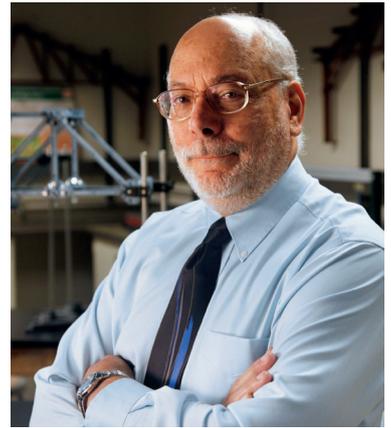


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DR JOSE HOLGUIN-VERAS

DIRECTOR OF THE VREF CENTER OF EXCELLENCE FOR SUSTAINABLE URBAN FREIGHT SYSTEMS (COE-SUFS)
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HI JOSE, SINCE WE'VE BEEN RESEARCHING THE UPCOMING PTI CONFERENCE WE'VE HEARD SO MUCH ABOUT AUTONOMOUS TRUCKING (AT) AND ITS POTENTIAL IMPACT, BUT HOW FAR ALONG THE ROAD ARE WE WITH IT?

I see AT becoming a reality really soon. There's a great deal of investment from truck manufacturers and a great deal of interest from shippers. When we look at something like truck platooning [joining several trucks together as one] we see an alternative between rail and traditional trucking. We could see a single driver driving, say, ten or twenty trucks, like a train, and I believe we'll see truck platooning within five years. Also, in the case of ports, we could see the transportation of containers done in this way.

FASCINATING. SO WHAT TYPE OF TECHNOLOGY ARE WE TALKING HERE – DEEP LEARNING? AI?

With regard to automated trucks, we're talking a wide range of possibilities, AI will be focussed on an operational platoon, but we could also see small trucks, delivery pods the size of a refrigerator, making deliveries, and in this instance, AI would play a role in manoeuvring the vehicle.

I SEE. THIS LEADS TO A BIG QUESTION: WHAT'S GOING TO HAPPEN TO TRUCKERS? I'VE HEARD THAT'S ONE OF THE MOST COMMON OCCUPATIONS IN THE U.S., SO WHAT HAPPENS TO THEM?

There's no doubt there'll be a huge impact on labour markets. But that doesn't mean we should stop progress. We need to put

in policy and new practice now. We may well be headed for economies in which people are not employed, and then we have to consider Universal Basic Income [a baseline payment for all members of society if machines take human jobs].

WOW. WELL THIS IS WHY THIS IS SUCH AN INTERESTING TOPIC AND REQUIRES THE INDUSTRY TO THINK ON A BIG, MACRO-ECONOMIC SCALE. HOW DO YOU SEE THE PORT INFRASTRUCTURE CHANGING IN LIGHT OF AT?

Yes, this is an interesting area. We're currently doing a study on efficient land uses and testing simulation models to provide planners with the best insight for future land use. When we think about freight we usually think about terminals, yet freight is like the circulatory system of the body which moves nourishment around, this raises the question of where freight needs to be produced and consumed.

There are no clear answers as yet because we're seeing trends and counter trends. Modern technology may well lead to increases in the distances in supply chains, or it may do the opposite. Typically, if you lower cost, things tend to spread out, as with globalization, yet if you have products with high-values value of time also becomes higher, meaning shorter distances are at a premium. In the end, I believe there'll be a pressure from the public and from politicians who will call for more sustainable operations and localized goods. In fact, we may even go back to a reduction of the level of globalization we have now.

Also because of the economics, it's very hard for a company to portray itself as an environmentally friendly company if it's transporting things all over the world. It won't be a complete reversal, but we'll see major adjustments to our current models.

I SEE. FURTHER TO THAT THEN, HOW DO YOU SEE THE SOCIAL AND CIVIC IMPACTS OF AT UNFOLDING?

