

Written evidence submitted by Ito World (FTD0049)

About us:

We are a British company, specialising in the collection, aggregation, quality enhancement and analysis of transit data.

Ito World has been working with the Department for Transport on the Bus Open Data Service (BODS) since 2018. Following the successful launch of BODS in 2019, the service continues to evolve – most recently with the addition of an extension Analyse Bus Open Data (ABOD) service launched in 2020.

The Bus Open Data Service (BODS) is an international first, national bus timetables, fares, and live vehicle locations are all being provided from one open-access, open-source platform. How might planning and delivery of transport infrastructure and services be changed by greater sharing and use of transport data over the medium and long terms?

Our experience working on the Bus Open Data Service has shown how aggregating, harmonizing and making a single country-wide data set accessible for transportation modes encourages innovation as well as lively conversations on operational compliance. Importance must be placed on single, multi-modal data sets that can be easily accessed; without this, any innovation will provide an incomplete picture of the transportation network, possibly producing unintended consequences. It is worth noting that to ensure the full benefits are realised, careful attention should be given to enforcing data standards and quality.

Data must be accurate, complete, consistent, and provided in a timely manner to be relied on for use in new innovations. Data standards must be easy to understand and use by technology developers, especially those unfamiliar with the industry. For example, converting complex timetables data provided to the Bus Open Data Service into a clean and easy-to-access GTFS data set that is more familiar to technology providers around the world.

Planning of transport services in the future will require open access to increasing amounts of data to ensure the service delivered is equitable, accessible and an efficient use of funds in both the private and public sectors. Static data sets for transport infrastructure, charging points, public transport stops and stations, timetables mixed with demographics data and the increasing amount of real-time

data available on vehicles will be used to determine where to position transportation routes effectively and which modes of transportation will best serve a city.

1. How might the travelling public, and local communities, experience the benefits of better use of transport data? What unintended consequences might there be?

Better use of transport data will support the government's 'Levelling up the United Kingdom', 'Active Travel' and the 'Road to Zero Strategy'. Providing enhanced visibility of transportation services and real-time information at the fingertips of public travellers will increase ridership across multi-modes of mobility whilst supporting the active travel agenda. A well-informed network of transport will support social equality connecting communities with activities that affect their health and wellbeing. This will aid the reduction of costly NHS appointments and medical prescriptions saving millions.

Millennials are becoming the largest generation of workforces within the UK. Typically, millennials are multi-modal and embrace a multitude of different transportation options they have available. They want more reliable information, real-time updates and an intuitive travel experience. Understanding the requirements of millennials and Gen Z is important for the continued investment in local communities and the transport available.

An interesting report by APTA on millennials & mobility provides insight into this;

<https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf>

When delivering public transport services, transport operators will increasingly rely on real-time data streamed from vehicles to deliver a service that satisfies the travelling public. These include the effective use of high-quality data in journey-planning apps, digital signage, and websites. Including up-to-date arrival time predictions, journey disruptions and cancellations. Increasing confidence in the

travelling public to use services that have previously felt unreliable or inaccessible.

Better quality data shared between operators, authorities and industry professionals improve the accuracy and pace at which service decisions can be made. An example of this could be identifying roading next work improvements that improve the journey times for public transport. An unintended consequence of openly publishing transport data is that users of the services have the power to highlight where a service is not up to standard.

3. What are the potential uses of data for understanding usage and condition of assets like roads, rail track, charging points, vehicles and the kerbside?

Public transport data, analysed over a period could be used in the following ways:

Road Usage – monitoring the performance of bus priority measures and validating the investment of funds into these systems.

Monitoring the frequency and severity of disruptions across the network would help service providers understand how faults are impacting their service.

Kerbside – analysing the dwell times of on-street vehicles, such as buses or trams, would help authorities understand the usage of their kerbside real estate.

4. What privacy, ethical, security, resilience and intellectual property issues arise in relation to gathering and sharing transport data, including location-based data about journeys and data with commercial value? How should the Government seek to manage and regulate these?

Bus operators in some areas have been concerned about openly publishing fares and occupancy data, as these could impact their commercial operations.

