CHAPTER SIX

EXAMPLES OF COMMUNICATING WITH RIDERS

COMMUNICATION AND MARKETING CAMPAIGNS

This synthesis revealed that agencies have used various types of campaigns to communicate specific information to existing and potential riders. In this subsection, there are brief descriptions of sample programs being used by responding agencies. These examples can be characterized as informational campaigns, and those that provide communication to retain existing riders and attract new riders.

At rabbittransit, York County Transportation Authority (YCTA) in York, Pennsylvania, there was a campaign called "I ride rabbit week." In this campaign, riders wore "I ride rabbittransit" pins, and if rabbittransit staff spotted them, the rider won a prize. Furthermore, direct mail was used to communicate with 15,000 seniors to encourage them to ride the fixed-route bus for free. Finally, an internal communication campaign was launched in January 2006 in an effort to increase ridership. This internal branding initiative, called "People Drive Us," is expected to encourage employees to provide a positive brand experience, and result in an increase in ridership.

PAT in Pittsburgh, Pennsylvania, has an ongoing campaign that offers simple information about how to use the Port Authority's services and where someone can go on the bus, light rail, and incline. This advertising campaign, called Riding the Bus 101, is aimed at individuals who are either unfamiliar with the system or afraid to try it.

At CATS in Charlotte, North Carolina, they have an overall campaign called "It's My . . .": "It's My Independence" is for seniors, "It's My Savings Account" for commuters, "It's My Contribution" addresses the positive affect on air quality by taking public transit, "It's My Security Team" addresses safety, and several others.

Metro Transit in Minneapolis, Minnesota, has the "Ride to Rewards" program, which encourages riders by offering prizes, as well as sending rider alerts if there is a service change or promotion. There is a new rider and Resolve to Ride program (see Figure 13). The new rider program has two features that use technology:

- A custom-designed website that uses flash technology and

- Recognition of a new rider when a customer calls 1-800-NEW-RIDER. In this case, information representatives recognize the caller as a potential new rider and provide more thorough assistance, including mailing a New Rider packet to the caller.

Resolve to Ride has a website with a custom designed trip planner featuring 365 things you can do by bus or train. There is also a tool to calculate driving costs to illustrate the affordability of transit.

Transit Link (Transit Link Pte Ltd) in Singapore has a park-and-ride plan designed to encourage commuters to use public transport. Commuters can park their vehicles at a car park near a mass rapid transit station or bus interchange and use public transport to reach their destination. They also offer the "GIRO-Linked ez-link card" scheme to make public transport travel convenient for commuters. This card provides automatic "top-up" of ez-link farecards (36). To GIRO-Link an ez-link card, the customer needs an automatic teller machine card and an ez-link card. Step-by-step instructions are displayed on a general ticket machine screen to guide the activation of this feature. A GIRO-Linked ez-link card will top-up itself with a preselected stored value amount when its value falls to zero or below when it is used on buses, the Mass Rapid Transit, or light-rail transit. This GIRO-Link feature eliminates the need for a customer to visit a ticket office, add value machine, or general ticketing machine to revalue the ez-link card's stored value. Every GIRO-Linked ez-link card has a security feature that invalidates the card within 48 h of a customer reporting it lost, and refunds the remaining value and deposit in the lost card directly back into the customer's bank account within 2 weeks.

The Capital Metropolitan Transportation Authority (CMTA) in Austin, Texas, used the "Dump the Pump, Ride the Bus" essay contest to market its transit services. This contest asked people who started riding in 2005 to write about how it changed their lives. They also have the "All Systems Go" promotion, which has its own website (37). This promotion is for continuing community input and support for the Long-Range Transit Plan to 2025.

OCTA's campaigns include "Putting Customers First," "Ride on America's Best," and "Senior and Youth Outreach Programs."

MetroTransit *Hop on:*
Minneapolis/St. Paul Metro Area

Home Contact Search   ROUTES   TRIP PLANNER   FARES   WHAT'S NEW Sun, Feb. 26
Us

Jan 1, 06
New Year's Resolutions:
- Save Money
- Reduce Stress
- Get Fit

Resolve to **Ride**
RIDE MORE
DRIVE LESS
CLICK HERE

RIDE MORE. DRIVE LESS.

One easy resolution can help you keep all the others. Resolve to ride more in 2006.

Hop on a bus or train, or carpool with a spouse or neighbor. A lot less stress, guaranteed savings over driving and even a little more exercise walking from the transit stop.

SAVE MONEY

A 15-mile commute in an average car costs at least $50 per month in gas alone. Add in parking fees and car maintenance costs and you're likely shelling out more than $200 each month just to get to work!

Keep more cash in your pocket by filling up less often. Taking the bus or train – even just a day or two each week – can dramatically cut your monthly expenses. See how much you spend on driving.

REDUCE STRESS

Feel your blood pressure drop as you ease into a seat. Having someone else drive puts the brakes on your stress level.

Turn commuting time into YOUR time. Read, put on headphones or just relax.

Worried about not having your car? We offer a free Guaranteed Ride Home for when you work late unexpectedly or need to get home in an emergency.

GET FIT

Thirty minutes of moderate exercise – like walking – is recommended for a healthy lifestyle. Those steps to your bus stop or train station count. A recent study showed that walking to and from a transit stop can help people attain the recommended level of daily activity. In fact, Americans who use transit spend an average of 19 minutes walking to and from their stop each day. Minutes well spent.

How close are you to your local transit stop? Use our Trip Planner to find out.

OTHER WAYS TO RIDE

No transit service in your area? Consider using a Park & Ride lot.

Share the ride with a spouse, neighbor or co-worker. Carpoolers can use freeway express lanes and may be eligible for discounted parking rates. Learn more.

365 things to do or see on the bus or train

Bookmark this page! Return often to find 365 destinations you can reach using transit, along with special offers.

Resolve to **Ride**   **MetroTransit** *Hop on:*
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FIGURE 13 Metro Transit Resolve to Ride Program (*35*).

MATS reported three major campaigns:

- "Your Ride is Here" Internet, Television, Print, and Radio advertising promotions.
- The School Outreach Program, providing historical civil rights information to school-aged children, especially on the 1955 Montgomery Bus Boycott (honoring Rosa L. Parks). MATS purchased a fully restored 1956 GMC coach bus for this and other special event purposes.
- MATS also has several collaborative efforts with local nonprofit and social service agencies to provide reduced cost or free bus passes to low-income individuals [e.g., Goodwill Industries, American Red Cross (Katrina victims), and Job Corps].

