Smart cities need to embrace big data in order to thrive

The pandemic had a monumental impact on the way we travel and forced transport operators to rethink their business models. This includes evaluating digital developments in 5G, AI, big data, and so on; and the potential of such developments have only just begun to activate change within the transport sector.

In smart cities, the rising adoption of connected and smart technologies, particularly as a result of the pandemic over the last year, has led researchers to predict that the market will grow from $410.8B in 2020 to $820.7B by 2025.

The role of transport in the formation of smart cities is largely rooted in tech disruption. The sector was already somewhat undergoing digitisation prior to 2020 with the use of technologies like contactless and online payments, though the past year has been a catalyst for giving the industry a long-overdue push towards unleashing the power of digitisation.

However, whilst smart cities are slowly but surely embracing the potential of AI and big data, there is a long road ahead if the industry wants to provide a smart, sustainable and efficient customer experience.

The transport sector needs more than The Internet of Things

The Internet of Things (IoT) – that is, the use of sensors, software and other technologies to better connect certain devices and systems over the internet – has been a major disruptor to the transport industry.

IoT has enabled improved communication, customer experience and data distribution, leading to cost savings for companies and greater confidence amongst passengers. It has also been a saving grace helping the travel networks to stay afloat and keeping up with passenger demands.

But it's not enough. IoT solutions only provide the foundations of enabling greater efficiency and sustainability in the sector.

As smart cities and smart networks become increasingly more nuanced and complex, AI and big data have a crucial part to play in assisting the next phase of development. This is particularly needed in bus and coach transportation, which has essentially been static for the best part of a year.

Bouncing back and ensuring safer and greener journeys is going to be challenging, and we need AI and big data to shape and enable this. Using AI and data, operators can make data-driven and informed decisions to match vehicle supply with passenger demand and improve service levels and reliability. The result of a better, more efficient service is a more positive passenger experience, which in turn reduces the desire to use private cars. The benefits of this for congestion in our cities and reducing carbon emissions are significant.

Data-driven decision making wins back passenger confidence

The impact of COVID-19 means that travel behaviours and patterns have become _less predictable_, and passenger confidence in public transport has dramatically decreased. With mask-wearing no longer being mandatory in England except for commuters in London, trepidation around safety is still rife and 40% of Brits have expressed a desire to keep mask-wearing indefinitely.

To address this situation and reassure the public that it's safe to start using public transport, many bus companies are laying the appropriate groundwork to restore passenger confidence and trust.

For example, some are utilising AI and big data to encourage passengers back

onto buses safely by predicting capacity levels for each bus at any specific date and time. The information is then continually updated based on actual bus loads and shared with passengers in an easy to understand 'traffic light' format. Passengers can then use this information to plan their journeys according to their comfort levels. Again, this improves customer experience and helps to prevent overcrowding and delays.

Bus companies are at the forefront of this digital transformation and many big players are already adopting such technologies to ensure passenger confidence and safety.

Transport infrastructure that's efficient, sustainable and reliable can exist

The next phase of digital transformation in the transport industry needs to centre around the creation of congestion and emission-free cities.

Reducing congestion in urban areas that face increasing challenges from high traffic levels and carbon emissions should be a priority for the transport sector. Smart cities effectively utilising AI and big data will pave the way for such carbon-neutral futures and will form the backbone of sustainable transport.

Alongside this, the sector now needs to be more active in the development of dynamic public transport, especially as authorities start to see demand for travel is increasing again, and that integrated, accessible, safe and reliable networks are vital for prosperity.

Ultimately, public transport systems have a vital role to play in contributing to a sustainable future for cities, but in order to do so, they must continue to develop and offer an attractive alternative to private cars.

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