However, these types of data are being used globally to better plan, manage and resource transport networks to improve the service offering, provide accurate passenger information and better distribute public funds.

Like with BODS, the Government needs to put frameworks in place where the availability of data is restricted at various levels depending on its sensitivity. Where sensitive information is being stored, there should be an agreed way that this data is anonymised and made available for public use.

5. What are the biggest gaps in available data about transport networks and travel? What kinds of policy, planning or maintenance questions cannot currently be answered that we could answer with new, or more accessible, data?

Large gaps remain in data available on demand and origin/destination information for the travelling public coupled with information about the demographics of the travelling public served by each mode of transport. Without these data, it is difficult to plan optimal routes for public transport both within cities and urban areas that are both value for money and accessible to a wider society and the journeys they need to make on a day-to-day basis.

Additionally, although more real-time data is becoming available over time; this is often of low quality due to both reliable 4G/5G coverage and the frequency of data provided from vehicles. For example, most public transport vehicles will provide data at a 20-30 second interval but a <5 second interval is likely needed to provide the most accurate planning and service delivery decisions.

6. How can the UK scale up from pilots, pockets of innovation and existing single-mode data sets towards an integrated, comprehensive landscape for transport data?

Policy makers need to put together a transport data innovation board whose remit is to articulate a vision that breaks down key objectives into 1, 2, 5 and 10-year periods. The government needs to upskill a core team of professionals who can maintain the central framework, develop standards with industry and scope tenders that drive the industry forward.

When an innovation or pilot is scoped, it will be aligned with this framework, built around the standards and evaluated based on how it meets the board's

objectives. If it enhances the framework, the innovation is brought in-house and rolled out across the country. A great example of this is how the DFT took on the Transport for North innovative Disruption Messaging Tool. It started with a successful pilot, after, other regions were able to benefit from rolling the platform out across the country.

7. How should data availability, and sharing by transport operators, suppliers and other bodies, be encouraged, facilitated and regulated?

Take the example of the Bus Open Data Service. Firstly, the sharing of data should be grounded in government policy and regulation. Once this is achieved, governments can provide services like the Bus Open Data Service to make this data easily available, accessible and understandable for potential innovators and a single source of truth for those searching for this data. Support must be made available for those likely to find it difficult to deal with the added costs and burden placed on transport service providers, this could be technological support and services provided centrally by the government to produce consistent and reliable data for those likely to struggle with this. Finally, adherence to the standards and requirements must be enforced to ensure any data set is complete and up to date, this is likely to require monitoring and analytic tools to check the validity and completeness of any data set.

8. What skills and capacity do operators, infrastructure providers and local transport authorities need in order to manage their own data well and get the most value out of available data? What help do they need to anticipate and cater for future requirements?

Data governance and management are high-tech, niche skill sets that are not easy to scale across the whole sector. By centralising these skills into a government framework, all transport stakeholders are able to leverage these for the benefit of the public.

An example of this from the BODS project was - a few transport operators didn't have a software solution that allowed them to easily publish schedule data into the BODS platform. The DfT sourced a cloud-enabled schedule creation tool that could be used by these operators to become data compliant.

9. Is the UK's digital infrastructure sufficient to allow the greatest value to be derived from transport data?

The areas that need to be focused on are:

How the data is entered into the platform to ensure it is accurate and up to date.

Continuous engagement with end-user clients to ensure it meets their digital needs, such as real-time predictions for signage or mobile apps, centralised disruption creation and management.

12. What is the emerging best practice internationally, in terms both of developing standards and frameworks for sharing and using transport data, and supporting specific innovations? How does the UK compare, and how can it help to shape international standards?

The Bus Open Data Service is a world first. We have been tracking the development of these across different regions and have found the following:

US FTA has mandated that all operators need to publish schedule data (GTFS Static) for the National Transit Database (NTD).

Norway has created a national data set of schedule, real-time and fare information to support national ticketing and journey planning.

Sweden is working on a national data set to support their national ticketing goals.

Most other EU countries are focusing on road data with public transport being a second evolution.

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