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# Chris Caplice, Matthew Rose on What U.S. Supply Chains Need

MIT and BNSF executives see a lot that's good and a lot that needs to be done



CHRIS CAPLICE | 'The solution is not just throwing money at it.' PHOTO: IAN WAGREICH/DOWJONES

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*Logistics are the core of any business, large or small. You won't be in business long if your supply chain doesn't function well.*

*But logistics, in turn, can depend on forces outside a company: things like transportation infrastructure and public support for it, as well as new*

*technologies.*

*To learn more about the trends in logistics, Wall Street Journal Deputy Managing Editor Gabriella Stern talked to Chris Caplice, executive director of the Center for Transportation and Logistics at the Massachusetts Institute of Technology, and Matthew Rose, executive chairman of BNSF Railway Co. Edited excerpts follow.*

## The backbone

**MS. STERN:** *What's your evaluation of the U.S. transportation network?*

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**MR. CAPLICE:** There are pieces that need a lot of support. But there are a lot of things that are really good. The highway system is actually pretty strong. It's the backbone. The way the freight infrastructure system is run is a challenge, because it is siloed by region, by mode and how they're funded. So they're kind of hamstrung. They don't get the political support. They tend not to have that constituency. They have the anti-constituency—people who don't want it built in their own area.

**MS. STERN:** *Big companies like BNSF have influence. You have employees, revenue, PAC contributions. Why are we stuck?*

**MR. ROSE:** If you look at our cost of our supply chain, as a percent of GDP, it's one of the lowest in the world. It's lower than China by a third. Costs of delays in

transit, all the rail costs, the truck costs, support costs, all that stuff, it runs at about 7% to 8%, 9% [of GDP]. And that's really important, because efficient supply chains are a weapon of mass competitiveness. The more efficient our supply chains are, the further our goods are going to be able to go to be shipped in the world, to compete against other supply chains.

When the interstate highway system was built, we had a population of about 225 million people. Today we have 310 million people. There is more need for transportation. Consumers see that on the highway. Shippers see that at the ports and on the railroads. And yet nobody has really been able to articulate how that impacts our job competitiveness in this country.

**MR. CAPLICE:** The demographics have changed in another respect: the number of people living in cities. Cities are not equipped to support and bring in the material that people need every day. That's a major choke point.

**MS. STERN:** *Is there political leadership that will reckon with this?*

**MR. ROSE:** At the state level there actually is quite a bit of leadership. It's the states you wouldn't necessarily think of that are taking action to increase their gas revenues. A lot of Republican states.



Matthew Rose PHOTO: IAN WAGREICH/DOWJONES

**MR. CAPLICE:** The solution is not just throwing money at it. We saw that really didn't do much with the shovel-ready projects. It's pinpointing where it makes sense. And I think I agree with the state level. But also a lot of the people in the Department of Transportation and

the Transportation Research Board and all the organizations, the professionals, see the same challenge. They just are not empowered to change things.

## New technologies

**MS. STERN:** *How is 3-D printing changing your world?*

**MR. CAPLICE:** UPS is doing some trials to see how they can do it for spare parts at all their hubs. Because if the spare-parts business goes away, they have the geographic footprint that might be able to do something there. I think what 3-D printing is doing mainly is reducing the economies of scale required for automation. That makes it more financially economical for you guys, for core market companies. It's lowering the cost of having automation and warehousing. It won't produce everything. But it's finding its niche.

**MR. ROSE:** It will change the supply chain. But things never quite work like we thought. You go back to 2000, with the Internet craze and everybody thought we were going to click ourselves all over the world. We thought it was going to take tons away from the railroad. It actually helped us. We now do a tremendous amount of business with Federal Express and UPS, stuff coming from Amazon.

**MS. STERN:** *Autonomous cars?*

**MR. ROSE:** We don't see a world in the next decade or two where you've got empty truck cabs running down the highway. But I do think that the technology, just like it's helping anybody who drives a newer car today, is going to improve safety.

**MS. STERN:** *Another bit of technology, one that will supposedly deliver things to our front doors: drones. Exaggerated or coming our way?*

**MR. CAPLICE:** I see it finding its niche. It's a great technology for certain things. I don't think its niche will be delivery of five-pound packages in urban areas. To remote areas, it makes sense.

**MR. ROSE:** We're actually using drones. We got one of the first permits from the FAA for drones to be able to inspect bridges and track ahead. We're really excited about how drones can improve inspection and thus safety on the railroads.

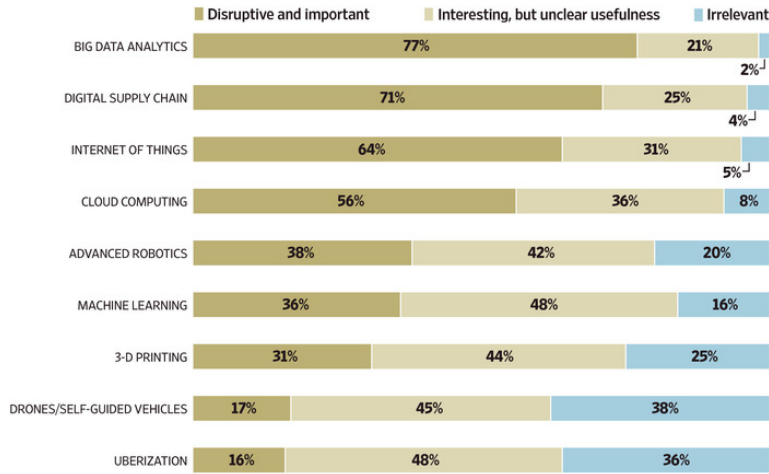
**MS. STERN:** *The drones fly over the tracks and look at whether they need repairs?*

**MR. ROSE:** Yes, and bridges. Instead of having to hang somebody over the side of a bridge, you can fly the drone under it and see the underbelly of it, and do inspections and things like that. We have been in drone operation for about eight

months. And we're ramping up.

### Rattling the Chain

Surveeyed supply-chain professionals see big-data analytics as the most disruptive technology for supply-chain strategy as it offers insights into volatile customer demand.



Source: SCM World global survey of 1,018 supply-chain professionals and academics conducted online in September 2015.

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