

Seamless Wireless Takes Flight

Mobile Performance Management in Airport Operations

Ground-handling, aircraft maintenance, passenger ticketing, security and safety are tightly orchestrated operations with thousands of moving parts. Real-time information about these interdependent operations reduces aircraft turnaround time and maximizes on-time performance. Wireless applications are key to achieving those goals. Airlines and airport authorities are turning to Mobile Performance Management software to optimize, accelerate and secure their mobile applications and data traffic, creating a unified, mobile network.

The challenge is as large as the facilities. A wireless network needs to cover immense buildings — often multiple ones — as well as the entire tarmac. Terminal-side systems in larger airports require hundreds of Wi-Fi access points and span multiple networks of airlines and the airport facility. Airside systems require 3G and 4G networks from mobile operators to cover the apron and the airport perimeter, and must work inside of and around large metal aircraft that block radio signals. In this challenging environment, dead spots in Wi-Fi coverage are inevitable. Also, mobile workers are constantly transitioning between Wi-Fi networks as well as between Wi-Fi and 3G/4G. Without Mobile Performance Management, workers are constantly re-authenticating to re-establish connections.

Applications Airport-Wide

In some situations, a dropped connection or time spent re-logging in can compromise passenger service, impact safety or delay a flight. Here are some of the aviation workers that rely on mobile networks in a modern airport:

- **Baggage Handlers** work in teams and need information on gates to handle, amount of baggage to move or store, and the optimal loading pattern for each type of aircraft. They sometimes need to scan and reconcile bags adjacent to or inside the belly of the aircraft.
- **Cargo Workers** who load and unload freight in passenger aircraft traverse the airport regularly, and need always-on connectivity for application access.
- **Bus Drivers** at airports that use bus gates receive dispatch information on computers for picking up passengers from inbound and outbound flights.
- **Roving Gate Agents** assist customers who need to adjust their itineraries due to flight delays, meet passengers on late-arriving flights at the gate and re-ticket them on the spot.
- **Security Workers** monitor the vast airport property, using GPS capability and real-time connections to catalog incidents and verify they have completed their rounds.

Making Multiple Mobile Networks Work as One

Collecting and accessing real-time data, both terminal-side and airside, requires access to multiple Wi-Fi access points and networks, as well as 3G and 4G networks from mobile operators. The connections must be able to persist through coverage drops or when the computing device needs to switch to a different network. Given the time-sensitive nature of the information and operations they support, this continuity is vital.

Mobile Performance Management software handles the complexities. It allows multiple Wi-Fi and 3G/4G networks to behave as one. A single sign-on gives workers continuous access throughout the shift, while the software automatically handles the transitions between networks. The software automatically switches to Wi-Fi connections when available, while compression and optimizations greatly reduce data consumption to lower the cost of using 3G and 4G networks.

Traffic Optimization ensures applications and resources are optimized for weak and intermittent network coverage, and workers can roam freely between networks as conditions and availability change.

Adaptive Policies fine-tune the mobile user experience, prioritizing applications and network access based on network, situation and location parameters specified by IT.

Performance Analytics and Diagnostics deliver constantly updated analytics on data use by devices, applications and networks, so IT can fine-tune the user experience. Root-cause detection quickly pinpoints problems for fastest troubleshooting to get workers productive again.

Security supports highly flexible and programmable secure access capabilities. IT can configure secure tunnels per-app or device-wide, securing access to enterprise applications and resources.

Millions of mobile workers worldwide depend on Mobile Performance Management software to do their jobs.

- **Safety Personnel** patrol the airport perimeter checking for, photographing and documenting the location of damage to the tarmac or markings, or debris or wildlife that could impact operations.
- **Personnel Security Staff** check the badges of airport personnel entering transit areas, using handheld scanners that access both Wi-Fi and mobile operator networks.
- **Facility Managers** inspect elevators, escalators and other equipment regularly, perform repairs when needed, and rely on continuous connections for dispatch information and instructions.
- **Maintenance Personnel** consult aircraft service manuals, check parts inventory and update maintenance logs. They are required to access and record the serial number of every part down to each single fastener, and meticulously track service activity, often moving in and out of the aircraft frames multiple times during their shifts.
- **Flight Crews** use electronic flight bags to reduce weight, save time on updating charts, and achieve the operational efficiencies that come with connectivity.

Next for Mobile Performance Management: Handling Irregular Operations

While more than half of airlines are able to inform passengers via mobile devices when a travel disruption occurs, they are less likely to provide their staff with those same technologies for response and recovery. Airlines currently lack the ability to capture events across all systems and furnish real-time data to respond appropriately. Only 20% provide mobile tools for situational awareness to allow their employees to handle irregular operations proactively, but more than 60% plan to address the issue by 2017.

The New Imperative: Personalized Self-Service

Thanks to mobile phones, laptops or tablets carried by 97% of passengers, self-service is a major area of investment. Self-service flight notifications, check-in and boarding passes via mobile are targeted for adoption by 90% of airlines by 2017, and self-service baggage drop by 70%.

However, self-service does not mean that airlines and airports will lose the personal touch. Instead, they will put mobile technologies into the hands of their workers to deliver uncompromising and highly personalized services. These require the seamless, reliable connectivity that only Mobile Performance Management can provide, wherever customer need takes the worker — anywhere inside the terminal, parking facility or on the tarmac. Through dynamic location and time-trigger based notifications, representatives will meet priority passengers wherever they are, personally escort them to their next location using VIP routes, and access operational systems to make and change flight arrangements on the spot. Airports and airlines are experimenting with some or all of these:

Roaming Customer Assistants. Roaming customer assistants, fluent in multiple languages, are equipped with mobile devices to provide a wide variety of services. They can check-in passengers from anywhere in the terminal, assist with flight changes, print boarding passes on the spot, sell optional add-on items such as extra luggage or arrange seat upgrades, or even hand-deliver merchandise purchased from airport retailers.

Mobile Concierge. High-priority passengers can be personally met on arrival and escorted to the first-class lounge — or even a separate, dedicated terminal — while the concierge handles check-in and bag drop.

Tarmac Transfer. Several airlines have introduced shuttle services that carry top-tier customers to directly meet their flight on the tarmac, bypassing buses or jetways. Some meet transferring passengers at their incoming flight and chauffeur them in luxury vehicles across the tarmac to board the connection, bypassing the terminal completely.

These are just a tiny sample of what is possible when staff uses mobile devices to connect with passengers and reliably access operational systems from anywhere. Such programs will allow airlines to better-compete for the most profitable passengers. Meanwhile, airports free more passenger time for non-aeronautical services that are a growing share of airport revenues.

Conclusion

Mobile Performance Management ensures that airport and airline staff have reliable access to real-time information, streamlining and improving every facet of operations. As passengers increasingly use mobile technologies, companies will expand their use of the technology so they can provide personalized services that meet customer expectations — and exceed them.