

Guide to Effective Communication Technology for Paratransit Service

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Findings in Brief

Paratransit service is an essential service for all municipalities that have public transportation. Clear, effective communication is important for efficient paratransit operations as well as for quality customer service. Various paratransit service functions—intake and registration, trip booking, communication of arrival time, and no-show occurrences—depend on the transit customer and the provider interacting through interpersonal and technologically-assisted communication. Effective communication can result in:

- Fewer missed trips
- Decreased cost of service
- Higher quality service with shorter travel times
- Customers' increased community participation and improved access to important appointments, such as doctor's visits.

The *Guide to Effective Communication Technology for Paratransit Service* report is intended for small to mid-sized paratransit systems that wish to improve communication technology in order to improve their overall quality of service. A summary of communication technologies, the existing problems with the technologies, and potential solutions follows. The report in its entirety is available in the resources section of the Easter Seals Project ACTION Web site at www.projectaction.org.

Service Functions, Problems, and Solutions

Service functions make up the bulk of the customer service-oriented actions. Associated with each of these actions are particular technology needs, problems, and solutions. Some of these technologies exist over all the service areas and include:

- **Telephony** is used to describe the electronic transmission of information over a handheld device. This information can be transmitted by phone or Internet and includes voice phone calls and text messaging.
- **Interactive voice response (IVR)** allows a computer to detect voice and tones from a phone call, and respond with audio instructions to callers on how to proceed through a menu of functions.
- **Relay services** are operator-based and allow phone calls to be made through a keyboard or other assistive device. Services can be designed to accommodate varying levels of communications for people who are deaf, hard of hearing or speech-impaired. This is used in combination with other technologies, such as TTY (described below) or videophone (useful for translating sign language into voice). All states offer relay services that callers can access free-of-charge.



- **Web-based information retrieval** can be especially useful, allowing a variety of accessible communications beyond the provision of printable forms. Such information retrieval can also adapt to a number of applications, such as chat-type services.
- **Teletypewriter/ Telecommunications Device for the Deaf (TTY/TDD) technology** has been used for many years, allowing callers with hearing impairments to type their messages through keyboard and text-screen-equipped phones.

Below are the specific service functions, problems, and solutions related to paratransit service communication.

Intake and Registration

This is the process by which new users apply for eligibility to use the paratransit service system. Medical condition and wheelchair type are among the factors assessed in this process.

Problems:

For the paratransit service provider, customer intake and registration entails costs and requires finding staff or contractors with the particular skills to complete assessments. It may be difficult to maintain an objective process in fact and perception. Processing records, addressing security issues, and communicating with third-party assessors can be difficult. For the customer, the overall accessibility of the eligibility system tools—as well as locations where intake, registration, and assessment take place—can hinder the process.

Solutions:

An online application process is now common and is also convenient because most people use computers as assistive devices. In addition, most providers ensure that their Web sites are compatible with text-to-speech, American Sign Language (ASL) video, or include text-reader accessible content. It is also important to have non-web-based methods of applying because some people may not have a computer and/or internet access. Many agencies use third party contractors to perform eligibility assessments to reduce costs and ensure fairness and objectivity in the process.

Trip Booking

This is the process that customers use to confirm their trip with the paratransit service.

Problems:

For paratransit customers, issues often mirror the basic communication issues sometimes encountered when applying for paratransit service (as noted in the previous section). One common issue is long call-processing time when using the agencies' phone systems. When interactive voice response (IVR) is not available or when there are not enough customer service agents, customer calls are not answered in a timely manner. Agencies may encounter what's referred to as trip fishing—when customers repeatedly call back during the reservation window to attempt to obtain a better trip time.

Challenges to IVR systems include the limitation of people with cognitive abilities and/or dexterity limitations that prevent them from effectively using telephone keypads in an IVR environment.

Logistical concerns arise when booking a return trip, as customers often cannot predict exact appointment completion times. This results in the need to attempt to contact the agency (difficult if a procedure or examination is underway) or results in a no-show and need to re-book the trip, often with considerable wait times.

Solutions:

Employing more sophisticated telephony systems with automated attendant functions (IVR) is essential. This enables a variety of monitoring and reporting functions that are sound investments because they improve call response times and reduces staff requirements. More sophisticated systems are also capable of estimating call wait times, based on recent activity in the system, and relaying that information to a caller with a message such as, "The estimated time for your call to be answered is two minutes." This gives people the option of holding or not and results in a shorter perceived wait time. Other options include review of trip schedules, options to change, book, or cancel a trip, and referral to other agency services.

Some larger systems have also begun to implement web-based booking, allowing customers to log in to a secure site with their ID and password, and book a trip online, in just the same way as they would with a phone-based IVR system.

Communication of Ride Arrival Time

Knowing ride arrival times is a key concern for customers. This may result in extraneous calls to agencies, sometimes outside of the window of time that the vehicle is set to arrive. Additionally, being able to accurately predict the length of time it will take to reach a specific destination may be difficult for an agency.

