

DELIVERY OF IMPROVED PASSENGER INFORMATION

Providing relevant and timely passenger information enables the travelling public to make informed decisions about the way they travel

With poor air quality and traffic congestion firmly on the agenda, authorities throughout the UK are striving to reduce the number of vehicles on our roads and encourage active and sustainable travel. This focus on modal shift is one of the most impactful changes we can all contribute to, as the transport industry aims to meet net zero carbon targets.

Passenger information has long played an important role, and the provision of improved real-time information demonstrably increases customer satisfaction. Providing passengers with timely and relevant information enables them to make informed decisions about the way they travel.

Current modes of passenger information

E-paper is now becoming the de-facto technology for applications where transport providers need to get dynamic or real-time information to customers in a sustainable manner, and at locations where mains power is not readily available. So, how is e-paper standing up against LED and LCD?

LED (Light Emitting Diodes) and LCD (Liquid Crystal Displays) signage has previously dominated the market – but with several clear benefits, transport operators are making a move to e-paper for RTP1 signage.

- The display can be seen in the reflection from direct sunlight, offering better visibility than ordinary signage.
- Because the display runs on very low energy, it is entirely solar-powered in all climates, making it extremely cost-efficient and environmentally friendly to operate (mains and long-life battery power are also an option).
- It connects to the content management system using wireless technologies so that it can be easily installed completely 'off-the-grid'.
- Content can be changed instantly and effortlessly by control centres, removing the need for constantly changing paper timetables.
- A new 28" e-paper display has been launched as a sustainable alternative to power-hungry LED 3 and 4 line signage in bus shelters. The new display is proven to use 32x times less energy than LED systems.

In addition to bus schedules, the electronic paper displays can also show exact bus arrival times and passenger information, such as notifications about planned disruptions. City news and updates about various events and nearby tourist information can also be displayed.

Designing passenger information for accessibility and social inclusion

E-paper displays are high resolution and high contrast, which means the content is very clear and easy to read in all lighting conditions (with illumination in the dark). This is ideal for people who are visually impaired. Additionally, e-paper has an exceptionally wide viewing angle of 175 degrees which means that mobility aid users will be able to see the screen content if they are in a seated position.

Papercast displays can be installed on a pole, wall or shelter at a height that meets any prescribed reach ranges to the accessible interactive controls, such as the push-to-talk button. Our displays can also be located to meet all required viewing positions.

The Papercast Content Management System (CMS) enables complete control over the display content. Font styles and sizes can be customized to ensure maximum readability depending on the height from the ground and horizontal viewing distance from the user.

Up to four optional display control buttons allow the user to interact dynamically with the on-screen content. As well as browsing a wide range of travel information, the buttons can be used to control illumination,

play recorded announcements or activate text-to-speech.

With industry-leading power efficiency, Papercast displays use no power at all to display an image and only a little power to change an image, making electronic paper one of the lowest power display technologies in the world.

Greener credentials for Ellon Park and Ride

A £1.4 million improvements package at Aberdeenshire Council's Park and Ride hub at Ellon includes six Papercast e-paper displays, providing passengers with real-time passenger information and scheduled travel information.

The state-of-the-art site features an array of pioneering, low-energy green technology and will sit as a benchmark for future transport facilities.

The Papercast displays were installed by Pindar Creative just days before Storm Arwen hit leaving large swathes of north-east Scotland without power for some time. The council's choice of 'off-grid' power in the form of long-life batteries will enable the screens to continue operating during future outages.



“I am really excited about the opportunities this can offer our existing customer base. Not only can we provide a cost-effective and robust system to deliver real-time and static information to the travelling public, a key element for the transport market is also the ability to provide instant disruption information, which the Papercast CMS offers.

We’re delighted to have been approved as a supplier yet again to the G-Cloud framework. As our various markets evolve, we are adapting our services and offering more and more online solutions to our customers. The framework will aid engagement with them.”

- Carl Thomas, Managing Director, Pindar Creative.

Using GIS to manipulate and display accurate data

One of the key functions of GIS is the ability to interrogate the data you have plotted. By using SQL queries, elements within a large dataset can be highlighted or styled based on given categories to create legible and accessible mapping.

GIS maps can be converted into interactive maps for your website, which can incorporate pannable and zoomable mapping, clickable hotspots, search functionality, and route highlighting – all with a responsive design.

The experienced cartographers at Pindar Creative have considerable knowledge of active and sustainable travel and are adept at taking data from various sources to create high-quality, accurate and flexible maps in ArcGIS/QGIS, enabling data to be repurposed into attractive public-facing maps at a cost-effective price.



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