10 Top Ways to Future Proof Your Transit Service

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We find ourselves in an unprecedented time and are facing extraordinary challenges globally, nationally and within the transit agency because of COVID-19 and other social trends. It is now more important than ever to take steps to future proof your transit organization while staying focused on its roots, principles, and identity.

The enclosed whitepaper includes an elaboration on the 10 ways to future proof your transit system and key learnings that will help your organization plan for what is forthcoming in the transit industry.

10 Top Ways to Future Proof Your Transit Service

Zero Emission Buses (ZEB)

1

Electric, CNG, Hydrogen fuels, reemphasizing transit's ability to help create a clean future

It is no secret that even before the onset of COVID-19, we were moving in the direction of zero-emission vehicles. For example, the state of California had a regulation in place that all vehicles had to be zero-emission by the year 2040. Other states had also created policies in pursuit of being zero-emission.

Before COVID-19 took the world by storm, transit was considered the clean, low-polluting commuting alternative to cars. One bus could do the job of 40 cars, give or take, creating only a fraction of the pollution.

Now, amid the pandemic, the transit industry is seen as a huge culprit because of germ transmission and people are becoming fearful of transit. However, there is no indication where transit has fostered the spread of COVID-19 any more than other public spaces.

Unfortunately, people do no see transit as the clean alternative. We must change the prism of the lens through which we are seen and strive to become the cleanest, zero emission alternative — an avenue to a clean future by taking advantage of zero-emission buses, CNG and hydrogen fuels.

New Tech Tools

2

For back-office scenario planning, rerouting service, and adjusting rosters and shifts quickly and seamlessly when needed

Unfortunately, the world was not ready for COVID-19 when it struck. While everyone has Continuity of Operations Plans (COOP), they are typically for natural disasters. There was no plan in place for the scale of this worldwide pandemic.

Transit agencies must have tools in place to facilitate planning quick adjustments of routes — from back-office scenario planning, re-routing service, adjusting rosters and shifts seamlessly, etc. Most transit agencies have collective bargaining agreements with their unions which have a variety of work rules within them. Ideally, those work rules should be templated into the ***transportation software*** so that when you are creating route schedules and blocking routes for drivers, these rules will be adhered to and will avoid changes from labor relations office. This is where software and tools come into the picture and will allow you to manipulate routes, try out different scenarios as well as calculate costs.

High Frequency Routes

3 Using headway management instead of time-point management on bus-only lanes, with transit signal priority (TSP)

Prior to COVID-19, high-frequency routes were the number one way that people were addressing congested, central areas. Over the last year or two, many transit agencies began moving to high-frequency routes to help get passengers on-board.

Essentially, agencies were moving away from time-point management and instead, vehicles would run much like a train (example, every 15 minutes). Passengers do not need to keep track of a schedule, they could look at their smartphone and see vehicle frequency, and when their bus would be arriving, on high-frequency routes. This coupled with bus-only lanes and traffic signals fosters a fast-moving system, with minimal friction.

New Software & Hardware

4 Allowing for better tracking of assets, buses, railcars, facility cleaning, and more accurate on yard vehicle location

While this is corollary to point 2 above, there is available technology that focuses on tracking of assets, facility cleaning and accurate on yard vehicle location.

Such technology allows transit agencies to track vehicle location, without having to rely on paper records indicating where vehicles are located in the lot — a practice that is extremely outdated, time-consuming and could lead to inaccuracies.

Vehicles must be equipped with hardware and software so that dispatchers and controllers can know the exact whereabouts of each bus, and easily send their driver to that location.

Having the right tools in place is key as it helps keep track of cleaning, allows for quicker turnover, and increases revenue.

Contactless Faring

5 Moving away from traditional fareboxes and emphasizing account-based faring, wearables, and contactless cards which speeds boarding, allows for all-door boarding and is low touch

The number one trend we are seeing in transit is the elimination of fareboxes. Agencies are deciding that they will go fare-free and will instead emphasize e-faring, wearables and contactless cards — all low-touch options.

Not only is ***contactless faring*** more hygienic, when calculating how much time can be saved by making faring account-based, wearable, etc, this dramatically reduces the amount of time spent on transactions and boarding, increasing productivity and improving the service of your vehicles.

