

NEW TECHNOLOGY WILL DRIVE AIRPORT



Flying can be stressful. It's really not the flying that creates tension, but getting to the gate on time that stresses us out. Driving to the airport, finding a parking space, getting through security—if you have an early morning flight, you may be tempted to leave the night before!

Airports get it. They can't do much about traffic jams along the way to the airport and they can't deviate from Transportation Security Administration (TSA) guidelines regarding security. However, they are doing a lot about the parking experience. Emerging technologies are being introduced to make airport parking faster and easier while also protecting and/or increasing revenues.

Install It, They Will Come

An automated parking guidance system (APGS) is an information network that can provide information on parking availability and directional guidance to motorists at every stage of their parking experience. Magnetic loops, ultrasonic sensors, and/or digital imaging technologies are used to monitor space availability and display the information on dynamic signs. There are three different levels of service:

- **Facility counts.** As a driver nears the airport, dynamic signage displays space availability at each of its parking facilities. If a garage is full, the driver won't waste time driving to it. Parking rates or other messages may also be displayed on the sign.
- **Level counts.** As a driver pulls up to the garage, he will see a sign displaying the number of available spaces on each level of the garage. As he approaches each level, he will see the number of spaces available on that level and the next level. "Hmm," the driver thinks, "only 10 spaces here, but 50 on the next level. I'm going up one more."
- **Space counts.** Red and green lights are displayed above every space. When a car pulls into a space, the light above it turns red. Open spaces are marked with green lights. As he approaches a row of spaces, the driver can quickly see if there are any available. If there are no green lights, he will bypass that row. Dynamic signs

PARKING IN 2014

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with arrows will guide drivers at key decision points and let them know how many spaces are available. Other colors are available, such as blue for handicapped or amber for reserved.

Thanks to automated parking guidance systems, we may never again miss a flight because we're circling around a garage looking for an open space. If you could choose between two airports, and one had APGS and the other didn't, which would you pick?

Committing

Parking reservation systems allow motorists to reserve and pay for parking via the internet or smartphone app. Having a guaranteed space makes it even easier to determine how much time to allocate for parking.

Airport reservation systems can capture a parking reservation when the motorist books his flight, which is most commonly done online or through a travel agent. Reservation systems include receiving payment in advance, ensuring the traveler will not park elsewhere. They also capture contact and travel information about the traveler for marketing purposes. Finally, they can incorporate frequent parker programs and other discounts to build customer loyalty.

Fully-automated reservation systems use barcodes or quick response (QR) codes that allow the traveler to scan his reservation at a reader at the entrance. License plates and credit cards may also be used to match the driver with a reservation.

Off-airport operators have used reservation systems for years, attracting potential on-airport parkers before they get to the airport. Many people research parking by searching their airport and the word "parking." When they do, off-airport parking usually appears before on-airport parking. This is not random, alphabetical, or geographical. A good reservation system manipulates key search words and search engine optimization so that certain facilities appear at or near the top of the search page.

Airports in Europe not only offer air and parking reservations online, but also reservations for hotel rooms, car bookings, and marketing opportunities for other airport-related services such as restaurants and retail outlets. Why let Orbitz have all the fun (and the business)?

Lost Tickets, Not Revenue

Airport operators obviously host a lot of long-term parkers, which equates to larger parking fees. If the parker is gone for a number of days (or weeks), there is a greater chance he'll lose his parking ticket, which has traditionally been the only documentation of when his car entered the garage (to calculate the parking fee). Unfortunately, the honor system doesn't work well here. They say time flies when you're having fun. I suppose that's why people tend to think they were parked for a shorter period of time.

Operators traditionally take overnight inventories to assist with lost tickets. Staff manually record the license plate of each vehicle to track the number of days it is parked. When a lost ticket is reported, the cashier can refer to the inventory. Some enter the data into handheld devices to record the data; some of these devices can digitally scan license plates. This works moderately well, but it's time consuming and labor intensive. It may cost more in payroll than it saves in lost tickets.

