

## Microtransit: A Good Idea Just Got Even Better

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In the before-times (pre-pandemic), public transit had a problem. Fixed-route services were being cannibalized by new private ride hailing services like Uber and Lyft.<sup>1</sup> While public transit has always been subsidized by government, their new competitors were enjoying private sector venture capital subsidies that seemed to be endless—all while using new ride-matching software that helped to provide on-demand transportation and substantially improve customer experience. They were picking off customers from transit who could afford to pay for a better experience, where wait times were short and transparent, response to customer concerns rapid, rides clean and private, and payment seamless. All of this was being offered at a price that was still well below the cost of providing the service. The result was reduced transit ridership, higher congestion and increasing pollution.<sup>2,3</sup>

This situation led some forward-thinking transit agencies to explore the idea of publicly provided on-demand transit, to capitalize on this new technology in a way that was more beneficial for society.<sup>4</sup> The thinking was that there was a market for on-demand, dynamic shared ride services that carried more people than an Uber or Lyft, but fewer than a bus, at a price affordable to transit riders. These services could compete with Uber and Lyft by providing faster service with better customer experience than existing transit at lower price than ride hail.

The pandemic re-aligned this paradigm (though it may have been due for realignment anyway). Both public transit and ride hail suffered dramatic drops in riders, as well as a crippling driver shortage when riders began to return.<sup>5,6,7,8,9</sup> But by 2020, private providers had scaled back their ambitions, which once included fully driverless fleets, various pooled services, and at one point, what were effectively fixed-route buses.<sup>10,11</sup> They went from attempted world domination and endless venture capital funding to a more realistic endgame as a much-needed improvement on taxi cabs.

Public transit will need to conduct a similar re-alignment, but given the nature of public bureaucracies and their resistance to change, will be slower to do so.<sup>12</sup> The travel patterns of the past are unlikely to resume in full force even when the pandemic has receded into memory.<sup>13</sup> While there is disagreement about the future of office work, the evidence for the present points directly towards more flexible working conditions, including remote work and less of a role for the traditional public transit commute. On-demand transit is uniquely suited to step into this new paradigm and thrive. By no means does this mean replacing the bus, which is still far more cost-effective and more convenient for riders in many cases, especially where ridership numbers are very high. But the potential for microtransit – an on-demand version of public transit with shared rides - has only grown in the post-pandemic environment. We were the architects of two new on-demand transit systems for LA Metro ([Mobility on Demand](#) and [Metro Micro](#)). Below we describe the reasons why we now believe microtransit is more useful than ever.

## Microtransit is Flexible as Work Patterns Change

One of the most frustrating things about fixed route transit is its lack of flexibility. Changing a route in response to passenger demand is very challenging. While you might think this applies only to fixed-guideway systems, such as light-rail or subway, it is almost equally true of buses, which carry most riders on mass transit in the U.S. While in theory a bus route can be changed with relative ease, the regulations and politics involved make it extremely difficult. As with many other issues in our society, there is a status quo bias, and any change must prove itself. Thus, the existing route can remain almost indefinitely without a challenge. Transit systems are often reluctant to take on bus network redesigns—even though redesigns often can produce substantial benefits—as the effort takes many years and costs substantial political capital. Just eliminating a bus stop can often require years of effort.<sup>14</sup>

Microtransit has several advantages in this regard. First, it does not have routes, or necessarily even designated stops and can offer these features in response to real-time demand. This gives the service inherent flexibility compared to buses. While it may take time for microtransit to add or subtract service areas, within an area it is highly flexible. Second, microtransit is guided by GPS with real-time traffic and can therefore respond to on-the-ground conditions such as a traffic jam or road closure, much more easily. Finally, microtransit uses smaller vehicles, which are inherently nimbler and can adjust more quickly to challenges on the road or to geographies that are un conducive to supporting a 40-foot bus.

