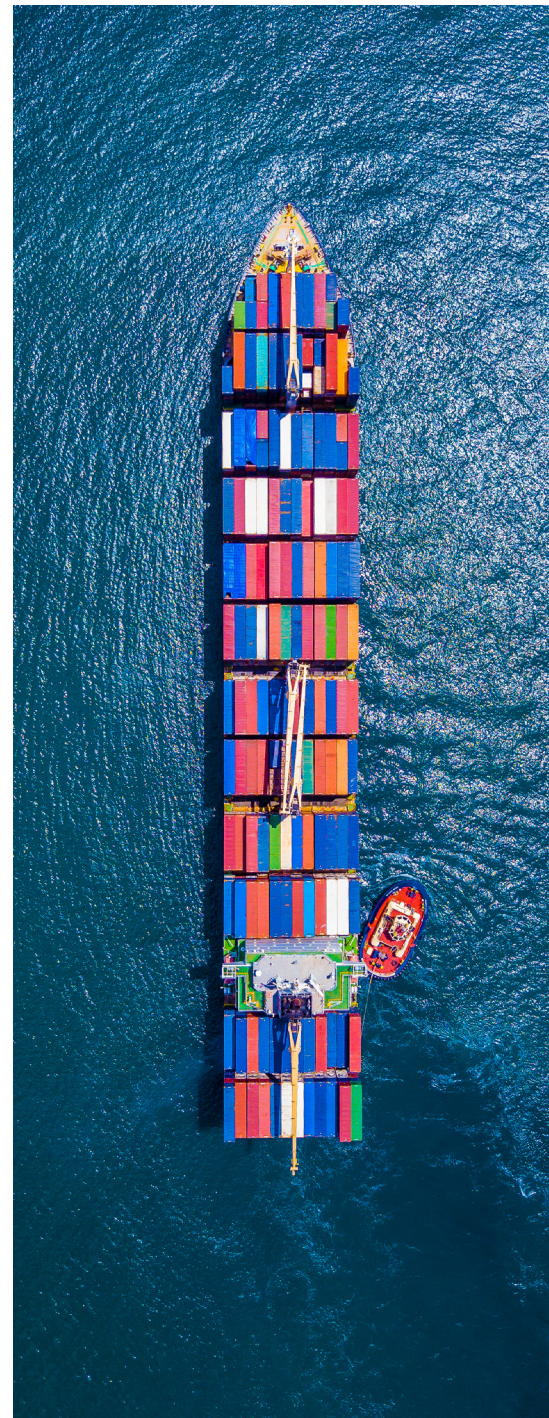
Early warning indicators can be designed based on market intelligence or predictive modelling to proactively identify potential risks and disruptions in the future. Inputs from key stakeholders can then be aligned with the list of potential risks. Artificial intelligence (AI) techniques, such as natural language processing (NLP), can assist in scanning a comprehensive dataset comprising both publicly available and subscribed datasets to generate early warning indicators and direct them as triggers to specified stakeholders.

**Example:** The supply chain of the global manufacturer was susceptible to multiple natural disasters due to geographical proximity of its processing plants and raw material suppliers to disruption areas. The disruptions were predicted based on historical data and external factors such as weather forecast data to identify potential risks to the supply chain.

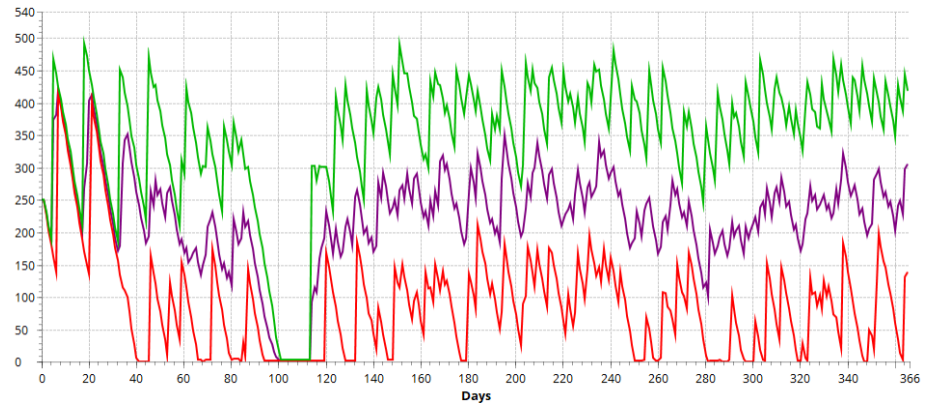
**Step 3: Assess:** Impact assessment of the identified risks

Digital replica simulations can assess the impact of various combinations of disruptions on the supply chain nodes and also quantify their impact in terms of the relevant metrics. Such simulations will help to identify either the failure/chokepoints, or the opportunities for strategic decision-making.

**Example:** The overall supply chain of the global manufacturer was simulated across all identified disruption scenarios to quantify the potential drop in service levels and contribution margin. Based on the generated results, the key finished goods stockouts were also identified.



**FG inventory positions with supplier disruption:** The digital replica of a supply chain can help identify the TTI on FG inventory due to the unavailability of a raw material (RM). In the following case, the RM becomes unavailable on day 0, whereas the stockout of the respective FG occurs on day 100. Thus, the TTI is 100 days in this scenario.



X-axis: Days; Y-axis: FG inventory at a distribution centre  
 Simulated inventory level: **Maximum**; **Average**; **Minimum**

**Step 4: Analyse:** Sensitivity analysis for identification of key parameters

Sensitivity analysis is performed on a supply chain on the basis of the synthetic data generated by the simulations to identify the most important parameters of the supply chain according to their impact on the key target metrics (e.g. customer service levels). The key parameters identified during this stage allow one to generate a prioritised path for designing recovery strategies.

**Example:** The global manufacturer performed the sensitivity analysis on a wider set of supply chain parameters and identified the production capacities and inventory replenishment policies that were critical for addressing the service-level disruptions. These were then used as the input for making additional investments to strengthen resilience without significantly impacting the overall cost of running the supply chain.

**Step 5: Act:** Planning and adoption of recovery strategies

Proactive mitigation strategies are designed to protect the key failure nodes and ensure potential improvements for each vulnerable part of the supply chain.

Changes in the supply chain need to be fed back to the simulation model to continuously monitor the future impact and course-correct where needed on an ongoing basis.

Intervention areas can be prioritised on the basis of the business impact and ease of implementation. Business impact could be assessed in terms of:

- reduction in TTI
- improvement in time to recovery
- increase in service levels
- optimisation of inventory costs.

Ease of implementation could be assessed by

- the degree of complexity
- data availability
- internal change management
- availability of existing tools and technologies.

**Example:** To mitigate the impact of disruption, inventory policies were improved at a few warehouses, and buffer inventory was maintained to ensure the continuity of the supply chain of the global manufacturer.

Institutionalising such learning will help organisations become future ready.

**Building resilience as a way of life**

With increasingly globalised supply chains, building resilience is more of a necessity than a nice-to-have capability. Often, companies are faced with three key questions:

- where to begin?
- what are the most suitable solutions to build organisational resilience?
- who should own such an initiative?

The answers to these questions would differ based on the maturity of the current supply chain capabilities and specific situation(s) one is likely to face

and would depend on the extent of exposure to relevant potential disruptions.

Evaluating as-is supply chains for potential vulnerabilities, identifying potential solutions, and laying out a clear roadmap to achieve resilience in a measurable and sustainable way can help companies chart this course successfully. These initiatives need to be sponsored by the CEO and championed by the supply chain teams, with support from the CDO/CIO. Finally, and most importantly, building and managing resilience should be a way of life for supply chain executives rather than a one-time activity.

