

# THE FUTURE OF PUBLIC TRANSPORT: WHY CITIES NEED TO GET SMARTER

How the passenger transport industry can transform, and answering the big question of "now what?"

# INTRODUCTION

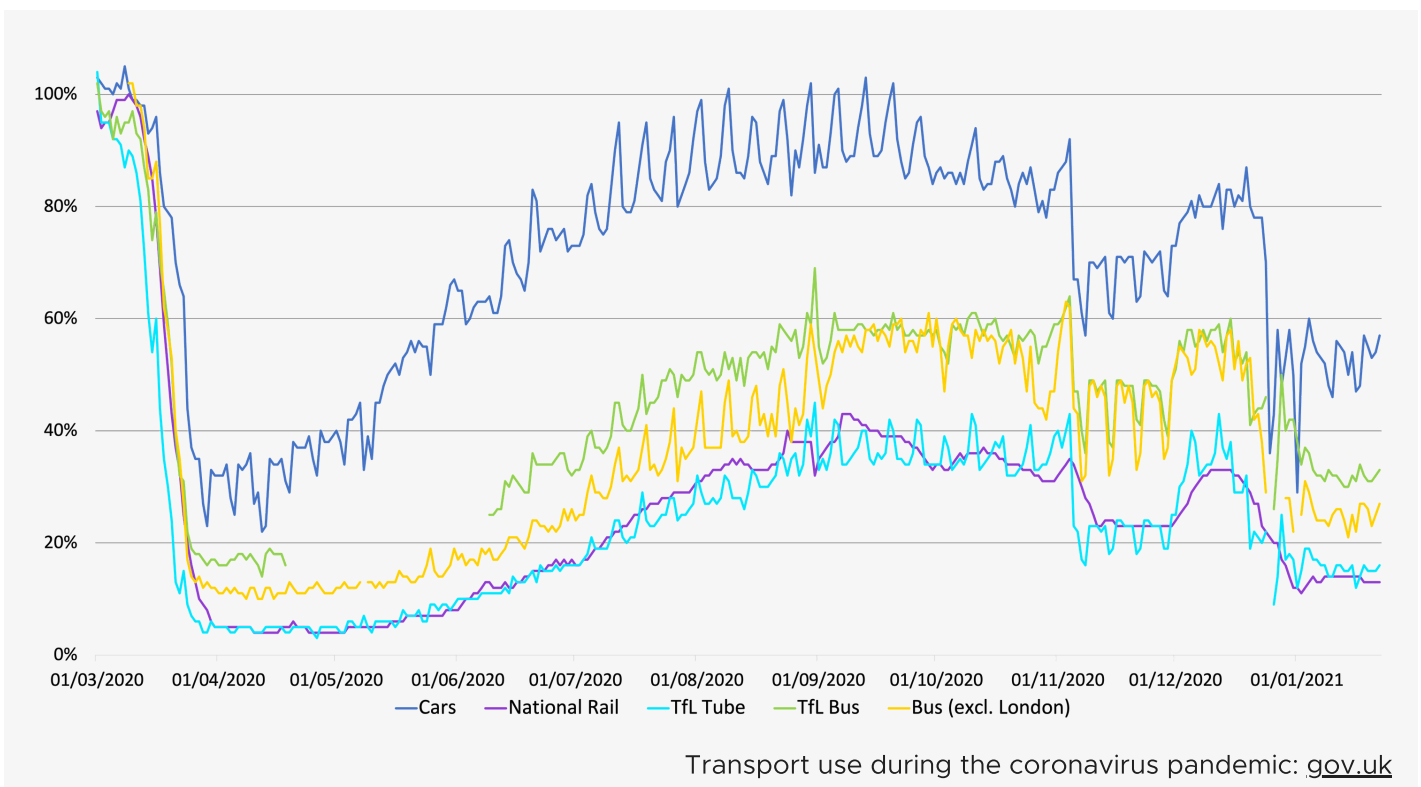
The past twelve months have posed more questions than ever for passenger transport. After a general decrease in ridership over the past decade, the disruption of COVID-19 could be a true tipping point for the industry. With the pandemic acting as a catalyst for change, we’re examining how the industry can re-invent itself, by looking back at the last transformative year and answering the big question of “now what?”.

We’ve analysed our mobility platform data, posed vital questions to industry experts and passengers, and highlighted significant developments and trends that are shaping this future vision.

## 2020: THE BIG PAUSE

In 2020, we saw the passenger transport industry completely pause. The severe impact on travel was felt across the globe, with average city road traffic levels decreasing by half in the first six months of 2020. Closer to home here in the UK, we saw public transport usage down to just 10% of ‘normal’ pre-pandemic levels.

There were some promising early signs of recovery as the lockdown rules relaxed in late Summer, with bus usage up to 60% and train travel steadily rising to 40%.

