

Safe Zone: Using Digital Signage for Public Safety

Digital displays can broadcast real-time information during emergencies and draw passengers' eyes to announcements, enhancing transit safety and security.

By Ben Hardy and Grant Wylie

Maintaining safety and security are important in any environment, but transportation professionals have particular challenges associated with ensuring travelers stay safe. Transit hubs, bus and train stations often are crowded, and there are no all-encompassing passenger screening processes for public transit like there are at airports.

Public transit remains a very safe form of travel, yet transit agencies must stay alert to the potential hazards and investigate new ways to prevent or detect them. Digital signage can help enhance transportation security and alert passengers to safety information in a faster, more streamlined way than static signage can.

Digital signage is easily updated, making it simple to instantly swap out content by uploading it to a server – whereas a static sign can only be updated if an employee physically changes out the sign. It also can integrate real-time data, allowing on-the-fly updates on news, weather, emergency alerts and delays.

These real-time capabilities are especially useful during emergencies. Officials can take control of displays instantly and update the content to provide information on where passengers should go (or, sometimes just as importantly, not go) and how to contact transit police/security. Agencies can even use them to provide live commands to assist travelers – improving the speed of communications as well as providing a safer environment for passengers.

Even in non-emergency situations, digital signage can help protect passenger safety. Digital displays can be used for “if you see something, say something” messages or public service announcements on harassment or keeping bags off seats, and are much more likely to draw the eye than static signage: Rich Media Technologies study indicates that digital signage is 63 percent more attention grabbing than static signs.

Transit agencies looking to invest in digital signage to boost public safety and security have two main options: liquid crystal displays (LCDs) and light-emitting diode (LED) displays. Both types of displays come at a greater investment than a static sign, but benefits like increased viewership and the power to send emergency alerts will outweigh the costs and help transportation officials protect passengers.



Digital Displays: LED versus LCD

Both LCDs and LED displays can be used for public safety and security messaging, but location and budget will dictate which types of displays are used where.

LCD is a more traditional technology that utilizes a transmissive LCD panel and LED backlights, with all video processing and power within a self-contained system. It allows for a lower pixel pitch than its LED counterpart and therefore higher-resolution capabilities for closer viewing distances.

While LCD displays come in all different forms and levels, it is important to choose a robust display. Robust displays refer to those with capabilities beyond that of a traditional television. Integrated active cooling for thermal dissipation, full external control, a full metal chassis and a matte finish in the panel are all qualities associated with commercial-grade displays.

In transportation hubs, there is often a fair amount of incident light, so if a display panel does not have a matte finish – or is considered high haze – oftentimes this light is reflected back and can negatively affect the image on the screen. High-haze panels scatter incident light off the screen rather than reflect it, which allows for a more readable display in areas with high ambient light.

LCD displays can be used for outdoor digital signage applications, including outside train and bus stations. However, it is important that the display is specifically designed to handle extreme weather, direct sunlight and solar load; not having the right solution for the application can lead to equipment failure. Oftentimes, special separate enclosures that add shatter-proof protective glass or additional heating and cooling are necessary to house the displays and protect them from the environment, if conditions are not ideal.

LEDs are light-emitting diodes, meaning they emit colors and are not reflective the way an LCD is. Even though they do not reflect light the same way an LCD does, it's still important to consider the reflectivity of an LED panel's surface, and the two factors that affect it.

The first is resin placed over the LED itself. Most quality LED displays developed for indoor applications will use a small LED package that houses the red, blue and green LEDs in a single packet, which is covered with a resin to protect the LEDs. The face of these packetized LEDs can either be white or varying shades of gray, and the darker the face, the less light it will typically reflect.

The second factor is the reflective properties of the mask or area between the LEDs, which is typically made from black plastic with a matte surface. One good way to tell if the mask has adequate antireflective properties is to view the display from the side. If the display turns into a mirror, it may not have adequate antireflective properties.

LED displays work well for any kind of distance viewing, including advertising, or if content warrants a large, seamless display. LED displays can be produced with fine pixel pitches to give the displays high clarity and picture quality up close. They can also be produced with a wider pixel pitch and very bright intensity, allowing viewing at great distances, even in outdoor spaces. This means that transit agencies have greater flexibility with the type of content they choose to display (including font type and size), as well as where the displays are placed – travelers will be able to read them whether they are close or far away.

If users are looking for the same quality and resolution as LCD, the LED display needs to be bigger and placed farther away from viewers; however, costs per inch and cost per pixel skew higher with LED. It's important to work with an integrator to ensure that a transit agency is not "wasting" pixels by purchasing displays with unnecessarily small pixel pitches – and pixel pitch will depend on viewing distance.

It is recommended that LEDs be installed in a location where they cannot be touched or harmed; this will help reduce the chance of damage or vandalism to the displays.

Best Practices for Public Safety in Transportation

The following best practices are important to keep in mind when investing in digital displays for public safety purposes:

Location: Where a display is installed will impact its effectiveness, so it is important to conduct traffic-pattern studies with a qualified public safety organization to ensure the desired location is actually the best place for it – just because it fits somewhere or looks good in a certain location doesn't mean people will be able to see it or pay attention to it.

Location also affects the type of structure required to mount the display, as well as whether the location is indoor or outdoor. In turn, these both impact cost.

Control & Content: Investing in software that allows control from a single network or point allows one person or team to monitor displays and control content. Some higher-quality displays can send email alerts to an admin if there are any issues with the sign or with the way the content is displaying. All displays can be networked, so if a screen goes down, the admin is alerted immediately. But not every display has this as an option, so having a point person to monitor displays is important.

Having a proper content management service in place is essential in emergency situations, when a transit agency would want to immediately push alerts to every screen in the affected area. With a content management service, this can be done in real time from anywhere an admin has access to the network. An agency can even set up pre-written messages for certain situations like a fire or collision, and simply hit a button to push them to displays.

The effectiveness of a public safety messaging program greatly depends on the content. It is important to work with a content provider and a public safety organization that knows best practices for messaging campaigns and emergency alerts and is able to design and create the most effective content.

It may be useful to get feedback on content from local public safety entities, transit police or a federal institution like Homeland Security, or work alongside them, to ensure that the messaging and design works and is user friendly.

Budget: It's important to have a clear vision of the goals and needs of the public safety messaging programs and ensure that the budget fits that vision. Budget should be determined early in the project so that an integrator can help choose the best possible solution for the messages and appropriately balance both budget and vision.

Perspective: Think about the passengers and travelers utilizing the transit: What are they looking at, where are they looking and what information would help them the most? Sometimes less is more when it comes to signage, so travelers are not overwhelmed with too much information. A clear, concise message in an environment that is not cluttered with signage ensures that the messaging is visible and effective.

Using digital signage for public safety in a transit setting can help keep travelers safe and aware even during emergencies, helping to create a more secure future for passengers and transit agencies alike.

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