Many airport operators are now using license plate recognition (LPR) systems to photograph and store data from vehicle license plates. These systems are extremely cost effective, and safeguard revenues against lost and even swapped tickets.

There are two types of LPR systems used in garage and surface lot settings: stationary LPR and mobile LPR. Both interface with the facilities parking access and revenue control system (PARCS) for audit control.

Stationary LPR uses stationary cameras at the entrance and exit points of a facility. The cameras capture the license plate images of cars as they enter the facility.



When the spitter ticket is surrendered at the exit, the vehicle's license plate is compared with the image that was recorded at the entrance. If a different ticket is used at the exit, the vehicle's license plate won't match the entering vehicle's license plate, which creates an alarm condition. The software can then be directed to search for the matching license plate image to determine the corresponding entry ticket data (time and date). This provides for accurate fee calculations in the event of lost tickets and eliminates the possibility of exchanging tickets in an attempt to reduce the parking fee.

Mobile LPR uses vehicle-mounted cameras to record license plate images of all parked cars as the vehicle drives through the facility. The data is synchronized with the previous day's data to track the duration of stay for each vehicle. If the facility is separated into zones and the vehicle drives the same route each night, the system can locate vehicles by querying their license plates.

Another option for minimizing lost tickets is getting rid of them entirely. Credit card in/credit card out has a parker swipe a credit card instead of taking a paper ticket. The software timestamps the transaction, ties it to the credit card, and stores it until the parker returns and swipes the credit card at the exit. The software then retrieves the entrance data, calculates the fee and charges the credit card. No cashier is needed, so this can be an automated exit lane. Make it a dedicated express lane to give frequent fliers the added bonus of bypassing the pay-on-foot station and any potential lines at the cashiered exits.

An App for That

We already know that smartphones can be used to pay for on-street parking. Pay-by-cell phone service providers set up a payment program for the airport in exchange for user convenience fees (typically 35 to 50 cents per transaction). Motorists register with the service provider and place a credit card on file for

payment, enabling them to use their cell phones to pay for parking.

Cell phones can be enabled to enter and exit gated facilities, too. Once the account is set up, the motorist is able to use a QR or bar code. When waved in front of a reader at the entrance to the facility, it sends a wireless signal to raise the gate. This is repeated at the exit, where the fees are calculated and charged to the credit card on file.

Some of these systems don't even require a reader; the smartphone can send a signal directly to the gate.

Near Field Communications

Near field communications (NFC) technology allows credit card transactions to be conducted without inserting or sliding a credit card into a reader. Credit cards are embedded with NFC processor chips that eliminate the need to read a magnetic stripe on the credit card. The user either taps the reader or waves the card close to it to conduct a transaction. The card needs to come within four centimeters of the card reader. The close proximity protects accidental charges from occurring if other cardholders are standing nearby. Smartphones can also be embedded with processors to serve in the same capacity.

NFC technologies offer a higher level of protection against fraud than magnetic stripe transactions, as each chip has unique characteristics. In addition, the reader is less susceptible to tampering than magnetic stripe readers. Visa thinks this is important, so they're waiving some PCI requirements for merchants with 75 percent NFC or chip-enabled transactions.

This is the same technology that Europay, MasterCard, and Visa (EMV) are slowly but surely bringing to the U.S., which is one of the few countries where EMV credit card processing has not yet been deployed (see the September 2013 issue of *The Parking Professional*). EMV intends to shift counterfeit credit card and fraud liability from the card issuers to the card processors if chip-enabled technology is not deployed. When they do, U.S. airports will likely be the early adapters.

Aviation, by its very nature, has always been about technological innovation, starting with the Wright brothers. In 1909, Wilbur Wright (Orville's kid brother) established the world's first airport (College Park Airport in Maryland, which is still operating today). That same year, Henry Ford began mass producing the Model T, the first affordable car. I doubt that either of them was concerned about parking back then, but they sure would be today! Thanks to like-minded innovators, 2014 promises to be a big year for airport parking. 



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