As Car Sales Zoom, Automotive Supply Chains Race to Keep Up

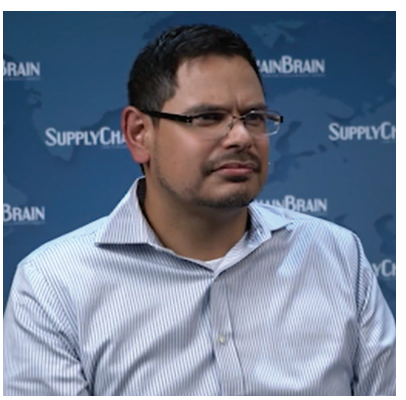
In The Know

A conversation with leaders in logistics and transportation management, as well as academia, about the capacity crunch vehicle OEMs feel as manufacturing and sales sometimes threatens to outpace the ability to get product to market efficiently or on time.

No doubt there is a certain irony that an industry built on making vehicles that move people from place to place is itself essentially grounded if it can't get needed parts to assembly plants, or its finished product to market. No one argues that the automotive industry is at a complete standstill, but as the global market for cars and other vehicles increases, investments must continue to be made in port, rail and road infrastructure. Expanding automotive logistics is particularly important in Mexico, both for production and for aftermarket parts services.

The following are excerpts from conversations between SupplyChainBrain editors and industry experts on how they see the industry and its transportation suppliers are addressing this need. The conversations took place at this year's annual conference of the Council of Supply Chain Management Professionals.

Adrian Kumar, VP Solutions Design NA, DHL: Basically, car sales in the U.S. are exceeding where they were pre-recession, and a lot of the networks of the OEMs were scaled back significantly during the great recession. So now they're at capacity, and you can't supply the level of service to your dealers that you did before with fewer facilities. A lot of these companies need to open more facilities, but they're whole supply base has changed. Where now they have more international suppliers -- maybe more manufacturing taking place in Mexico or in Asia -- this is changing the nature of some of the aftermarket distribution networks. They might need more parts distribution centers located across the U.S. They might need multiple tiers of inventory. Maybe some of the slower-moving parts distribution centers need to be more centralized and more regionalized.



Adrian Kumar,
VP Solutions Design NA, DHL

With faster-moving parts distribution centers, we've seen some of the aftermarket players get into the hub-store concept or hub-dealer concept that will service other dealers through the day, because it's all about speed and turnaround. After all, when you bring your car into a dealer, you're expecting that dealer to have that part or be able to get it within a day at most. And that creates a challenge, right? How do you flow all those parts, hundreds of thousands of parts for all the different makes and models of vehicles to the dealers, to create a truly customer service based model?

John Langley, Professor of Supply Chain Management, Penn State: One thing the automotive industry is challenged with is that of change itself. They have a lot of infrastructure, they have their assembly plants that most typically are company owned, they have pretty good use of non-asset-based logistics providers, so they don't have to worry too much about the fixed costs there. But their supply chains have been in existence for so long. I'm thinking about the rail-based supply chains, and part of their supply chain is trucking-based, so it's very difficult for them to change that, those parts of their supply chain. I would argue that that's one of the major impediments.

Another is the fact that these companies are all so very global in terms of their



John Langley,
Professor of Supply Chain Management, Penn State

parts and their assembly operations. So the challenge is making sure that you have parts from disparate areas of the world, trying to reach an assembly plant or a consolidation center or whatever on a certain time schedule. It's a little bit like the apparel business. If they don't get to the same desired point at the right time, you've got problems with your supply chain.

Brian Hancock, EVP & Chief Marketing Officer, Kansas City Southern Railway: The automotive industry's going to grow about 60 percent from a production perspective



Brian Hancock,
EVP & Chief Marketing Officer, Kansas City Southern Railway

in Mexico. That's enormous capacity that has to come on over the next two or three years. But I think as we continue to invest, I don't know that there are going to be shortages. There may be a shortage of trucks and drivers -- the Mexican traffic situation is starting to contract a little bit and have an impact on how much can go over the road. But from a rail and port perspective, I think those investments have been made and are continuing to be made to help support where the manufacturing base is, and up into Monterrey and the U.S.

The automotive industry continues to grow -- we're going to have another four manufacturing plants or so over the next three years. We're also seeing a lot of finished goods, automobiles coming in from Asia, so they'll come into Mexico. The Koreans especially are bringing a lot of finished vehicles in. Mexico itself is a small car market, so about 85 percent of all production in Mexico in the automotive space is exported, not only to the U.S. and Canada but to the rest of world. So all of the parts to create those cars, to build those cars, and then all of those finished vehicles go on out.

I think what's unique about the automotive logistics industry is, first off, you have suppliers that bring parts in not only for production but service parts as well. Then you have an enormous outbound of finished vehicles. So you have railcars that are specialized, you have ports that are specialized. When you think about all of the pieces that have to be in place to not only support the logistics inside the plant but the logistics outside the plant, it's a pretty significant investment being made not only by automotive companies but all of the transportation companies as well.

