Navigo and TeleBus: Improving User Information

Organization
City of Winnipeg — Winnipeg Transit

Status
Started 1999, ongoing

Overview
Since completing its *Direction to the Future* report in 2000, Winnipeg Transit has made numerous improvements to its transit information user systems to make transit easier to use and help increase ridership.

Two programs, NAVIGO, an on-line interactive trip planner, and TeleBus, an automated schedule information system, were both developed in-house. Both have helped make facilitate personalized transit trip planning.

In addition to these programs, Winnipeg Transit is currently adding another application to fully automate the production of maps, timetables, and schedule posters.

To date, these programs have upgraded Winnipeg Transit's data integration and other technical capabilities.

Budget:
- $200,000 for Navigo development

- $65,000 annual maintenance and telephone system costs for both systems

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Resources
- Winnipeg Transit (www.winnipegtransit.com)

Community context

As with many other municipalities across Canada, the City of Winnipeg historically accommodated increased auto travel through significant investments in new roads, road widening, bridges and underpasses. In the past, these improvements were made without a parallel investment in the public transit system.

As a result of these improvements, traffic congestion is minimal in Winnipeg and travel by auto around the city is easier than ever. Consequently, the majority of commuters in Winnipeg travel by car, while Winnipeg Transit's overall share of the city-wide work and post-secondary trip market is only 20%.
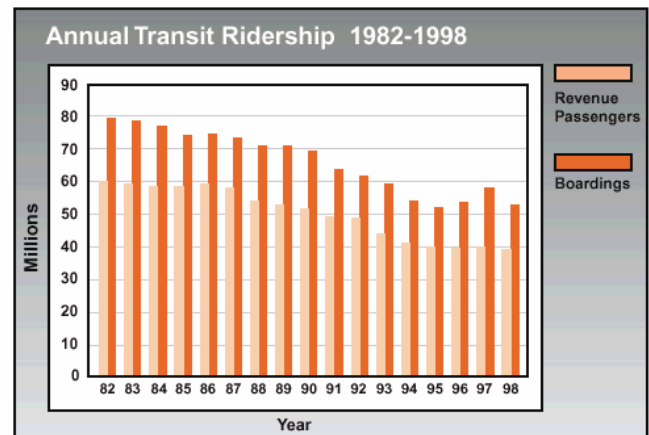
Source: *Direction to the Future: Guide to Better Transit in Winnipeg (January 2000)*

Policy context

Transit service improvements, including the TeleBus system and automated trip planning, were identified in the following two policy documents.

Direction to the Future: Guide to Better Transit in Winnipeg (January 2000). D*irection to the Future* laid out a long-term strategy for transit improvements, funding and programs in Winnipeg. Among its recommendations were ones to investigate the development of an automated trip planner for Winnipeg Transit's web site and to expand the features of the TeleBus system.

Plan Winnipeg 2020 (December 2001). *Plan Winnipeg* is the City's guiding planning document. The plan is very transit supportive from both a land use and funding perspective. The plan commits the City to transit improvements to increase ridership making ongoing improvements to service and making transit service easier to use.

Rationale and objectives

During the past few decades, the number of trips made by automobile in Winnipeg has grown faster than the rate at which the population has grown. Although transit ridership has remained relatively stable since 1995, it did go through a period of significant decline between 1987 and 1995.

To reduce the number of single occupant vehicles on the road, the City of Winnipeg has committed to creating conditions that support increased transit use. While some factors affecting ridership are beyond the City's control, such as employment levels in the local economy and automobile operating costs, other factors such as transit service quality are within the control of Winnipeg Transit and affect ridership directly.

Strategically, the City of Winnipeg and Winnipeg Transit have targeted making the specific transit service improvements that have the highest potential to attract new ridership. One of the key improvements identified is making transit more convenient to users.