The T in Fort Worth, Texas, noted two campaigns for customer communication: "We Drive Drivers" and "La T es mi camino" ("The T is my way" Hispanic campaign).

TriMet has a number of campaigns, some of which include technology. TriMet conducts open houses to communicate how the agency makes transit investment decisions in alignment with regional priorities using the Transit Investment Plan annual report. The "Offpeak Marketing Campaign" promotes using transit for recreational trips. In 2006, the theme is "discovery"—FIND inspiration, FIND adventure, FIND what's fresh, etc. (promoting regional venues and attractions with broad public appeal). This is supported by the tagline, "Trimet, See where it takes you," which is completed with the call to action to plan your trip at trimet.org. "Lose the Wait" promotes the convenience of TriMet's Frequent Service (16 bus routes that carry 55% of their riders) with service that is every 15 min or better, 7 days a week. One technology-driven campaign is Transit Tracker, which promotes TriMet's real-time arrival service that gives customers information about the arrival of the bus or train at their stop by phone. It is activated by calling TriMet at 238-RIDE and entering the stop identification number. More than 300,000 calls are placed to this service monthly.

CASE STUDIES

Several of the U.S. transit agencies that responded to the synthesis survey were interviewed by telephone to obtain more detailed information on their rider communications programs. The results of the interviews are presented in this section as case studies.

San Francisco Municipal Railway (California)

San Francisco Municipal Railway (Muni) began demonstrating real-time information in 1999 as a key component of its rider communication program [interview with Byron Morgan and (38)]. As of February 2006, the demonstration included the deployment of 25 DMSs and an Internet application (39) that displays the real-time arrival information for buses on Route 22–Fillmore and light rail on routes F, J, K, L, M, and N. Currently, one-half of Muni's vehicles, including all diesel coaches and trolleybuses, are equipped with the necessary technology. By August 2007, more than 400 DMSs will be deployed throughout Muni's service area, with another 600 to be deployed later. The signs will be located at bus and rail shelters where power is available, and where the vehicles that stop at those shelters are equipped with the necessary technologies.

Three critical issues related to this type of rider communication were noted by Muni:

- It is critical to develop the procedures and tools necessary to monitor the accuracy of the predictions.
- If a DMS is to be installed in a shelter, the shelter must have access to power. If it does not, providing power to the shelter may be cost-prohibitive.
- During the demonstration that is running for bus route 22, riders at a stop (with a DMS) that services more routes (e.g., route 24) assume that buses on the other route(s) are not running because they are not displayed on the DMS. Because these other services are still operating at the equipped stops, it is confusing to riders waiting for those other services.

Another key element of this rider communication system is the integration with the Bay Area's 511 system. This system provides extensive transportation information for the Bay Area, including transit itinerary planning (see Figure 9) and real-time information on Muni's J, K, L, M, and N lines, and on the historic F-line streetcars (see Figure 10). As mentioned earlier, as the full deployment of Muni's real-time information system is completed, real-time information on all Muni bus and rail lines will be available through the 511 system using both the Internet and telephone.

The funding for this extensive system of real-time information specifically comes from a Real-Time Transit Information Grant Program, which was approved by voters in March 2004, as part of the Bay Area's Regional Measure 2. (Regional Measure 2 is expanding transit service throughout the Bay Area through a $1 bridge toll increase on seven state-owned bridges.) This grant program provided $11.3 million for Muni to implement this system.

Muni also provides a display of train locations outside of the station agent booth on a flat panel display board at the Powell Street station (see Figure 14). Although this display was originally intended to provide information to Muni staff and consultants only (and was not intended for riders), this monitor has become popular with customers. It is also available on the Internet at http://www.sfmunicentral.com/.
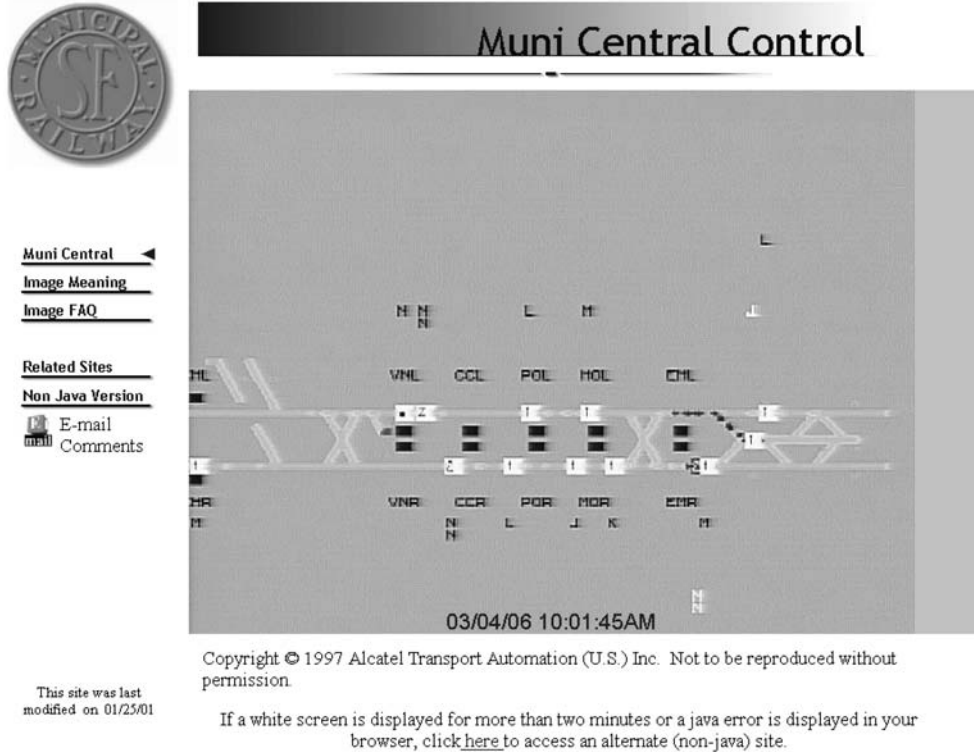
FIGURE 14 Muni real-time information display.

"The image on the Muni Central page shows a line overview of the Muni Metro Railway from Church station to Embarcadero. This image is captured from the screen of the computer in Muni's control center that is used to control trains in the subway via the new Automatic Train Control System (ATCS)" (*40*).

