Transport for London

Digital Screen Evaluation Research

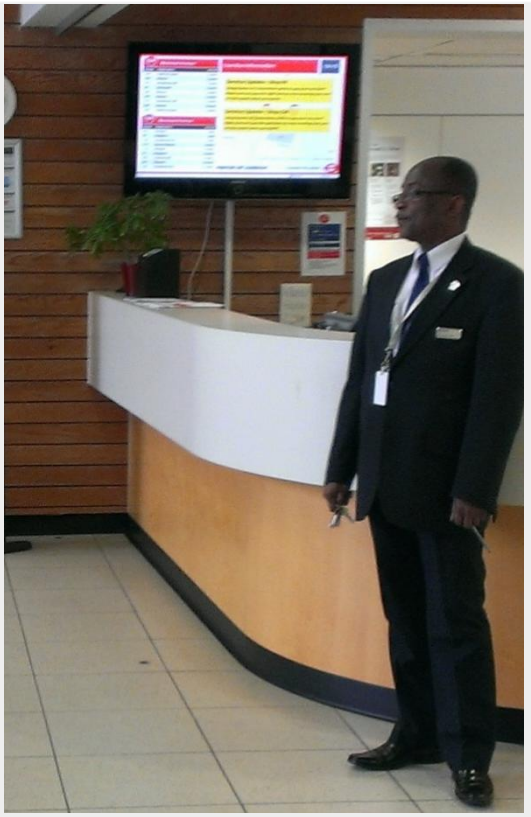
Debrief

7th May 2013

MAYOR OF LONDON

Transport for London

Contents



1 Background, objectives and methodology

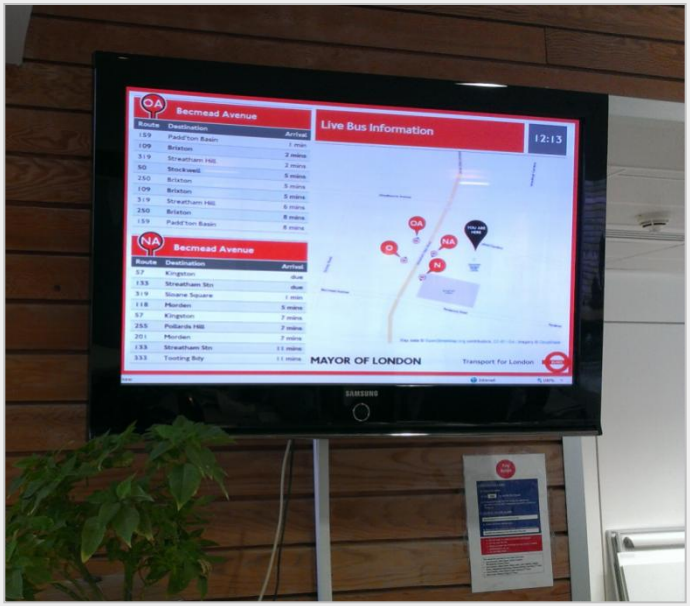
2 Headlines from the research

3 Bus use and information needs

4 Responses to digital screens

5 Moving forwards

Background



- The Technical Services Group have developed new format digital screens that have been designed to communicate Bus arrivals information
- Screens have been piloted in 4 locations across London. It is intended that the new screens will be rolled out based on the success of pilot tests conducted.
- Research was required to evaluate the effectiveness of the digital screens: how well they are understood by customers (particularly for less familiar journeys) and what intrinsic value they provide

Detailed research objectives

To evaluate the new digital screen format and explore to what extent…

- ***The screens and information shown are user friendly in terms of content, comprehension and look and feel***
- ***Customers understand the information and feel confident enough to plan their journeys accordingly***
- ***The new screens impact positively on the London Bus brand***