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# Reimagining tomorrow's supply chains

Supply chains of the future will need to be connected, autonomous, integrated and powered by data and digital capabilities. **Ajay Nair** and **Saurabh Jain** provide the lowdown.

## Supply chain headwinds

Organisations today are facing huge survival challenges. PwC's 26th Annual Global CEO Survey indicates that about four in ten CEOs — both globally and in India — believe their organisations will not be economically viable in ten years if they continue on their current course. Five in ten CEOs in the Asia-Pacific region believe that their current business models will not survive in ten years. The survey also indicates that given the changing customer demands and supply chain disruptions, CEOs are looking at reinventing their companies over the next five years with the required investments in technology and people.<sup>14</sup>

Some of the headwinds in the supply chain domain are highlighted below.

### Unstable commodity prices

Due to climate changes, inflation and supply chain bottlenecks, commodity prices soared in April and May 2020. This was compounded by the conflict in Ukraine. Typically, war impacts commodity pricing, leading to quick surges in prices if one of the participants is a big supplier – such as Ukraine in agriculture and Russia in energy. However, it can also cause sudden reductions in global prices if one of the participants is a big buyer.

<sup>14</sup> 26th Annual Global CEO Survey: India perspective

Commodity prices are declining despite the ongoing Russia–Ukraine conflict. According to experts, the Fed’s decision to halt quantitative easing resulted in higher interest rates, a stronger dollar and the possibility of slower gross domestic product (GDP) growth – all of which are detrimental to the overall prices of commodities.

### Increase in container transport rates

When the pandemic was at its worst and resulted in worldwide lockdowns, customers supported the economy by shopping online. Operational costs – most notably, freight container shipping prices from Asia – skyrocketed due to the unexpected increase in demand for commodities.

Freight rates doubled, tripled and eventually quadrupled as a few dominant operators gained control of the market. As reported in the Washington Post, the cost of shipping goods from China and East Asia to the ports around the US East Coast exceeded USD 22,000 in September 2020. Moreover, early January 2020 saw an average price of USD 2,649.<sup>15</sup>

### Shortages of supplies

Disruptions have led to a considerable lack of supplies, due to either unexpected spikes or constraints. For instance, as the COVID-19 pandemic spread, automakers reduced their orders for semiconductor chips. On the other hand, demand for technological devices increased. In the second half of 2020, when the automotive market rebounded more quickly than expected, the semiconductor sector had

already relocated manufacturing lines to fulfil demand for new uses. This unexpected increase in demand led to an unprecedented chip shortage in addition to long-standing problems – such as limited capacity – of the semiconductor industry.

### Workforce challenges

With the introduction of new technologies in the market, digital literacy is gradually becoming a critical component of the upskilling process for the workforce. Due to an increase in uncertainties, it is no longer possible to make business decisions the way they were in the past. Therefore, there is a need for a seamless integration of artificial intelligence (AI) and human intelligence in the supply chain ecosystem.

### Reimagining supply chains of the future

The traditional supply chain relied on siloed supply chain functions, limited data availability, manual decision making, unconnected planning and business models with limited customisation as per customer demands. However, owing to the disruptions in the ecosystem, the supply chain of the future will need to be customised, autonomous, integrated and powered by data and technology to serve new customer channels, and adjusted dynamically to new scenarios. Moreover, it would have to be equipped to anticipate and adapt to unforeseen circumstances.

One of the first steps in this direction is to create scenarios to deal with the different kinds of disruptions while factoring in every aspect of a supply chain – from

Tier N suppliers (entities at the bottom of the supply chain) to logistics providers and customers. In order to do so, one needs to ask these questions to get a clearer picture:

- How do problems with one tier of suppliers affect the others?
- What would happen if a major piece of equipment at a logistics facility broke down, or if a pandemic or natural disaster caused a port to be shut down?
- What if there was an unexpected increase in demand or niche market segments emerged?

#### a. Supply chain customisation

In a complicated global business environment, numerous current supply chains fall short of helping a firm achieve high performance standards. With most chains designed to accommodate stable demand with high reliability, a one-size-fits-all approach cannot be used to manage problematic issues such as growing customer needs and shifting market dynamics.

Thus, a more diversified supply chain strategy is required for the dynamic and unpredictable business environment of today. Supply chain customisation or individualisation enables businesses to set up their supply chain networks to relevant clusters so that customer requests can be met in an effective and efficient way.

The main goal of supply chain customisation is to create a network of supply chains that is specifically tailored to each customer’s needs in terms of

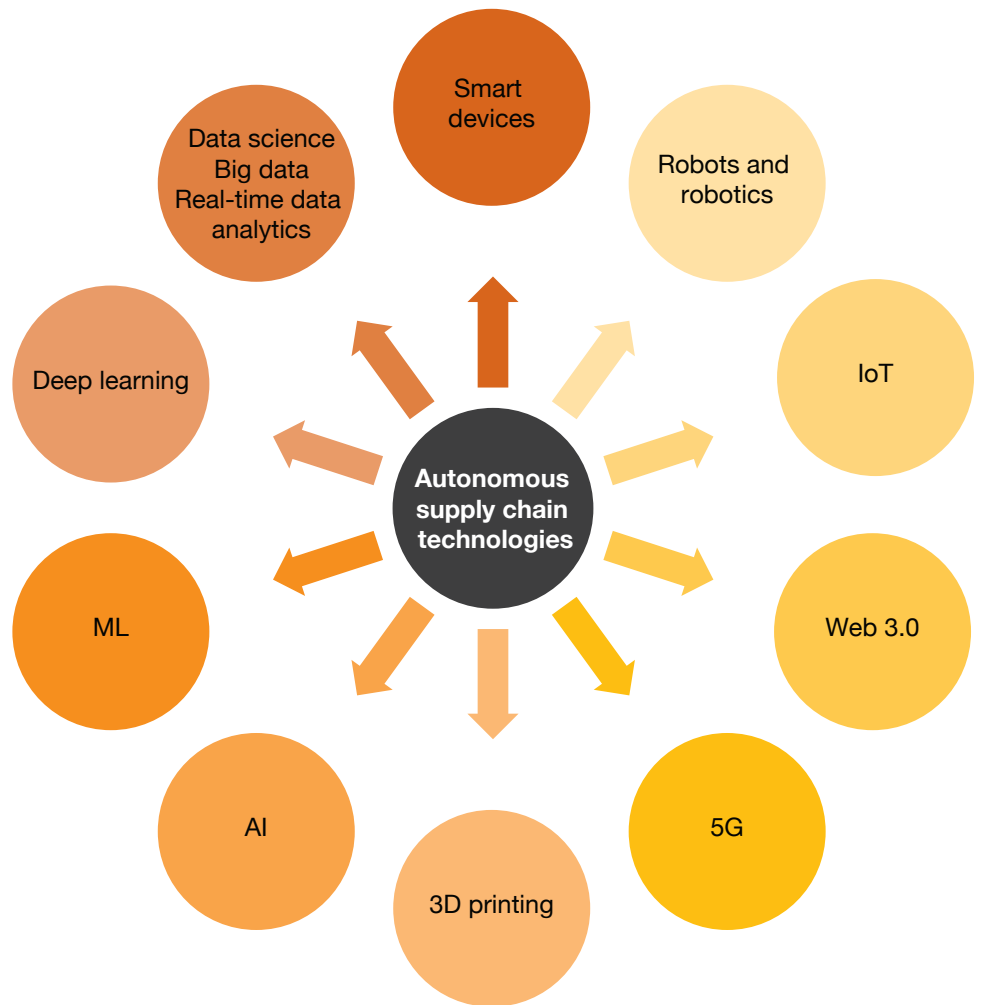
<sup>15</sup> Ocean freight rates, accessed in December 2022

timing, cost, quality and logistical activity. This can be started off by developing a supply chain strategy design where segmentation takes place based on the channels – general trade, modern trade or e-commerce of direct-to-consumer (D2C; which has evolved recently). Every element of the supply chain aims to fulfil expectations translated into relevant stock keeping units (SKUs) at desired service levels with optimised costs.