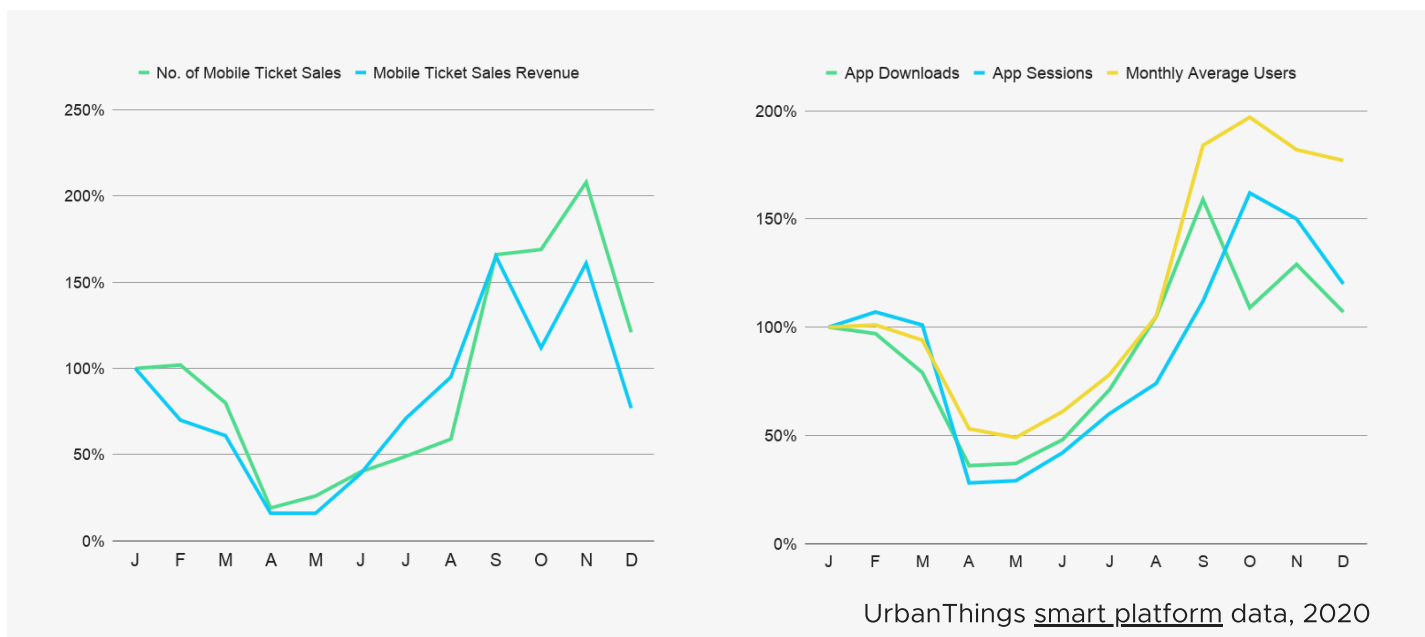


## STATISTICS FROM URBANTHINGS: THE RISE OF MOBILE TICKETING AS A SAFER MEANS OF PAYMENT

Throughout the COVID-19 crisis, our customers in the bus industry have been encouraging passengers to use contactless payment forms, such as mobile ticketing as a safe payment option. We explored our data to understand the effect of lockdown on mobile ticketing.

Once restrictions were relaxed in September, mobile ticketing demand increased to nearly double the pre-pandemic average. This shows how behaviour change has incentivised smart travel as passengers move away from traditional methods and towards m-Ticketing.

Technological innovation played its part in aiding sector recovery in the wake of COVID-19. UrbanThings was part of this effort, winning £100k in government funding to develop a live vehicle occupancy prediction feature to provide passengers with peace of mind. Also key was increasing the availability of real-time passenger information. UrbanThings was active here too, working with Transport for London to introduce the driver app with accurate vehicle tracking, ensuring safe travel for NHS staff to and from the Nightingale hospital.



## CATALYTIC CHANGE TOWARDS SMART TRAVEL

We saw significant developments across the industry in 2020 as the pandemic acted as a catalyst towards smart technology. The passing of the Buses Bill was a significant moment, allowing the public sector to start influencing how bus services are operated and, crucially, ensure their connection into the wider data ecosystem. Other key developments included Milton Keynes Council voting to abandon fixed buses and replace them with an 'on demand' service, and the DfT's investment of £90m into 'Future Transport Zones' which could implement similar, MaaS-style modernisations elsewhere.

A shift in the availability of data also began: the UK bus open data system (BODS) launch means location and arrival time information will be provided nationwide, and live occupancy being extended on UK rail data systems too shows movement across the industry towards wide-scale smart technology use.

