Creating the Transportation System We Want: Building Blocks for the Road Ahead

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Summary

This paper offers a set of guiding tenets that policy makers can use as they grapple with disruptive forces within the transportation sector. Autonomous vehicles have received ample attention in the media, but the impending disruption is much larger than this one technology and could involve a shift in the entire ecosystem of transportation. The tenets presented here are consistent with AARP’s livable communities agenda and intend to lead the United States toward a more equitable and sustainable transportation future. This paper is part of a series on the Future of Transportation: The Opportunity (and Potential Pitfall) of Disruptive Technologies.

About PPI

The AARP Public Policy Institute informs and stimulates public debate on the issues we face as we age. The Institute promotes the development of sound, creative policies to address our common need for economic security, health care, and quality of life.

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Introduction

Transportation policy in the United States and the infrastructure investment of the past 100 years have resulted in tremendous mobility for many Americans.

But they have also left many isolated. One-third of US residents do not drive. This number includes children, many people with incomes too low to afford the upkeep of a personal vehicle, more than one in five people over the age of 65, many people with a disability, and others who, for a variety of reasons, choose not to drive. For many of these individuals, accessing transportation can range from a minor inconvenience to an insurmountable barrier.

Emerging disruptive technologies present an unprecedented opportunity to vastly expand mobility for all sectors of our society and address the negative impacts of our transportation system. Autonomous vehicles have received the most attention in the media, but the impending disruption is much larger than this one technology and could involve a shift in the entire ecosystem of transportation, from one where “I own my own mobility” (i.e., a car), to one where “I access my transportation from a menu of options.”

This paper places new technologies impacting the transportation sector in the context of AARP’s livable communities agenda. It articulates a set of guiding tenets that policy makers can use as they grapple with this disruptive technology. These conceptual building blocks will help to ensure that the disruptive technologies emerging today can achieve their potential to vastly increase mobility for older adults and other currently disenfranchised users of the transportation system. These building blocks also provide a framework for how disruptive forces can be shaped to address the negative societal impacts of the current transportation system and enable communities to achieve quality-of-life goals. Realizing these aspirations will require foresight and the wherewithal to put in place policies that can both unleash the opportunity and tame its potential for harm. It will also require proactive collaboration between the public and private sectors.
Building Blocks for the Future of Transportation

In order to create a transportation system that works for everyone, policy makers should look to the following dozen interdependent tenets to guide the new transportation policy framework:

1. **Embrace a Universal Mobility as a Service framework.** In its most basic form, Mobility as a Service describes a shift away from personally owned modes of transportation (i.e., car ownership) and toward mobility solutions that are consumed as a service. Universal Mobility as a Service expands this concept to offer customers a single platform through which they can identify all available transportation options, evaluate their cost in terms of dollars and time, schedule a ride, and even pay for a trip. Fixed-route and demand-responsive public transportation as well as private on-demand options—including ridesourcing, ridesharing, car-sharing, and bikesharing—are available to serve everyone in the community. The ideal outcome of this approach is that while services tailored to the needs of particular populations will be available, they will be part of a single, coordinated system, which if designed well has the potential to meet the needs of everyone in the community, regardless of income, geographic location, disability, or age.

2. **Prioritize shared-use mobility.** Shared-use mobility refers to transportation services that are shared among users. Public transportation is the backbone of shared-use mobility, but shared uses also include taxis and limos, bikesharing, car-sharing, ridesharing (carpooling, van-pooling), ridesourcing (especially when it involves ride-splitting, as with Lyft Line and Uber Pool), scooter sharing, shuttle services, and neighborhood jitneys. Shared-use mobility maximizes system efficiency, affordability, and environmental sustainability. While personal transportation will remain an option, the system will no longer favor single-occupancy vehicle trips.

3. **Adopt a strong commitment to equity.** Our existing transportation system has not served our most vulnerable well. All Americans, regardless of income, location, race, disability, and age, must be able to conveniently access the transportation system to meet their travel needs. This era of disruption offers a once-in-a-lifetime opportunity to address the inequalities of our transportation system and expand mobility options. But this will not happen on its own. We need to articulate our vision and put in place people-supportive policy. Community values, rather than technology, should drive decisions.