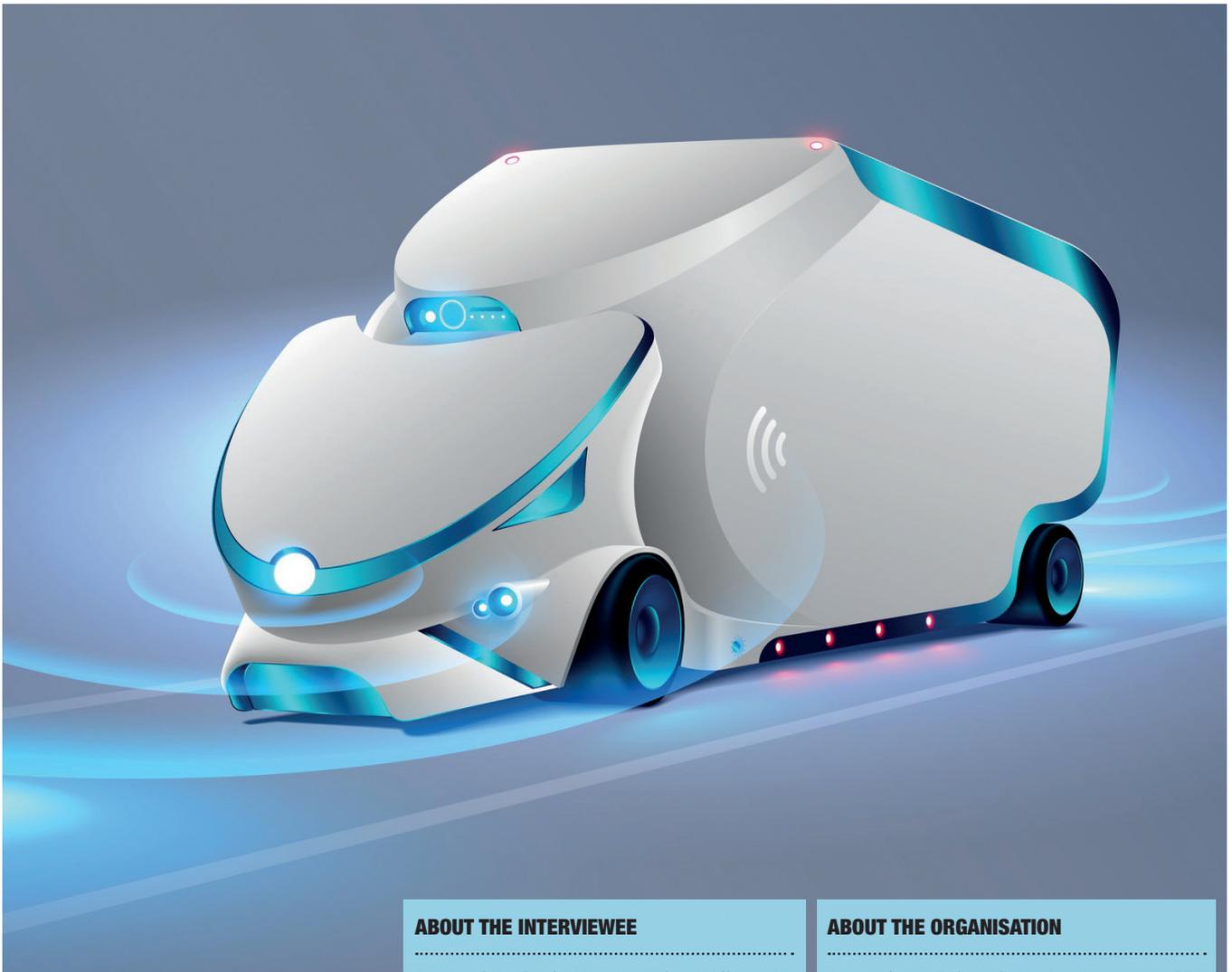
This is all about attitudes. People tend to be afraid of big trucks. They are big and impersonal, and people can be worried by a large amount of AT. That said this could also create opportunity. For instance, if people don't want trucks on the road, they could travel at night. At night there's less traffic, meaning we could significantly lessen emissions on the highways, and our studies show a diesel truck would produce around 60% less emissions travelling this way.

INTERESTING. HOW DO YOU FEEL PEOPLE CAN BE ASSURED AT IS SAFE THEN?

I believe, while it may take years; that people change. At some point people will accept AT as normal. There have been many major, major changes over the centuries much bigger than AT, so I believe it is something people will get used to.

HOW DO YOU SEE UNIONS INTERACTING WITH AT? DO YOU SEE DISRUPTION?

The unions are going to be concerned about the impacts of modern technology, no doubt. In the US, since the 1979 Staggers Act, trucking has largely been deregulated and union power has largely been diminished in trucking. I don't see



the unions playing a big role in blocking things. That is in the US at least. However, the safety concerns will be much more significant, and there are many valid issues there which will have to be addressed.

SO WHICH REGIONS DO YOU SEE LEADING THE PUSH TOWARD AT – EUROPE, THE U.S., CHINA OR THE MIDDLE EAST?

When it comes to truck platooning, Europe has an advantage. That said Europe also has a strong tradition of regulation. The will is there in the US, so it's hard to see who will take the lead. It's a toss-up really. What I can say is that the US West Coast has an advantage because the infrastructure is less complex, unlike the East Coast and Europe. China is another question mark. They could move really quickly, but it depends on the will of the government.

ABOUT THE INTERVIEWEE

Dr. José Holguín-Veras is the William H. Hart Professor, and Director of the Center for Infrastructure, Transportation, and the Environment; and the Volvo Research and Educational Foundations (VREF) Center of Excellence on Sustainable Urban Freight Systems at the Rensselaer Polytechnic Institute. He received his B.Sc. in Civil Engineering, Magna Cum Laude, from the Universidad Autónoma de Santo Domingo, Dominican Republic, in 1981; his M.Sc. from the Universidad Central de Venezuela in 1984; and his Ph.D. from The University of Texas at Austin in 1996. He has been a faculty at California Polytechnic State University at San Luis Obispo, City College of New York (1997-2002), and Rensselaer Polytechnic Institute (2002-present). His work has received numerous awards, including the 2013 White House Champion of Change Award for his contributions to freight transportation and disaster response.

ABOUT THE ORGANISATION

Rensselaer Polytechnic Institute, or RPI, is a private research university and space-grant institution located in Troy, New York, USA, with two additional campuses in Hartford and Groton, Connecticut. The Institute was established in 1824 by Stephen van Rensselaer and Amos Eaton for the "application of science to the common purposes of life" and is described as the oldest technological university in the English-speaking world. Numerous American colleges or departments of applied sciences were modelled after Rensselaer.

ENQUIRIES

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