# 2021: SO, NOW WHAT?

We predict how transport will evolve given the disruption of COVID-19 and the acceleration towards smart travel, and source expert viewpoints from across the industry:

## TRANSFORMATIVE CITIES

Almost 30% of an average city is devoted to automobile-focused streets and parking, and many are looking to change that. By prioritising and re-allocating public space for active and public transport, cities are driving the modal shift away from car trips and thus improving the overall passenger experience. Enabling public transportation will mean it is able to thrive again.

We're already seeing cities across the world maximise this opportunity to transform. In 2020, Paris, Milan and Bogota decided to widen sidewalks and added 50-100 miles of new bike lanes each. Seattle too announced permanent changes to keep 20 miles of streets car free after the pandemic.

## EXPERT VIEWPOINT

“ Following any crisis, companies that can adapt quickly are the ones that flourish. Many large incumbent providers will really struggle to bounce back, and some won't survive. It will be the agile, innovative start-ups and SMEs that are able to seize the moment, creating lighter, smarter mobility services that rapidly respond to changing customer needs and expectations.

I feel hopeful, rather than optimistic about the industry's recovery. There are many ideas that have been talked about for a long time, such as MaaS, whose time has come now. I look forward to the permanent demise of the rush hour and welcome a new era of “slow travel” where the pleasure of the journey is savoured.

Technology can help find, not just the fastest route or mode of transport, but also the greenest and most life-affirming. Never again do we want to be packed like sardines in a germ-filled carriage. We'll all want to know that our journeys will be comfortable, healthy and pleasant. Only real-time, location-based data is going to provide this reassurance. ”



**Stephen Hilton MSc AoU**  
Director and Founder at [City Global Futures Ltd](#)

## CURRENT PASSENGER CONFIDENCE, AND WILL IT RETURN?

We asked members of the UK public about their public transport habits and how confident they currently felt about using it:



The results clearly show that there is a huge willingness to return to public transport, provided that key barriers such as cleanliness and passenger spacing can be addressed. There is also an overall expectation that operators will provide clear, digital communication. Travel providers need to reassure the public if they are to encourage riders back, by increasing staff presence to combat rule-breaking, stepping up on marketing campaigns and investing in technology to improve the customer experience.

## THE DEATH (OR NOT) OF THE COMMUTE

There has been plenty of speculation as to whether the commute will return. Numbers suggest that we will still want to go into the office: Envoy found that 94% of 1,000 respondents want to go back to working in the office at least once a week, with 46% saying ideally for the full five day week. We may also see the government incentivise returning to the office in order to protect inner-city economies.

Some sectors, like manufacturing, hospitality and retail, have no choice to work from home and will continue to rely on their teams' ability to commute to work. Plus, private transport is not a financially viable option for many. With all of this in mind, a steady level of demand is likely to return once the public feels like it is safe to travel.

Despite our optimism there is likely to be less travel in peak hours, with passengers making the decision to travel smarter instead, both time-shifting and geo-shifting their journeys. There will be a rise in travel into cities, rather than across them, as commuters take advantage of flexible working and move further afield. Operators will need to create more flexible ticketing strategies, such as consumable rides (e.g. carnets), post-pay and capped fare options. Account-based ticketing offers a flexible pricing model that is well-suited to these requirements, and would provide higher levels of operational efficiency.

### EXPERT VIEWPOINT

“ Technology has been key to managing lower volumes of travellers and providing services for essential workers. People who have discovered new information and new services (like DRT) aren't going to want to go back. Likewise, people who have been working online more are increasingly comfortable with digital interfaces so I would expect more use of apps and online booking.

With mass transit under extreme pressure, it's essential that services are optimised and communication with passengers is clear. Online sales will not evaporate and managing increased numbers of delivery vans will become more urgent. There'll be more need for experimentation - merging micro-logistics and public transport. We're likely to see new business models develop, especially in Future Transport Zones.

There is also more space for lateral thinking and experimentation as we emerge from lockdown. Many of the patterns and modes - from increased bike sharing, a growth in e-cargo bikes, scooter trials and active travel networks - provide new ways to link together routes and there is the opportunity to creatively use data to evaluate new transport trends and meet new demands. ”



**Beate Kubitz**  
Future mobility research, writing and thought leadership

## DEMAND WILL BOUNCE BACK - WITH HIGHER EXPECTATIONS

Our need for convenient transport services will surpass our anxieties over safety as restrictions ease. Demand will recover, but there will be long-lasting effects from COVID-19. In a tech-savvy world of Uber users, transport is increasingly expected to be door-to-door at the tap of a finger, backed by prompt customer service when things go awry. Passenger transport will need to meet with these higher expectations in order to win riders back.

