OPTIMIZING TRANSIT PROCESSES THROUGH TECHNOLOGY

HBSS HELPS PROVIDERS BETER SERVE THEIR COMMUNITIES

By Dr. Himanshu Bhatnagar

Just as diverse as the services it provides, technology's role in public and community transportation varies greatly. Depending on the system, its needs, its passengers and its community, the level of automation within individual transit agencies ranges from paper to spreadsheet software to computerized dispatch to automatic vehicle locators (AVLs). HB Software Solutions (HBSS), a Community Transportation Preferred Partner, has recognized the tremendous opportunity for technology to help streamline, optimize and integrate transit operations. With appropriate, customized technology components — software or hardware or both — transit operators can reduce labor hours and stress levels, increase efficiency and improve customer service.

Of course, technology in and of itself is not enough. Each operator needs the right set of tools to do the job of moving people better. Technological innovation must be combined with practical implementation, offering components not only for the obvious — scheduling and dispatching — but for the not-so-obvious — tracking seniority enforcement for union rules, or predicting how many temporary drivers will be needed based on tomorrow's bookings.

Transit systems can benefit from an added dimension to automation technology — different views for different transit players. For operations personnel, the software can not only automate various steps but also maintain an automatic to-do list and alert staff to potential problems. Managers and directors can receive on-demand reports (potentially over the Internet) to view how their operations are running.

Cape Ann Transportation Authority, Rockport, Massachusetts
Integrated Dispatch and the Ultimate Form of Coordination

The Cape Ann Transportation Authority operates both fixed-route and demand-response service along the rocky northeast Massachusetts coast, using sedans, vans and 30-foot buses. The system sought to integrate these operations, using a single technology to provide the most efficient, effective mobility service possible.

Now testing integrated dispatch technology, Cape Ann aims to unify dispatch operations, reduce staffing needs and increase operations efficiency. Computerized dispatch backed by a single radio and GPS-based automatic vehicle locator technology permits a large number of repetitive manual tasks to be automated. Fixed-route dispatchers can now provide back-up assistance to demand-response dispatchers during peak hours. On-demand trips can be transferred to fixed-route service via on-board mobile data terminals. Residents who do not qualify for paratransit service can still benefit from demand-response service that encourages them to use public transportation instead of driving.

This new technology enables the ultimate form of coordination — amalgamated transit — expanding connections, improving customer service (subscribers will receive a reminder even for daily trips), and growing ridership. Amalgamated transit operations require only one set of dispatchers and utilize the same set of drivers. Cape Ann Transportation Authority, and any transit system that currently operates both fixed- and demand-response service as two separate operations, can unite their operations and offer a more direct on-demand service.

Annapolis Department of Transportation, Annapolis, Maryland
Lower Maintenance Costs, Better Service

Mechanics with the Annapolis Department of Transportation spend a large portion of their work time in locating, ordering, or procuring parts for vehicles. New technology can simplify the process so that parts procurement becomes as simple as going to a store with infinite capacity, i.e., the World Wide Web.

When mechanics are inspecting, locating, ordering and procuring parts, vehicles remain in the garage too long. Maintenance costs rise and service suffers. A new radio frequency ID-based parts replacement verification system combines software, hardware, ID tags and readers. A radio frequency ID tag is similar to a bar code except it transmits a low intensity signal that can interact with a reader without the need to scan any-thing. This ID-based replacement verification system is integrated with an Internet-based parts procurement module. When combined with skill-based routing of maintenance jobs, this system allows mechanics to make the best use of their time— spending it on actual vehicle maintenance and repairs.

Lowell Regional Transit Authority, Lowell, Massachusetts
Economical and Efficient Communication and Customer Care

The Lowell Regional Transit Authority is an urban transit operator with high call volume. Their phone system, while complicated, has no automation capabilities. HBSS' iNexPhone technology is a phone system based on voice-over internet protocol (VOIP) technology —sending telephone calls over data networks (such as the Internet) instead of traditional telephone lines. iNexPhone, and other technologies like it, is not only inexpensive but scalable with economical add-ons that will make scheduled and ad-hoc calls to clients, whether reconfirming their rides for the next day or announcing imminent arrival based on GPS-advised data, and allows clients and operators to access a computer database via telephone. Today, the system's operators can view all seven lines, prioritize calls, potentially record every call, preserve every voicemail as an email and a host of other capabilities — all within an affordable budget.

Pee Dee Regional Transit Authority, Florence, South Carolina
Better Data, Better Decisions, Better Service

The Pee Dee Regional Transit Authority uses a customized billing module with sophisticated trip validation to analyze every ride — by rider, by driver, by vehicle, by funding agency, by date range — investigating every driver hour spent, every mile traveled, separating allocated and non-allocated miles, and then using over 50 reports to track their data and determine whether the ride lost or made money.

Hence, the operator now knows exactly how many driver hours and vehicle miles are allocated for a particular funding code for Darlington County for the month of June 2005, enabling cost of operation allocation to the last mile between paid miles and unpaid miles.

For further information contact:
HBSS   MART
Sarah Porter   Bruno Fisher
sarah@hbssonline.com   bfisher@montachusettrta.org
978-379-0010   978-345-7711

Montachusett Area Regional Transit Authority, Fitchburg, Massachusetts
Automation, Efficiency and Expanded Mobility

A big challenge facing community and public transportation agencies today is the perception that private companies operate more efficiently. The Montachusett Area Regional
Transit Authority (MART) is proving otherwise.