Real Time Passenger Info

6 **Permitting passengers to make informed decisions, allowing for capacity control on buses/trains and at bus stops and platforms. This creates confidence in the system**

This type of real-time information not only includes the number of commuters on a vehicle, but also provides useful context. For example: a commuter can look at their phone and see the next two vehicles are full. However, some transit agencies have taken their real-time information and have given it context. There are transit apps that will tell the commuter that on average, this bus is typically full at these particular stops, at these particular times. Commuters are then equipped to make an informed decision as to whether or not they would use the bus or opt for another option, which could be Uber, Lyft, Zipcar, etc.

Microtransit

7 **Supporting main routes and providing more individualized service**

Microtransit helps to support main routes and fill in the gaps. Many transit systems have cut back on their service during off-peak hours (nights, weekends), especially during COVID-19. Unfortunately, now there are transit systems that are simply cutting their routes because of the lack of revenue and ridership indefinitely, not just because of COVID-19, but beyond it. Microtransit is now more important than ever because there are people who still need service in those areas that were cut — this can be done by using ***demand response software***. Agencies have the flexibility to use vans, smaller cutaways or full-sized buses depending on their needs, providing mobility to everyone, including those that rely on ADA service. ***Microtransit options*** ensure no one is left without access to transit.

Online/ Mobile Trip Booking

8 Allowing more control for passengers and reducing the need for packed call centers

Online booking tools allow people to book and manage their own trips, giving them more control. These tools are also available for microtransit and ADA/paratransit service and allow delegates to manage travel for anyone who is unable to do so on their own. This significantly reduces call volume into call centers, reducing cost to the transit agency and allowing allocation of those resources elsewhere.

Autonomous Vehicles

9 Provide niche service as part of a comprehensive program of MaaS

Autonomous vehicles are finding their niche, and these can be used for other services. One way to help future-proof your transit system is to add some of these to your fleet and find a niche — this could be overnight service (as an example).

Mobility as a Service (MaaS)

10 Aggregating all public mobility services in a city on one smart app on which passengers can plan, pay for, and subscribe to all mobility services

Traditionally, a transit organization was a quasi-government agency that provided all the direct mobility for a city/region. Now, transit agencies are becoming aggregators of all public mobility. The MaaS option is one cell phone app with all sorts of mobility options (bus, LRT, Lyft, Uber, taxis, bikes, Zipcars, etc..). With this one smartphone app, a commuter can plan their trip and figure out the fastest or most economical way to get from one point to another. The app then gives the commuter different options to choose from and they can then select the one they want. Everyone, regardless of transportation mode, gets paid automatically through the app. This is the future of transportation.

Future-Proofing Your Transit System – Expert Insights

Transit was gaining significant traction as of 2018, and by 2019 many agencies were in a strong position. Agencies had begun incorporating these three key things in their plans:

1. **Rebooting bus networks:** Old bus networks had not been readjusted for many years, decades even. These needed to be revamped based on urban changes and where people needed to go on a daily basis.
2. **Increasing frequency (10-15 minutes headways):** Agencies were moving away from timepoint management to headway management — that is, ensuring buses are x amount minutes apart from each other.
3. **Reducing friction:** Agencies were taking measures to remove anything on their routes that was slow them down. The goal was to increase average mph of their vehicles (bus-only lanes, transit signal priority). This enticed riders to get of their cars and use transit, etc.

