

Autonomous and On-Demand: Radical Transformation

By Sam Veraldi, CAPP

A DISRUPTIVE TECHNOLOGY is one that displaces an established technology and shakes up the industry or a groundbreaking product that creates a completely new industry. Harvard Business School professor Clayton M. Christensen coined the term “disruptive technology” in his 1997 bestselling book, “The Innovator’s Dilemma.” The autonomous (self-driving) vehicle qualifies as a disruptive technology.

When autonomous vehicles appear, our cities will be transformed dramatically. Our downtown areas will have parking spaces removed, and daytime parking will become more peripheral. It is possible that daytime and nighttime parking will coincide, allowing cities to take advantage of these complementary types of parking and significantly reduce the total amount of land dedicated to parking. As a result, there will be an increase in the density of economic activity, which should lead to a productivity increase.

In addition, autonomous vehicles could increase the amount of travel for their owners, making cities larger and reducing residential density. Our design criteria for streetscapes and buildings going forward will generate more enthusiasm for a new look to accommodate this transformation of the new mobility and access. The traditional rules for parking will have to be modified.

Demand

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much as 24 percent of the area of American cities, and in some cases, urban areas have as many as 3.5 parking spaces per car.¹ Further, those looking for parking spaces account for as much as 30 percent of miles driven in urban districts.² The county of Los Angeles, Calif., has an estimated 200 square miles of parking;³ there are roughly six parking spaces per vehicle in the United States; and the average vehicle is parked approximately 95 percent of the time.⁴

According to the Boston Consulting Group, fully automated cars could make up nearly 10 percent of annual global vehicle sales by 2035. Many automotive companies have been working on autonomous vehicles for many years. Google and Apple have also made their presence known with their own versions of these vehicles.

The other major contributor to this radical transformation is car- and ride-sharing. Companies such as Uber and Lyft have been allowing commuters to substitute their services in place of using public transit. Lyft has announced a partnership deal with Ford to develop autonomous vehicles. With the rapid growth of Uber and Lyft, some local transit agencies are forming partnerships to offer subsidized or free Lyft or Uber services.

In Nashville, Tenn., the transit agency is working with TransLoc to pilot an on-demand van service that enables riders to get crosstown. TransLoc, which was recently acquired by Ford,



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provides the software that routes the vans to the most efficient path and builds technology to support microtransit services, including real-time tracking, demand modelling, and response analysis, as well as consumer-facing mobile apps and services.

Changing the Landscape

The complexity of this transformation will change the entire landscape of our urban environments. One of the most challenging aspects of this transformation is that while autonomous vehicles, car-sharing, and ride-sharing will have a very positive influence on mobility, they will have a significant influence on reducing demand for parking. Structured parking will probably be the most affected and experience the most rapidly diminishing demand. Most experts are recommending that the design for these parking facilities should include adaptive reuse. In fact, *Washington Post* columnist Carlo Ratti believes that “designers, tasked with creating garages, should take as a challenge to introduce flexibility and acknowledge the full life cycle and potential transitions for these structures.”⁵

The radical transformation that is occurring in the parking and transportation industry will revamp concepts of parking norms, renew the landscapes of our urban environments, reset the automotive industry

production standards and expectations, and place more reliance on the use of technology to integrate all these systems. At the end of the day, innovative advancements are developing before our eyes. It is an exciting time to be part of a technological disruption. **P**



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Notes

1. “The World If: Autonomous Vehicles Rule the World, From Horseless to Driverless.” *The Economist*. Pub. (n.d.). <http://worldifeconomist.com/article/12123/horseless>. April 27, 2016.
2. Ibid.
3. Wattenhofer, J. (Jan. 6, 2016). What Would It Look Like if All of Los Angeles’s Parking Was in One Giant Blob? Retrieved from Curbed Los Angeles. <http://la.curbed.com/2016/1/6/10849122/los-angeles-parking-how-much-space>.
4. Schmitt, A. (March 10, 2016). It’s True: The Typical Car Is Parked 95% of the Time. Retrieved from Curbed Los Angeles. www.streetsblog.net/2016/03/10/its-true-the-typical-car-is-parked-95-percent-of-the-time.
5. Ratti, Carlos, (March 4, 2016). “Cities Should Take Back Their Parking Spaces,” Retrieved from *The Washington Post*. https://www.washingtonpost.com/news/in-theory/wp/2016/03/04/cities-should-take-back-their-parking-spaces/?utm_term=.677ccf4c6ffe.