In June 2005, a survey of 400 Muni riders was conducted to determine the level of satisfaction with Muni service, performance, communications, and the website (*41*). This survey indicated the following:

- On-board printed signs and brochures are cited most frequently as the most useful forms of communication to inform riders of changes in Muni's schedule and service. 75% of

riders say they are useful forms of communication, including 39% of riders who say they are 'extremely useful.'
- 48% of riders say that television is a useful way of communicating with riders, while 43% cite the newspaper and 42% say radio is a useful method of communication.
- 47% of riders say the MUNI website is a useful form of communication, an increase from 2004 when 41% mentioned MUNI's website (*41*, p. 5).

Survey respondents were asked to identify the most important features of the sfmuni.com website:

- Maps of individual bus routes and bus schedules are the most important to MUNI riders. 65% of riders say bus schedules would be 'extremely' useful to have on the website. 64% say maps of individual bus routes would also be 'extremely' important.

TABLE 9
MOST IMPORTANT FEATURES FOR SFMUNI.COM

	Important (%)	
Feature	2004	2005
Maps of individual bus routes	77	79
Bus schedules	75	78
Maps of the entire MUNI system	72	77
Service change announcements	70	77
General fare and rider information	73	74
Trip planner	55	74
Vehicle arrival predictions to indicate when a particular vehicle is coming	67	72
On-line feedback	57	60
Site search	52	60
Information about MUNI construction projects	53	59
MUNI press releases	37	43
Information about MUNI administration including reports and awards	29	29

- Maps of the entire MUNI system and service change announcements were viewed to be important features of MUNI's website by 77% of riders.
- Outlined in the table [Table 9] are potential features for MUNI's website that voters cited as the most important (*41*, p. 6).

Finally, the survey explored the use of the sfmuni.com website:

- One-quarter of MUNI riders say they check the website frequently or occasionally. The features these riders check most often include: schedules (38%), maps of individual routes (38%), and the trip planner (27%). Riders are less likely to check maps of the MUNI system or vehicle arrival predictions.
- A majority (59%) of MUNI riders say they have never checked the MUNI website prior to riding (*41*, p. 7).

Ventura County Transportation Commission (California)

The Ventura County Transportation Commission (VCTC) is responsible for the allocation of transportation resources in Ventura County, California. VCTC also operates the Ventura Intercity Service Transit Authority (VISTA). VISTA provides hourly service on seven routes that connect the different communities of Ventura County, as well as the California State University at Channel Islands Campus. The VISTA routes are designed to connect with the local transit services scattered around the county: Camarillo Area Transit, Moorpark City Transit, Simi Valley Area Transit, South Coast Area Transit, Thousand Oaks Transit, and Ojai Trolley Services (*42*).

Most households (70%) in Ventura County had a personal computer 10 years ago. Currently, 90% of households are "wired." VCTC's rider communication program is based on making transit customer-friendly and easy to use, and recognizes that many households are technology savvy.

The key ridership initiatives deployed by VCTC over the past few years include the Bus Tracking and Arrival Prediction System, the Internet/Phone Trip Planner, the "Just Ask Gordon" marketing campaign, and the GoVentura regional smart card program. "These elements were designed to enhance the trip for the transit rider, as well as raise awareness of transit services. Although no formal research has been done on customer satisfaction levels directly related to these efforts, VCTC believes that they have in combination had a significant positive impact on ridership" (*42*).

VCTC provides real-time location and arrival information on all VISTA buses, as well as the buses run by the local operators in each community. This information is available by means of electronic signs at bus stops and from the Internet. There are 31 signs throughout the county at major transfer points and bus stops of a total of 1,505 bus stops in the system. VCTC is considering adding 10 more signs covering more transfer locations.

FIGURE 15 Real-time progress of buses along VISTA routes.

The same information is available through VCTC's website (http://www.goventura.org). Users can view a graphical display showing a map of the area, an outline of the route, and animation of the bus following that route in real time (see Figure 15). Users can zoom in or out while monitoring one or as many as 30 routes. Ventura County residents can view the progress of any VISTA route or any route operated by a local transit agency. Using pull-down menus, a specific bus stop can be selected to see precisely when the next bus will arrive at that location (see Figure 16). This information is available to riders by means of the Internet, as well as WAP-enabled mobile phones and PDAs.

VCTC reports that

. . . as a result of the Bus Tracking and Arrival Prediction system, calls and complaints to VCTC's Customer Information line have decreased dramatically. Usage statistics for the Internet tracking option have not been recorded, but VCTC says it has undoubtedly been popular. The Executive Director feels that this system 'has probably produced the greatest benefit for riders' (i.e., of the different types of service/information improvements implemented over the years). It cost less than $1 million to equip the fleet of buses for the entire county with this technology. There is also a $20,000–$30,000 annual cost to maintain the system. VCTC hopes to add signs at more transfer points throughout the County.
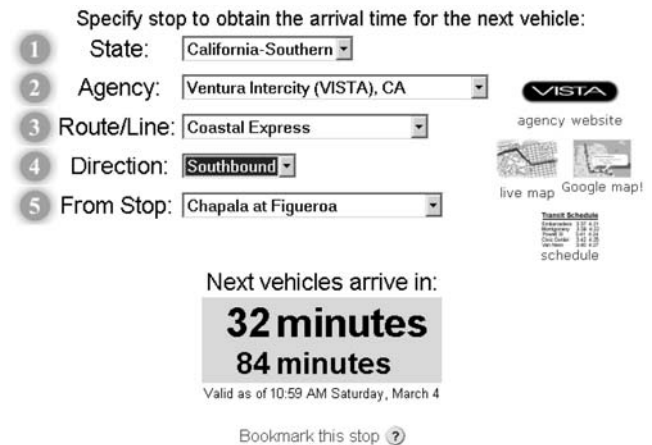

FIGURE 16 Real-time information for VISTA.

VCTC found that it did not have to do very much to advertise these new services. An on-board flyer was handed out notifying riders of the technology and a few articles were written in the local newspaper. The technology was also featured prominently on VCTC's website, although the service apparently gained popularity on its own without a specific marketing effort (*42*).

VCTC's Trip Planning includes "dial-a-route" service by means of the telephone that uses two live operators, as well as an automated planner. Information is available in both Spanish and English. "Eighty percent of people taking advantage of VCTC's trip planning services come from outside of Ventura County, meaning that this service is particularly useful to the infrequent rider unfamiliar with the system" (*42*).

In 2002, VCTC initiated a major marketing campaign to promote the intercity services provided by VISTA, as well as the many distinct services provided by the local transit agencies. This campaign also featured the technology that VCTC has deployed.

VCTC was primarily concerned with increasing transit ridership countywide, and chose to make that the focus of its marketing efforts. When VCTC issued the Request for Proposals for a marketing campaign, it required that the contractor be able to prove it had helped to increase ridership. The RFP emphasized that 'measurable results' would have to be obtained in order for the contract to be fulfilled (*42*).

