Mobility on Demand Trends in the United States

~A Case Study of New York, Part 2~

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1. Paratransit

In 2017, the Paratransit Division of the New York City Transit (NYCT) under the MTA began considering utilizing TNC (Transportation Network Companies) and taxis to respond to increasing demand and to improve the Access-A-Ride (AAR) program, which is a traditional one-day in advance phone reservation system for paratransit.[1)]

As a result of this, the "advanced reservation e-hail (e-hail)" pilot program, which the MTA launched in the fall of 2017, enabled users to request ride-hailing services using a smartphone application immediately before use. The apps connecting customers and drivers using existing NYC green and yellow taxi services managed by the NYC Taxi and Limousine Commission (TLC) are Curb from Verifone Transportation Systems (headquartered in California) and Arro from CMT (headquartered in the UK).

On August 7th, 2018, the Wall Street Journal reported that as a result of the pilot program being exceptionally received by users after its launch, the MTA was facing a crisis with sustaining it because of cost increases.[2)]

Although 2,500 trips were expected per day at the start of the pilot program, as it was exceedingly convenient, 6,000 trips per day had been reached at the time of reporting, an increase of 5% every month. Meanwhile, the advantage of saving the cost per trip rather than using brokers, such as traditional Non-Emergency Medical Transport (NEMT) services, has some merit. Considering this situation, in March 2019, the MTA decided to extend the pilot program from the original allotted period of the end of April 2019 to the end of 2019.[3)] (Later, due to strong demand from users, it was decided to "continue in its current form until further notice."[4)]) In addition, they announced that they'd be starting an "enhanced broker service" from March 2019. Until then, the use of private taxis and ride-hailing services were permitted only when a AAR car was delayed (a system that would refund users afterwards upon their request).[5)] In conjunction to this, they announced that they would be going to provide special training to taxi operators on paratransit services, such as how to support users getting on and off vehicles. Although there has been no news releases on their operations from the MTA as of the writing this report, e-hail and enhanced broker services have presumably continued to be offered. However, it is uncertain whether operations will extend in 2021 or beyond because of financial difficulties due to the covid-19 pandemic.[6)]

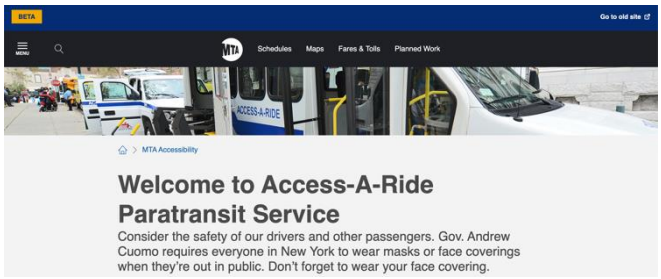

Figure 1 From the MTA Access-A-Ride Paratransit Home Page (LINK)

2. On Demand Transportation Other Than Paratransit

In NY, until now there haven't been any notable trends for on demand transportation except for paratransit, which has had partnerships with public transportation organizations and private operators. However, the MTA distributed a press release on February 4th, 2020 saying that they've issued a Request For Proposal (RFP), which

asks for proposals from private operators, such as TNC, to launch a "Late-Shift" pilot program aiming to improve access to the Manhattan suburb subway system for New Yorkers working late night shifts.[7] According to the RFP's press release, they intend to respond to expectations that the healthcare, restaurant, and hospitality/leisure industries will increase night shifts in the next 5～10 years at a rate exceeding the growth of the entire economy. The Bronx, Brooklyn, Manhattan, Queens, and Staten Island are the areas targetted as they are more than 0.5 miles away from the nearest subway station with less than one bus running every 20 minutes during the night.

However, in response to this announcement, multiple local media reported that there are adverse opinions, such as that the MTA should improve late night bus services and that they shouldn't outsource to TNC and other service providers.[8]

Ydanis Rodriguez, who represents the New York City Council Committee on Transportation, said that they should look for partnerships with local taxi operations instead of TNC.[9]

3. Automated Driving

In New York State, there are extremely strict rules on automated driving. Based on a law passed in 2017, all automated driving tests must aquire approval from the Commissioner of the Department of Motor Vehicles and be implemented under the supervision of New York State Police[10].

In August 2019, Optimus Ride, an automated driving technology company (Headquartered in Boston, Massachusetts), announced that they would be the first private company to begin a free automated driving shuttle service in New York on a private road in Brooklyn Navy Yard.[11] Brooklyn Navy Yard is an industrial park covering? a site area of 300 acres and including more than 400 manufacturers and over 10,000 workers within its perimeter. Operations of 6 automated driving cars to Flushing Avenue Yards' Cumberland Gate from NYC Ferry's Dock 72 expect 500 users per day during weekdays (automated driving through software + safety driver).