One consistent expectation of passengers is that there will be accurate, up-to-date information on transport, including vehicle locations, predicted arrival times, disruptions and current occupancy. UrbanThings has seen positive feedback from transport operators, local authorities and passengers about our vehicle occupancy predictions feature and it seems likely that such data will be vital to win back passenger confidence in the medium, perhaps even longer term. It is uncertain whether social distancing practices will continue into the future, but as seen in our survey results, it is unlikely that passengers will want to rub shoulders with strangers again anytime soon.

## ACCELERATION TOWARDS DEMAND RESPONSIVE TRANSPORT

COVID-19 could well be the tipping point that ultimately moves public transport away from reliance on pre-scheduled services. We are already seeing an increased number of city-wide tenders for Demand Responsive Transport (DRT), MaaS and on-demand systems in regions such as Wales, West Midlands and West of England.

A limitation of scheduled services is their inability to adapt to short-term surges in demand, for example football matches, public events or rallies. Schedules are usually updated just a few times per year and can be based around some fairly crude methods of measuring passenger demand. Transport for London still part-relies on paper surveys to collect data on passenger demand. Lack of flexibility creates an imbalanced supply and demand relationship, meaning frustrated passengers and lost revenue for operators.

### EXPERT VIEWPOINT

“ The problem is largely one of wastage and inefficiency. At the moment, supply 'hangs around' waiting for passengers to show up, regardless of whether or not they are ever going to. This lack of synergy between supply and demand causes huge inefficiency problems. Even before the pandemic, we would see empty buses and half-empty trains travelling around most of the day. Not only is this system wasteful and unecological, but it is uneconomical too, wasting fuel and stacking up unnecessary operational costs. ”



**Carl Partridge**  
CEO at [UrbanThings Ltd](#)

## OUR FUTURE VISION

In a post-pandemic world, it will not be feasible to continue moving people around so inefficiently. Cities are going to need to get far more savvy about transit: starting with greater access to data, not only for passengers but also for the city itself. We've seen the beginning of this in the UK with the launch of powers such as the Buses Bill and BODS, but even with these in place, there is still relatively little data as to who is actually using those public transport services.

There is currently no standardised sharing of data between operators, aggregator apps (like Google Maps and Citymapper) and local authorities. This leaves big knowledge gaps when it comes to making strategic decisions on how to provide public transport services.

By adopting a collaborative approach to data sharing, cities and authorities can use new-found powers to create a Smart City platform that can capture passenger journey data and demand. Transport operators will have the ability to feed data into the platform (possibly even as a condition of operating) and aggregators will be encouraged to feed usage and journey planning data in exchange for free access to schedules.

Not only will this allow a consolidated city view for efficient transport management, but it will allow the city to match supply with demand, creating an OnDemand system that brokers demand between passengers and multiple transport operators. Ticketing and fare policy can be managed centrally, with suitable incentives to encourage ridership, and transport performance can be monitored to ensure high quality of service.

### EXPERT VIEWPOINT

“ The next 12 months will be hard for everyone involved in transport. But there is hope. Those that will thrive will need to be bold, and to bet on the new travel habits that will emerge. Understanding the end customer has never been more important. Know them, and create your services around them, and you can't go wrong.

I see technology's role in the recovery process as the same role that it has always played best. One that overcomes key pain points, and just makes the system work. Ticketing and journey planning are the obvious ones, and should now be treated as standard. Other key barriers that should be considered are how to best provide services for an increasingly part-time travelling public, and how to ensure that your services serve the needs of the vulnerable without just relying on your vehicles being DDA compliant. Ultimately, if the service that you provide is not a good one, a new mobile app or ticketing system will not save you now. ”



**James Gleave**  
Founder and Director, [Mobility Lab UK](#)



# IN CONCLUSION

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As capacities are restricted and traditional commutes are transformed, it has never been more vital for cities to have full visibility over their transportation. If the public transport industry gets it right at this crucial time, it will be one step closer to bouncing back from COVID-19 and truly evolving to match the new world we find ourselves in.

To get started transport providers need to :

- Centralise data to create tailored services and gain further control
- Provide passengers with digitally connected services
- Adopt flexible revenue and ticketing strategies
- Put real-time information into the hands of passengers to rebuild confidence
- Become demand- and customer service-led as the industry evolves

Cities need to take the lead on transforming transit and ensure that they are fully connected into their transport ecosystem and its data, investing in a centralised platform such as a Mobility Hub. This, in turn, will allow all stakeholders to diversify their business models, reduce their cost of operations, and improve their customer experience.

We remain optimistic that, with these measures in place, the sector will rebuild and recover, but the aspects we discuss in this report will be likely to have changed forever, and it's time to start preparing for that now.

We're here to help. If you need any guidance on how your business or city can evolve using smart technology, please do get in touch [here](#).