The next level of segmentation and customisation happens at the demand planning level, where customer demand is segmented based on multiple parameters such as sales, variability and margin, to ensure that correct scientific models can be applied for a good baseline statistical forecast as a starting point. The demand planning process is accordingly designed to ensure the completeness, bias and accuracy of the forecast of every SKU and channel.

**b. Autonomous digital supply chain**

An autonomous supply chain indicates an integrated, data-driven digital supply chain that operates harmoniously across different layers to drive customer satisfaction. These automated



systems and technologies require minimal human intervention or exceptions, escalations and approval handling. Data science enables the extraction of meaningful information from unseen patterns that emerge from vast volumes of data. Furthermore, AI and machine learning (ML) help in making decisions based on this information and previous trends in coordination with the internet of things (IoT), robots and smart devices working seamlessly on 5G networks.



### c. Integrated supply chain ecosystems

An organisation can meet customers' demands and expectations by using an integrated supply chain network to:

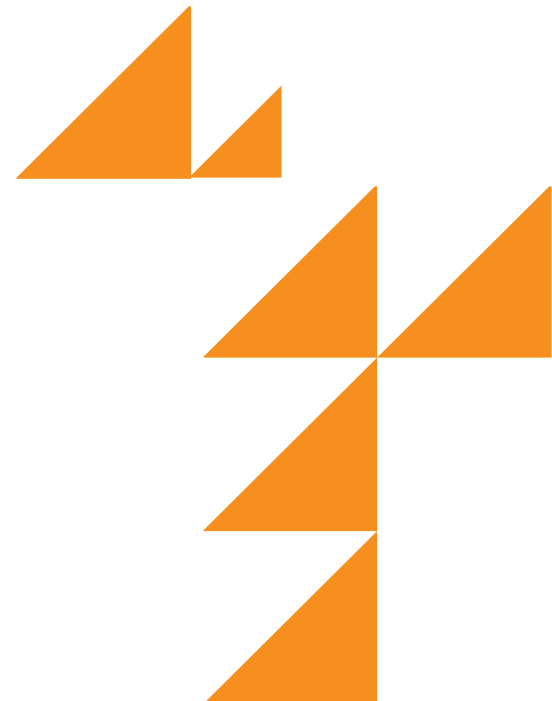
- onboard its customers and suppliers, and harmonise shared reference data – such as information on traded items or shipping addresses
- exchange business documents with identified and authenticated partners
- share demand signals, available-to-promise (ATP) or capable-to-promise (CTP) data in a selective manner
- align production purchase order call-offs and transportation orders
- meet demand signals.

Integrated supply chains give network partners the option to examine and rate their dependability as a group, manage what information they communicate with each party, and have confidence in the identification of their trading partners.

Integrated supply chains are used by businesses to match supply and demand, and give the cooperating parties the same ability to agree on a common understanding of the projected demand as done by an enterprise's sales and operations planning processes. The parties are able to spot possible production or transportation capacity gaps and recommend alternative network resources to bridge the gaps.



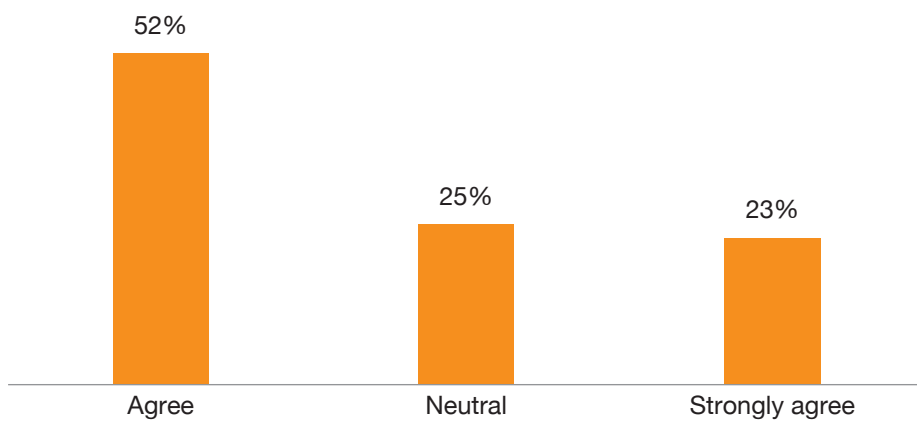
The majority of brands and consumer packaged goods companies communicate with their consumers through D2C channels or marketplaces. For instance, today, both digital and traditional methods are used for communication between auto original equipment manufacturer (OEM) service dealers and vehicle owners. Their integrated supply chain monitors demand signals and predictive characteristics for each type of consumer across channels – just like other multichannel organisations. Additionally, it enables the finance and sales teams to jointly analyse the depth and breadth of local product offerings for quick client assistance and provide attractive choices.



As per PwC's recent survey<sup>16</sup> more than 52% of supply chain leaders from various sectors strongly agree that digital transformation is key to achieving an integrated supply chain. Multiple software tools and platforms have come up in the last few decades to help organisations ensure an integrated view of the supply chain. Such tools also enable organisations to link demand planning to supply and dispatch planning, with multiple feedback loops to ensure that supply chain planning and execution challenges are met, and decisions are taken after analysing multiple real-time scenarios. Therefore, dynamic demand–supply balancing through quick scenario formulation and scientific analysis-based decision making with the help of technology is an essential part of the integrated supply chain ecosystem.

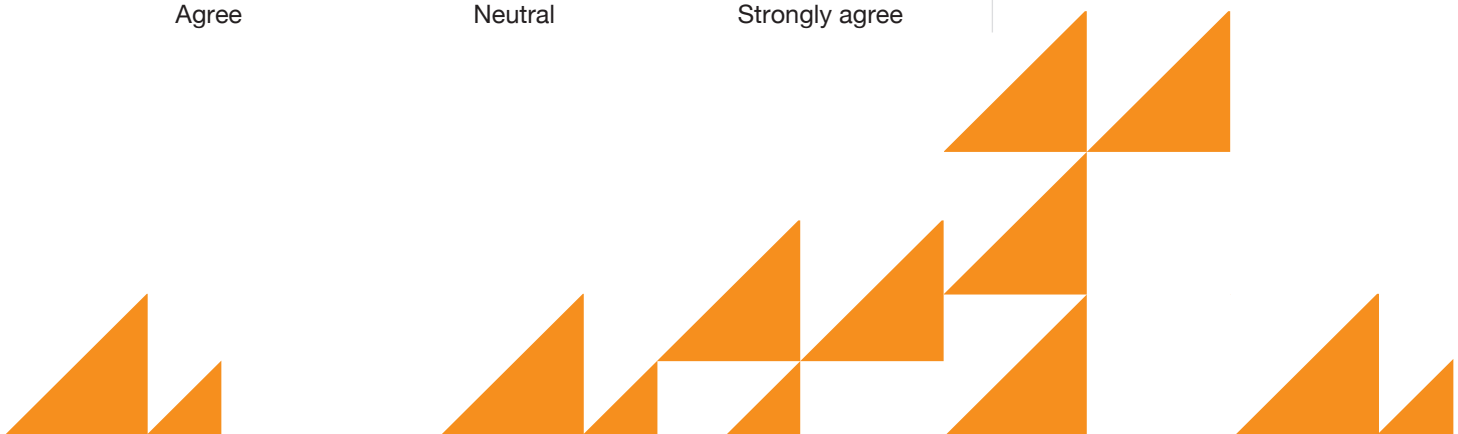


### Digital transformation: Key to integrated supply chains



### d. Data and digital – the fuel of future supply chains

Legacy supply chains, which are designed for bulk replenishment in the case of mass market distribution and procurement from the same suppliers, severely limit customer choice, degrade the customer experience and restrict the ability to respond to changing market forces.



