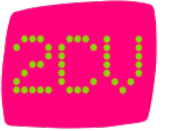# Evaluating the impact of upper deck seat indicator technology on London buses

Topline summary

December 2015

Background to the research

- TfL is trialling new CCTV technology which provides information about seat availability on the upper deck of buses, with the aim of improving the utilisation of space on buses at peak times in London

- A pilot was launched on route 59, which runs between Kings Cross St Pancras and Streatham Hill

- The new technology analyses information from the on board CCTV system and displays seat availability on the upper deck on a screen at the base of the stairs. It enables passengers to make an informed choice on whether to use the upper deck and may reduce crowding on the lower deck of the bus

- This new technology is aimed at increasing utilisation of the whole bus and to make passengers journeys more comfortable by encouraging them to go upstairs, rather than standing on the lower deck, which at the busiest times can prevent other passengers from boarding. Route 59 has been identified as a busy route where crowding can be an issue making it an ideal test route for this trial.

The pilot involves 3 variations of the screens:
1. Standard CCTV screen;
2. New screen with just the number of available seats;
3. New screen with both the number of available seats and their location on the upper deck.

Research objectives
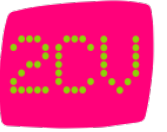
Business Question
- How far does the introduction of new upper deck indicator technology on buses encourage improved utilisation of space on the whole bus at peak travel times?

Overarching research objectives
- Evaluate customer comprehension of the upper deck indicator screens, and understand the impact of different versions of the screens on customer behaviour and use of available space on the upper deck
- Understand the impact of the upper deck indicator on customer experience and journey satisfaction
- Explore the role the screens play on wider customer and driver behaviour and any potential for unintended consequences around customer uncertainty and increased congestion on the bus

Detailed research objectives
1. Which of the screens do customers prefer, and which are most effective* at encouraging customers to make use of available space on the upper deck?
2. To what extent do customers pay attention to the screens and understand the information displayed?
3. How far do the screens create hesitation and delay around the stairwell on buses as customers process the new information?
4. What is the driver perspective on the new technology and how does it influence driver behaviour? (e.g. driver announcements)
5. Are there differences between observed customer behaviour (on CCTV/live observations) vs. customers self reported behaviour?

*Note: effectiveness is referred to from a TfL perspective about making optimum use of space on buses

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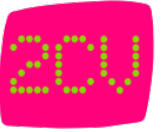
Customers are currently choosing to sit on the upper deck out of habit, and this habit is stronger among those who take a longer journey on the bus. Customers who are currently stay downstairs have a preference for this area (it is closer to the doors, they don't like taking the stairs) and so it is hard to change their seating behaviour

There is a cohort of customers who do stay downstairs out of habit (almost a fifth), and so these customers are the key audience for the screen technology. However, these customers are more likely to be regular bus users, and so these habits may be engrained. The screens must become a lever for change among these customers.

Spontaneous and prompted awareness of the 'text' screen is higher than that for the 'diagram and text' screen. However, we see a greater impact of the 'diagram and text' screen, with higher scores across the TfL reputation metrics, and momentum scores. This is particularly true among those who are spontaneously aware of this screen type.

Comprehension of the screen types is generally good, although we see customers are more likely to rate the 'diagram and text' screen as confusing, and say they would like an introduction to the screen technology as it is not initially straightforward to understand. There is also comment that the look-and-feel of the screen could be improved.

Impact on customer behaviour is likely to be greatest for the 'diagram and text' screen - customers claim to be more likely to look out for this screen than the 'text' screen, and be more likely to go upstairs if it indicated seating was available. CCTV also outperforms the 'text' screen; customers want to actually see which seat is available, not just the number of seats.