Microtransit has also proven flexible in unexpected ways. During the Mobility on Demand Pilot at LA Metro, a partnership with Via where LA Metro offered first/last mile services to and from transit stations in three zones, the pandemic significantly curtailed demand (as it did for fixed-route service). Instead of cutting service, LA Metro was able to repurpose the service by working with local community organizations to deliver meals to food insecure families.<sup>15</sup> LA Metro also adjusted the service area and restrictions to serve changing community needs more effectively.<sup>16</sup> This type of flexibility is rarely seen with fixed route services.

## Microtransit Excels at Improving Customer Experience for Existing Transit Riders

The average customer experience on public transit was often poor prior to the pandemic. Many transit systems, particularly those that rely solely on buses in mixed traffic, offered services that were slow, inconvenient, infrequent, and rudimentary. Often these services were also offered with challenging or antiquated fare systems, uncomfortable waiting areas, and in-vehicle experiences that were perceived as unclean or unsafe.

The pandemic has only made this problem worse. Homelessness has become a major challenge for transit agencies. Riders have the perception of, or in some cases face the reality of, increased crime on the system.<sup>17</sup> There are fewer people riding, making people feel more alone and isolated on transit, and in some cases reducing service frequencies. Transit needs to find a way back to a better customer experience, something that was elusive pre-pandemic in many cases, and seems to be even more of a challenge now.

Microtransit offers a potential method of improving customer experience, while reducing transportation inequities, particularly post-pandemic. The end of the pandemic didn't end the need for essential

workers, who are statistically more likely to be low-income and women of color, to get to work.<sup>18</sup> Yet many of these workers are still typically riding infrequent buses that require one or more transfers, thus resulting in high travel times.<sup>19</sup> They are also concerned for their safety, as numerous surveys have shown.<sup>20, 21</sup>

On-demand microtransit services can dramatically improve customer experience for existing riders by providing guaranteed wait times and more point-to-point service, thus reducing travel time. Customers can watch their vehicle arrive in real-time and can give feedback post-trip through ride ratings and reviews, which agencies monitor and report out. Microtransit can be offered with smaller vehicles that are easier to clean and less likely to become shelter for unhoused individuals.

The traditional solution to these problems has been to fix the existing system. And this certainly needs to be done. Adding more frequent bus service, improving cleanliness and safety on that service, and better tailoring that service to existing need is crucial. This is not an either/or situation. However, the pandemic has likely increased the number of cases in which there are fewer riders, but those riders are left dealing with a system that is worse than it once was. This is where microtransit can be helpful.

One charge often leveled against microtransit's customer experience benefits is that it cannot scale to serve large amounts of people efficiently.<sup>22</sup> Admittedly, the cost-per-rider of microtransit will always be higher than buses when transporting large numbers of people because smaller vehicles mean more drivers and more energy consumed. However, a higher cost of service that comes with a better customer experience can be a net positive from a public policy perspective, especially in cities where transit ridership is dominated by low-income people, because this can represent a substantial equity improvement.

Moreover, not all cities or parts of cities are well-served by buses. In small cities, or parts of cities where transit ridership is largely confined to those without access to private automobiles, buses can often be an inconvenient way of getting around because there is insufficient demand. This leads to very low service frequencies just to ensure coverage. In fact, even in Los Angeles, a relatively dense city and the second-largest city in the nation, buses can often run at 30-45-60-minute frequencies during peak times in many areas, and often those buses are mostly empty.<sup>23</sup>

Coverage is where microtransit thrives. The on-demand nature of microtransit means lower wait times on average in areas where demand does not justify high-frequency buses. The flexible nature of the system means that people will also have shorter trip times and fewer transfers, as microtransit can take them much closer to "door to door" than a bus system. In areas with low-frequency bus service, microtransit can represent a vast improvement in customer experience over an existing bus system.<sup>24</sup>

