

Transportation Innovations Present Policy Challenges Now and For the Future

By Sean Slone

They are known as ride-sharing or ride-hailing companies and in some circles as transportation network companies or TNCs. Uber, Lyft and other similar companies provide an update on the traditional taxi service, complete with a smartphone interface that has made them popular among the tech-savvy, millennial generation. State governments have found themselves playing catch-up in recent years, trying to authorize and regulate an upstart industry their laws never envisioned. But as policymakers navigate the particulars of basic operational questions like how to protect riders from unsafe or unsavory drivers, these services present a myriad of other policy questions for both the short and long terms.

When the taxi-like, smartphone app-enabled services Uber and Lyft began operating in Virginia in the spring of 2014, state officials had a problem.

“This technology forced us in Virginia to look at our ordinances, which clearly did not contemplate this type (of service),” recalled Delegate Thomas Davis Rust, who chairs the Transportation Committee in the Virginia House. “The Division of Motor Vehicles actually issued ... a cease and desist order, which of course (the companies) objected to. Then the Division of Motor Vehicles, the attorney general, the governor’s office worked something out and issued them a temporary license to operate with the understanding that we would do legislation that would ... bring them in to our regulatory scheme, which basically had to be pretty much totally rewritten.”¹

The resulting legislation, House Bill 1662, which Rust sponsored and Gov. Terry McAuliffe signed in February 2015, includes background checks for drivers, a zero-tolerance policy regarding the use of drugs and alcohol, a 21-and-older age requirement and a \$1 million insurance liability coverage requirement.

“When the rules that govern our taxi industry were first written many years ago, no one had any idea that companies like Uber and Lyft would come along,” McAuliffe said upon signing the bill. “So we had to find a way to ensure Virginia’s consumers were protected and that these new and innovative businesses could operate legally in the commonwealth.”²

Rust’s bill, which he says is among the statutes now being looked at closely by other states seeking to regulate Uber and Lyft, was the result of extensive negotiations among all the interests—the

Division of Motor Vehicles, the transportation network companies themselves, the taxi companies with which they compete, the insurance industry and the legislature.

“If you were to have told me six months ago that we would be able to bring everyone together, I would have thought it would have been ... extremely difficult, because when there are cease and desist orders and lawsuits on both sides, you don’t think you’re going to get the parties together,” Rust said.

While policymakers like Rust wrestle with the particulars of how to regulate—but not overregulate—companies like Uber and Lyft, analysts say the services are at the leading edge of a variety of innovations, trends and paradigm shifts that could dramatically reshape transportation and prompt even more policy and planning headaches for those trying to envision the future. Among them: the sharing economy that has helped popularize the services, the shifting preferences of the millennial generation, the potential impact for transportation funding, and the consumer choice and heightened expectations triggered by smartphones and smartphone apps.

Balancing Act for Policymakers

As they seek to deal with the myriad of short- and long-term issues presented by services like Uber and Lyft, policymakers must walk a tightrope between competing interests representing past and future.

“From the public policy perspective, it’s always a balancing act between your critical job to make sure the public is protected and safe while also not putting in place onerous regulations that are going

to stifle innovation and keep new products and services from coming on the market,” said Paul Feenstra, senior vice president for government and external affairs at the Intelligent Transportation Society of America (ITS America), a Washington, D.C.-based organization that argues for the advancement of research, development and deployment of intelligent transportation system technologies to improve the nation’s transportation system.³

Analysts say it’s important for policymakers not to regulate out the efficiencies the services are able to provide to the point where they become indistinguishable from everything else in the marketplace.

“The more you legislate entrepreneurialism, you stifle innovation and so (policymakers) should consider a balance that lasts longer than one year in a law,” said Darran Anderson, chief strategy and innovation officer at the Texas Department of Transportation. “If you want to make a lasting law, think about how well it might translate in the future. (That’s) what I always try to tell (legislators). . . . If you really feel that you must write legislation, . . . you might just have a few rules or statutes in the first thing you establish and see where it goes from there. And then if you find that (other) things need to be addressed, then you have that opportunity. You didn’t create an unnecessary restriction early on.”⁴

Feenstra said fortunately cooperation and collaboration of the kind Rust experienced with Virginia’s Uber bill has become commonplace when policymakers find themselves at the intersection of transportation and technology.

“We have automakers that now have Silicon Valley tech centers and we’ve got Silicon Valley companies that are now in Detroit and elsewhere,” Feenstra said. “You’ve got partnerships that are developing and have developed between the GMs, Fords, Toyotas and the Googles and Apples and Intels and Qualcomms. The automakers know how to make automobiles. They know how to work with the state regulators and they have a lot of experience in developing vehicles that can operate safely on the road. You’ve got technology companies that know how to secure data transmission and know how to implement effective communication systems and provide the public with high tech consumer applications. And so having these two industries working closely together and in close collaboration with regulators so that everybody is on the same page moving forward I think is important.”