I think one of the other things we have to be really cognizant of is the need for parts coming into manufacturing and how those are served by the intermodal industry. In the U.S., intermodal is very consistent. Variability has been taken out of the intermodal product. In Mexico over the last few years, they've been struggling with that. What I would say is that investment in the ports and at the border is allowing a more fluid opportunity for intermodal containers to move. So I think the intermodal product that has served this industry is going to continue to get better over the next two to three years. You're going to see pretty significant investment on the part of the ports and railroad companies to make sure that fluid process continues.

Guy F. Courtin, VP, Industry & Solutions, GT Nexus: It's interesting to see that in Mexico finished goods produced there are taxing the logistics infrastructure to get those goods out of the country.



Guy F. Courtin,
VP, Industry & Solutions, GT Nexus

Recently, Ford announced it will move its small-vehicle production to Mexico, and this is on top of companies like VW, GM and Mercedes and such being there, which just adds more and more physical manufacturing capacity in Mexico. From a logistics standpoint, we wonder if the infrastructure is going to be able to handle this increased number of vehicles that have come out of Mexico. Obviously, production there is one thing; getting it to your market is another.

You look at certain port facilities which are already over-taxed. Some rail facilities don't know if they can handle this kind of capacity. It's an interesting dilemma for these automotive players because they moved there for very

good reasons, but have they overlooked something very crucial -- getting the product to the consumer, to the market? That's what we will see in the next few months and years.

These players are really trying to find new ways to overcome what we might call physical constraints. I can't build a new port overnight. If I don't have a deep-water port, I can build a new railhead, but that takes time. It's an interesting dilemma, if you will, for some of these OEMs.

Think about this space and visibility: how do I see my entire network to make better decisions? We as consumers have higher expectations of our automotive players these days. We want certain makes, models and functions and features. I read somewhere that if BMW ran their plants in Europe for three straight months, for three straight shifts, seven days a week -- they might be able to run a plant without producing the same car twice.

Think about that diversity, and now think about what that means for visibility: I need to know even more precisely what's in my supply chain. What is on my demand side, what's on my supply side? If I have finished goods, are they already allocated to someone or are they free to go somewhere else? How flexible can I be when it comes to a change in demand? If I don't have a full view of my network, in a way, I'm just making half-baked decisions that are based on a certain amount of variables without knowing the others. I don't know what the impact will be.

Alan Amling, VP Corporate Strategy, UPS Supply Chain Solutions: Let me tell you about the importance of 3D printing, specifically in the automotive space. There are two really key use cases that fall right into automotive. One is the kind of low-hanging fruit of parts. Parts are an issue not only of availability but inventory. You think about the inventory that we hold in parts especially for out-of-production models. When you have a vehicle where you don't have the molds or the tooling, and you run out of parts and you have to recreate that, that's extremely expensive. So companies load up on inventory as these models go out of production. But that contributes to the over $10tr worth of inventory that we have globally across all industries.

The other case that's really, really interesting is around parts that are 3D-native, that are designed for 3D, that take advantage of strength-to-weight ratios. Can I make a lighter part for a vehicle that's stronger, that lowers that vehicle's weight, which reduces fuel consumption – that uses less power, even if it's electric? Today and into



Alan Amling,
VP Corporate Strategy, UPS Supply Chain Solutions

the future, taking advantage of those properties, that's going to become a big driver of 3D printing as well.

Brian Bourke, VP Marketing, Seko Logistics: Traditionally, our customers in the automotive space have been more concerned about U.S. distribution, just-in-time manufacturing and logistics support – and NAFTA considerations: Mexico and Canada and cross-border



Brian Bourke,
VP Marketing,
Seko Logistics

trade. But more and more today we're seeing inquiries about Asia and about Europe, especially consideration with the Brexit in the U.K., and all the implications related to the demand for a global TMS.

These are some of the trends we're seeing. But I think the biggest and most interesting one is, years ago, the automobile sector was the leader in really innovating and designing some pretty amazing supply chain models and solutions. They invented just in time, for example. But where I think it's becoming more interesting is that the computers and hardware going into automotive today are more powerful, in some cases, than your desktop of five years ago. So the supply chains of the automotive industry and the tier one and tier two suppliers are actually beginning to mirror the supply chains of the high-tech industry. You're even seeing centers of excellence and innovation in the high-tech sector now opening up in Detroit, and that's an interesting trend.

Dave Halsema, Vice President, MacroPoint: It used to be the automotive industry usually relied on asset-based carriers to move all their product. Because in the automotive world, if product doesn't get to where it needs to be in time, it can shut down a line, which is hundreds of thousands of dollars. But as carrier capacity restrictions have hit everybody, they've had to go out and look at more third-party logistics organizations or freight brokers to be able to meet those needs. And to be able to get that business from those automotive folks, they have to have things in place that allow them to not do business as normal. The old check calls – "I'll find out where the driver is" – won't work today. Now they want to know the predictive analytics that say, "We know where this truck is every hour, we know it's going to hit the deadline that the auto lines are wanting."

Without that, you're never going to get the business.



Dave Halsema,
Vice President, MacroPoint

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