Following the release of a major transit strategy in 2000, Winnipeg Transit identified the following key service improvement objectives:

- Continue to improve map and timetable information
- Improve the TeleBus phone schedule information system
- Investigate automated trip planning system for Transit web site

Actions

Winnipeg Transit has developed two transit user information services to help make transit easier to use and to attract new users. One of the systems, Navigo, is a web-based interactive trip planner, while the other, TeleBus, is an automated schedule information system available over the phone.

Navigo route directions

Navigo

Navigo is a computer application that automatically finds the best path through the transit network between a specified trip origin and trip destination. The application was developed in-house in 2001 and field tested by staff working at the Transit Information Service prior to being made available on Winnipeg Transit's web site in late 2002 on a "trial" basis. The formal launch took place in February, 2003 and included considerable marketing and public awareness, including bus advertising (interior and exterior), passenger shelter ads and radio ads.

As a system, Navigo uses a simple, step-by-step process to give transit users the information they need to make effective use of the Winnipeg Transit System. The system asks users for their trip's origin and destination and the time of their trip.

After entering this information, Navigo returns one to five trip options from which users can pull up detailed instructions for each. Maps are available for each route option that show either the entire route or a route segment that provide more detailed information on any walking route that may be required.

Advanced options allow Navigo users can also customize their results. For instance, if a user requires Winnipeg Transit's Easy Access low-floor service, a Wheelchair accessibility option can be selected. Other options include maximum wait time at transfer points, maximum walking time for any given walking segment and walking speed. Walking times are based on standard walking speeds using the shortest possible route.

The technology that supports the Navigo system not only provides riders with static data about the normally scheduled services, but it dynamically adds any new information due to breakdowns, weather, road closures and the like. As Herb Vossler, Winnipeg Transit's Information Systems Manager explains, "If our operational management systems indicate that there's a delay somewhere out in the city, or we've canceled one of the runs, that information is sent right away to the web server."

Understanding that riders do not want to wait for a bus that's broken down, Vossler adds, "We keep our databases synchronized and insure that our web clients see the very latest news."

TeleBus

The TeleBus system is an automated telephone information service that announces bus departure times for any bus stop in Winnipeg Transit's system. During the busiest months, more than 20,000 calls are received each day on TeleBus generating approximately 24,000 specific information requests.

The original system was supplied in 1986 by a commercial vendor. Its launch included a $160,000 advertising campaign, the largest that Winnipeg Transit had ever undertaken.

In November 1999 the system was replaced with a significantly updated version developed in-house by Winnipeg Transit. The launch of the new system included a $60,000 media campaign that highlighted the new features of TeleBus and the new single phone number to access it.

In addition to providing the departure times for the next two or three buses at the time of the call, the new system also enables callers to obtain information for departure times up to one week in advance.

Every bus stop in Winnipeg has been assigned a five-digit bus stop number which TeleBus users enter to identify their specific bus stop. All bus stop numbers are listed in the local Yellow Pages. As illustrated below, bus stop sign information includes the nearest cross street or landmark, bus stop number, TeleBus phone number, and route numbers for the stop location.

With new technology now in place for TeleBus, it is possible to add new features to the system. Soon the capabilities of TeleBus will be expanded to provide improved transit information, such as real time schedule information and fare information to riders.

Navigo helps shorten winter waits for Winnipeg Transit users
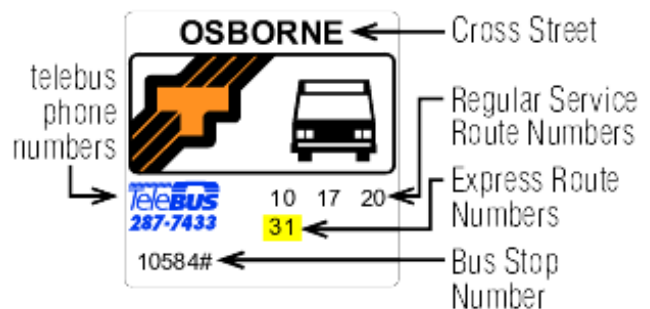
Bus stop information permits easy use of the TeleBus system

Results

Currently, TeleBus is the more popular of the two information tools, with 52% of transit customers using the system regularly compared to only 30% for Navigo. Navigo is still quite popular and receives an average 3,600 requests on a regular weekday. Navigo provides a much broader and more detailed range of information to passengers and usage is expected to increase as increasing numbers of consumers gain access to the internet.