The Sharing Economy

Uber and Lyft are two of the most successful companies considered a part of the “sharing economy,” an evolving socio-economic trend involving the sharing of underutilized human and physical resources and consumer empowerment through technological innovation.

“The sharing economy is leveraging new technology and an apparently exceedingly pent up latent demand for convenience and quality that the public is looking for,” said Joseph Coughlin, founder and director of the AgeLab at the Massachusetts Institute of Technology and an expert on demographic change and technology trends. “As long as you’ve got the connectivity and the convenience factor of a smartphone at your disposal to be able to get a ride when you want, how you want it, to go where you want, that is going to have profound implications over the priority and the value we place on having a car that sits unused in a driveway or on a street side.”⁵

But Coughlin and others say one downside to the sharing economy is its potential to displace some of the transportation options that have become mainstays of the existing system.

“We see taxi companies fighting Uber and Lyft in metropolitan area after metropolitan area because their pre-existing way of providing the service is quite expensive and less effective, quite frankly, than these new generation services coming in,” said Thomas Kern, interim president and CEO of the aforementioned ITS America. “Over time, what’s going to happen is those more traditional services will have to change or they’ll go out of business.”⁶

Frank Shafroth, director of the Center for State and Local Leadership at George Mason University, wrote in a March 2015 article for *Governing* magazine that the explosion of services like Uber is “the beginning of an economic upheaval every bit as significant as the industrial revolution.” The impact to the taxi industry and ultimately to state and local governments are but one reason.

“Uber and Lyft continue to undercut the licensed, regulated and revenue-producing taxi industry,” Shafroth wrote. “State and local officials confront not just equity issues, but also declines in traditional taxi-related revenues—and a singular switch from a highly regulated industry of licensing and insurance requirements.”⁷

Transportation Preferences of Millennials

Another aspect of the policy challenge presented by Uber and Lyft is the popularity of such services among millennials—those Americans born roughly between 1980 and 2000—who have expressed transportation preferences much different from previous generations.

“Younger people are less interested in owning cars,” said Glen Hiemstra, founder and CEO of the website Futurist.com. “Some of that is financial for sure, but much is a shift in values. A car is less needed to achieve freedom, less needed to connect with friends, and more of us live in metro areas with transportation alternatives, alternatives are more sustainable, etc. Implications are that there will be a declining percentage of car ownership per population, and a desire for alternatives to be enabled and enhanced. Eventually, private car ownership will decline precipitously and shared ownership, single-use options and so on will dominate.”⁸

But the differences of millennials may extend not just to their preferred mode of transport but to other aspects of their lives as well, said MIT’s Coughlin.

“They’re also putting off having kids,” he said. “Well, if they’re getting married later, having children later or not having children at all—which is a big issue—then maybe they will stay more urbanized and look for more urban transportation-like solutions, whether it’s traditional public transportation or Uber or car-sharing, biking and the like.”

Impact on Transportation Funding

If the future holds fewer cars on the roads, more Americans living in the city and driving shorter distances, it’s likely to have a significant impact on what has been the major source of transportation funding for much of the past century at both the state and federal levels: the per gallon gas tax. Revenues from such taxes already have been in decline due to increasing fuel efficiency and other factors.

While a mileage-based user fee has long been touted by transportation researchers as a potential replacement for the gas tax, it would have little benefit in a future that involves less car ownership and more on-demand services like Uber and Lyft. Some say a revenue mechanism that would incorporate a larger base of Americans might be a better bet.

“The fact of the matter is that transportation ... is a national benefit,” said Coughlin. “Even if you don’t drive, even if you don’t even ride your bike, you are getting something delivered to

your supermarket or to your doorstep using that infrastructure.”

Coughlin said what’s needed is a general use of infrastructure tax that incorporates not only the transportation infrastructure, but also the communications infrastructure because we already are seeing a convergence of the two.

“If people have lightened up on their VMT (vehicle miles traveled) to use their 3G, then maybe we need to start thinking (that) it’s the nation’s communications infrastructure that we need to finance and ensure is the best in the world to remain competitive and connected.”

Smartphones Apps Enabling Mobility, Choice

That convergence is manifesting itself these days in the use of smartphones and smartphone apps to drive transportation systems and empower travelers.

