

# Electrifying the Passenger Experience

## The Future of Sustainable Travel That Exceeds Passenger Expectations Is Now

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In the global public transportation arena, there has been an explosion in game-changing innovations to meet rising customer expectations and emerging environmental policies.

Much of this transformation is coming in the form of the electrification of transportation fleets in an effort to embrace sustainability goals, including producing zero carbon emissions.





The good news is that there are already more than 500,000 battery-electric buses and almost 400,000 electric delivery vans and trucks on the road globally, according to 2020 [BloombergNEF study](#). And by 2025, electric buses [will account for](#) more than half of the world fleet.

As this electrification trend continues, the players within public transportation will change dramatically. For example, infrastructure management will be focused on servicing both fossil fuel and clean vehicles during this transition. The passengers themselves will require and demand greater transportation flexibility, and stations will evolve into being destinations where people can work, socialize, and shop.

### **The Rising Green Fleet Comes With Challenges**

Many transportation providers are also targeting 2025 as an ambitious goal for operating clean and silent electric fleets, though this transition comes with many challenges.

For example, local governments and electricity suppliers must adapt their infrastructure so that there are enough powerful charging stations to accommodate the vehicles. Transportation suppliers will have to service these new vehicles, and the charging times of the electric vehicles need to be taken into consideration.

There are also unforeseen weather challenges. During a heat wave, the air conditioning in an electric vehicle can drain the battery faster than normal, and multiple stops and starts – common on bus routes – can also drain batteries. Change management will become a priority for making the transition to electric transportation a true reality, and thankfully, new innovations can support this rapid evolution.

### **Data and Visual Knowledge of All Operations**

By leveraging next-generation GIS solutions, it is possible to analyze networks like electricity lines, water pipes, and roadways, as well as aggregate power line data and features with an overview of the planned bus routes in a city.

This is important because it will detect routes where charging a vehicle during a shift may pose problems due to weak power lines in a certain area. It is also possible to have a view on everything from the vehicle routes to battery life to the location of charging stations – even resting times for drivers.

Data monitoring will also rise in importance, especially with 2D and 3D capabilities. This will allow dispatch teams to have a complete citywide view of traffic, weather, battery life, and roadwork to see and respond to issues before they arise.

## Meeting Mobile Expectations for Passengers

Today's travelers and commuters are used to having continuous access to real-time data on their smartphones. Meeting passenger expectations will become paramount to making this dramatic transportation shift.

Passengers want to be able to access mobile apps that allow them to choose their desired route based on their needs. For example, a more eco-conscious passenger would be fine with taking a journey that leaves the smallest ecological footprint, whereas a hurried business traveller may opt for the fastest route.

This is where Mobility-as-a-Service (MaaS) comes into play, and it requires everything from stable network coverage to data providers that can collect and harvest the information that is relevant for each specific traveller.

MaaS can also be used for apps that aggregate information from public and private transit companies to provide a real-time view of all assets. This can include station floor plans with 360-degree imagery, visualization of network coverage, current inventory of e-scooters, e-bikes, parking spots, shared cars, and more.

## Managing All Digital Assets

Transportation companies have traditionally relied on field personnel and paper records to track and analyze the integrity, safety, and compliance of their assets and infrastructure.

Today, digital asset management can help these companies achieve more efficient approaches using solutions such as connected asset life-cycle management and mobile mapping.

In the mobile mapping process, a sensor installed on top of a riding vehicle, such as a train or tram, can capture data from the moving vehicle.

By translating this captured data into something meaningful through AI-powered software, it is possible to recognize ongoing patterns and anticipate any issues that require immediate attention.

This AI software can also be trained to automate the analysis of point cloud data, identify different structure types, and perform measurements on the structures. It can also visualize all infrastructure, such as stops, switches or points, common crossings, expansion joints, and the rail track system itself.



## The Future Is Now for Electrified Travel

In many ways, the future of electrified travel is already upon us. With many global cities already embracing sustainable transportation options, making the leap further into the future is not as challenging as it seems.

By integrating available data management and visualization solutions, it is possible to create travel experiences that meet the expectations of today's consumers. In the end, cities are able to address and exceed new environmental sustainability policies and goals, while also ensuring happy travelers.

To learn more about public transportation solutions for Smart Cities, read the complete white paper here: <https://go.hexagongeospatial.com/TransportationWhitePaper>



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