4. Promotion of Data Cooperation and Open Access

New York City has published an open data strategy and enacted the Open Data Law, although promoting MOD/MaaS was not their main goal. The NYC Open Data Law was enacted in 2012.[12] They announced the "NYC Open Data Plan" in 2015 and "The Next Decade of Open Data" in 2019 as a plan to supersede the former[13].

Furthermore, the "Partnership for New York City," consisting of private company executives in the New York metropolitan area, established the "Transit Tech Lab" in October 2018, which is a competitive accelerator program in partnership with the MTA.[14] This program aims to help modernize public transportation, and identify and support technology and products that will contribute to its improved efficiency. Every year, they search for solutions to specific challenges that the MTA's urban railway and bus networks are facing. For 2019[15], they sought proposals that solved the following two conundrums: "How can we better predict subway incident impacts and serve customers?"[16] and "How can we make buses faster and more efficient?"[17] They received 100 offers, and 2 companies for each challenge, totaling 4, were selected to aid efforts to resolve said issues. For example, regarding urban railways, the following two companies were chosen: Axon Vibe (Headquartered in Switzerland[Note1]), which provides users with information related to incidents and delays along their route via a smartphone application, and Veovo (Headquartered in the UK[Note2]), which captures the number of users and the flow of stations using data and sensors, with each starting their own pilot projects. For buses, attempts are being made to predict the failure and repair cycles of cars in advance[Note3] and to reflect user opinions and data in scheduled future revisions of bus routes.[Note4] These attempts are made based on technology with MTA provided data. For 2020[18], there are 4 challenges: "①How can we make New York's public transit system more accessible? (such as by providing users with status information of elevators)," "②How can we make buses faster and more efficient, especially in bus lanes?" "③ Challenges Responding to COVID-19," "④How can we modernize the subway signaling system to be quicker and operate at a lower cost?" Progress on resolving each challenge varies, but open calls for participation on ①②

has ended, and 8 finalists have be selected for ③ (the status of ④ is unknown). According to the plan description on its homepage, a pilot program was started in August 2020, but an "Accelerator will begin in February 2020" is still listed as of the writing of this report.

Figure 2 The Open Data for All Report Image Published in 2020 (LINK)

5. Partnership with Urban Transportation Planning and Urban Planning

The next blueprint to be announced of the New York metropolitan area long-term transportation plan will incorporate technology needed to accomplish MOD / MaaS. Given that much of these are still being rapidly developed, the related parties are currently collecting and investigating various types of information on them.

The New York Metropolitan Transportation Council (NYMTC), which is an MPO of the New York metropolitan area, has declared 3 challenges in the latest long-term transportation plan (formulated in 2017, with the plan to be executed by 2045): (1) impacts on the freight transportation industry (development of the manufacturing industry using 3D printers, etc.), (2) global trends (climate change, etc.), and (3) changes in traffic patterns.[19] Regarding the third point, with population and employment in urban areas expected to continue to increase through 2045, demand for transportation is also predicted to rise. In addition to this, the number of cars on the road are anticipated to increase as shared services further develop (However, the number of those owning private cars are expected to decrease). At the same time, the technology and services underlying these changes are currently still evolving, and it is difficult to accurately predict the extent of these changes until they are fully developed.

The federal government requires every MPO to update their long-term plan every 4 years. The NYMTC has been researching autonomous and connected vehicles as well as shared services (including microtransit) and is utilizing big data analysis of the movement of people and goods in order to include this information in the next plan (active until 2050), which is scheduled to be published in 2021.

Each local government and transportation agency is conducting research and making equipment updates by obtaining funds from the NYMTC. Regarding the MTA, they are identifying private sector technology and services that may be of use when transferring from/to urban and suburban rail stations at customers' first and last mile stops. They are also creating a list of technology and services specific to each station (tool kit). Jurisdictions where stations are located are aiming to help to provide information for users for each station.[20] Furthermore, local governments situated farther away from New York City are investigating the potential use of on-demand transportation, such as TNC, to solve first and last mile problems (Westchester county and Suffolk county), and have devised the "Shared Mobility Management Plan" for maximizing the benefits of shared mobility by identifying necessary infrastructure investment and legislative changes. (Nassau County)

Notes:

Note1) Start-up established in 2014. Located in the U.K., U.S., Hong Kong, Australia, and Vietnam. (https://axonvibe.com/〔Accessed：2020/1/7〕

Note2) Start-up. Located in New Zealand, Denmark, and the U.S. Specialized in solutions for airport management. (https://veovo.com/discover/news/mta-and-veovo-collaboration-to-ease-platform-crowding/〔Accessed：2020/1/7〕)。

Note3) Preteck, a start-up in the U.S. is in charge. (https://www.preteckt.com/about; https://www.preteckt.com/post/ridership-trends-in-transit-bus-fleets〔Accessed：2020/1/7〕)。

Note4) Remix, a start-up in the U.S. is in charge. It was established following the Code for America. Approaches to improve bus routes at user levels have begun in San Francisco. (https://www.remix.com/about-us〔Accessed：2020/1/7〕)。