The "Just Ask Gordon" campaign was developed by the successful proposer. The primary purpose of this advertising campaign, which is broadcast on radio and television (VCTC has found that newspaper advertisements are not effective in their service area), is to demystify riding on a bus. Gordon, a "reluctant transit guru," finds himself in an unusual situation with people desperately needing answers to questions. Gordon always comes up with the right answer, no matter how random the question. Each of the advertisements also contains some piece of information for the public about transit services in Ventura County. Some feature popular destinations and ways to get there, whereas others show how easy and comfortable it is to ride transit. The advertisements are broadcast throughout the county, in both English and Spanish. In addition to the advertisements, the Gordon character (played by a Ventura County resident) has made appearances on buses and at public events. The idea behind the campaign is to make the bus and transit service seem friendly and easy to the nonrider. VCTC's Executive Director described the goal as educating the public "so they know it's easy to get on the bus, and it's easy to know how and when to get on the bus" (*42*). The "Just Ask Gordon" campaign is an example of mixing marketing and customer information to not only communicate with existing riders, but also to attract new riders.

"At the end of the campaign's first year, ridership on VISTA [which provides service to connect the communities of Ventura County] had risen significantly above the baseline.

The contract has been renewed in each successive year, as the campaign has continued to raise awareness and ridership has continued to grow" (*42*). Between 2000 and 2005, ridership increased 49.25%. The targeted advertisements described earlier, using predominantly radio and cable television (e.g., MTV), have been extremely effective.

One of Gordon's situations relates to the use of the GoVentura smart card for fare payment. The emphasis of the advertisements is not on the technology, but using the technology as a way of making travel convenient. According to VCTC's Executive Director, it does not matter to riders that the VCTC transit pass has technology (it is a smart card). This approach to using technology as a way of promoting transit without focusing on the technology itself is unique in the transit industry.

Keys to the success of the communications initiatives that include technology include an approach in which VCTC ensures that all vehicle operators become invested in the technology so that they have a sense of ownership. Furthermore, the cities in the county are invested as well, by having to maintain stops and pay for electricity. VCTC also gives all of the transit operators the opportunity to manage their own systems and data. The agency reports that this overall approach has resulted in an increase in ridership for all operators.

VCTC's Executive Director mentioned two specific elements to the success of using technology in communicating with riders. First, technology is still a relatively new approach to disseminating information to riders. This is the result of the reluctance on the part of some agencies to embrace technology and to try new approaches. Many of these agencies are focused on having to build a "business case" for the technology. However, according to the Executive Director, needing transportation is not a business case. Therefore, VCTC's success relies on educating today's public to take advantage of technology that is available. This is possible given the affluence of the county and because so many households are "wired."

The second key to success at VCTC is making the services easy to use, reliable, customer-friendly, and simple. Because many people still have problems reading a traditional bus schedule, providing a schedule or real-time information in a simple format facilitates their travel and willingness to use transit. Having a transit pass that happens to include technology also makes it easier for the rider.

Tri-County Metropolitan Transportation District of Oregon

TriMet believes that technology is practical and a viable tool for their choice riders. Within the service area, 70% of the population is choice riders. Furthermore, Portland considers

itself a very "wired" city. In 2006, it reported that 86% of its residents had Internet access. TriMet's on-line trip planner records 170,000 to 500,000 visits per month.

TriMet has three key elements to its communication program, each corresponding to major phases of a trip: pre-trip, en-route, and on-board. First, they still print "bus books," although fewer than before, and for these there is a charge. Also, the agency still has live customer service operators.

Second, as far as pre-trip and en-route communications, TriMet has an IVR feature that provides real-time information using its AVL system and a database of bus stops. Each bus stop has a four-digit bus and train stop number associated with it, and this stop number can be used to request real-time arrival information. In September 2004, shortly after deployment of this feature, the IVR system registered 330,000 calls per month. The previous IVR system received an average of 30,000 calls per month, when it was simply a schedule retrieval tool.

Third, automated annunciation (using both visual and audio technology) has been deployed on board all light-rail vehicles and on 100 of 600 buses. The remaining buses were scheduled to be so equipped by fall 2006. According to TriMet's Director of Marketing, the annunciation system establishes more consistent and reliable on-board information, because there are 1,500 individual bus operators, who all have a particular style when it comes to announcing stops.

One unique application of technology is the Google pilot of transit information. Google requested data on stops from TriMet for a Transit Trip Planner pilot program [see (*43*) and Figure 17]. Although TriMet views this as an opportunity and a good leverage point, the agency will continue to control the trip planning and other information it provides to the public.

As far as future communications technologies, TriMet is examining SMS/text messaging to provide an even wider range of dissemination media. It is also considering an application that would allow customers to download maps to an iPod.