Research approach

- 4 x **intercept sessions** at:
  - *Gracefield Gardens Health & Leisure Centre*, Streatham
  - *Redbridge College*, Romford
  - *Oaks Park High School*, Newbury Park
  - *Loxford School of Science & Technology*, Ilford
- Sample included a **range of customer typologies** based on nature of site visited :
  - Students going home by bus
  - Visitors to centre travelling by bus
- A good range was achieved in terms: **gender, ethnicity, age / school year**
- Where possible, organisation staff were also interviewed
- Fieldwork conducted between 27th March and 29th April

Executive Summary

Headlines from the research

- The digital screens are **well received and can deliver against the information needs of customers**: if rolled out, the screens are likely to deliver vs. key TfL reputational drivers

- The screens **work well to inform customers on local area bus arrivals** and are likely to become part of a bus arrival resource repertoire
  - On this evidence, the screens are more appreciated by customers unfamiliar with the locale and associated bus routes

- Critically the digital screen format allows for information to be accessed and **consumed easily and quickly** vs. other digital sources currently used (apps and websites)

- However, there are still certain **elements of the design and format that lack clarity** and can impact negatively on engagement and propensity to use, namely
  - Design can lack standout
  - Service update information can distract
  - Map details (lack of clarity regarding precisely which stops are the relevant ones; presence of stops not linked to real time arrival info) can cause uncertainty

- And there are **additional contextual elements beyond TfL's control that can impact on engagement**
  - Position of screens in organisation
  - Digital screen software that can impact on resolution
  - Whether screen used to display information other than live bus detail

Bus use and information needs

Few stress points identified by customers

- Satisfaction levels with the service are high and customers can **struggle to spontaneously identify unmet needs**

- In addition, waiting for and catching buses considered a **low-involvement activity** that rarely necessitates proactivity
  - For the majority, journeys are habitual (eg. to and from school) and as such, **adopt an 'auto-pilot' behaviour** in terms of use - will walk to stop and wait
  - For this audience **making familiar journeys** bus information (particularly arrival info) is not always proactively sourced

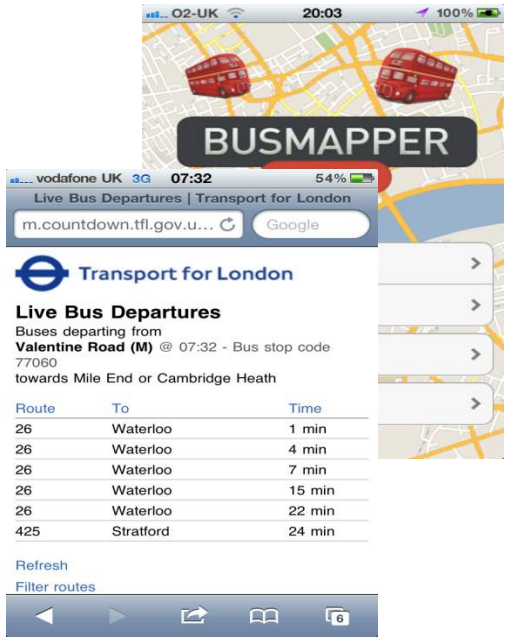
- This said, customers **making less familiar journeys can lack the material** needed to make informed decisions regarding journey planning, lacking knowledge of:
  - Location of stops
  - When buses will arrive at stops

- Even customers that are more aware of their travel options **can and will (if given a convenient opportunity) utilise information to plan journeys**

The provision of information that can help facilitate journeys and inform decisions is appreciated

Current sources of info deliver vs. information needs

- Customers across the sample **employ a range of sources** to determine bus arrival (typically younger and more tech engaged)
  - TfL Live Bus Departures ; a range of Bus arrival apps
- Motivation for accessing information on arrivals is to **determine when to leave building** to catch required bus
  - Especially if looking to avoid waiting at stop when the weather is inclement or it's after dark
- The sources accessed are felt to be **delivering against customer information needs**
- For audiences served by high frequency routes, the **benefits this information delivers are felt to be 'soft'** – 'nice to have' rather than essential
- Conversely, those **less well served** with route alternatives (or less familiar with the routes) **appreciate this type of information more**



