



Transportation Coordination Enabled by Technology and Innovative Design

Introduction

This publication, profiling service coordination through the use of technology, is part of the “Promising Practices in Mobility Management” series, created by the National Center for Mobility Management (NCMM). The series has been created for mobility management practitioners to help advance the adoption of transportation coordination and other strategies that lead to responsive, customer-centered transportation services. All publications in the series—covering the topics of coordinated transportation planning, technology in coordination, one-call/one-click services, mobility management, and performance measurement— are available at <http://nationalcenterformobilitymanagement.org/>.

Technology solutions that enable coordination among different agencies and programs result in long-term efficiencies that cannot be reached manually. The technologies used to achieve improved outcomes for agencies and customers have been innovatively adapted to address specific coordination activities. The technologies used are not necessarily new, but they have become more affordable and easier to customize, enabling transit providers to design platforms that support coordination in new and innovative ways. Coordinating service provision through the use of technology strengthens transit providers’ ability to meet agency and customer needs on many levels:

- 1) Technology can assuage barriers to coordination through elimination of turf and institutional differences, jurisdictional boundaries and varying means of data collection;
- 2) Technology improves information management capabilities, allowing easier customer access and reducing staff time and costs; and
- 3) Technology links transportation and human service assistance, presenting a unified service to customers, without diminishing system autonomy.

The practices profiled in this document were informed by a committee of experts, including transit and public agency directors and an expert in transit technology, all of whom were familiar with promising programs designed and implemented by their colleagues nationwide. Committee members were asked to rank programs based on how technology facilitated more efficient service delivery, improved communication between providers, expanded services to customers, streamlined reporting and billing and more efficiently used staff time. Final selection of practices was based on the input of this committee, as well as knowledge gained by NCMM program staff about other exemplary practices meeting quality indicators.

The programs profiled below are listed below (hyperlinked to their place in the document for quick reference):

Promising Practices in Mobility Management: Technology in Transportation Coordination

- [Via Mobility Services, Boulder, Colo.: Technology to Enable Trip Sharing Among Providers](#)
- [Polk County Transit and ElderPoint Ministries, Fla.: Partnering with Volunteer Drivers to Expand Capacity](#)
- [Lane Transit District, Ore.: Using Technology to Schedule, Track, and Allocate Trip Costs](#)
- [GoLive, North Carolina: Providing Real-Time Travel Information to Customers](#)
- [Montachusett Regional Transit Authority \(MART\), Mass.: Web-Based Bidding System for Brokering Lowest-Cost Trip](#)

Montachusett Regional Transit Authority, Massachusetts

Web-Based Bidding System for Brokering Lowest-Cost Trip

The Montachusett Regional Transit Authority (MART), with central offices in Fitchburg, is one of Massachusetts' 15 regional transit authorities. MART is located in North Central Massachusetts and provides public transportation to 22 area cities and towns. MART has been brokering human service transportation since 1990, using technology to optimize competition for service and keeping prices affordable. What makes MART's brokerage system unique is its real-time, competitive, market-based approach.

Regional Coordination Efforts

MART's Brokerage "Bid" System

Through its brokerage, MART provides approximately 4.5 million trips annually, and has contracts covering approximately 73 percent of the human service transportation in the state, generating nearly \$110 million in annual expenditures.

As a broker, MART is responsible for

- Subcontracting with providers
- Monitoring and maintaining contract compliance
- Ensuring the provision of quality customer service delivery
- Accuracy in billing and cost effectiveness rates
- Resolving any conflicts or concerns relating to service

Using Technology to Secure Lowest-Cost, Coordinated Trips

To provide trips at the lowest cost possible, MART has implemented a web-based bidding system that allows providers to bid on trips and review the bids of others. Currently, 235 private operators participate in the brokerage, including private, nonprofit transportation providers; private for-profit providers; private livery services; and taxis. Providers can apply to enroll in the MART system at any time. Vendors are contracted with on a five-year basis and can bid on new contracts as they arise. Subscription trips (e.g., day programs, trips to critical appointments such as dialysis and chemotherapy) can be bid on for a three-month contract.

