



Orange County Transportation Authority

Managing Paratransit Growth through Innovation



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OCTA is anticipating an increase in passengers per hour from 2.0 to 2.2, which could result in savings as high as \$1,000,000 per year.



BACKGROUND

Orange County Transportation Authority's (OCTA's) shared-ride paratransit service offers curb-to-curb and door-to-door service for those unable to use regular bus service due to a disability. Currently there are more than 26,000 riders enrolled in the program. The paratransit fleet of 255 vehicles (220 in service during peak hours) performed more than 1.1 million subscription and same day trips in 2005.

Over the past few years, OCTA's paratransit service has experienced remarkable growth. Between 2002 and 2006, the number of eligible clients increased by more than 100 percent. The number of active clients increased by 54 percent. The number of ADA passenger trips provided by OCTA has doubled in this period to as high as 102,400 per month. Managing growth has

required improvements in processes as well as in the technology used to manage service.

CHALLENGES

Keeping up with this remarkable growth has not been without its challenges. Managing client and trip eligibility and ensuring that agency policies are followed have become critical, as the number of rider applications has increased.

The cost of delivering service also escalated with demand. As Patrick Sampson, transportation analyst with OCTA, explained, "OCTA is challenged with managing significant increases in demand with limited vehicle resources and funding. Throwing additional vehicles at the problem is not an option. We needed to find cost effective solutions that would help us improve

productivity and system performance as well as help us manage our revenue vehicle hours more effectively."

While OCTA's service is an advanced reservation system, they must be able to respond effectively to same day issues such as late vehicles, breakdowns, no-show returns, etc. and to manage changes "on the fly." This involves collecting real-time trip data, finding a vehicle that can accommodate a trip, and communicating any change in itinerary to the driver immediately. Managing same-day changes presents a challenge for any agency, especially as service demand increases.

OCTA also wanted better access to historical trip information such as actual pick-up, drop-off and dwell times, when investigating incidents or measuring system performance.

SOLUTION

OCTA developed several strategies for dealing with its growth-related challenges. The first was to review and revise its service policies with the objective of better management. The second was to perform system trend analysis to better understand ridership patterns. The third strategy involved implementing a new technology infrastructure that would help fulfill the above-mentioned objectives and support service improvements and more effective communication with clients.

SNAPSHOT

Type of Service:	ADA Paratransit Service
Registered Clients:	26,000 +
Total trips in 2005:	1.1 million +
Peak Vehicles:	220
Trapeze Products:	Trapeze PASS, PASS-MDC, PASS-MON, PASS-IVR
Projected Savings:	\$1,000,000 annually
Projected Return on Investment:	1.5–2 years

One of the service policy changes implemented was a more strict enforcement of the ¾-mile service corridor. Eligibility policies were also revised to include more use of trip-by-trip eligibility (i.e. eligibility conditional on the reason for the trip or time of day) and limited eligibility types.

To better understand ridership trends, trip data for a 12-month period beginning July 2004 was analyzed by exporting service data to an external database. Reports were generated that provided performed service data such as bookings by trip type, bookings by time of day, and no shows by time of day. This information enabled OCTA to improve planning and resource allocation.

Innovative technology was essential to the achievement of the other objectives. In 1999, OCTA implemented Trapeze PASS to perform client management, trip booking and scheduling functions. The automated scheduling software enables an agency to perform real-time updates throughout the day, as well as periodic batch scheduling to re-optimize the daily schedule.

The PASS system automatically qualifies each trip, ensuring that the client is eligible for the service and that the trip falls within the ¾-mile zone. PASS also tracks eligibility on a trip-by-trip basis. PASS automatically performs real-time client and trip qualification, giving reservationists the ability to notify the customer of any issues at the time that they make the service request.

In 2004, OCTA began implementing mobile data computers on its paratransit fleet, adding real-time mobile data communication capabilities. The in-vehicle computers were installed with PASS-MDC, an application that enables drivers to view itineraries and inform dispatch of the status of a trip (arrived, performed, no-show). The Trapeze mobile application automates trip data collection and communication between drivers and dispatch. PASS-MDC is connected to PASS via a public data network.

Drivers receive real-time updates to their itineraries, communicate with the dispatch center via "canned" or free form text messages, and send updates regarding the status of their trips. Real-time data, including pick-up and drop-off times, automatic vehicle location (AVL) data, and odometer readings, are collected and

stored along with route and schedule data, enabling better system analysis and improvements to trip productivity.

The AVL data constantly updates schedules, showing dispatchers actual vehicle locations and telling them whether a vehicle can accommodate a same-day request without requiring them to speak via radio to the driver. Automatic updates of actual arrival and departure times from pick-up and drop-off locations enable dispatchers to see instantly whether a vehicle is running on schedule.

Because the in-vehicle, scheduling and dispatch applications are all provided by Trapeze, system integration is seamless. "Eliminating the requirement for third-party middleware to communicate between the vehicles and the scheduling system saved OCTA valuable time and resources," Mr. Sampson remarked.

RESULTS

According to Mr. Sampson, adding mobile computing to the Trapeze system has dramatically improved communication. "Dispatchers no longer need to use the radio to dispatch each add-on trip, cancellation, or other event-that information is automatically transmitted through the MDC. Dispatchers now have more time to respond promptly to high priority issues affecting service and can be more pro-active in addressing route and schedule changes."

The integration of real-time data has improved scheduling and routing on the day of service, and trip productivity has improved.

Collecting and recording real-time data also makes it easier for OCTA to perform forensic analysis when investigating an event, responding to customer feedback or planning further system enhancements.

In 2005, OCTA's efforts to improve its system were rewarded when the American Public Transit Association (APTA) named OCTA as the "Outstanding Public Transportation System of the Year."

NEXT STEPS

In the near future, interactive voice response technology will be integrated with the mobile computing solution. When the vehicle is within a prescribed distance of

the pick-up location, a prerecorded voice message will be automatically sent to the passenger notifying him or her of the vehicle's imminent arrival.

The IVR system will also enable clients to book, confirm and cancel trips without speaking to an operator, and receive an automatic reminder one day before a scheduled trip. This value added service for clients should translate into increased satisfaction as well as fewer no-shows and delays.

OCTA has been very satisfied with the Trapeze system and anticipates that PASS will be able to grow to meet the agency's changing paratransit needs for the foreseeable future.

BOTTOM LINE

The new paratransit system has increased productivity and reduced revenue vehicle hours.

OCTA is anticipating an increase in passengers per hour from 2.0 to 2.2, which could result in savings as high as \$1,000,000 per year.

Return on investment is predicted in less than two years.



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