"Sometimes I'll have a look at the TfL app as I'm walking out of school just to see when the bus's coming. But if I miss one, there's usually another close behind it"

A customer preference for ease of access

- As noted, current resources deliver vs. broad needs and there are no **overt complaints / suggestions for improvement**
- This said, bus users (particularly in this context – leaving a building to catch a bus) **want to be able to access information as quickly and as simply as possible**
- And while accessing information via smartphone is a relatively straightforward undertaking, there is a sense that **customers appreciate more direct and uninvolved processes** that can deliver vs. information need
- In addition, **apps and web enabled phones use is not universal** and there is a role for alternative access points to this type of information

"If it's going to take me a few minutes to look stuff up on my phone, I'll just leave and head to the stop. I don't use the app everyday"

"I don't have an iPhone. I don't use apps"

Customers appreciate resources and information they can access and consume passively

Responses to TfL Digital Screen

Overall, Digital Screens are well received

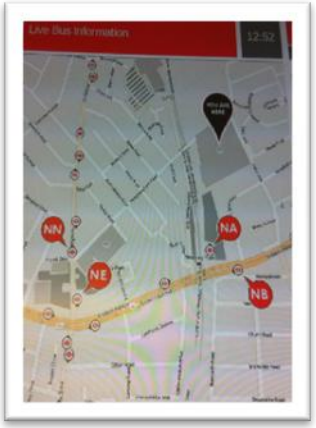
- The concept of the screens was **well received by customers** across the sample:
  - Seen as an additional source of helpful information that can inform decisions
  - Real Time Information (RTI) delivered via digital format considered innovative and 'up-to-date'
  - Information via this format **allows for quick and easy access** and consumption
- On using the screens, customers are broadly confident that they can make informed journey decisions
- Generally the layout **works to inform about bus arrivals** in the local area
  - The amount of **information on screen is considered right** and generally clear and intelligible
  - The **maps are essential in orienting** people
- In terms of layout and design, **the format of the screen invites reading**, however, there are **some issues (with layout and formatting)** that can **impact on comprehension and propensity to engage**
- In addition, **contextual factors can also impact on screen's perceived usefulness:**
  - Positioning of screen in situ can impact on whether info is interrogated
  - Where TfL info competes for 'screen time' with other information, bus arrival detail can be overlooked

Introduction of screens supports TfL reputation drivers:
What TfL stand for; Experience; Progress & Innovation

Navigation consistent across the sample

1

2



Customers consistently **read and navigate thorough in a specific order** depending on familiarity with area

- Attention drawn to 4 (or 2 depending on how formatted) **bus stops and arrival information** table (routes information and arrival times) catches the eye 1st as **customers look for their specific bus route** (where known) - this is the information that is felt most critical

- Map then looked at next – **useful in identifying / locating required stop**, but overlooked by those more familiar with the area

Impact of screens based on nature of organisation

Factors can impact on propensity to use screens and their perceived practical value

Educational institutions

- Students' familiarity with routes and (regularity of service; alternative services) and area (location of stops) can effect
- Nature of journey (heading home) potentially less time critical (vs. getting to school)
- Presence of RTI does still provide reassurance re arrival of bus and when to leave