16 PwC survey (see note at the end)



In contrast, supply chains in the modern era are faster, more dynamic and more disruptive than ever before. Identifying new markets and supply sources is essential to the digital economy's success. Additionally, agile supply networks outperform rigid supply chains by foreseeing demand from informed customers.

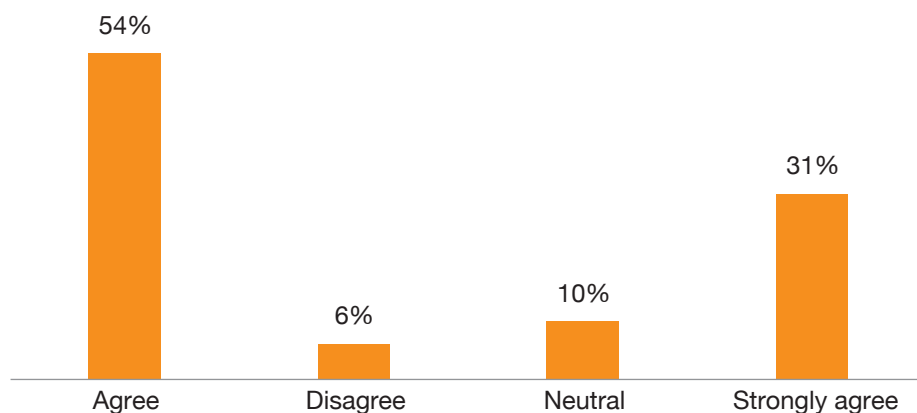
PwC's recent survey indicates that more than 54% industry leaders believe that digital transformation is key to enabling collaboration with end-to-end supply chain partners – i.e. suppliers, logistics and warehousing service providers, and customers.<sup>17</sup>

The digital revolution made it possible for businesses to trade directly with customers and for manufacturers to interact with their clients directly. It is now possible for businesses to make use of technology to also speed and scale up their response to changes in supply and demand. Businesses may securely and privately exchange data within a network, altering hierarchical supply chains that have historically been fragile.

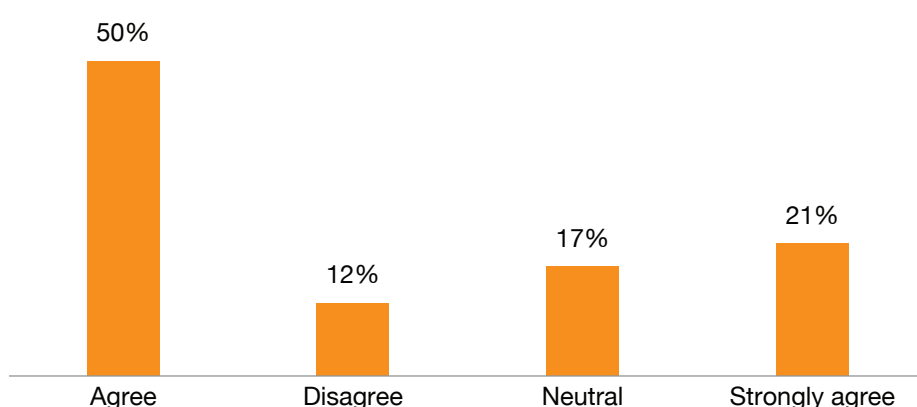
Supply chain leaders can also examine the current condition of operations and anticipate future disruptions with the use of digital twins, which use real-time information streams including incoming shipment timetables, vehicle whereabouts and inventory levels.

More than 50% business leaders say they are focusing on building digital supply chain capabilities in the supply chain teams of their organisation.<sup>18</sup>

### Digital transformation: Key to achieving end-to-end supply chain visibility



### Focus on building digital supply chain capabilities within the organisation<sup>18</sup>

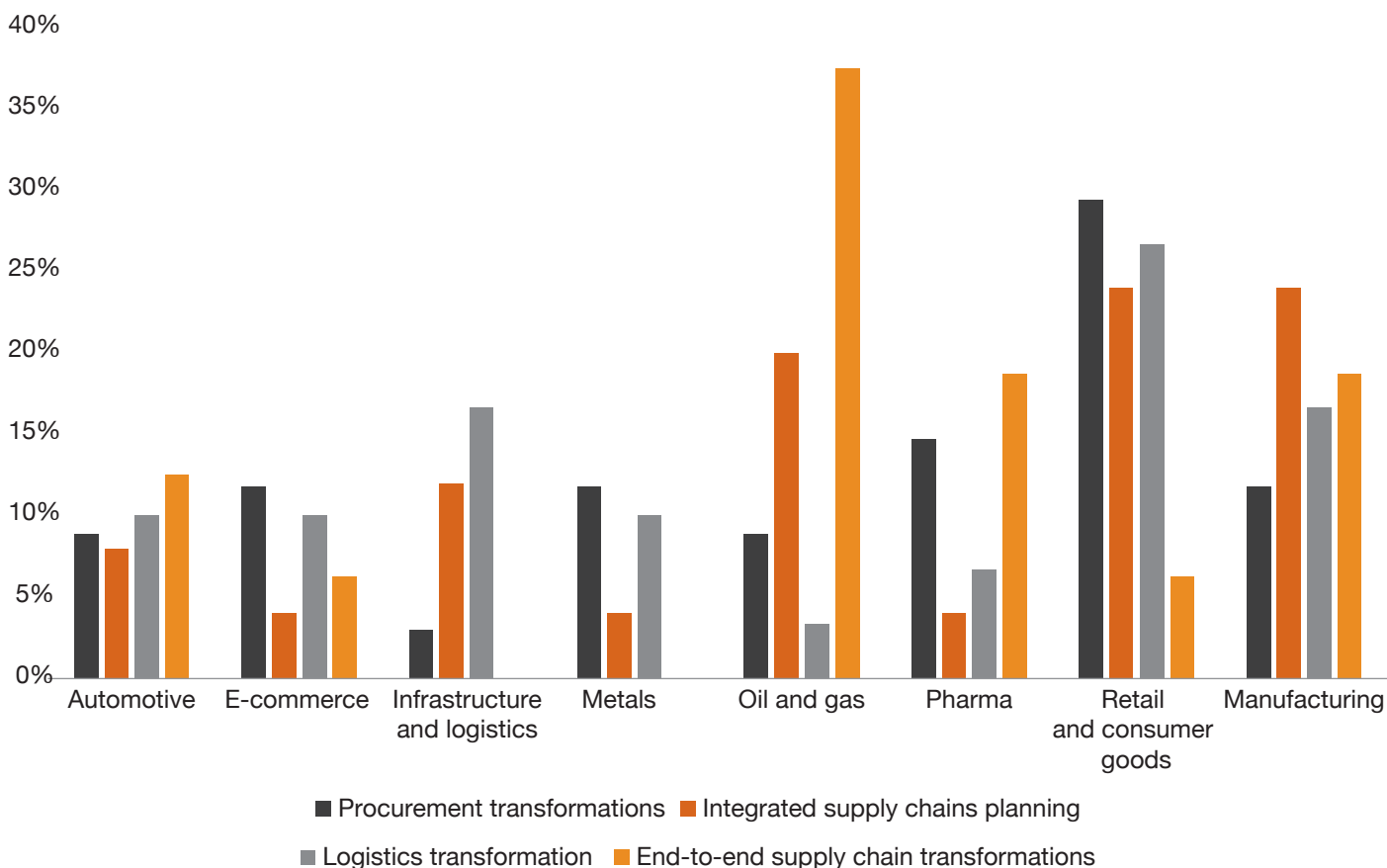


<sup>17</sup> PwC survey (see note at the end)

