Transport for London

Insights from Wi-Fi Data
Briefing Note
16 September 2016

1. Purpose

1.1. This paper outlines a proposal for a four-week pilot in autumn 2016 whereby Wi-Fi connectivity data is collected at certain London Underground stations and analysed to better understand journey patterns and gauge whether this can be used to improve services for customers.

2. Background

2.1. Our partnership with Virgin Media provides Wi-Fi in 250 London Underground stations offering customers internet access through more than 4,000 access points.

2.2. Connectivity data collected as a by-product of this has the potential to provide a far greater understanding of crowding and aggregate-level travel patterns so we can improve services and information provision.

2.3. We have conducted an initial investigation using a 'pseudonymised'[1] (de-personalised) sample to test whether Wi-Fi connectivity data could provide richer information than that currently collected from ticketing systems and manual surveys. The findings were very encouraging, and we have identified a number of areas where this data could provide benefits to customers:

- **Customer information:** providing better customer information for journey planning and avoiding congestion;

- **Medium and long-term planning:** ensuring optimal and evidence-based decision-making for potential capital investments ranging from the number of new trains procured, station upgrades, timetabling and event management, all superseding and improving current survey-based methods;

- **Operational and safety:** enabling us to manage disruptions and events, deploy staff to best meet customer needs and ensure a safe environment; and

- **Financial:** significantly increasing revenue from our advertising assets and decreasing the cost of annual surveys.

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[1] The process of distinguishing individuals in a dataset by using a unique identifier which does not reveal their 'real world' identity. Because it may theoretically be possible to combine this data with other data sources and then draw conclusions about the identify of an individual we have used the term pseudonymised rather than anonymised in line with guidance set out in the Information Commissioner's Office Anonymisation Code of Practice.

3. Proposed Station Pilot

3.1. We are seeking approval for a four-week pilot of data collection at 54 London Underground stations (Appendix 1). These stations have been selected to enable TfL to robustly assess the usefulness of Wi-Fi connectivity data in achieving the benefits stated above whilst keeping the amount of data collected during the pilot to a minimum.

3.2. We would collect and pseudonymise Wi-Fi connectivity data detected by Wi-Fi access points in these stations. Our proposed pilot would exclude staff devices.

3.3. Clearly there are potential sensitivities in terms of personal data. We engaged a Customer Research partner to test our proposal through a qualitative research exercise. The overall feedback from the focus groups was positive, particularly if our approach for collecting the data would demonstrate transparency and clear and tangible customer benefits with the right to opt out.

3.4. Therefore, communications would explain: the purpose of the pilot; that data would not identify individuals; and that we could, potentially, in future deliver a range of benefits to our customers.

3.5. TfL's Privacy and Data Protection team have been involved with the proposal to ensure the pilot is fully compliant with the Data Protection Act 1998.

3.6. We briefed the Information Commissioner's Office (ICO) who regulates the processing of personal data within the UK as part of the development of our plans in July and met them on 11 August 2016 for further discussions. The ICO have not raised any concerns or additional guidance to the briefing paper we submitted. We are committed to keeping the ICO informed.

4. Informing our customers

4.1. We are committed to being open and transparent with customers on how we use data. A number of communication methods would be used to ensure customers were aware that we would be collecting Wi-Fi connectivity data and the benefits from doing so.

4.2. We would, as usual, agree the media briefing of this with the GLA Press Team. Key stakeholders such as the ICO, London Travel Watch and London Assembly Members would be briefed in advance to reduce the chance of negative comment.

4.3. Posters would be displayed on each platform and at each entrance of the stations included in the pilot. This is a total of approximately 190 double royal platform posters and circa 150 entrance posters. Appendix 2 contains a draft of the poster.

4.4. A new website page would be published on www.tfl.gov.uk/privacy with further details of the pilot and responses to frequently asked questions. Our station posters and press releases would direct customers to this for further information.

4.5. We would brief social media teams and our Contact Centre staff to enable them to respond to any questions customers may ask.

4.6. Briefings to our staff working at stations would be managed through existing channels.

5. Pilot Review

5.1. We would only collect Wi-Fi connection data for four weeks. We would begin the analysis of pseudonymised data during the pilot but this analysis would continue beyond the data collection period.

5.2. The review would consider whether the data collected would enable us to provide the benefits outlined in section 2.3.