Customer Centre

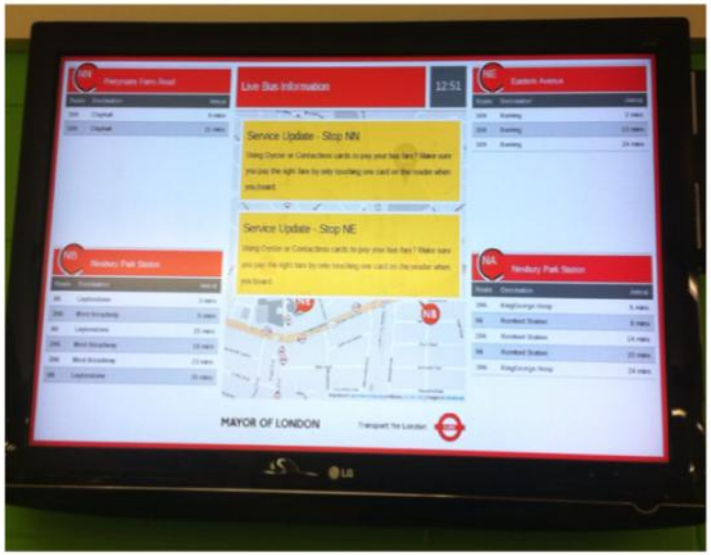
- For many customers, visit to centre are infrequent so less aware of locale and how serviced by buses
  - Less aware of relevant routes
  - Unfamiliar with location of stops
- Screens' information provides real practical value for these audiences

Nature of the organisation (and the composition of occupants/visitors) can be factors in determining which potential targets TfL/Technical Services Group approach when rolling out the screens offer

Design, look and feel – can help to drive appeal

Spontaneous impressions of design are positive

- The layout used **helps people navigate the information** and makes it accessible
  - It is worth noting that each pilot organisation had laid out screens slightly differently
- Design (tables, map, icons esp) is also **key in driving appeal** and aids navigation
  - Detail thought user-friendly and easy to understand
  - Respondents made associations with familiar travel planning tools (eg Google maps)
- Design and formatting (colours, fonts, iconography) considered 'in keeping' with existing London Bus comms assets and so **feels familiar and accessible**



Design can drive comprehension due to familiarity with travel planning tool and TfL references.

Design, look and feel – but can work harder to engage

More considered response highlight some issues

- Some feeling **that information lacks standout**
  - Only 3 tonal shades – red, black and grey - on expansive white background
  - Recessive title (and provenance) – can lack relevance
  - Font size not indicative of information hierarchy
  - No overt CTA / reason to engage
- Some **complaints regarding the size of text** and map detail (this dependent on screen resolution & interface at each organisation)
  - Customers need to be quite close to interrogate detail; this is not always practical

"I suppose it just lacks a bit of something. A bit of colour". It could draw my eye to it a bit more

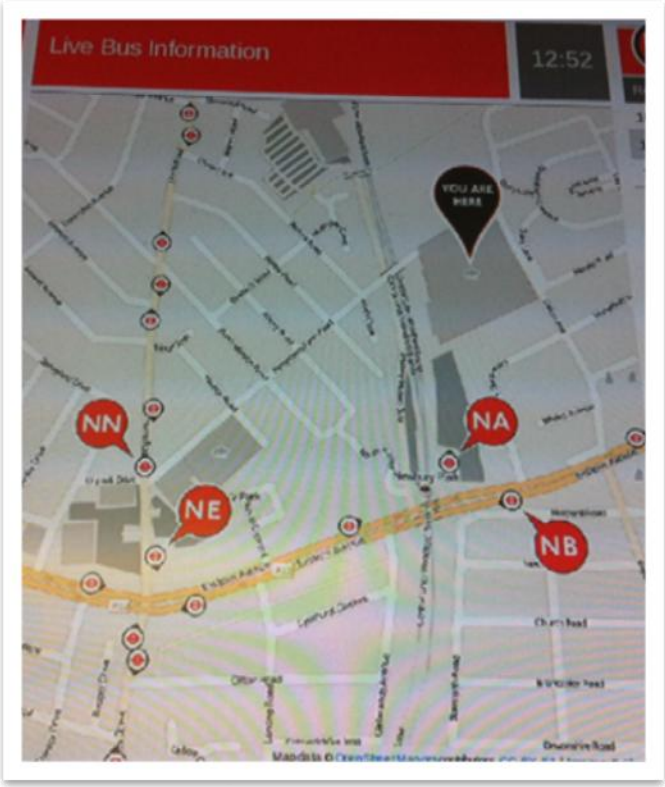
Upping TfL / Bus provenance (logo and title) use of colour in map and use of different font sizes could increase overall standout. Increasing text size can also help comprehension