“Mobile company Ericsson has just predicted that by 2020 there will be 50 billion connected devices in the U.S.,” said ITS America’s Feenstra. “That’s just a phenomenal amount and that reflects the fact that ... we’re already seeing a ton of new consumer applications based on the smartphone.”

Feenstra points to RideScout, an app that gives users real-time information about all transportation options available to them at a given time.

“Smartphones are key to enabling transportation choice, whether (it’s) an Uber app, a one-bus-away app, ... quick mapping of alternate routes and times, or simply substituting for travel,” said Hiemstra. “This is all just getting started.”

But the proliferation of these tools already is having a profound effect on the users of the transportation system and policymakers will soon need to take notice, many believe.

“I think the biggest thing that they have done is frankly, they have changed the consumer’s expectation,” said Coughlin. “I think what transportation is now up against is it is no longer going to be acceptable that the system has got a pothole here or that the train’s not on time. ...

“And Uber is only one little indicator. Of course it can pick me up exactly where I am and I’ll know it’s going to be here within three minutes with precision. So what the app has done is it has taught the consumer to expect more from an enterprise that is still built upon the legacies of the past decades. And we’re all working hard both in research and practice, but it’s really going to have to take a rethinking of the transportation enterprise to be more responsive to a consumer who is empowered by a smartphone.”

Notes

¹Telephone Interview with Del. Thomas Davis Rust. February 2015.

²Jacob Geiger. “McAuliffe signs bill setting rules for Uber, Lyft.” *Richmond Times-Dispatch*. Feb. 17, 2015. Accessed from: http://www.richmond.com/business/local/article_ecc1b973-d99d-57c0-9241-209da466ec42.html

³Telephone interview with Paul Feenstra, March 3, 2015.

⁴Telephone interview with Darran Anderson, March 11, 2015

⁵Telephone interview with Joseph Coughlin, March 16, 2015.

⁶Telephone interview with Thomas Kern, March 3, 2015.

⁷Frank Shafroth. “The Unforeseen Fiscal Challenges of Uber-Like Services.” *Governing*. March 2015. Accessed from: <http://www.governing.com/columns/public-money/gov-uber-unforeseen-fiscal-challenges.html>

⁸E-mail interview with Glen Hiemstra, March 13, 2015.

About the Author

Sean Slone is the director of transportation and infrastructure policy at The Council of State Governments. He staffs CSG’s Transportation Public Policy Committee and writes about transportation policy for CSG publications, such as *Capitol Ideas* magazine, the Capitol Comments blog and Capitol Research policy materials. He is the author of two CSG national reports: *Transportation and Infrastructure Finance* (2009) and *Shovel-Ready or Not? State Stimulus Successes on the Road to Recovery* (2010). He has written an article for *The Book of the States* each year since 2010.

New players make innovation a #1 priority for corporates to shape the future of mobility. It is disruptive innovations and electric mobility in particular that pose great challenges and possibilities not only to the automotive sector but also the energy industry. Inevitably, corporates will need to redefine their roles in the industry and recognize this time of change as a chance for innovation. Energy suppliers, for example, are expected to be able to cover the higher power demand emerging from these new technologies. But they also need to address the question if they want to position themselves solely as an energy supplier to third-party technologies or as a provider of their own.

Oliver Wyman conducted a survey of executives in the transportation industry to determine what passenger mobility will look like in 2040. Sustainable, efficient assets; integrated personal mobility; urbanization and smarter cities; and increased competition and innovation will define the future. What The Future Of Mobility Means For Today's Transportation Industry. Joris D'IncaFormer Contributor. Oliver Wyman. The present work addresses how the capacities and impacts of growing degrees of ground automation can be communicated to and understood by the general public. To accomplish this, we have sought to integrate our individual perspectives on the issue of AVs which feature, first, a science communication viewpoint that focuses specifically on how the traveling public can anticipate, understand, and appreciate the effects of such innovation. The comparative lists generated by Fitts and his colleagues (31) in a 1951 report on the future of aviation. Although considered peripheral to the central focus of that report, the lists themselves and the associated graphic have been the subject of much discussion in the more than 60 y of their existence. The Innovation Race takes readers on a lively global adventure to explore the current state of innovation. Along the way best-selling authors Andrew and Gaia Grant search for clues on how to stay ahead in the race and design a more sustainable future. Are we at risk of innovating for the sake of innovation? What could we be doing better? - the Grants reflect on whether, if in the race to come up with 'the next big thing, ' we may be losing the purpose behind the process. They then outline how to navigate the key paradoxical challenges that can either frustrate or fuel innovation to change the game. By taking the latest academic research and presenting it in an accessible way, the Grants present a compelling case for forging a new path for the future.