Customer feedback for Navigo has also been unanimously positive. "Over a year after initial implementation, complimentary emails are still being received on a regular basis," says Herb Vossler, Winnipeg Transit's Information Systems Manager.

In comparison to Navigo, the public's initial reaction to the new TeleBus system when was mixed when it was introduced. "While the new TeleBus system is functionally superior to the old system it met with some customer resistance, particularly from older individuals who were used to calling a separate phone number for each bus stop," says Nick Iafolla, Winnipeg Transit's , Manager of Marketing and Customer Services. "[The old system] allowed users to store their stop number in their phone and to 'speed dial' TeleBus," he says, adding that the new system requires use of a menu system to access stop numbers and other functions.

To date, Winnipeg Transit cannot point to any definitive relationship between ridership changes and either the TeleBus system or Navigo. Although ridership has declined over the last number of years, Winnipeg Transit feels that TeleBus, Navigo and all other information sources have helped minimize the overall decrease. "Winnipeg Transit's fundamental belief is that if customers are provided with comprehensive, convenient, accurate information this will encourage further Transit use," says Iafolla.

Participants

TeleBus and Navigo were jointly developed by Winnipeg Transit Customer Services, Planning and Information Systems.

Both systems were designed to be "self-administering" systems. The base data is fully integrated with the source planning and scheduling systems such that no separate data management measures are required. Software application maintenance is the responsibility of Winnipeg Transit Information Systems staff.

Resources

Navigo was developed and implemented within the constraints of regular operating funding. The total cost of development and deployment amounted to approximately $200,000. Development staff costs were approximately $150,000 of this amount, with the remainder being comprised of additional hardware and middleware purchases.

Total annual maintenance cost for TeleBus and Navigo are approximately $35,000. In addition annual cost for the 60 TeleBus telephone circuits amounts to $30,000.

No full time staff are dedicated to either of the systems. Information Systems allocates approximately 0.3 FTE for application maintenance and support of the two systems, including changes to printed information and data base updates.

Lessons learned

The primary success factor for information systems of this nature is integrity and integration of the underlying data. This was recognized going into both projects so that the majority of implementation problems were minor and technical in nature and related to errors in the service definition data.

In addition to these technical lessons learned, Winnipeg Transit staff also identified the following issues for the two information systems.

Navigo

- Develop the system in conjunction with other divisions to get an overall understanding of customer needs and presentation preferences.

- Test the system with the Customer Services staff. Allow them to compare their "human" versions of trip planning against the Navigo system as a method of making corrections and refinements to the system.

- Implement the system on a "trial" basis allowing the public access to the system and encourage their feedback.

- Launch the system on a specific date in conjunction with a promotional campaign to raise awareness and usage of the system.

TeleBus

- Expect the unexpected. While the new TeleBus system is functionally superior and provides significant advantages to users, many customers initially preferred the old system which was simpler to use.

Next steps

The TeleBus system will be expanded to provide improved transit information, such as real time schedule information and fare information to customers.

Winnipeg Transit also plans to utilize the underlying data technology and application components created for Navigo to develop fully automated mechanisms to produce printed customer information materials that are currently produced in a largely manual process today.

Finally, in conjunction with a project to install automated vehicle location technology on its entire fleet, Winnipeg Transit is planning to undertake significant enhancements to customer information provided directly to the user on the street. These include:

▪ Real-time next-bus platform displays at major locations

▪ On board next-stop annunciation

Images are courtesy Winnipeg Transit