

# Market Analysis Biometrics

## Which Air Travel Applications Will be Adopted First?

Adoption of biometrics technologies for the air travel sector of the travel and transportation industry has become inexorably linked with an international focus on combating terrorism and terrorism's devastating effects on global commerce. While biometrics technology pilots were being planned long before Sept. 11, the shift in focus from passenger convenience to improved security is hastening the integration of biometrics into a variety of airport and air travel processes and programs.

### proven applications

As Figure 1 shows, the majority of biometrics use within the air travel sector has been limited to test pilots with small populations of users. Biometrics technology has been proven effective in several applications within the air travel market including trusted-traveler immigration, employee access, background checks and time and attendance. The most notable biometrics deployments are the use of hand-recognition technology for employee access and immigration applications.

#### employee access

Adoption of biometrics for employee access is likely to proceed rapidly. The successful use of biometrics for this application has been demonstrated at San Francisco Airport (SFO) where hand-recognition systems have secured access for 30,000 employees and outside suppliers for 10 years. Post Sept. 11, major airports are ready to accept biometrics as a more secure version of a card-keyed door lock. There's nothing fundamentally new here; just the introduction of a technology innovation to perform a well-defined task. Biometrics in this sense is just a better "mouse trap."

There are significant implementation issues

Application	Status	Market Phase
immigration	deployed for immigration at Tel Aviv, Amsterdam, Detroit, JFK, LAX, Miami, Newark, SFO, Toronto, Vancouver, Washington-Dulles pilot for immigration at Heathrow planned for immigration at Toronto, Vancouver, Montreal	chasm, moving towards mainstream
trusted-traveler domestic US	being defined	very early market
employee access	deployed SFO, O'Hare planned for Schiphol being re-evaluating Charlotte, Frankfurt	chasm, moving towards mainstream
cooperative surveillance	deployed St. Petersburg-Clearwater, Kevlavik pilots Fresno, Boston, Palm Beach, DFW	early market
employee background checks	deployed at more than 80 US airports	mainstream
time & attendance	LAX, San Diego, Chicago, Boston-Logan, DFW	chasm, moving towards mainstream

associated with the deployment of biometrics for employee access such as template storage (locally, centrally or on a smart card) and *spoofing* (fooling a biometrics device). However, the fundamental security process improvement is clear and process improvement is what drives mainstream adoption of new technology (see *BMI*, Issue 1, Volume 1, Adoption, page 2). Though not 100% fool-proof, biometrics-based identification dramatically reduces false acceptance rates especially compared to the 100% false acceptance rate that occurs when a card-key falls into the wrong hands.

#### immigration

Adoption of biometrics to process trusted-travelers through immigration is also likely to proceed rapidly. Tel Aviv's Ben Gurion Airport has relied on hand-recognition systems to expedite the immigration process for nearly four years. The U.S. Immigration and Naturalization Service's Passenger Accelerated Ser-

vice System (INSPASS) program has also used hand-recognition systems for this application at nine North American airports since 1993. London's Heathrow Airport is conducting an iris scan pilot for immigration with positive initial reviews. Amsterdam's Schiphol Airport's iris scan pilot was so successful, the system is being rolled out to 50,000 frequent travelers as well as adapted for secure access for 55,000 airport employees. The system will also be marketed to other airports throughout the world via an alliance with Johan Enschede

These pilots and deployments demonstrate the effectiveness of biometrics-based immigration solutions in reducing wait times and increasing customer satisfaction. This type of tightly controlled process, where biometrics replaces the human verification of a person's identity, is well suited for rapid adoption.

#### background checks

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# Which Air Travel Applications Will be Adopted First?

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Recent U.S. legislation has made biometrics-based fingerprint systems de-facto mainstream technology. Every major U.S. airport has or will soon have access to this equipment to complete government mandated background checks on U.S. airport employees.

## time and attendance

Time and attendance applications do not have the sex appeal or urgency of security-related applications. However, as security requirements drive the integration of biometrics technology more fully into airport operations, the adoption of biometrics for time and attendance will likely accelerate. Biometrics-based time and attendance systems can enable airport and airline operators to realize rapid return on investment and on-going cost savings and even possibly offset some of the investment required to integrate biometrics technology into security procedures and to enroll and train users.

## early market revolution

Several biometrics air travel applications are still in the early phase of market development. These include surveillance and domestic trusted-traveler programs.

## surveillance

Cooperative surveillance, where a digital image is captured with explicit knowledge of the subject and then compared against a *watch list* of known criminals and terrorists, has been deployed at security checkpoints at Iceland's Keflavik Airport and at the St. Petersburg-Clearwater Airport in Florida. This application is also being tested at several other U.S. airports, including Boston Logan, Fresno, California and Palm Beach, Florida. The speed at which widespread adoption proceeds will most likely depend upon the outcome of these tests.

Non-cooperative, or face-in-a-crowd, surveillance applications have been so controversial in their limited use that it is not likely

this application will be widely deployed any-time soon. (Of course, once cooperative surveillance applications are more widely deployed, demand for non-cooperative technology may grow as well.)

## trusted-traveler controversy

Adoption for non-immigration-related trusted-traveler applications pose significant challenges. This program is being emphasized in the United States, where the majority of flights are domestic and will no doubt generate numerous process and technology tests and pilots. However, unlike the well-defined and tightly controlled passenger flows associated with immigration, domestic passenger flow must be expedited through hundreds of facilities that were not designed for a tightly controlled security process. Therefore, passenger flow systems must be re-engineered for every airport in the United States if biometrics technologies are to be successfully integrated as a means of *securely* expediting trusted travelers.

Other issues must be addressed as well.

These include deciding who will enroll travelers, who will own the programs and who will control and have access to the databases. Also, will these travelers be subjected to less thorough scrutiny or will they simply be expedited through security lines?

There is tremendous incentive to solve these problems rapidly, especially as the most profitable airline customers have become weary of long lines, unpredictable delays and missed departures. Anxious airlines, along with the Transportation Security Administration, are partnering with security experts and technology vendors to identify the best airport security solutions. This is bound to rapidly propel biometrics-based trusted-traveler applications through the early market development phase, across the chasm and towards mainstream adoption over the next few years.