

7 BEST PRACTICES

Emerging Technology

SAN FRANCISCO; LOS ANGELES; NEW YORK

WHAT IS IT?

In addition to roadway improvements such as adaptive transit signal systems and transit priority treatments, there are a variety of emerging technologies that can be used to speed transit delivery. Technologies that speed boarding help to reduce delays. Used effectively and in concert with other treatments, they can improve travel times and passenger experience.

WHY DO IT?

Examples of emerging technology include smart cards and mobile phone transit passes. Both allow transit passengers to speed the boarding process without the hassles of looking for money or purchasing a ticket. While smart card technology has been widely used in transit agencies throughout the country, improvements are still being made to enhance user experience. One of the latest developments in smart card technology is dual-use prepaid credit cards that can act as transit passes and as well as credit cards. Taking this concept one step further, some transit systems have been testing the use of mobile phones as transit passes. This has many advantages, as mobile phones are one of today's most widely used technologies. Transit agencies can utilize this technology by allowing passengers to purchase transit passes with their mobile phone, or even use the phone itself as a transit pass. Mobile phones take smart cards to the next level by making it easy to purchase a transit ticket via the Internet, a mobile application, or SMS text messaging.



In September 2010, the L.A. Metro system, Visa, and Ready Credit Corporation deployed the Transit Access Pass (TAP) ReadyCARD, a contactless smart card.

Image from Flickr user MetroTransportation Library and Archive

HOW WELL DOES IT WORK?

This section presents examples of two emerging technologies, dual-use contactless smart cards and cell phone transit passes.

Dual-use Contactless Smart Cards

In September 2010, the L.A. Metro system, Visa, and Ready Credit Corporation deployed the Transit Access Pass (TAP) ReadyCARD, which incorporates the transit system's "TAP" fare application (contactless smart cards) with Visa's prepaid functionality. The dual-use prepaid card allows riders to pay their fares

and purchase fare products using their Visa account, while also allowing cardholders to make purchases anywhere credit cards are accepted.

In 2010, Visa also expanded its global transit initiatives by working with transit systems to provide a variety of smart card options in Kuala Lumpur, Singapore, Paris, London, and Istanbul.

One of the challenges associated with using smart cards for mass transit is a concern about privacy issues because the technology allows the mass transit operator (and the government) to track an individual's movement.

Cell Phone Transit Passes

In 2008, mobile phone transit passes were tested on San Francisco's BART system. Instead of swiping a card, passengers swipe their mobile phones over a wireless reader when entering the transit system or boarding a train. The technology, called near-field communication (NFC), allows a secure connection between the phone and the sensors.

Visa has also launched a pilot program in New York that uses payWave technology, which is based on a small electronic chip embedded in either a mobile phone or smart card. This technology is being used in a pilot program at New York City Transit, NJ Transit and the Port Authority of New York and New Jersey.

Mobile phones have been used as transit passes in Asia and Europe for a few years. Germany, for example, has been using "mobile ticketing" since 2006 and recently introduced an iPhone application. The German system allows cell phone users to buy a single ticket, day pass, or group tickets. A barcode similar to that on an airplane boarding pass is used to verify the purchase

One of the primary challenges associated with implementing mobile phone transit passes is figuring out how to incorporate the technology into a distance-based system for tiered cost by transit zone. In addition, some applications require distribution of a special chip for use in the phone.



BART tested Near-Field Communication (NFC) technology, which allows passengers to use their cell phone as a transit pass.

Source: Nelson\Nygaard