Driven by an integrated transportation management system, MART's independent advanced brokerage for Medicaid, Department of Mental Retardation, Early Intervention Programs
and Special Education automates every aspect of the operation — eligibility verification, client information creation, caller-ID-driven search capability, advanced reservation capable of managing trips against authorizations, low-cost vendor assignment via competitive bidding, automatic rate management, shared-ride management, contract management, vendor work assignment, vendor billing and trip validation, fiscal management, complaint management systems and an extensive archival system. All necessary information is at the fingertips of whoever is sitting in the scheduler's seat. MART has also implemented a fully automated scheduling system with mobile data terminals on all vehicles. So when a passenger calls to schedule a Medicaid ride, the system can locate the authorization, create a client record, determine how many trips the rider is eligible for, create a standing order for that duration, locate a list of most cost-effective vendors, determine if this rider can be part of a group, and, if yes, create a new contract or modify an existing contract to send to vendors, and inform the passenger as to which vendor will provide the service.

At the end of a 1 5-day period the system marks her rides as transactions and moves them to a billing system where the vendor's invoices — sent by MART — have her trips listed. After the bills are returned (via a HIPAA compliant communication system or Internet portal) as undisputed, the vendor is paid almost immediately, and those rides are moved to the fiscal system for payment from the government agency. In case she or the vendor has any concerns, an Internet-based complaint management system ties the complaints, their responses, and resolutions to the actual ride performed. Most of the modules are available to vendors via an Internet portal. The vendor interaction is either via phone or text chat. To facilitate 24/7 access by phone for passengers, MART uses an integrated voice response system that can pull vendor information from a database, as well as review and cancel rides. *(For more on MART, see p. 29-31 in Winter 2004-2005 edition of Community Transportat ion.)*

For further information contact:

HBSS	MART
Sarah Porter	Bruno Fisher
sarah@hbssonline.com	bfisher@montachusettrta.org
978-379-0010	978-345-7711

Council on Aging Leominster, Leominster, Massachusetts
Leveraging the Value of Volunteers with Affordable Technology

In the past, volunteers with the Council on Aging would record every trip booking in a spreadsheet and fax it daily to providers. The providers would make multiple copies of the printouts and color code rides for the various drivers. With new technology, these same rides are now booked through the Internet, and trip rosters are downloaded securely into each provider's database, ensuring the privacy of health data. The Council on Aging staff use a simple Internet based reservation and ride management module designed for similar agencies that cannot afford high-priced software. This capability is made available with either an on-site intranet that resides within the Council's office, or an off-site Internet connection, and is an inexpensive way for Council on Aging volunteers to track their operations.

Data can be uploaded to any transit database, making this model extremely flexible. A transit agency can thus support multiple councils, and individual councils can interface with multiple transit agencies. This same system can expand capabilities for other types of agencies, such as senior centers, sheltered workshops and independent living centers.

Modoc County Transportation Commission and Partners, Alturas, Calif.
Rural America On-Line

The Modoc County Transportation Commission desired a better way to serve the communities in this rural, northeast corner of California. They found it on the Internet. The Commission is implementing a website that can be visited by local residents to plan a trip utilizing mixed-mode public and private transport. The site integrates various social service agencies that can offer their vehicles/routes, as well as book rides on routes offered by other agencies. This trip coordination tool manages trips and clients, as well as drivers and vehicles, via an Internet-based system. An important aspect of this system is the capability of seamless cost allocation when multiple operators complete a trip. Using smart cards the system can proportionately divide the revenue among the operators and upload that information to a standard accounting package.

For further information contact:
HBSS   MART
Sarah Porter   Bruno Fisher
sarah@hbssonline.com   bfisher@montachusettrta.org
978-379-0010   978-345-7711

This capability and the Internet-based sharing of trip and vehicle information can connect rural America like never before. For example, if Mrs. Smith has to go from Alturas, Calif., to an address in Redding, she used to call two different agencies and figure how and when she could make the trip. With the new system she will be able to go to a website, type in source/destination and date/time of travel and the system will help her plan the trip, including any bookings she may have to do on intermediary paratransit routes or taxi services. This capability is rare in rural counties today except for some brave souls providing this over the phone.

The important aspect to appreciate is that transit agencies should neither be awed by technology nor think in terms of software packages. Technology is better utilized if it is better understood — not in terms of bits and bytes but in terms of what it can do for transit operations and the communities served. Which problems will it solve? Will it reduce cost of operations? Will it reduce stress? Will it allow operations to run smoothly after staff turnover? Will it allow government agencies to run as efficiently as a private entity might? When the answers start meeting the common sense test, one can start seeing the results. Thinking can then shift from tools to solutions.

HBSS founder Dr. Himanshu Bhatnagar combines his background in developing artificial intelligence techniques for transportation applications, and over 15 years of experience in transit — including re-engineering of Panama Canal operations — with a commitment to helping transit operators better serve their communities. Learn more at http://www.hbssonline.com.

For further information contact:
HBSS   MART
Sarah Porter   Bruno Fisher
sarah@hbssonline.com   bfisher@montachusettrta.org
978-379-0010   978-345-7711