The pandemic has only increased this competitive advantage for microtransit. Whereas pre-pandemic there was such strong demand for travel during peak times that transit had to run more high-frequency services to accommodate it, now travel demand is more spread out so there is less peaking.<sup>25</sup> Traditional commute trips have declined across the world, even as other travel patterns have recovered<sup>26</sup>. This leaves cities struggling to justify high-frequency bus services, a problem exacerbated by an ongoing operator shortage, and leading more people to abandon transit due to high wait times. Microtransit can potentially reverse this problem by offering a faster solution, and because there are fewer passengers, dynamic routes, and smaller vehicles that are nimbler, a more

attractive job than driving a bus. While it still might cost more than existing bus service, it also can provide a far better service for that price, bringing people back to transit and substantially improving the mobility of those without access to personal vehicles. As others have noted, when demand increases, microtransit can be converted back into frequent bus services where appropriate.<sup>27</sup>

## Microtransit Can Effectively Step into the Void

The pandemic has also brought into sharp focus the fact that Transportation Network Companies (TNCs) are not financially sustainable businesses. While Uber and Lyft used to present themselves as the future of transportation, taking on everything from reinventing the bus to eliminating drivers entirely,<sup>28</sup> the pandemic has brought them back down to earth. Now it appears likely that the technology and improvements they have brought to transportation will live on in some form, but they are unlikely to continue to be affordable to the masses.<sup>29</sup> There is even some evidence that TNCs have fared worse than transit post-pandemic<sup>30</sup>. Indeed, prices for TNCs have risen substantially since the pandemic, in part due to a driver shortage and gas prices, but that trend is likely to continue as investors wake up to the fact that these companies do not actually make money.<sup>31</sup>

As Uber and Lyft revert to a higher-end service, this likely leaves a void in the transportation space that microtransit is uniquely suited to fill. When we created Metro Micro in Los Angeles, we saw it as an effective competitor to Uber and Lyft on the basis of price. While it might not offer a private direct service, the subsidized cost (still only \$1) was far below what Uber and Lyft could offer. With prices rising on TNCs, this becomes an even greater disparity that will likely push more customers off Uber and Lyft and onto transit. But in many cases, existing transit options are so meager that many of these customers will try to either purchase a vehicle or continue to use Uber and Lyft. Microtransit has an opportunity to step into this void and capture market share.

Remember the pre-pandemic debate about whether TNCs reduced vehicle ownership and thus overall driving by enabling people to live without a car?<sup>32</sup> Or the discussion about whether they improved safety (and increased drinking) by providing a way for intoxicated people to get a ride home?<sup>33</sup> Those debates seem quaint now as private vehicles are in extremely high demand<sup>34</sup>, and the overall danger on the roads has increased<sup>35</sup>. Microtransit has the capability of dealing with both of these issues, likely more effectively than TNCs. Microtransit offers an alternative to car ownership that is an improvement on existing transit, but more affordable than your own personal ride. It offers a safer ride than Uber when provided by public sector agencies with strong license and strict drug and alcohol testing requirements for drivers. In short, microtransit may be how we can capitalize on the technology Uber helped bring to bear, in a way that has greater public policy benefits.

## Conclusion

Microtransit showed promise pre-pandemic as a method of improving transit service by adopting some of the technology innovations that made Uber and Lyft so popular. On-demand service, more direct routing, and reduced transfers benefitted transit customers pre-pandemic. But with our post-pandemic perspective, these improvements are more critical than ever. The pandemic has created new travel patterns that require greater flexibility, which microtransit is well-equipped to provide. The pandemic has exposed substantial inequities in mobility, which microtransit can help to mitigate. And the pandemic has severely damaged TNCs, leaving a void in the market where publicly provided microtransit can step in.

Transit was long overdue to change and realignment pre-pandemic. Now that need is even more urgent. Pre-pandemic we knew we could not continue to provide the same kind of transit service and expect different results. Now transit faces an even deeper crisis, and even greater reason to explore new service options that meet modern needs. Microtransit is one option that has already shown promise and deserves closer examination.

## Endnotes

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