5.3. Based on the outcomes of the pilot we would discuss findings and options for next steps with the GLA. We will then update our stakeholders and customers.
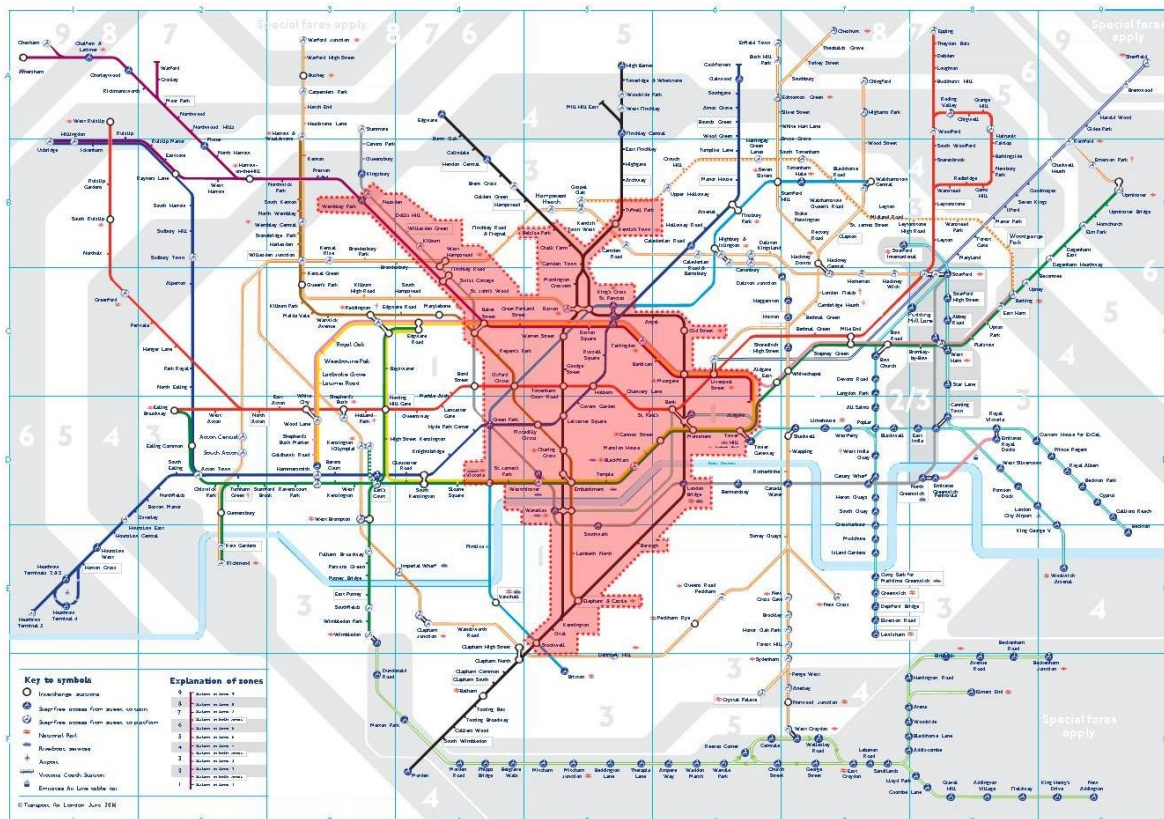
6. Contact Details

Shashi Verma, Chief Technology Officer and Director of Customer Experience

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Appendix 1: Proposed Pilot Stations

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Bond Street and Tottenham Court Road are shown in the map but have no TfL Wi-Fi provision.

Aldgate	Green Park	Piccadilly Circus
Angel	Holborn	Regent's Park
Baker Street	Kennington	Russell Square
Bank	Kentish Town	St. James's Park
Belsize Park	Kilburn	St. Paul's
Blackfriars	Kings Cross St. Pancras	St. John's Wood
Borough	Lambeth North	Stockwell
Camden Town	Leicester Square	Swiss Cottage
Cannon Street	Liverpool Street	Temple
Chalk Farm	London Bridge	Tower Hill
Chancery Lane	Mansion House	Tufnell Park
Charing Cross	Monument	Victoria
Covent Garden	Moorgate	Warren Street
Dollis Hill	Mornington Crescent	Waterloo
Elephant & Castle	Neasden	Wembley Park
Embankment	Old Street	West Hampstead
Euston	Oval	Westminster
Finchley Road	Oxford Circus	Willesden Green

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Appendix 2: Draft Station Poster

WiFi connectivity data collection

We are collecting WiFi connectivity data at this station to test how we can use this to improve your journey.

We will not use this to identify individuals.

We will collect data from dayname xx month to dayname xx month

For more information visit: tfl.gov.uk/privacy

🌐 tfl.gov.uk   ℹ 24 hour travel information **0343 222 1234***   ✉ Sign up for email updates tfl.gov.uk/emailupdates   f 🐦 ▶ tfl.gov.uk/socialmedia

*Service and network charges may apply. See tfl.gov.uk/terms for details.   000 00000 0000

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