Available trips for bidding are posted on an open-data-exchange platform allows all vendors to view competing bids for service and counter-bid on trips. Providers may decide to lower their rate to be more competitive, and are permitted to do so during the first five business days of each month. Once all the bids are in, MART automatically assigns trips to the lowest bidder, ensuring transparency and competitive rates. MART's software program sorts all bids every two hours based on location (who is nearest) and cost (whose is lowest). The automatically assigns a trip ID number and generates invoices for all completed trips on a daily basis, deducting the cost of cancellations and other changes. Assignments are made until all seats are filled; when possible, customers are scheduled to share trips to achieve cost-efficiencies. Almost 20 percent of MART's Medicaid trips are shared rides; an average of 2.5 percent of the brokerage passengers make their connections on its fixed route. At the end of each day, all the trips for the following day are distributed.

Promising Practices in Mobility Management: Technology in Transportation Coordination

A database maintains requests for service, the majority of which are pre-scheduled, and manages billing and invoicing. Samsung mobile data terminals on vehicles record trip origins and destinations, and use of GPS devices optimizes shared ride possibilities. MART manages multiple funding sources and has the capability to schedule rides across all sources and service areas.

The portal used to provide vendor services includes these features:

- Auto assignment of trips, maximizing vehicle capacity
- Reconciliation of trips postings and attendance
- Vendor rates management
- Vendor vehicle and driver management
- Automated scheduling and dispatching, with requests sent directly to the vehicle
- Shared ride scheduling
- Automatic invoice preparation and reconciliation, and
- Incident management, which logs and reviews customer complaints, allowing for a high level of quality service

MART's system updates client information continually, and has structured the system to automatically determine a customer's eligibility for services. Having this eligibility verified for each trip means the number of denied rides can be reduced.

MART has also reduced trip costs through innovative accounting software. Invoices from and payments to providers are automatically generated by the system twice monthly. This process has served to reduce vendor administrative costs, improve vendor cash flow, and given providers increased borrowing power to expand their business, all of which also leads to lower prices. MART also assists some vendors with vehicle purchases. Many small providers that began service with one or two vehicles are now operating with 20–25, strengthening the state's network of non-emergency medical transportation.

Innovative Features

MART's system, developed by HB Software Systems, is designed to interact with other scheduling/dispatching systems and can be used by any region or program, while MART maintains system oversight. From a state perspective, this system has the potential to enable distribution of funding across a wider spectrum of providers through one centralized broker, and at the same time reduce state expenditures. The system could be adapted for other programs, such as ADA paratransit service.

Participation in the brokerage has also significantly improved small business development by making it easier for providers to fill seats, reduce operating costs, and transport riders for programs funded by multiple agencies. By guaranteeing a quick cash turn-around, the system increases public borrowing power, creating better opportunities for transportation providers to offer better services.

The 2012 Human Service Transportation Annual Report issued by the Human Service Transportation Office noted an 8 percent increase in consumer trips through the MART system, with an increase in average cost per trip of only 2.6 percent. In that year, MART provided over 4,300,000 brokered trips throughout the four of the nine service areas statewide. MART's achievements noted in the report include streamlined scheduling of recurring appointments, improved training for inspectors and brokerage staff, and system upgrades.

Promising Practices in Mobility Management: Technology in Transportation Coordination

While the state budget benefits from MART's efficiency, so do passengers. More non-emergency medical transportation providers improves flexibility and service. As always, the focus will remain on reducing total trip costs in order to expand service and connect more people with the healthcare they need.

Monitoring and Evaluating the Service

Customer complaints are logged into a dedicated web-based complaint management system, to which transportation providers have access. Complaint reports are continually monitored to ensure timely management, satisfactory resolution, and appropriate disciplinary action/penalty assessment. Complaints of a serious nature are immediately brought to the attention of the appropriate manager for review. In addition, MART provides a consumer satisfaction survey to programs and consumers to assess overall satisfaction and address any deficiencies noted.

As highlighted in the 2010 annual report, fines assessed by the brokers represented 0.1 percent of total service expenditures; drivers and monitors removed represented 2 percent of the total driver/monitor workforce; and vendor contracts terminated for cause represented 0.5 percent of the total vendor base.

MART Inspectors are required to perform at minimum the appropriate number of inspections for the year required by MART's contract with the Human Services Transportation Office. Inspectors observe the transportation provider's pick up and/or drop off at the residence or facility and note and/or address the following: time violations, driver/monitor interaction with the consumer as well as the driver/monitor interaction with the residence or facility staff. Inspectors also perform a full vehicle inspection.

Moving Forward

MART plans to enhance its brokerage software to include a vehicle manpower portal. The portal will store vehicle and driver information, generating training and licensing renewal alerts to drivers and alerts when inspections are due. MART also plans to expand the administrative functions managed via the portal, with no further increase in manpower.

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[back to the top](#)

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