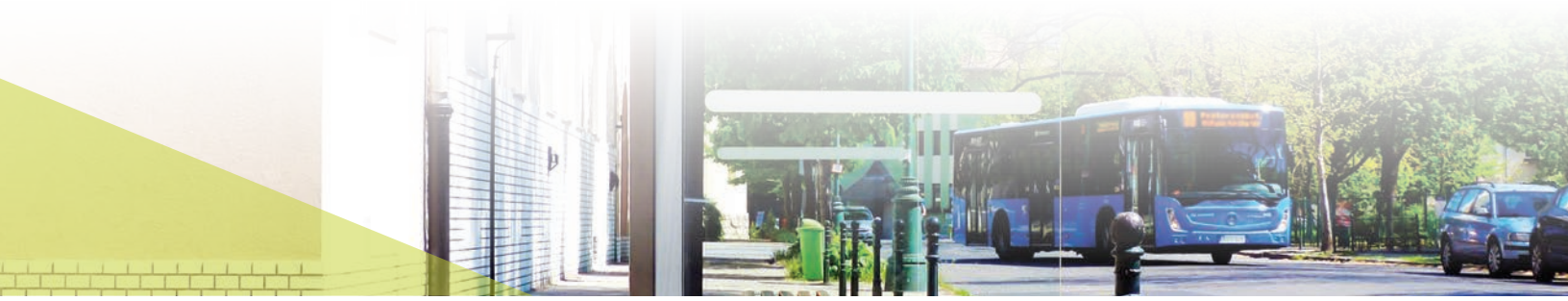
A look back on 2020

Ridership declined significantly, across the board. Here are some measures that were taken to navigate the sudden change:

- Going fare-free and rear-door boarding
- Virtual call centers to reduce the spread of COVID-19
- More frequent cleaning:
  - » Example: Fort Bend County Public Transportation was using a misting system that can clean one bus in 10 minutes, for only $2.00 per vehicle.
- Implementing strict security protocols:
  - » Colored arm bands to indicate if that employee was screened on that particular day
  - » Restricting access to breakrooms (no employees congregating in one place)

Key learnings from this experience:

1. **Communication:** This is key as things are changing faster than normal. Being in constant communication with the public, employees and policy makers was, and is, still paramount.
2. **Messaging and optics:** While agencies must communicate what they are doing to keep communities safe, it is equally important that they are seen putting safety measures in place (you can talk the talk but you must also walk the walk).
3. **Identify shortcomings:** COVID-19 helped reveal those who rely heavily on transit and also exposed areas that were being underserved.



Hindsight is 20-20: What's Your Pandemic Do-Over?

Here are three lessons that agencies have learned from the events of this year so far:

1. **COOP (Continuity of Operations Plan):** While agencies do have such plans in place, no one had a plan in place for a worldwide pandemic. You must have strategies in place — from high-level scenario planning, down to managing employees and vehicles that are in the community.
2. **PPE (Personal Protective Equipment):** It is imperative to have enough PPE for both employees and riders, as well as cleaning supplies to maintain clean vehicles.
3. **Improved Technology:** Whether it is e-faring, route planning software, or microtransit — you must have technology in place to make changes and communicate those changes to your riders and staff. By moving away from cash as a primary source of fare collection, riders can board quicker, and the risk of germ transmission is decreased.

However, while things do seem dire, there have been some silver linings:

- **Improved relationships:** Agency employees learned to work together while being apart, cultivating deeper relationships and friendships.
- **Connections:** Agencies connected with other city agencies in the region and worked together.
- **Battlefield commendations:** It is during the heat of battle that we see what we are made of — agencies were able to identify those they can count on.
- **Increased focus on the customer:** Many executives are consumed with high-level issues and sometimes lose sight of the end customer. Working through a pandemic encouraged them to learn more about their customer base.
- **Federal funding:** Governments provided funds (***CARES Act Funding***). This made a mark and helped people understand that public transit is not a nicety, it is a necessity to have cities function well.

Closing Keynote: Fare Free Transit in a COVID-19 Backdrop

Robbie Makinen, CEO of Kansas City Area Transportation Authority (KCATA)

Here are three lessons that agencies have learned from the events of this year so far:

- Public transit is about people, it is not a utility — it must be seen through a different lens
- Transit must be woven into the community's fabric
- Fare policies:
  - » Revenue from fares is not as significant as from other sources. If those funds can be injected back into the community, the effects will roll over 3-4 times and foster growth
  - » We must question elected officials to determine the viability of going fare-free
  - » Residents already contribute to transit funding through taxes — which begs the question: why are riders taxed twice?
- The system must be designed around access and eliminating fares breaks down many barriers and connects talent to opportunities. While we may not use public transit, we depend on those who do to fulfill essential roles.
- Economics and paradigms are great at a high level, but we must question whether they make sense in practice.
- Ridership is a by-product of access
- We must look at transit in a different way — how things should be, not how they have been — the status quo simple will not cut it.