One of the critical tenets of TriMet's communications program is that it believes in providing the content for riders and asking the riders to provide the delivery system. For example, TriMet provides real-time information; however, the customer is expected to provide the media with which to view such
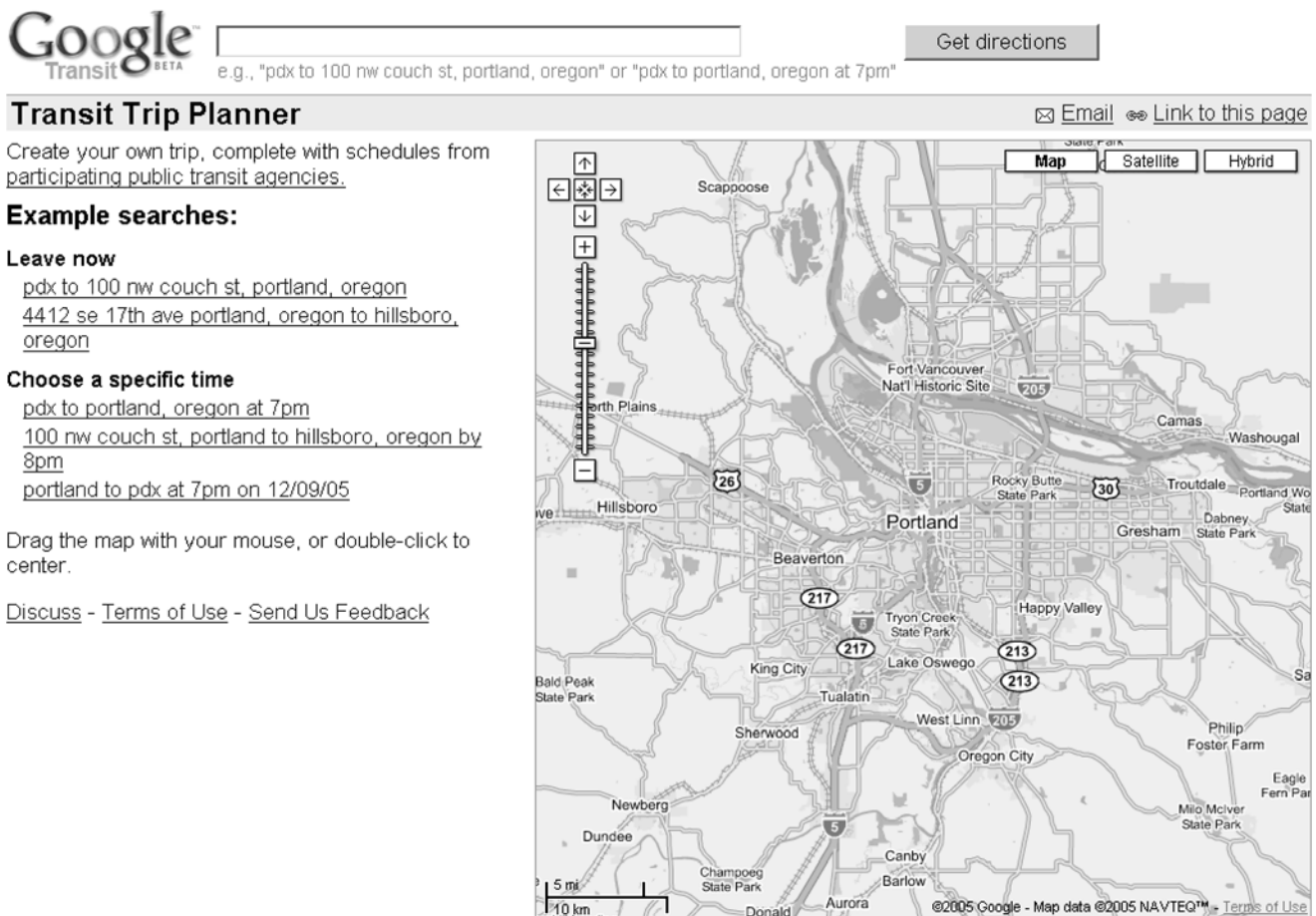

FIGURE 17 Google Transit Trip Planner for Portland, Oregon (TriMet).

information. An important goal of TriMet's communication program is to match the rider's experience with the promise being communicated. In addition, TriMet seeks to combine value with amenities to provide attractive and practical service.

The 18% increase in ridership that TriMet experienced between 2000 and 2005 is derived from a combination of factors, one of which is the provision of real-time information. TriMet believes that real-time information is an amenity that helps to match the experience with the promise. It helps retain riders and contributes to new ridership. TriMet has experienced an increase in calls for real-time information—from 28,000–30,000 per month to 43,000 calls the next month after the inclusion of real-time information. The number of calls has steadily increased every month since the inclusion of the real-time information.

In addition, TriMet is now marketing an application to businesses in which there would be a display of the real-time information for the specific stop(s) that are close to a particular building. This custom display application involves simple scripting and approximately 3 days of programming. For example, a shopping mall might have one or several of these Transit Tracker displays that will be customized and TriMet branded. The customer provides the hardware.

Another factor in the ridership increase is the routes that are branded as "Frequent Service" routes. Of a total of 93 bus lines, 16 are frequent service. The slogan that is attached to these routes is "Lose the wait. Every 15 minutes, every day" (see Figure 18).

Finally, TriMet demonstrated the use of technology for visually impaired individuals to access location and amenity information for every TriMet bus stop and MAX (light rail) station. TriMet teamed up with a private firm to include transit information in its BrailleNote/VoiceNote User Points of Interest database. Downloadable software allows all visually impaired individuals to receive voice or Braille instructions on how to reach any of TriMet's 7,700 bus stops and 64 MAX stations (*44*). One issue associated with this pilot program was that it required the rider to purchase a device that cost between $3,000 and $5,000.

As discussed earlier, TriMet has been very successful in communicating with customers in a variety of ways, particularly through the use of technology. According to the Executive Director of Marketing and Customer Services,

> Reaching riders today takes an effective marketing strategy, one that combines a variety of targeted marketing initiatives with a strong Web component. Web technology can be a wonderfully efficient and effective way to market services, improve customer relations, increase ridership, and most importantly, aid in customer retention. Developing and implementing a successful Web Strategy can be one of the best tools to keep your riders coming back for more. Better communication translates into loyal, repeat riders (*45*).

Transport for London (United Kingdom)

London Buses, which is part of Transport for London (TfL), continues to focus on customer communication with several

FIGURE 18 TriMet's "Lose the Wait" campaign.

key programs and products that not only promote the use of bus transit, but provide static and dynamic information through multiple communication media. First, London Buses pioneered one of the earliest large-scale uses of DMSs at bus stops. This system, called Countdown, was piloted in 1992 on Bus Route 18. The results of customer surveys conducted during the pilot program indicated that Countdown was highly popular. In 1993 and 1994, Countdown was tested in several bus corridors. By 1996, a London-wide rollout of AVL and Countdown was approved. In 2001, the AVL program was 80% complete and the Countdown program was 25% complete. As of March 2002, 1,473 Countdown signs had been installed and were operational; as of 2005, there were more than 2,500 operational signs.

The Countdown system is currently based on a beacon (also known as signpost) AVL system. In April 2005, London Buses began a 10-year program called iBus that will replace the current signpost system with a GPS. Furthermore,

"by introducing a £117m state-of-the-art Automatic Vehicle Location (AVL) technology system and comprehensive telecommunications across London, millions of bus passengers are soon to benefit from a more reliable, consistent bus service and will have access to real-time passenger information (RTPI) at bus stops, on board buses, and from SMS text messaging" (*46*). Figure 19 depicts the new "iBus: informing you every stop of the way" system as it is envisioned.