What's working – RTI bus arrivals tables

- Provision of RTI for local bus service **delivers real, practical benefits**
  - Allows customers to make informed decisions regarding when to leave
    - Especially appealing for those unable to access info via smartphone
- Format **replicates Countdown dot matrix** signs at stops so information layout familiar and easily understood
- RTI clearly and i**ntuitively displayed for each relevant route** and corresponding stop
- RTI **serves to deliver emotional value** and reassurance that stops are 'live' and connected to the wider network

What's working – map of local area

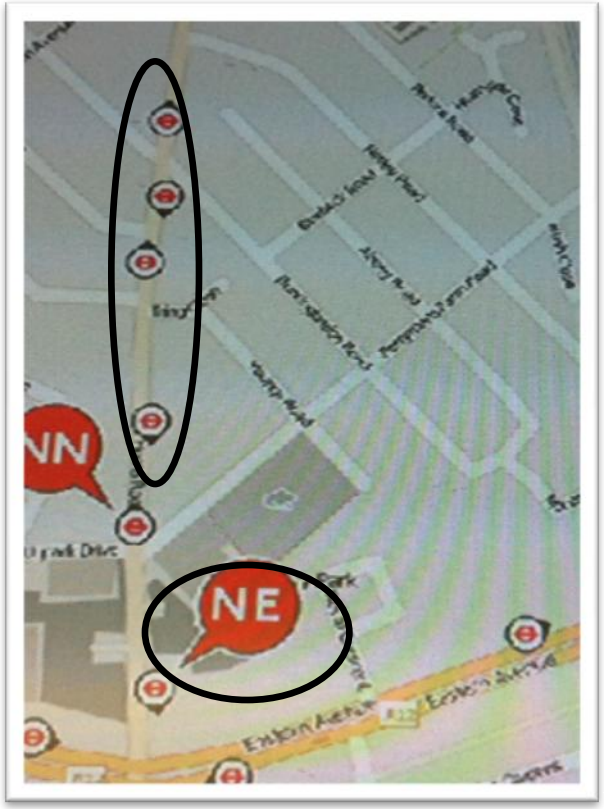
- Map of local area **essential tool in orienteering** customers (particularly if unfamiliar with area)
  - Comparisons with static *'Plan onward journey'* maps located at train/Tube stations are common
- **Street names and locations of relevant stops** are labelled
  - Street names are a **crucial point for navigation and used as cues to determine distance** form desired destination
- **Cross reference to other modes** (rail/Tube) are appreciated
  - Useful as a **point of reference** in orientation
  - Helpful for **cross-modal journey planning**



Consider including estimates (time or distance) to relevant stops as additional frame of reference

Watch outs and developments – Use of point letters on map

- Although relevant stops are clearly labelled by reference point letter(s) and street name customers (particularly those who knew the area) **do not always refer to stops using these frames of reference**
  - Typically refer to stops by **local landmarks or specific street name**
    - Though familiar to most, code letters viewed by some as internal organisational reference and can lack relevance
- In addition, some **maps included additional unnamed stops** (presented as unmarked roundels) in the area unconnected to the RTI
  - Earlier research established* stops do not tend to feature as part of information hierarchy when navigating
- As such, customers (even those familiar the location) are not **always certain precisely where on the map the relevant stop is** – there is a risk of customers making for the wrong stop