<sup>18</sup> PwC survey (see note at the end)

Below are the industry-wise digital transformation focus areas in the next three to five years.<sup>19</sup>

### Supply chain focus areas for digital transformation



### Transforming a leading e-commerce player's business model

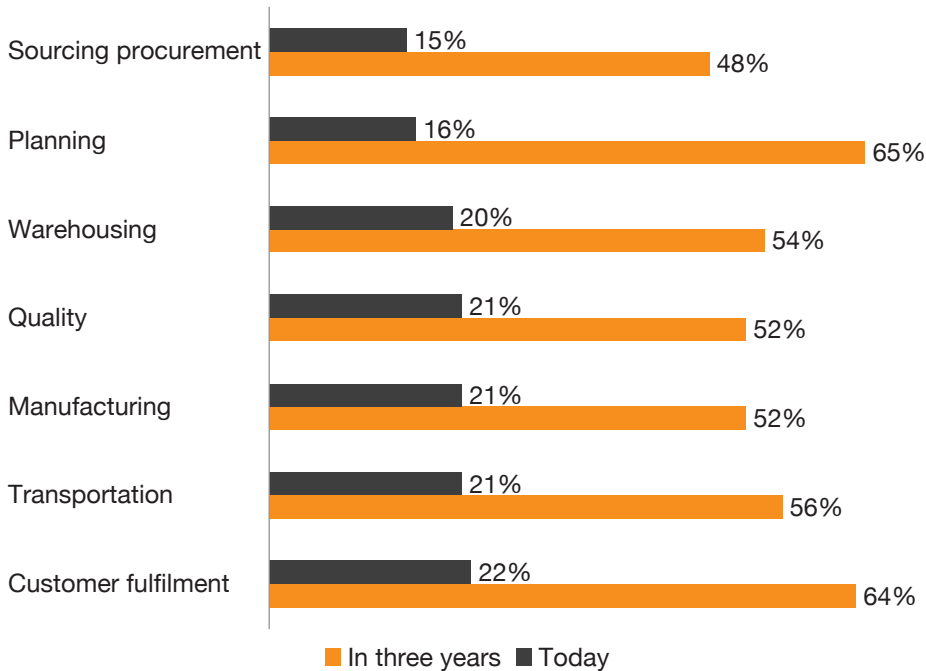
A leading e-commerce player wanted to reinvent its business model by using technology. The company has an in-house ML platform – which is essential for this transformation – and used it to create two store brands. Over time, it discovered that for more than 50% of its online buyers, price was a more significant buying motivator than the brand name.

The primary objective of the ML platform was to immediately recognise changes in consumer behaviour and understand fashion preferences by quantitatively identifying buying trends. Using the same machine vision technology to analyse images from blogs and influencers on social media platforms, the store enhanced this data and added assumptions about global demand gleaned from crawling rival businesses' websites. This enabled the ML platform to provide its designers with 'recipes'

or detailed insights that allowed them to decide which particular styles to produce more or less of (e.g. 'make more yellow bohemian clothes'). The likelihood of any design being a top seller was determined by running these designs repeatedly against a machine curation algorithm that uses current sales data and photographs.

<sup>19</sup> PwC survey (see note at the end)

## Increase in the level of decision-making automation in three years (by function)



It is evident that the importance of AI in the supply chain is growing rapidly. According to projections based on a discussion with industry experts, companies that rely only 15–20% on AI for decision making today will increase their reliance to 55–65% in the next three years.<sup>20</sup>

### Sectoral insights

PwC’s survey also indicates that industry experts from the manufacturing sector are keeping integrated supply chain planning as their top priority for the next three to five years. For the automotive, pharma, and oil and gas sectors, end-to-end supply chain transformation is the major focus area to drive business. Retail and consumer goods and e-commerce, on the other

hand, are relying on procurement transformation for business growth.

Healthcare organisations are actively implementing AI to improve clinical decision making, remote patient monitoring and surgical outcomes. Leading pharma sector companies use digital twin capabilities to optimise vaccine production. According to them, with better forecasting and supplier management, data-driven supply chain management can save more lives.<sup>21</sup>

Free-flowing data, unrestricted by departmental silos, is a sure sign of a supply chain that is prepared for the future. Leading businesses gather and model enormous volumes of supplier and consumer data. They invest in data analytics

tools to monitor consumer trends, track sales data across all channels and identify shifts in client preferences. They employ data to:

- identify shifts in demand across stores
- notify suppliers of anticipated changes in requirements
- assist in reallocating inventory across locations
- ensure business restocks at the appropriate time.

Data may come from publicly accessible sources, numerous external vendors, or internal sources. Due to this, it is essential to combine structured and unstructured data intelligently and have a mechanism to extract meaningful insights from this data in place.

However, these efforts require capital. Recent PwC research<sup>22</sup> demonstrates that investing in sophisticated supply chain capabilities pays off in the long term through lower costs, higher revenues, improved sustainability, higher asset utilisation, improved risk management, and higher rates of on-time, complete delivery to B2B and B2C clients.

Conceptually, environmental, social and governance (ESG) standards and compliance work guide supply chain operations which are ethical, socially acceptable and environmentally beneficial – especially when it comes to procurement, sourcing and supplier relationship management-related activities.

20 AI in the supply chain

21 The five key takeaways

22 Smart moves your supply chain needs

ESG criteria, however, are relevant both internally and externally. ESG standards that constitute a factor in a company's monthly internal performance evaluation are equally applicable when a supplier plant is randomly audited. As a result of globalisation and the outsourcing of labour, traceability and transparency into suppliers' activities are now mandatory in globally operating supply chains to handle ESG-related risks. Therefore, when creating a sourcing or procurement strategy, ESG is gradually becoming the primary consideration.

A recent PwC survey indicates more than 50% business leaders are focused on defining and implementing an ESG strategy in the end-to-end supply chain ecosystem comprising suppliers, organisations and customers.<sup>23</sup> To this end, companies can improve the speed and responsiveness of their entire value chain by moving their manufacturing and distribution facilities closer to customers. This would reduce carbon emissions due to shortened transportation routes. As businesses increase their decarbonisation obligations, Scope-1 and Scope-2 emissions — which are either directly created by businesses or indirectly through the purchase of energy — are at the forefront of discussions. However, there should be more focus on Scope-3 emissions — produced in the upstream and downstream value chains — given that they account for a considerable percentage of the overall carbon impact of most organisations.

## Connecting the dots

PwC's vision of a connected and autonomous supply chain consists of a closed-loop system of planning and execution, transparency and sustainability, and smart logistics powered by dynamic segmentation through AI.