This state-of-the-art system is expected to improve the existing predictions displayed through the existing Countdown system, as well as provide customers with more options for receiving real-time information on board and by means of mobile telephones. The design of on-board electronic visual displays and audio announcements will be based on passenger research and trials. Persons with disabilities will participate in these trials to provide review and comment on the proposed on-board display and audio technologies.
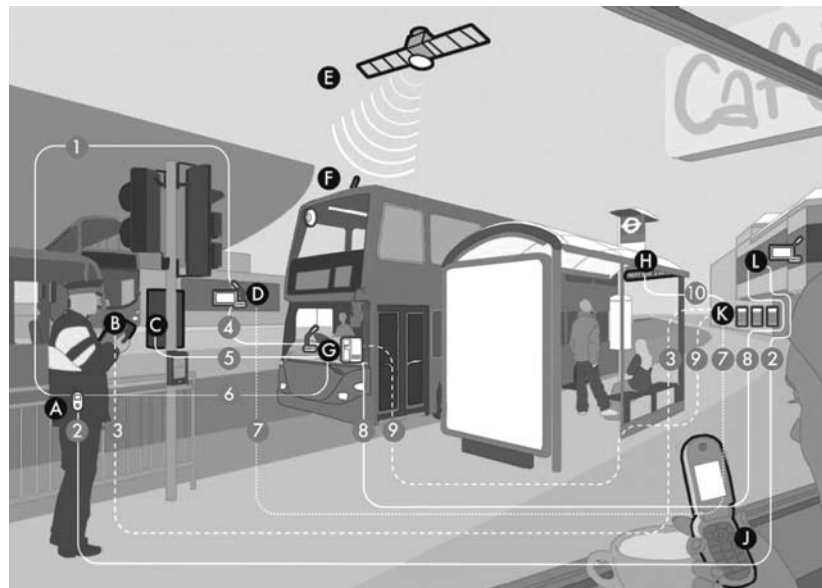
A. Pocket radio
B. On-street controller
C. Traffic light priority control
D. Bus garage
E. Satellite
F. Bus GPS receiver
G. London Bus with on-board computer, voice and data radio, next-stop sign and audio announcement, CCTV, bus priority, camera/traffic enforcement
H. Bus stop Countdown information
J. Mobile phone passenger information (using mobile phone network)
K. Central System
L. CentreComm
1. 2. 6. MPT1327 (standard for analogue trunked radio system)

4. MPT1327 (standard for analogue trunked radio system) and Wireless Local Area Network (WLAN)
3. 9. General Packet Radio Service (GPRS)
5. Two-way wireless radio
7. Virtual Private Network (VPN)
8. MPT1327 (standard for analogue trunked radio system)–Code Red
10. General Packet Radio Service (GPRS)/Integrated Services Digital Network (ISDN)

FIGURE 19 iBus system (*46*, p. 3).

TfL has provided its trip planner on digital cable television. Using a remote control, subscribers can access "TfL London Travel Services" (*47*), which consist of the following:

- Journey Planner—planning a trip from point A to point B in London.
- Live Travel News—the latest updates on Tube, bus, Docklands Light Railway (DLR), and river services.
- Useful information on using the Oyster card (smartcard fare payment device).
- Search capability for licensed taxi and private hire operators in the subscriber's area.
- Phone numbers and advice on fares, Dial-a-ride, Freedom Pass, and other information.

In addition to this interactive service, TfL is providing trip planning and real-time information through other media, including mobile phones, the Internet, and e-mail. "Orange and O^2 [wireless application protocol] WAP users can [use] the mobile Journey Planner—it knows where you are and tells you the quickest way to get to where you want to go" (*47*, p. 1). SMS can be used for the text Journey Planner, in which users send "point A to point B" to 60835. A and B can be postcodes, names of stations, or names of stops in any combination. The Internet Journey Planner is available at http://www.tfl.gov.uk. Free SMS text messages with real-time travel news can be sent to mobile phones and/or by means of e-mail.

Based on extensive customer market research, TfL changed the way that the agency provides basic information to the customer. For example, bus timetables are stop-based, not route-based (see Figure 20). Furthermore, spider maps (see Figure 21) are used to show all of the services radiating from specific transit stops.

TfL demonstrated automated annunciation on five buses on Route 149, and is in the process of conducting focus groups to determine the system's effectiveness (*48*). Non-English speaking riders and persons with disabilities are included in the focus groups.

Washington Metropolitan Area Transit Authority (District of Columbia)

The Washington Metropolitan Area Transit Authority (WMATA) has several methods to communicate with riders that include technology (*49*). First, basic service information, trip planning, rider alerts, meeting broadcasts, and online chats are available through the Internet. Annually, there are more than 81 million visits to the wmata.com website, and more than 9 million itineraries built from the website (called the Ride Guide). Second, WMATA uses e-mail subscriptions to provide notification of rail service interruption and elevator outages. This method of dissemination is

FIGURE 20 Timetable for selected bus services from Paddington Underground Station from 3 p.m. to 5 p.m. on May 31, 2006 (using http://journeyplanner.tfl.gov.uk/user/XSLT_SEL_STT_REQUEST?language=en&mode=line).

partially manual—the e-mail content is entered by hand. At this time, there were more than 35,000 subscribers to this eAlert system.

Third, WMATA employs IVR technology to provide service information (including scheduled next bus information) and trip planning over the telephone. Approximately 709,000 calls have been handled by the IVR system, with more than two million calls for information handled by customer service agents, in both English and Spanish. Fourth, the passenger information displays used in the subway, or Metrorail, provide real-time train arrival and elevator and escalator information. WMATA will be adding real-time bus arrival information at selected bus stops over the next several years.

