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Transportation And Technology On A Collision Course

Autonomous Vehicles Generate Interest In Land Use, Public Safety

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The recent crash of a Tesla vehicle has highlighted the many hurdles that remain for the coming revolution in driverless (or autonomous) vehicles.

The crash occurred when a Tesla vehicle on autopilot struck a truck because the vehicle's guidance system was unable to distinguish the white side of the truck's box from the sky behind it. The passenger, who was not at the controls of the vehicle, was killed. While the crash caused quite a stir in the media, there are many technological and industry discussions moving forward to envision the day when autonomous vehicles are the norm, not the exception.

A recent panel convened by the Urban Land Institute (ULI) in Boston highlighted the many issues that society must tackle in order for there to be a successful transition to autonomous vehicles. In addition, there are many issues that

must be considered in response to the rise in autonomous vehicles, and the panel discussed a number of considerations that apply to the public realm.

Based on the comments from the panel and the attendees, one thing was for certain – the autonomous vehicle movement is coming. It is only a matter of time before it arrives. Estimates ranged from 10 years to 30 years, with very little consensus on where in that range we will see a transition to mostly autonomous vehicles. But as the Tesla crash has made everyone aware, autonomous vehicles are already operating in our midst and are not about to go away.

Much of the panel discussion was focused on the implications of autonomous vehicles from a land use perspective. The panel offered a wide variety of visions for land use. Some wondered whether parking as a land use will simply disappear, noting that vehicles that are now in use less than 15 percent of the time will be in use more than 90 percent of the time. Since they can drive themselves around the city, picking up and discharging passengers for a fee, they do not need to remain stationary in a parking lot or parking garage throughout the day. As a result, parking a car for the day will no longer be necessary or cost effective. In this version of the future, parking itself will be obsolete.

Another thought that was raised was the possibility of eliminating on-street parking. In this version of the future, the space currently dedicated to on-street parking could be repurposed for parklets (mini-parks), bicycle lanes and wider sidewalks. While the benefits of this possibility are pretty self-evident, there is also the possible downside of increased vehicles speeds due to reduced friction. It also means reduced revenues for cities and towns accustomed to parking fee and fine revenue to balance their budgets. This presents many technical and policy challenges for municipalities that have been accustomed to on-street parking for close to 100 years.

Go West, Young Man

Another concern raised by the panel is the potential for autonomous vehicles to induce urban sprawl. At a time when people are moving into cities at an accelerating rate, thereby reversing the trends of urban sprawl, the very evolution of autonomous vehicles could result in increased sprawl.

The panelists observed that the autonomous nature of these vehicles will reduce the stress and difficulty of driving long distances, and could result in much improved travel speeds and reduced travel times. As a result, commuters could live even further from cities than they do today and manage longer distance commutes. They could make commutes more productive, by working or resting while the car drives itself, much as people do today on the commuter rail.

Most of the panel agreed that this would be a mostly negative trend, although there was some acknowledgement that this trend might have a leveling effect, providing more affordable housing and access to jobs for those who cannot live in the cities due to gentrification.

One thing that most of the panel could agree on is that the first trend in autonomous vehicles will likely be with fleets like Uber and Bridj. Fleets of autonomous vehicles could create a new form of transit that is more cost effective than taxis and public transit buses, and more flexible and responsive to consumer demands.

Such a fleet of vehicles might even obviate the need for costly expansions of commuter rail service, by expanding access to cost effective rubber tire transit that does not require substantial investment in expensive rails and acquisition of right-of-way. Instead of a public transit agency subsidizing each ride on the commuter rail, a market rate ride on an autonomous fleet vehicle may cost less than a commuter rail ticket and could eliminate the need for subsidies, while improving the quality of service.

Everyone in the audience agreed that autonomous vehicles are yet another disruptive technology coming sooner than perhaps we are ready. The question is how we will prepare for their arrival. Because, without a doubt, they are on the way.