4. **Maximize independence.** Individuals’ mobility needs change with life stage. At the beginning and end of life, people are most dependent, but the goal is to maximize independence as early and for as long as possible. Convenient access to mobility options is essential for those who do not drive.

5. **Commit to universal design.** Universal design is the design of buildings, vehicles, environments, products, services, and user interfaces that are broadly accessible to people with disabilities, older people, young children, and everyone else. It is a rejection of the notion that things should be designed for the “average” person, which too often results in separate facilities for people with disabilities—for example, a ramp set off to the side of a stairway. Universal design provides one solution that can accommodate all. Our transportation system needs to go beyond the accessibility requirements of the Americans with Disabilities Act and offer full access to people with disabilities throughout the system.

6. **Support livable, sustainable communities.** Livable communities are great places for people of all ages, and in fact studies show more people of all ages desire such communities. They include safe, walkable streets; age-friendly housing and transportation options; access to needed services; and opportunities for residents of all ages to participate in community life. Our nation’s transportation policy should favor mobility options that minimize energy consumption and carbon emissions, discourage sprawl, maximize economic opportunity, and foster livability.

7. **Foster transportation system efficiency.** Streets and sidewalks should be designed for all users and give priority access to system use in alignment with livability and

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sustainability goals. System pricing and other strategies designed to influence travel behavior and motivation should be considered. The public and private sectors should collaboratively identify a balanced data sharing framework that will inform transportation planning and result in more efficient movement of vehicles and people and a more productive transportation network overall.

8. **Encourage data system and platform interoperability.** The data systems of the various transportation providers within a Universal Mobility as a Service network need to be able to communicate with one another. Without interoperability, a seamless one-stop platform where customers can shop, schedule, ride, and pay for their choice of services will not be realized. Adoption of a common transactional data specification by all providers within the network will allow a ride to be scheduled on the most appropriate vehicle, while at the same time protecting individual privacy and proprietary company information. This data and platform interoperability can reduce costly service redundancy and improve efficiency. Data system and platform interoperability are essential for Universal Mobility as a Service.

9. **Put in place a transparent system to measure impacts, both positive and negative.** Transportation is a means, not an end, and can be used to help communities achieve a variety of quality-of-life goals. The economic, environmental, and social-equity impact of the transportation system should be continually tracked and evaluated. System refinements should be made to meet transparent societal goals in these areas. To that end, all providers should share data about their contributions to and demands on the transportation system, while protecting individual privacy and companies’ proprietary information.

10. **Prioritize safety for all modes of travel.** Federal policy makers and regulators should establish performance measures for the thorough testing of autonomous vehicles prior to their deployment and require manufacturers to publish the results of such testing. Policy makers, regulators, and industry should prioritize safety for all road users in regulating autonomous vehicles. The onus for safety should be on the motor vehicle, not the individual pedestrian or bicyclist.

11. **Provide consumer protections.** The transportation system of the future should be based on a strong foundation of consumer protection in areas such as safety, privacy, cybersecurity, transparency, and liability. Autonomous vehicle technologies depend on an array of electronics, sensors, cameras, and computer systems that could be subject to various cyberattacks. The delivery of Mobility as a Service makes it much easier for companies to collect, store, analyze, and share vast amounts of data about consumers’ travel habits. This provides opportunities to aggregate many different pieces of data and create detailed profiles of individual consumers that can be used for purposes far beyond transportation delivery. Considerable thought should be given in each of these areas, to ensure consumer protection.

12. **Manage effects of resulting economic shifts, facilitating career transitions.** Widespread use of driverless vehicles could affect the livelihoods of the more than 4 million professional drivers in the United States today. Policy makers should anticipate the potential for worker displacement and offer effective strategies to support smooth, and economically viable, career transitions for those likely to be impacted.

References