WMATA is embarking on a program to fully integrate the systems that provide customer communications. The first phase of this multi-phase program, the Public–Private Technology Partnership Initiative, is a "partnership for a 21st Century Integrated Customer Communication System" (E.L. Thomas, Assistant General Manager, Planning and Information Technology, WMATA, personal communication, Jan. 30, 2006). The vision for this system is to make information available 24 h a day/7 days a week by means of a variety of media throughout the customer's entire travel experience. The hallmark of this system is easy access to information at home or the office when traveling by another mode, at the bus stop, on the bus and train, walking to the station, in the rail station (including mezzanine and platform), and through front line employees.
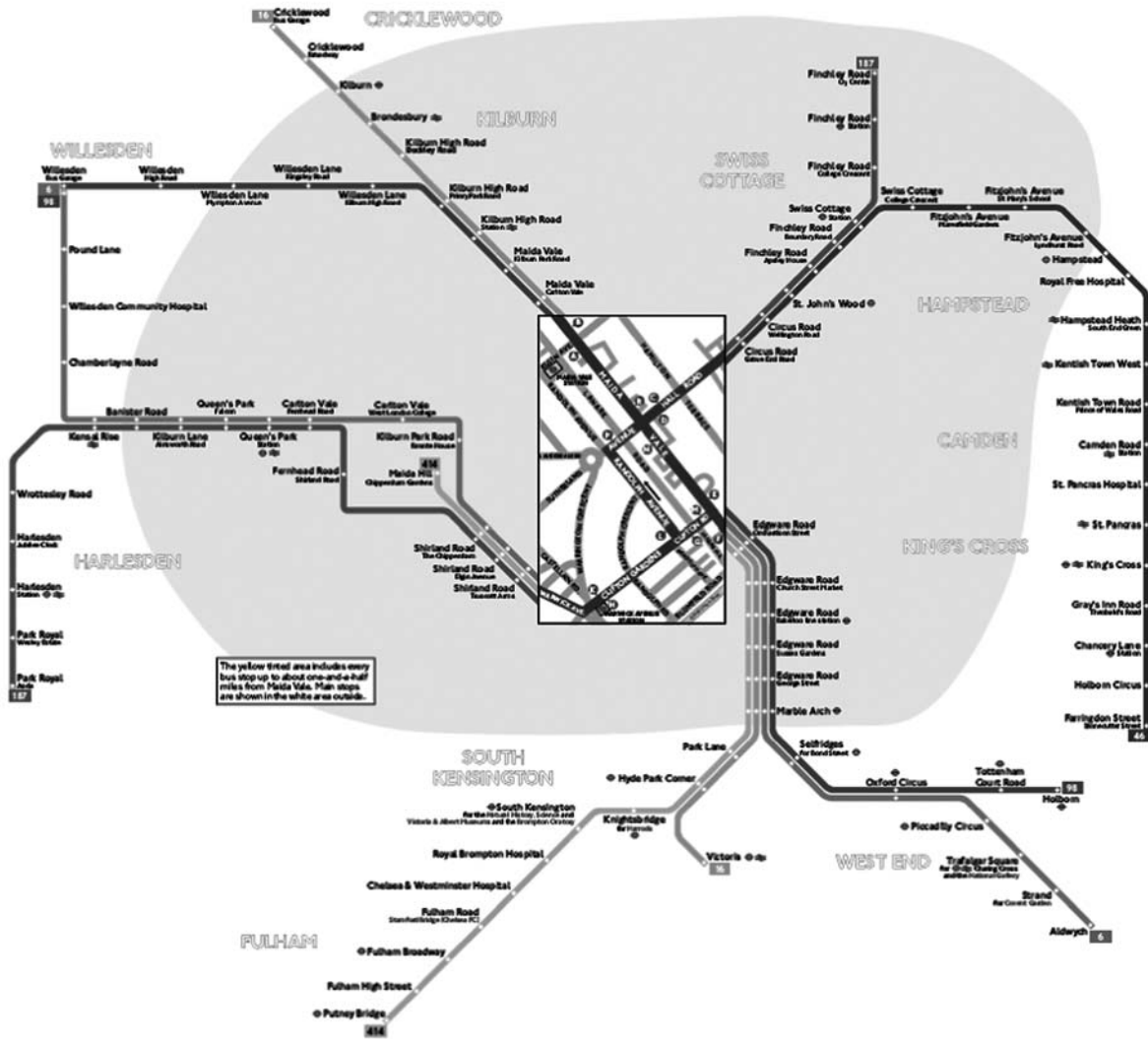
FIGURE 21 Bus services from Maida Vale (spider map).

Upcoming improvements that will be included in the future integrated communications system are:

- Automated switchboard with prerecorded information, including IVR capabilities;
- Real-time bus information;
- On-board information displayed on monitors (as of February 2006, this pilot program was in procurement);
- Future technology projects that were in the concept stage as of February 2006:
  - DMSs in stations with real-time service status information,
  - Information formatted for PDAs and iPods, and
  - Transformation of sales outlets to full-service customer information centers.

Currently, information flows between WMATA and its customers in the following ways. Some of the sources of information rely on technology, as described earlier, and others are partially manual (*50*):

- Main switchboard,
- Town hall meetings,
- Rail line managers,
- Front line employees,
- Board meetings and public hearings,
- Elderly and disabled committee,
- Website,
- On-line chats,
- Riders' Advisory Council,
- Customer Service Center, and
- Customer research.

Figure 22 illustrates WMATA's current [early 2006] customer communications system (the "as is"). The diagram depicts management data originating in many places within the organization under various timeframes, individually dispersed over various dissemination media. However, there is no central location or method of data collection, decision making, or staff dissemination. Nor is there a central or unified method of delivering impact communications to customers.
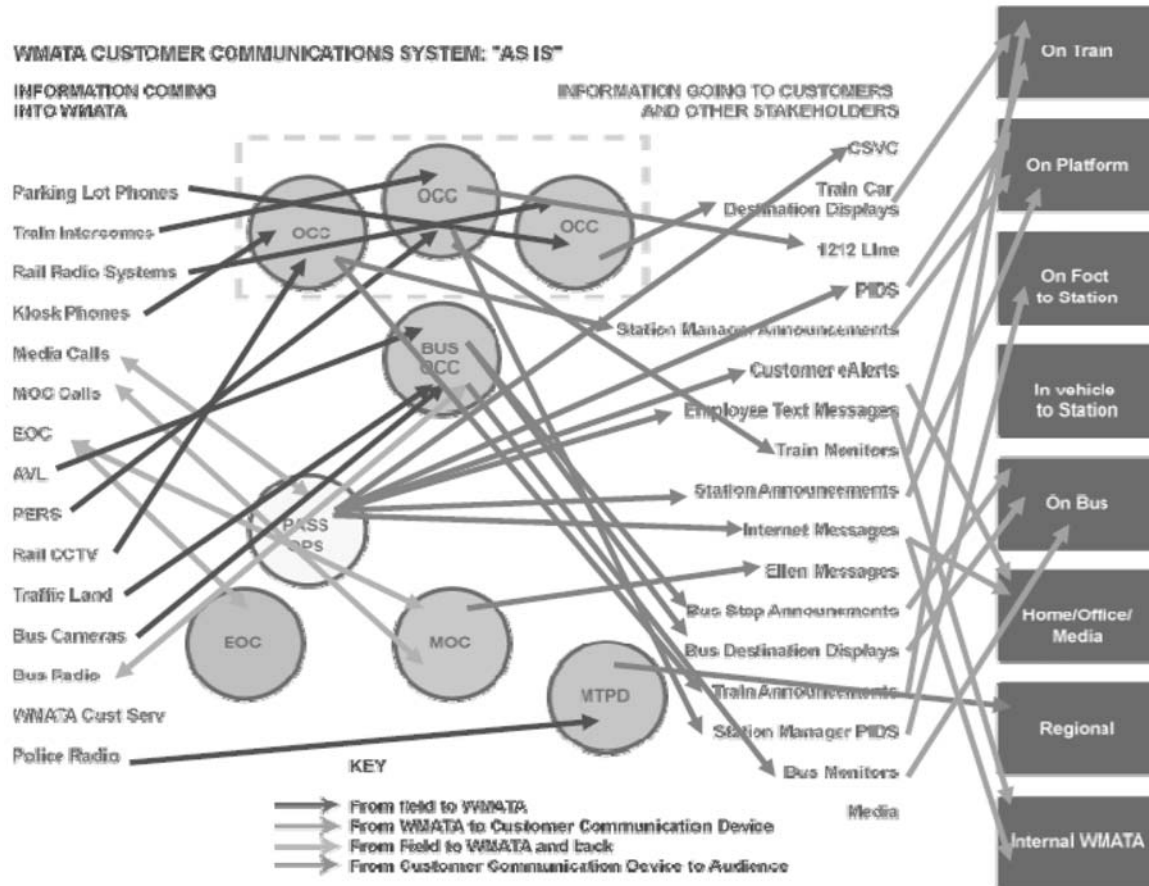
FIGURE 22 Existing (early 2006) WMATA customer communications system (*50*, p. 5).