References:

1) National Academies of Sciences, Engineering, and Medicine 2019. Partnerships Between Transit Agencies and Transportation Network Companies. Washington, DC: The National Academies Press. https://doi.org/10.17226/25425.（Accessed：2019/11/19）; http://www.mta.info/press-release/nyc-transit/mta-offers-first-ever-real-time-demand-service-access-ride-users（Accessed：2019/11/19)

2) https://www.wsj.com/articles/mtas-cost-saving-paratransit-program-proves-too-popular-runs-up-big-tab-1533474000（Accessed：2019/11/19）; https://www.drivearro.com/aar/（Accessed：2019/11/19)

3) http://www.mta.info/press-release/nyc-transit/mta-announces-enhanced-program-expand-taxi-use-entire-paratransit-system-%E2%80%93（Accessed：2019/11/19）; https://citylimits.org/2019/04/01/mta-disabled-taxis/（Accessed：2019/11/19)

4) https://new.mta.info/document/15776（Accessed：2020/11/04)

5) https://new.mta.info/accessibility/paratransit/on-the-day-of-your-trip（Accessed：2020/1/7)

6) https://new.mta.info/document/19481（Accessed：2020/11/2)

7) http://www.mta.info/press-release/mta-headquarters/mta-advances-%E2%80%98late-shift%E2%80%99-pilot-program-connect-new-yorkers-outer（Accessed：2020/3/6）; The original RFP was not confirmed on MTA's website which was published to the public. Relevant media reports are published on the website as RFP as of January 24th, 2020. (https://www.documentcloud.org/documents/6763235-Late-Shift.html〔Accessed：2020/3/6〕)

8) https://thecity.nyc/2020/02/mtas-uber-plan-to-give-late-shift-workers-a-lyft.html；https://www.nydailynews.com/new-york/ny-mta-privatize-ride-sharing-late-night-20200204-2qy6mqxj55agnfketjdheza5ca-story.html；https://nyc.streetsblog.org/2020/02/05/mta-to-late-night-transit-riders-via-con-dios-have-a-lyft-and-uber-uber-alles/（Accessed：2020/3/20)

9) https://nyc.streetsblog.org/2020/02/05/mta-to-late-night-transit-riders-via-con-dios-have-a-lyft-and-uber-uber-alles/（Accessed：2020/3/20)

10) http://www.thedriverlesscommute.com/wp-content/uploads/2019/08/Dentons-US-Autonomous-Vehicles-Whitepaper-August-1-2019.docx.pdf

11) https://www.optimusride.com/press/optimus-ride-launches-new-york-states-first-commercial-self-driving-vehicle-system-at-the-brooklyn-navy-yard（Accessed：2019/11/19）; https://www.wsj.com/articles/some-new-yorkers-brave-self-driving-shuttle-11565218555（Accessed：2019/11/19）; https://www.cityandstateny.com/articles/policy/technology/self-driving-cars-uncertain-future-new-york.html（Accessed：2019/11/19)

12) https://datasmart.ash.harvard.edu/news/article/new-york-city-open-data-a-brief-history-991（Accessed：2019/11/19)

13) 2015 Plan：https://www1.nyc.gov/assets/home/downloads/pdf/reports/2015/NYC-Open-Data-Plan-2015.pdf（Accessed：2019/11/19）; 2019 Plan：https://www1.nyc.gov/assets/doitt/downloads/pdf/Open-Data-For-All-Report-2019.pdf（Accessed：2019/11/19)

14) https://transitinnovation.org/mta-and-business-leaders-launch-transit-tech-lab#more-419（Accessed：2020/1/7)

15) https://transitinnovation.org/transit-tech-lab-2019; https://transitinnovation.org/mta-announces-plan-to-test-

(Accessed：2019/11/19）; The latest trend can be checked on NCSL database for discussions at State Legislature in 2017 or later. (http://www.ncsl.org/research/transportation/autonomous-vehicles-legislative-database.aspx〔Accessed：2019/11/19〕)。

innovative-solutions-to-bus-and-subway-challenges （Accessed：2020/1/7）

16) https://transitinnovation.org/challenge/data （Accessed：2020/1/7）

17) https://transitinnovation.org/challenge/optimize-buses （Accessed：2020/1/7）

18) https://transitinnovation.org/lab （Accessed：2020/1/7）

19) https://www.nymtc.org/Portals/0/Pdf/Annual%20Report/NYMTC_AR2019.pdf?ver=2019-03-08-212041-047 （Accessed：2020/1/9）

12) （P15）

https://www.nymtc.org/Portals/0/Pdf/Annual%20Report/NYMTC_AR2019.pdf?ver=2019-03-08-212041-047 （Accessed：2020/1/9）

Figure 1 https://new.mta.info/accessibility/paratransit

Figure 2 https://opendata.cityofnewyork.us/