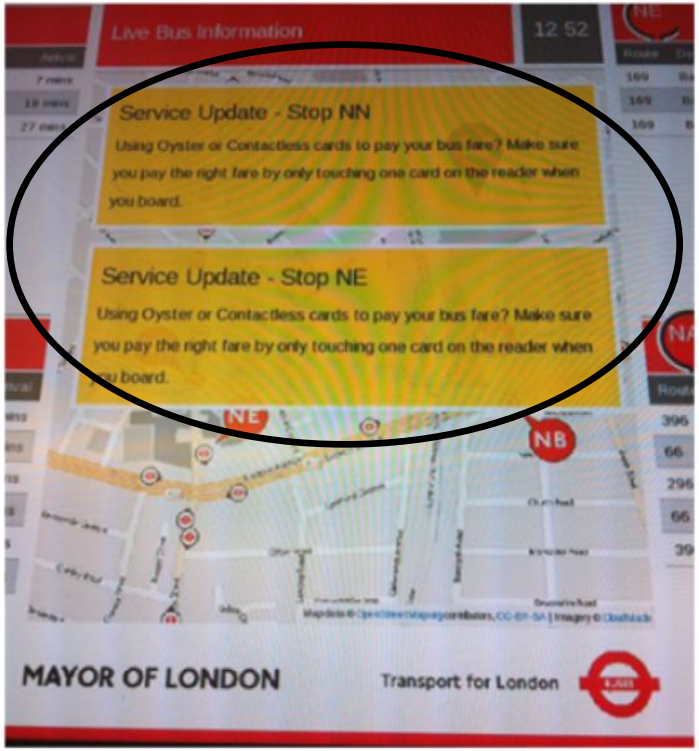
Consider removing unnamed stops from maps and adding additional local contextual detail / landmarks

*Walking Maps Research 2CV July 2012

Watch outs and developments – Service update notices

- Conceptually, the **idea of service update information is well liked** and thought to have real value
  - Informs on any local disruptions to service
  - Allows customers to respond accordingly and look for travel alternatives

- In its current format, however, **the yellow boxes used to communicate updates are a significant distraction**
  - Boxes obscure critical map detail
  - And the frequency with which the notices appear adds to distraction
    - Some question value of generic content when no actual disruptions – Oyster info thought irrelevant



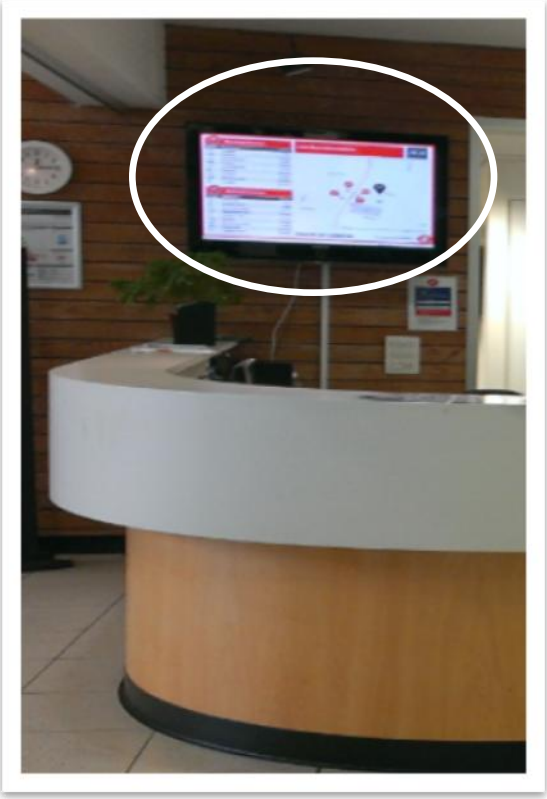
If possible consider repositioning boxes away from map and extending refresh period to every 60 seconds vs. every 30 - or making updates reactionary as opposed to regular

Positioning of screens can impact on engagement

- Position of screens determined whether information is seen and interrogated

- Where screens are harder to access, **customers tend not to notice the information** - in Gracefield, screen situated behind reception desk and assumed to be a tool for staff
  - And if Bus arrival data also **competing for screen time with organisational information** issue is accentuated