This is aligned with what the future holds in store. Supply chains of tomorrow will be connected, autonomous, integrated and powered by data and digital capabilities. A connected supply chain integrates planning processes and enables feedback loops across the value chain to adjust sales and operations planning in real time. Next-level planning is synchronised in real time with execution and enables continuous optimisation. The subsequent logistics level seamlessly integrates and connects the entire order-to-deliver process. This level consists of warehouse automation, logistics track and trace, autonomous supply and loading, and scheduled delivery to consumer. The connected supply chain leverages IoT for increased visibility, integrity

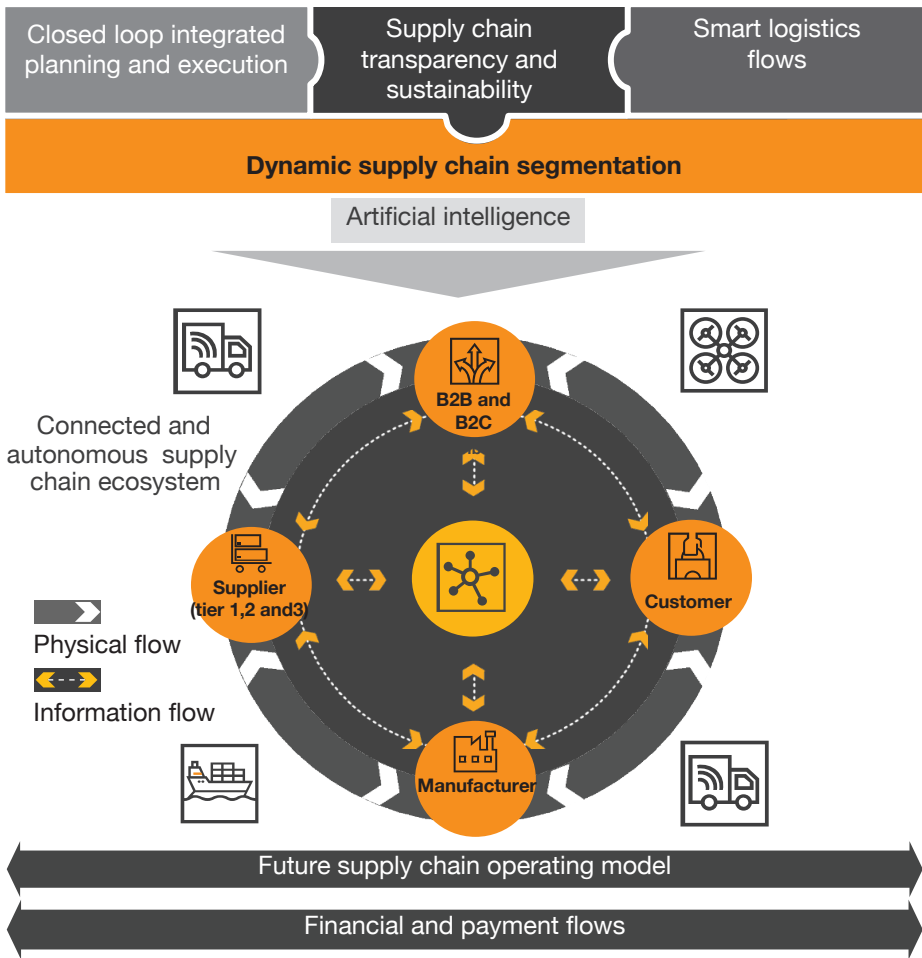
and efficiency at the delivery stage of the value chain. This provides end-to-end network visibility, real-time alerts via geo-fencing, advanced analytics, enhanced security and theft prevention.

Any firm embarking on the journey to create a supply chain of the future needs to first have a supply chain transformation programme designed. The current state maturity assessment should also be done, and a desired future state should be agreed upon. The overall transformation programme should consist of multiple work streams of supply chain strategy and process design, digital tool selection and implementation, and a parallel workstream of value assessment and realisation, with a focus on the adoption of new processes and digital tools.

Organisations equipped with a reimagined supply chain that factors in agility of thought and action would be able to thrive in a dynamic supply chain ecosystem — in spite of unexpected and unforeseen scenarios.



23 PwC survey (see note at the end)



**Note:** Having witnessed many disruptions and innovations in the supply chain industry over the past couple of years or so, PwC India conducted a survey towards the end of 2022 to seek insights from industry leaders and decision makers, and understand the steps to be taken to enhance supply chain capabilities and take them to the next level.

A total of 52 companies participated in **PwC India's Supply Chain Survey**. Nearly 50% of the responses came from CXOs, 30% from supply chain department heads and the remaining from business unit heads. The survey sought views on themes such as supply chain resilience, digital transformation and logistics infrastructure from leaders across sectors such as manufacturing (industrial goods), retail and consumer, oil and gas, pharmaceuticals, automotive, e-commerce, infrastructure and logistics, and metals.

Also contributing to this article were **Rohit Saxena** and **Vishnupriya Sengupta**



**Ajay Nair**  
Partner, Customer Consulting and Supply Chain Transformation



**Saurabh Jain**  
Partner, Supply Chain Transformation

# Hitting a home run

ElasticRun has joined the unicorn club in a record period of six years. **Sandeep Deshmukh**, its Co-founder and CEO, tells **Vivek Prasad**, Markets Leader, PwC India, how the company's very existence generates ESG goodness with its laser focus on social inclusion and financial wellness of those at the bottom of the pyramid.



Vivek Prasad (left); Sandeep Deshmukh (right)



## Excerpts from the interview

**Vivek Prasad:** Welcome to the third edition of *Immersive Outlook*. Today we have the pleasure of having with us **Mr. Sandeep Deshmukh, CEO and Co-founder of ElasticRun. ElasticRun is not only transforming supply chains, but also changing the way rural India consumes. It also has the esteemed privilege of being in the unicorn club and that too in a record period of six years. Mr. Deshmukh is an alumnus of IIM Ahmedabad and has an educational background in engineering. Sandeep, thank you very much for being with us. Let me start by asking you what really spurred the idea of a direct distribution, B2B e-commerce platform for rural India?**

**Sandeep Deshmukh:** Thank you for inviting me. I am glad to be here. Prior to launching ElasticRun, I worked in various areas of transportation technology and transportation operations. And while working in those arenas, you do get a good view of what's happening in the Indian supply chain ecosystem. One of the key findings was that Indian supply chains were geared for a very miniscule market compared to the total market size of what Indian consumption could be. And one of the key reasons was that the cost of fulfilment of rural markets

through the traditional channels was substantially high. And that's why that market has remained unaddressed. And then if you put together the triangulation of mobile data coming in, the development of the shared economies space and the overall emergence of transportation technology, if we put all of those things together, married with the demand, then we saw an opportunity to address that untapped market demand using the technology solution we had. And given the massive size of the opportunity, I think that was a trigger for us to start ElasticRun and build a network that will open up that untapped Indian consumption market. That's how we started.

**Vivek Prasad:** **The whole rural ecosystem can really be a gamechanger for India. But when we reflect back on the last few years, we've seen that this segment was impacted in a big way. What were the challenges that you faced during this period? And what were the opportunities?**

**Sandeep Deshmukh:** During COVID, we saw the worst of worst days and the best of best. The first extreme was the moment lockdown was announced. You were not able to operate on the ground, people were not allowed to move, vehicles were not

moving, production came to a halt. So, in a way, the market just came to a standstill. That time we were at a fairly small scale, we were still convincing our customers to come on board and target the global market.

But a month or two into the lockdown, this scenario completely changed. What happened is, by anyway struggling to get supplies on the ground, the traditional ecosystem is highly fragmented, the operators there are very small entrepreneurs, very small businessmen, and COVID hit them even harder – that ecosystem almost got wiped out. What that means is that demand just went through the roof, demand was always there, but there was no fulfilment channel. And because we had some organised semblance of the ecosystem running before COVID, we became the go-to player for almost all of the brands in the country to reach out to the rural market. It was before COVID that we were trying for at least couple of years to convince almost all the brands, show them the rural demand and why they should be supporting there.

I think there was a general consensus that they should go to the rural market. But given that these are large companies and decision making takes its own time, and they were going through the process, but COVID just turned around everything and all the decisions which were

pending for six months or a year, maybe a couple of years, they just happened overnight. And that saw a massive spike for us from a complete shutdown of the network to going into almost 10x during that year.

