

Trajecto: a first look

By [Directions Magazine français](#)

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In November 2008, Quebec City's transit agency, the *Réseau de transport de la Capitale (RTC)*, introduced its online trip planner, [Trajecto](#). The tool, which was in growing demand by *RTC* customers, was introduced roughly a month after several Montreal-area transit agencies integrated [Google Transit](#). Although the *RTC*'s trip planner did not quite compare, overall it was very well received.

Six months after the introduction of *Trajecto*, *Directions Magazine français (DMF)* met with Josée Bouchard, Project Manager at the *RTC* to see how the service had been integrated at the *RTC* and how it had affected customer habits. The following is a brief overview of the *RTC*'s experience with *Trajecto* so far.

DMF – How did the introduction of Trajecto come about?

J. B. - The need for this tool actually came from our customers: through various requests to our Customer Service department for such a tool, as well as through surveys we conducted to better understand our customer information needs. We started implementing *Trajecto* in November 2007. Setting up the system infrastructure posed particular challenges, because part of the system integrates directly with software used to create bus schedules, as well as the fact that our Web site is hosted by an outside vendor.

The implementation project took about a year to complete and involved both a team provided by the software developer plus an internal team made up of about twelve people devoting part of their regular work duties to the project. The entire project cost about \$500,000. Currently, there are five employees in charge of *Trajecto*. Since the software is nested in the management of schedules, a certain amount of coordination work is required when transferring data. In addition, tests are also carried out after each modification. Major changes are made twice a year, during the transition from winter to summer and vice-versa. This involves making major changes to the database. Otherwise, the operational structure is fairly basic.

DMF - How does Trajecto link to GIS systems or other internal systems within the RTC?

J. B. - *Trajecto* uses a software solution called [HASTINFO](#), developed by [GIRO Inc.](#) in Montreal. Geographic information is processed using the software's *Geo* module. *GIRO*'s software performs all calculations and operations and executes the algorithm required for finding the shortest travel path according to the schedule for each request. Maps and aerial images provided in *HASTINFO* are based on Microsoft® Virtual Earth (i.e. Bing™ Maps for Enterprise).

The *RTC* uses data from DMTI Spatial to build the road network in its territory; *HASTINFO* performs calculations using this vector data (lines, direction of traffic, etc.). This data is exported to *HASTINFO*, where a simplified network is then created and merged with bus schedules to build travel itineraries that are transmitted to the Web site in response to a user's request.

Itinerary paths are drawn on Bing Maps based on data from NAVTEQ. Using geographic data from two different sources – namely [DMTI Spatial](#) and NAVTEQ – and altering (simplifying) one of the data sets may, in some cases, create inconsistencies such as a route path being incorrectly overlaid on the map, a street not appearing in one of the sources, or seeing two different names for the same street. However, these inconsistencies are very rare and the overall result is more than satisfactory.



An overview of the interface.
(Click image to enlarge)

DMF - How has Trajecto affected the RTC's Customer Service activities?

J. B. – Since November 2008, the estimated number of calls to Customer Service has dropped by about 15% thanks to various improvements to the way customer information is provided, whether such as introducing *Trajecto*, an increase in the amount of information available to users at stops, and improvements to our Web site. *Trajecto* handles nearly 150,000 trip planning requests per month. Even though no target was established at the outset, the *RTC* is very pleased with the popularity of *Trajecto*. It's also worth noting that we have received very few calls related to technical support for *Trajecto*. In January, only five calls out of 15,281 were related to user support.

Trajecto also facilitates certain work aspects of Customer Service employees who use the tool to respond to user requests. The software shortens and facilitates the training of new employees. It also facilitates the integration of new services; in the past, Customer Service relied on the vast knowledge of the network that employees had developed over the years. But with a network that has become more complex, *Trajecto* makes it much easier to learn new routes, which have multiplied in number.

DMF - What are the main comments, positive and negative, that the RTC has received from users?

J. B. – Among the positives, users have said that the service is efficient, practical, and extremely helpful to customers who are less familiar with the *RTC*'s network. We've received many comments that the tool is easy to use. In addition, users like being able to choose different types of routes, according to user-defined constraints (shortest travel time, fewest numbers of transfers, shortest walking distance). Users also appreciate being able to obtain alternative routes.

As for negative aspects of the tool, users have commented about the inability to obtain a complete overview of an entire trip. Some have also expressed difficulty using the search interface, such as non-intuitive searching of street names. Some dislike the fact that it is not possible to view multiple trip plans (alternative paths) simultaneously. However, *Trajecto* is an evolving tool so user feedback will help us to improve the functionality in future developments*.

DMF - Several North American cities, including Montreal, opted for Google Transit: Why did the RTC choose to introduce its own solution, and how would you compare it with Google Transit?

J. B. - Use of Google Transit does not replace the relevance of having a customized solution on our Web site. *Trajecto* allows the *RTC* to further customize the product and capabilities we're offering to our customers. As we see it, the main advantage of using Google Transit is the level of visibility it can provide, and we're not ruling out using it in the medium-term. In fact, [HASTUS](#) (the planning system used by the *RTC* and developed by GIRO) now includes a module for exporting data using the Google format. But for now, we see Google Transit and *Trajecto* as two separate tools.

DMF - There has been some criticism that importing information in *Trajecto* is difficult and that the solution excludes surrounding transit agencies. How does the RTC respond to these criticisms, and is anything being done to improve these aspects?

J. B. - There are actually many advantages offered by *Trajecto*'s importing capabilities. For example, the system allows users to look for objects, such as landmarks, directly on the map. In addition, users can search for objects by subset, using scrolling menus. In fact, the more familiar one becomes with the user interface, the more they realize how easy it is to use. That said, the *RTC* always views criticism as constructive. Comments regarding the tool's data importing capabilities have been forwarded to the supplier for possible future improvement, since *Trajecto* is based on a commercial solution.

To respond to questions about including data from other agencies, the *RTC* is planning to integrate information from the *Société de transport de Lévis*, but it is not possible at the moment due to technical constraints related to the database format.

DMF - We noticed it is no longer possible to view a map of the entire network with all associated routes. Why was this application removed?

J. B. - The interactive network map was formerly available because we did not offer a trip planning tool at the time. Although many users had learned to plan their trips using the map, it became redundant once we implemented *Trajecto*, which is capable of performing the vast majority of actions formerly done using the interactive map. The only function that *Trajecto* lacks is the ability to provide an overall view of the transit network, and we are currently working to find a solution that can meet this need without duplicating other functionalities offered by *Trajecto*.

DMF - What future developments are planned for *Trajecto*?

J. B. - As mentioned previously, the ability to provide a complete network view is definitely something we envision. However, it is also possible that other solutions will be evaluated and implemented in the coming months. We are also planning an AVL project involving GPS localization, which would be an information tool for our customers. The project is currently in its preliminary analysis phase. (Author's note: the *Société de transport de Laval* has just announced the implementation of a similar system.) We are always listening to customer feedback and remain dedicated to satisfying any new needs that may arise.

** Some of the improvements sought by the RTC and raised in this article are planned (and currently in development by GIRO) for the 2010 version of HASTINFO.*