- The other pilot organisations had screens that could be more easily accessed with **no physical barriers and with heavy customer foot fall**
  - Canteens; receptions; outside library, hallways

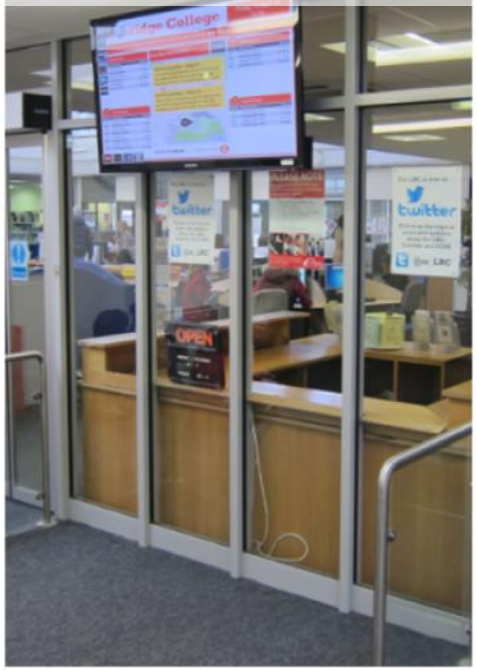


While the positioning of screens is beyond the remit of TfL / Technical Services Group, advising on optimum positioning and formatting could become part of the consultation process

Positioning of screens can impact on engagement

Redbridge College: Location 1

Redbridge College: Location 2



Loxford School of Science & Technology

Screens positioned where 'footfall' is heaviest more likely to be interrogated

Organisations' screens set-up can effect engagement

- Each organisation's screen set-up had a significant impact on customer awareness of information and propensity to use
- Organisations use screens to deliver variety of internal and external **messages which compete for space and time** – necessitates waiting for bus arrival information to come up
  - In addition customers (esp. students) can ignore what they believe to be less relevant internal procedural info and miss out on arrival time data
- And because information is in rotation sequence, it can impact on formatting of Bus arrival information
  - In Redbridge this resulted in service update boxes always **obscuring map detail** as they did not rotate 'off sequence'

There may be a role for TfL / Technical Services Group advising on protocols / best practice to optimise layout of data for different digital signage

Concluding points

Digital screens can be an additional information resource

- The screens and information **deliver vs many of customers' information needs** and can be a tool to facilitate journeys – particularly for customers in an unfamiliar location
  - Data easily accessed and consumed
  - Information (particularly arrivals of buses on specific routes) intuitively displayed and easily interrogated

- And introduction of screens **can also support key TfL reputation drivers**: *What TfL stand for; Experience; Progress & Innovation*

- In terms of potential organisations to target for roll-out, it would appear that organisations **visited by customers unfamiliar with the local area** would provide the best opportunities
  - Hospitals/health centres; shopping centres & malls, train stations
    - Educational establishments can be a target but the screens are of less intrinsic value for the students that frequent these organisations

Moving forward – developments

- There are **some design issues that can impact on how information is communicated** that might result in less informed decisions being made regarding journeys

- Changes to the following would **impact positively on engagement and comprehension**
  - Increasing TfL provenance could increase relevance
  - Upping text size (particularly street names) – though this may be dependent on the resolution and signage system operated by organisations
    - Different text sizes to help define information hierarchy
  - Detail on map (desire for larger fonts, more contextual information) to provide clarity and ensure correct stops are identified
  - Reduction of frequency of service up date notices
    - Consider additional bus service information beyond current Oyster card notification

- The Technical Services Group **can add value by providing 'best practice' protocols** designed to optimise screen information including:
  - How to optimise format depending on
    - Digital signage software (ONELAN, BroadSign etc.)
    - Screen size / resolution
  - Where best to position screens to ensure engagement