And while the opportunity opened up, fulfilling demand in that period was of course a very tough challenge. We had to work with several regulatory authorities, local administrations, get our partners to come and work, work with police authorities all around. But that was also one area which proved the calibre of technology – that if you leverage technology to have visibility across your supply chain, then marshalling your resources and getting the supply chain re-established in the shortest span of time is possible throughout the network. And since then, it has been a rocket ride.

I think the COVID just helped establish the fact that there is a need for such a channel that can enable reach to the rural market; there is an opportunity in the rural market and the rural markets will continue to grow. So, as I said earlier, COVID took us to the lowest of the low days and highest of the high days. And I think we became a fairly resilient company.

**Vivek Prasad:** If I may just pivot to the fact about how the organisation has achieved the milestone of becoming a unicorn and that too in a record period of six years. When you reflect back on your journey today, what are some of your learnings? Could



We observed that the Indian supply chains were geared for a very miniscule market compared to the total market size of what Indian consumption could be.

**you also reflect on the whole start-up ecosystem? We are the third largest start-up ecosystem in the world today. How do you see this space evolving over the next few years?**

**Sandeep Deshmukh:** I think first things first, the company needs to become meaningfully large, attain scale and then valuation may or may not follow. What helped us become large is, I think, the product-market fit. It should not happen that we are thinking in our own mind that yes, there is this very particular kind of demand, and customers are going to love it. It has to be tested on the

ground, and we had to establish that there is a consistent pool for the demand for our products in that market.

Once that is established, then the other work that we had to do was on the supply side, working with brands and convincing them that we have the channel and they should go to this market and we are a better channel and so on and so forth. This was a long project, as those are established companies and they have their own channels, they have their own thesis and then for them to understand that this new channel will work for them is a process. But that's when COVID happened, and we got some boost to convert those decisions.

And once those two things came together, that product pool was established and supply-side equations were established, then the hockey stick growth happened and sales went through the roof. I think once you get thrown into the deep end of the pool, you do learn to swim, and I think that's how the company got created.



About the unicorn status, I think we are fortunate to have a very strong pool of investors, and we have a solid industrial base that has backed us through every single round. And in the valuation multiples, how it gets calculated is a function of how we operate as well as how the external markets are behaving. And once those two things came together, that's when the unicorn story was built. That's the answer to the second part of the question.

The third question was about the overall start-up ecosystem. I think what the last couple of years have shown is that the start-up ecosystem in India has been maturing at a very fast pace. I know there are side effects of growing too fast; but there is clear sign that a lot of quality is coming straight out of college as start-ups and entrepreneurship is a very viable and preferred choice for youngsters. Now, I work with some of the youth on a personal level and I see that launching something straight out of college is their first reference to a larger audience. The risk-taking capability has definitely gone up, the fear of failure is much lower.

The second side of the start-up ecosystem, if you look at the investors, the VC community has also gone through multiple iterations. And people who have spent 10–15 years in the market, they are able to compare what's happening in this cycle to what was happening in the first cycle. So, I think that that's a great sign of maturity that you do have a large set of VCs who have seen cycles multiple times. And that definitely helps to mature. India has a great future, there's so much

of demand, there are so many problems to solve. There are so many entrepreneurs coming in. And if capital follows it, we'll have a very thriving start-up ecosystem.

**Vivek Prasad:** We do an annual global CEO survey, and this year, we just concluded the 26th edition. And one of the interesting statistics that came out of the survey was that almost 50% of CEOs in India think about supply chain disruptions, and that is, in their top three risks that they need to navigate in their organisations. Being so entrenched in this ecosystem, what in your mind are the future trends that will shape this segment?

**Sandeep Deshmukh:** Okay, I think you're right that most of the business leaders or almost all of the business leaders are thinking of supply chain as a key component for the sustainability of the business. Making it disruption-proof is a key challenge for each one of them. I see the problem as two-fold.

I think we need to take one step back. What if there was no COVID? If you look at the Indian supply chain it was an extremely efficient supply chain, it's very well oiled. The biggest problem is to crack the cost structure that the current supply chain has. But because it is so finely tuned to the last mile, it also does not have resilience capabilities, the predictability of the supply chain, the data engine that will provide you visibility into what's where, how things are moving, where

they should be moving – that data backbone does not exist, that connection across multiple parties doesn't exist, the supply chain is not organised and predictable.

I mean, it is predictable in a very brute force way, but it does not have very system-driven predictability. And some of the top players who definitely have it, I mean, they would have built their in-house solution. But those are only two to four players. Beyond that, if you look at the hundreds of manufacturers and brands, they don't have those capabilities. So, if I may say that the surviving capability of that supply chain will always be under question – that if something like COVID happens again, the supply chain will go down. And it is not only about if it will stay or go down. It is also about the efficiency of the supply chain.

If you look at some of the finest brands of the country that probably run the most tight supply chains, at any point of time, based on our calculation they would have at least 25% of excess inventory moving into the supply chain. Because everyone is working in isolation everyone is working on their own pieces, no one has visibility into what's coming or what they should be asking.

I think we as a country or the overall ecosystem needs to come into some sort of integrated platform. A complete integration from point of retail sales to point of manufacturing. I think we need to build that resilience of the ecosystem to make it disruption-proof.

**Vivek Prasad:** If I may now pivot the conversation, you did mention earlier about having an integrated view, right from the manufacturing to the sales sector, so there is predictability. Clearly, in today's world, everything is technology driven. And you see a lot of AI, ML and analytics come into play. So can you tell us how you really integrate technology, such that you're one step ahead?

**Sandeep Deshmukh:**

As you rightly said, I think the supply chain game at the end of the day is a data game. So all of the technologies that we build are essentially to collect data at every stage – collected in time, and then basis of the end data, you trigger certain actions that will eliminate anomalies. That's the whole plan. So essentially, probably supply chain is the best example of how data can solve various problems. AI keeps coming on top of that for specific actions – certain actions where you need humans, you need humans.

To give you an example of how data intensive this is, say you pick a particular village in the country, and there's a good chance that we will be able to tell you what's going to get consumed in 2023 in each month, in each week and in each category from a particular store in that village. I mean there is no rocket science to this. It is the data that we collected over the last, say, three odd years. Of course, there are some new items that get procured. But you can predict the list of items that will get consumed in that market with upto 80% certainty, right down to what quantity they are going to purchase.

Now, just imagine if this data is available at an ecosystem level, because then you can map that data all the way till manufacturing. And you can do some scenario analysis, wherein you map the point of manufacture to the point of consumption, almost a year in advance, and at that point of time your supply chain resilience is at a very different level.

What happens today is there are at least 25% of inefficiencies, a gap of planning which data and technology can help eliminate. And for eliminating this, actually, you don't need any other change in the physical ecosystem. The only change we need is the visibility of that data and putting in those blobs of data in the ecosystem wherein you can read all of this. But even this is pretty far away for the ecosystem to where we are today.... AI is a very lofty world, but essentially a very, very tiny decision that you make as part of all those AI engines. And that helps you in eliminating wastages; we have at least 25 different bots or AI bots operating that continuously keep bringing the actual curves of the demand and supply in tune with what we had projected. So these are the two pieces – how do we consume all this data? And how do we leverage AI to fix the ecosystem on an ongoing basis?

**Vivek Prasad:** As responsible businesses today, everybody obviously is adopting technology for efficiency for better predictability, but it's also about sustainability. Very curious to understand how you look at sustainability at ElasticRun, and not just from an organisational

standpoint but also when you look at your supplier ecosystem and the stores and all the outlets that you actually distribute the products to as well.