Problems:

For the agency, the process of confirming exact location can be challenging and requires that a customer service agent contact a dispatcher, who then contacts the driver. The driver estimates an exact arrival time which is then relayed back to the agent and then to the caller. This process is time consuming. Agency policies sometimes require the customer to be ready up to 15 minutes before the scheduled pick-up time and to wait up to 15 minutes after the scheduled pick-up time. This wait time can be an issue.

Solutions:

In the future, customers and staff envision a system that accurately estimates expected time of arrival (ETA) and provides this information automatically to customers via email or SMS text message. Automatic vehicle location (AVL) using global positions systems technology is already in place in many agencies across the country. AVL systems allow call-takers or dispatchers to readily identify a vehicle's location and use the scheduling software to determine ETA. This practice greatly reduces the time it takes to get ETA information to callers.

No-show Occurrences

As described above, no-show occurrences happen when the rider is not present in the pickup location or when there is confusion about the exact pickup location around a building. Though most customers make attempts to contact the agency when plans change or illness occurs, this causes time delay for the driver, who must wait a designated amount of time (five minutes or more).

Problems:

Driver location is usually easier to determine than a customer's location. For the agency, no-shows represent a significant cost and reduction in trip capacity. For timely communication, the biggest limitation remains the lack of availability of cell phones or other communication devices for customers and their lack of comfort with new technology.

Solutions:

Technology applications require customer education. Several technology applications are currently used to help resolve no-shows, including IVR systems, links with mobile data terminals on-board the vehicles, and customers' mobile communication devices. Automated Reminder Calls are also used to reduce no-shows. The forgotten or mistaken booking is greatly reduced by using IVR technology to send these calls.

Another more sophisticated system is to link the IVR system to the AVL system, so that instead of or in addition to a reminder call, the system can call the customer at a predetermined time ahead of the pick-up as the vehicle approaches. This can happen in different ways. The driver can activate the call from an on-board mobile data terminal (MDT), by pressing a button to *call customer*. In other systems, the AVL system establishes a geo-fence around the customer's pick-up point, which the AVL system detects when the vehicle crosses it and activates the call. Implementation of these technologies, however, has not yet been very successful. Geo-fences are crossed prematurely on a different pick-up or people are called while they are already waiting outside. Some customers who would normally be outside waiting are inside waiting for the call prior to getting ready.

Comments and Suggestions for Implementation

- Plan ahead, and seek the advice of those who have dealt with the issues before
- Plan for incremental implementation if possible
- Add generous contingencies to your implementation timetable
- Develop a partnership approach with your vendor
- Buy the best equipment you can afford – cutting corners will not pay off in the long run
- Include adequate acceptance criteria in your procurement specifications
- Involve employees at all levels of the organization who will be affected by the technology
- Involve customers in processes where they will be using the technology, such as IVR, to determine exactly how to ensure successful use
- Plan for reluctance to adopt new systems – change is hard
- People are more adaptable than people may realize
- Simple is best – avoid bells and whistles unless you can clearly identify and quantify a benefit
- Visit other organizations that have successfully implemented systems
- Hope for the best, plan for the worst

Accessible Community Transportation In Our Nation

A solution that assists with clarification of pickup details is the Mobile Data Terminal (MDT). Drivers can bring up a detail screen on the MDT that offers information, such as alternate pick-up locations, instructions to hard-to-find locations, gate or door codes. In the best case scenario, cell-phone or personal-digital-assistant (PDA) use solves many problems. Cell phones allow the agency and the customer to communicate anywhere at any time and address most of the underlying issues leading to no-shows.

More Technology

Two additional technologies are emerging as promising devices: talking signs and personal transponders. Talking signs provide navigational information to customers who are blind or have low vision. Customers use a handheld receiver that reads messages emitted by infrared beams from transmitters installed at various locations. Talking signs help customers with low vision navigate to designated stop locations. For instance, designated locations at malls or large hospital complexes could be equipped to help customers navigate to the stop location more quickly and reliably in an effort to avoid a no-show. Unfortunately, the cost of these systems is often prohibitive, and customer adoption is in its infancy.

Personal Transponders (or Travel Assistant Devices) are particularly suited to assist individuals who have special needs (i.e., physical or mental disabilities) successfully navigate the transit system through cues that are delivered through the device. Personal transponders

provide the opportunity for agency staff to precisely locate customers. Personal transponders would still benefit from the ability for dispatch personnel to communicate with the customer via cell phone, text message, and the like. At the same time, privacy is an issue with this type of technology, as is the potential for users to operate the device inefficiently.

Summary

The *Guide to Effective Communication Technology for Paratransit Service* covers a number of technologies used by paratransit systems. With planning and the involvement of staff and customers, paratransit systems can use technology to improve communication, potentially save costs, and provide an overall higher quality of service.

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