Lastly, there is no standardized means to disseminate data and information within WMATA staff or to riders in a timely and accurate fashion (*50*, p. 4).

WMATA's future concept, shown in Figure 23, includes the following (*50*, pp. 6–7):

- Creation of an Integrated Customer Communications System, including a management center, capable of both capturing and delivering timely and accurate real-time information to WMATA's customers by means of a variety of outputs, such as the Internet, PDAs, telephones, and DMSs in stations at major bus transfer points.
- Delivery of information to WMATA's customers throughout the Metrorail and Metrobus system and other locations.
- Consolidation of multiple, independent communication systems into an integrated, single solution.
- Expanded use or reselling of WMATA's current unused fiber optic inventory.
- Replacement of WMATA's current aging telephone systems, to include the possible inclusion of Voice over Internet Protocol (VOIP).

- Reselling video and radio broadcasts to underground stations and tunnels.

In terms of rider communication, the future communications system will take into account the following factors:

- The Integrated Customer Communications System should address the complexity of delivering timely and accurate information to riding customers to enhance the means for collecting and determining customer information and to improve system operations.
- In the Washington, D.C. metropolitan area, many WMATA riders have ready access to various wireless devices.
- Reaching mobile customers, including providing delivery to cellular devices and wireless PDAs, will require expanding wireless broadcasting capabilities into the Metrorail tunnel system.
- WMATA's inventory of unused fiber optics is available to provide data communications and bandwidth for these solutions
- Replacement of the telephone system will provide a more efficient means of gathering and disseminating the information to riding customers, while using VOIP.
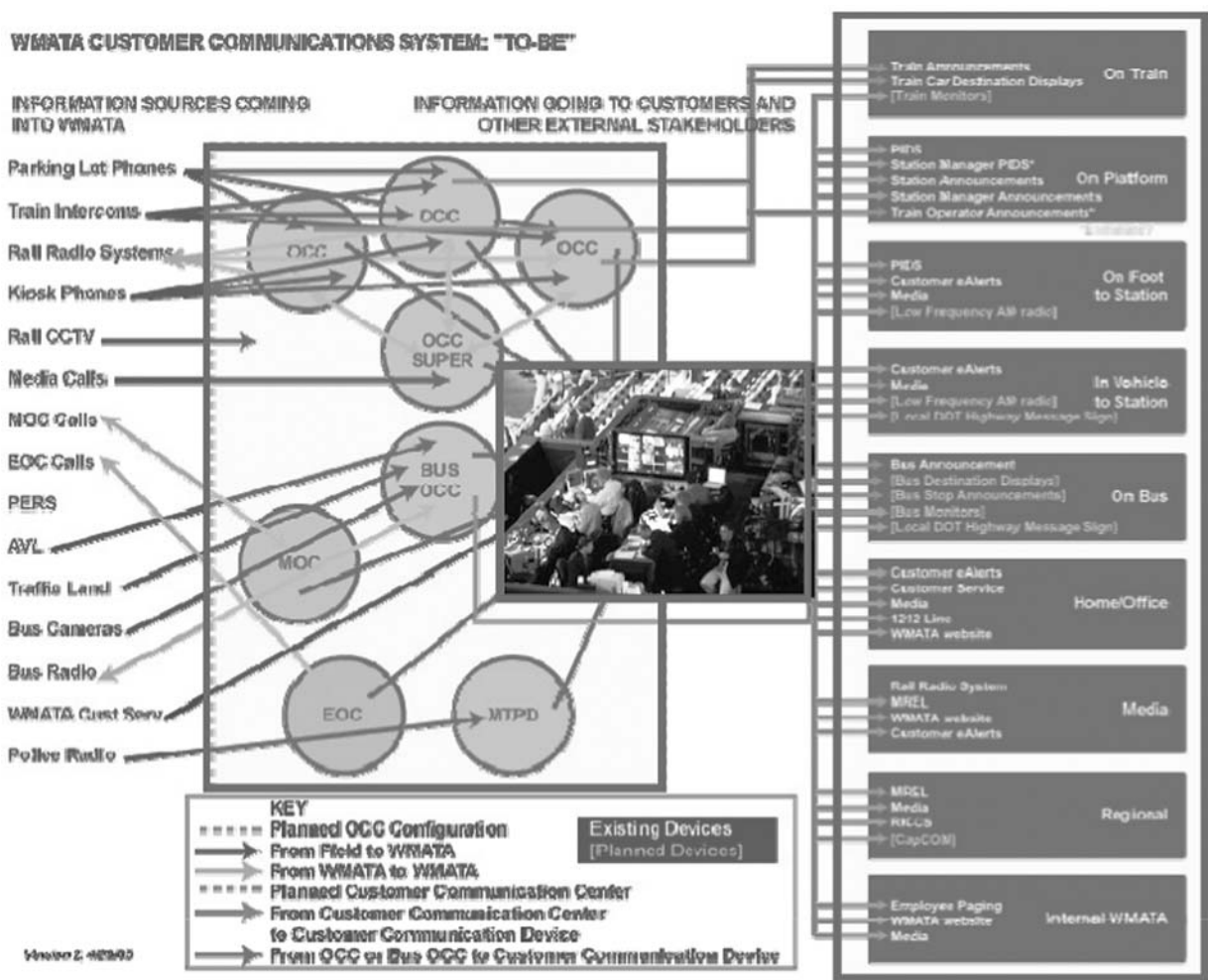
FIGURE 23 Potential future solution for integrated customer communications system.