**Sandeep Deshmukh:**

That's a great question. And I must say when we started, we did not start as an ESG company or social company. We started to do the business that we are doing, but over a period what we realized is that our existence itself generates tonnes of ESG goodness. Why do I say that? See, our core belief is we are that common aggregated platform that helps hundreds of brands reach out to those millions of customers in the rural markets. And the very fact that you're able to consolidate on to one platform eliminates so many inefficiencies in the physical world.

To give an example, if you pick up a corner village in Maharashtra or in Andhra Pradesh, and we carry at any point of time 40 to 50 brands into a village on any given day. That means, before us, those 40 odd brands would have gone through, if not 40 channels, at least 10 different channels going to that market. There are so many touchpoints, vehicle movements, people touchpoints, and double handling to multiple handling happening for all of those brands. The moment we consolidate all of that, that gets closer to one single run.

And as you know, I mean running 10 one-tonne vehicles versus one single vehicle or running one team that manages all of this and using the right technology essentially eliminates all those wastages. So,

we have done one study in terms of the carbon footprint we have reduced for vehicles going in. The numbers are substantial. That's a massive benefit we bring in.

It also reduces overall wastage which is as simple as the packing material that we use, or any resources that we use for handling the aggregation.

The second sustainability advantage that we have, and this we did not go and plan but that that's how we ended up being. Almost over 70,000 people from deep rural villages operate on our platform. And these are the folks who have never worked in an organised setup. They do not see money coming into their bank accounts. But the moment they start working with us, they have a steady flow of income and through organised channels. He or she can come onto the platform, see what work is available for them, commit to it, and get paid in their bank account at the end of the month. So, there are almost 60 to 70,000 people who created their financial identity because of this platform. Bringing so many people into an organised workforce, people at the bottom of the pyramid, it definitely delivers a big social impact for us. Every time we go into those markets, we see how those lives are changed. So, eliminating all the inefficiencies of the ecosystem, reducing the carbon footprint and bringing the bottom of the pyramid into the formal ecosystem – these are the are some of the key ESG benefits that we as a company have delivered.

**Vivek Prasad: What you're doing is not only connecting rural consumers to rural stores, or kirana stores as we call them, but also connecting financial institutions and driving financial inclusion. Now, this is a much bigger agenda and has a lot of other benefits to all the consumers. Could you tell us how this comes into being?**

**Sandeep Deshmukh:** I think this is another big area that we are working on. So, it's a slow journey, but I think it's a very impactful journey. So, what happens today is that we operate with stores which are really in far-flung areas. Before UPI came into the picture, these stores almost always operated only in cash. Now, at least UPI codes are show up in the stores, but penetration is very low. I would say less than 1% of their payments have started through the organised ecosystem wherein they get full account visibility of what they have bought in the last month, last six months or last full year. Now just having the data and verifiable data in one place, our data goes to the GST portals and even if the store is not GST registered, the data visibility is there. Now on the basis of that data and the consistent payment track record of the store, this data becomes a crucial data mine for banks or financial institutions that want to penetrate and go into that market.

The second big challenge for banks and financial institutions was reaching the store. So even if

I gave a loan to you, how would I recover the money? Or how would all the digital channels set up? Do I have a physical channel set-up if not digital? So just accessibility – physical and digital accessibility – of that market was the key challenge.

We tied up with several NBFCs and a few banks when they started lending to the stores. The ticket sizes are fairly small. Maybe INR 10,000–15,000 a week or 30–40,000 a month, and the repayment track records are extremely good. That is another engine that we want to build, in that there was always demand that remained untapped. There is always this supply side that wants to service that market. And because of the channel now and because of the platform, the two parties can communicate with each other at nearly zero cost.

**Vivek Prasad: It's not only solving supply chain and operational issues but also uplifting people's lives. Truly, truly inspirational. It has been a pleasure to have you with us.**

**Sandeep Deshmukh:** Thank you. Thanks for this invitation.

## Contact us

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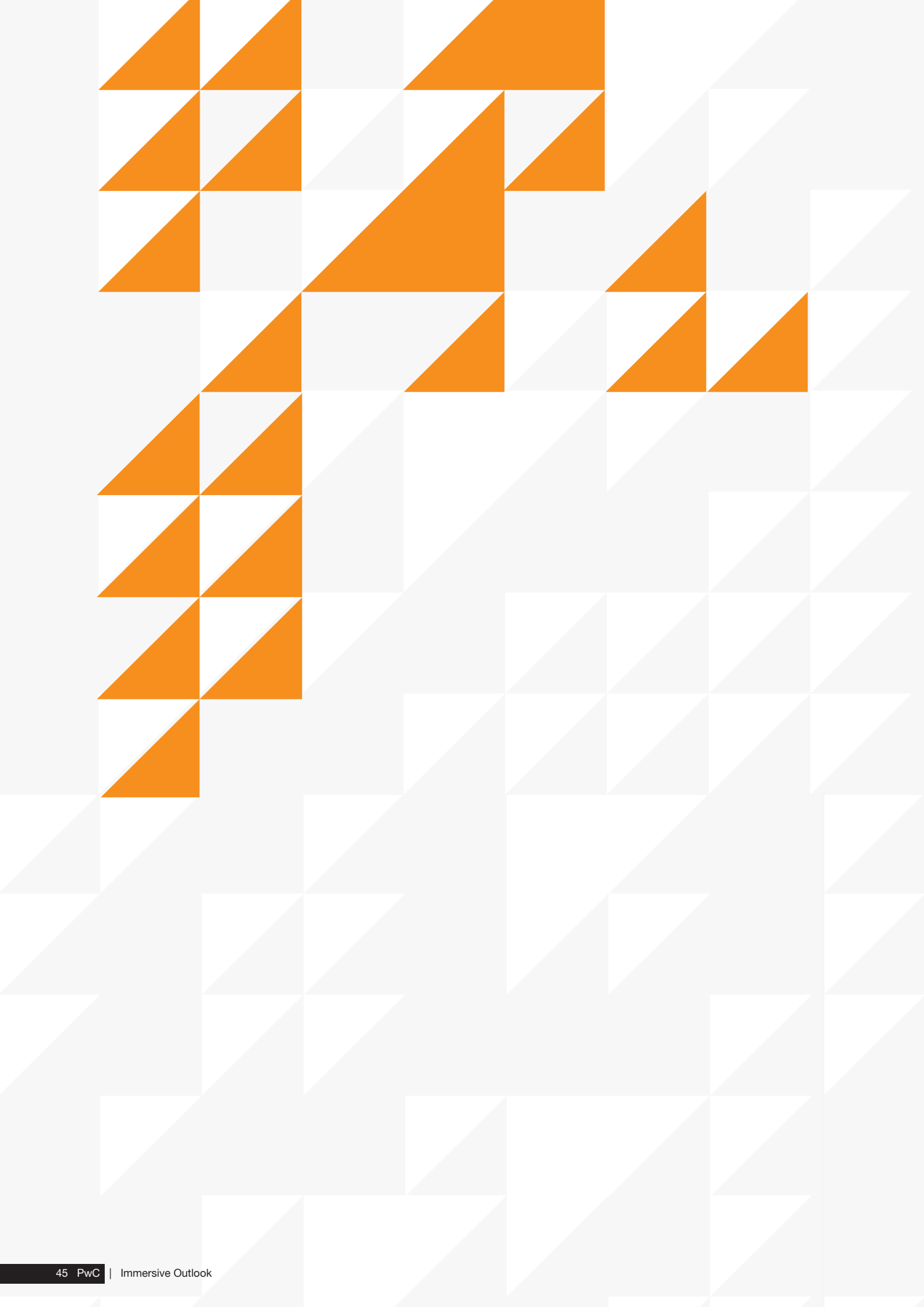
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Data Classification: DC0 (Public)

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KS/March 2023-M&C 26124

