

App, beacons guide travel on underground for vision-impaired

March 7 2015, by Nancy Owano



What would it be like for you to navigate your local transport system during rush hour if you were vision-impaired? How would it feel to try to catch a bus? To stand on the right platform? To pass quickly through automatic open-shut doors and gates? To find the right escalator up to the right exit? Passengers and transport staff may be eager to help but most people try to make their way with as much independence as possible. In the London area in the UK thousands of children and young people are vision-impaired; half find it difficult to use London's transport to get to jobs or to meet friends.

If they knew they could navigate the [public transport](#) system more easily they would welcome the confidence boost, raising a quality of life in mere terms of getting around. A meeting of minds from two groups will result in a meaningful solution. The Royal London Society for Blind People and ustwo, described as a studio building digital products and services, have come up with a system for the vision-impaired to use in the London transport [system](#).

Their Wayfindr app, developed through collaboration of Royal London Society for Blind People (RLSB) Youth Forum and ustwo, is being trialled at Pimlico station, a [London](#) underground station. The trial run, from February 2 to March 13, is designed to investigate how an app called Wayfindr could work across the Transport for London (TfL) network, explore how visually impaired customers of London Underground can navigate safely and independently, and establish how beacons work within the architecture of the Tube and around large volumes of people.

To get started, the ustwo group did simulations/observations. They wanted to understand [difficulties](#) firsthand to design a relevant app that could deliver. "We got our hands on some sim specs, which can simulate a variety of eye conditions, and – using a cane – started wearing them around the studio. We followed this with a trip on the TfL network," said a team member on the ustwo site last year. On the day of the simulation, with a cameraman in tow, the testers travelled through the TfL network, moving from tube to bus. They used a digital recorder, the H1 Portable Zoom Recorder, and Autographer Life-Logging camera to capture the interview. They were able to see how problems played out; the value of the simulation allowed them to experience some of the challenges for themselves.

The technology involved to help blind and partially sighted people help themselves to navigate independently uses Bluetooth beacons and this

smartphone app. Phones and mobile devices are able to pick up the beacons' signals. The ustwo team worked on indoor positioning technology that could get this right, to enable the app to use the signals and give directions to the user. The person is given both the app and bone conduction earphones. The [app](#) talks the user through the station, from the ticket hall, down the escalators and stairs and safely onto the platform. Sixteen Bluetooth low-energy beacons were installed at Pimlico station, with these beacons tracking users' smartphones and activating descriptive notes.

Umesh Pandya, software developer, elaborated in the [BBC report](#): The technology is not restrictive to just the underground. It can be used in other forms of transport. Isabel Dedring, Deputy Mayor for Transport, said, "This is another great example of how London is leading the way in making public [transport](#) more accessible for everyone. These trials will hopefully prove that this sort of technology works in real life situations and will give people more freedom and confidence to travel around our Capital."

Transport for London is responsible for the day-to-day to operation of the Capital's [public transport network](#) and they manage London's buses, the Tube network, and other services. Wayfindr provides general directions similar to signage in stations and is not designed to replace the long cane or assistance dog that is a primary mobility aid for partially sighted people. According to the Transport for London website, "LU provides a 'turn-up-and-go' assistance service so that people who want to be guided through stations do not need to book in advance. Throughout 2015, staff are moving from behind ticket windows to ticket halls, gate lines and platforms, to offer assistance to customers where it is needed most. There will be more LU staff on platforms than before and across the network, there will be more staff visible and available than ever to help customers buy the right ticket, plan journeys and ensure they feel safe and secure as they travel."

The BBC's Hugh Pym tried out the system with a visual impairment simulator. Pym said he found the instructions extremely clear. The technology he said was relevant across the spectrum of visual impairment. According to Pym, "London Underground says it will continue with trials with a view to introducing the system at a wider range of stations."

More information: [www.tfl.gov.uk/info-for/media/... tion-for-tube-travel](http://www.tfl.gov.uk/info-for/media/...-tion-for-tube-travel)

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