



\_experience the commitment

# Microsoft .NET Practice : Case Study

## Practice Footprint

## Revenu Quebec IMPACT Solution

### Domain Expertise

- Client-Server
- Rich-Clients
- Smart-Clients
- Web apps and E-commerce
- WebServices/Service Oriented Architectures
- Application migration (DNA/Lotus to .NET)
- Microsoft Patterns and Practices

### Technical Expertise

- VB.NET
- ASP.NET
- C#
- VSTO
- SQL Server and Reporting Services
- Commerce Server
- Sharepoint
- BizTalk
- Content Management Server
- Dynamics (CRM, ERP...)

### Showcased Client

Revenu Québec/Quebec Revenue Agency – from here on referred to as the MRQ – oversees the collection of income tax, sales taxes and ensures that everyone pays their fair share of public services. It also administers the support-payment collection program (PAPA) to guarantee that children and custodial parents receive their support payments regularly. Another function is to administer taxation-related social programs, as well as any other tax-collection and redistribution program that is entrusted to it by the Québec government. Lastly, the MRQ provides recommendations to the government on its fiscal policy and programs. The agency is composed of:

- Seven branches
- 16 regional offices
- An authorized workforce of 8,294 full time equivalent (FTE) positions, including 5,977 authorized permanent employees



### Problem Domain

In 2002, the MRQ decided to redesign the systems that supported two of its mission-critical business processes, i.e. the administration of personal and corporate income tax. This decision stemmed from its 2001-2006 IT investment plan, which clearly ranked this overhaul as a top priority. In other words, this major project was considered highly strategic for the agency.

The MRQ had very specific business goals for the redesign of these systems:

- Elimination of any risks associated with the obsolete technology of these systems
- Modernization of its business practices and processes by leveraging new technology
- Simpler implementation of regulatory and administrative streamlining measures
- Improvements in customer service
- Improvements in operational process efficiency by providing its staff with effective tools that are suited to the task at hand

The MRQ called upon CGI's Québec city business unit to undertake this project after being selected through a formal public RFP/proposal process. This partnership has already provided dividends to the MRQ as illustrated by the following awards:



English information about the Octas can be found at:  
[www.fiq.qc.ca/FRANCAIS/concours-octas/apropos.html](http://www.fiq.qc.ca/FRANCAIS/concours-octas/apropos.html) (see bottom of page)

## Revenu Quebec IMPACT Solution

### Solution Characteristics

A total of 6 systems are involved in the mission critical business processes that are to be overhauled. For all of these systems a Rich-Client architecture was determined as the proper way to deliver a quality environment for users. Batch capabilities were also to be provided by each one of these systems. The underlying architecture had to make services available to both the interactive and batch applications through the use of the same components, i.e., though the execution of the same business logic. The overall business domain encompasses thousands of quite complex business rules. The dynamic context in which these rules are executed has inevitably makes the architecture highly configurable. Hence, not only must rigorous performance standards be maintained, but the systems also need to be very flexible to ensure that annual integration and refactoring of business needs is straightforward. Lastly, to promote a high degree of interoperability, all of the systems would share the same technological environment. This is known as the IMPACT Solution.

**SOW :** Total recast of the systems supporting the income tax processes for businesses, corporations and individuals.

**Technologies :** .NET Framework 1.0/1.1; Visual Studio Enterprise Developer 2003; VB.NET; CGI .NET Toolkit; Microsoft Application Blocks; EnterpriseLibrary 1.0; COM+; Windows Server 2003 Datacenter; FxCop; NUnit; NDoc; VbCommenter; Reflector.NET

**Efforts :** 45,000 d/p of a total 82,000 d/p envelop. Still underway. Staff of 40 people.

### Solution Realization, thus far...

Last november (2005), a cornerstone application of the group of systems was delivered, bringing the delivery due date of the whole to november 2012. Providing the proper tools for the design and implementation of these systems and the means of favoring productivity and consistent work are elements of the strategy to ensure the respect of this schedule. Needless to say, with such imposing systems no work is to be done hastily. This resulted in the creation of the XP Toolbox. In short, the toolbox provides end-to-end services that automate and guide the software development process so that focus may be put on the business functionality at hand. It provides automation and enforces standards in the following manner:



**patterns & practices**  
proven practices for predictable results

- Is sought as a baseline approach to application development: use of proven architecture and design concepts
- Integration into VisualStudio: provides a highly productive and customizable development environment
- Appropriate use of GoF patterns, namely factory method, façade, singleton...
- CGI .NET Toolkit components, metrics, code rules and naming schemes
- **Patterns and Practices, recommended guides, and EnterpriseLibrary 1.0**
- Infrastructure components such as data access and pessimistic locking mechanism

Presently, two other systems are underway and are leveraging assets of the XP Toolbox. This assures continuous improvement of the XP Toolbox so that it may eventually render a complete set of assets in compliance with MRQ development needs.

## About CGI Quebec City

The Quebec City Business Unit (QcBU), which currently employs more than 1,000 people, operates in favorable markets that have enabled its early adoption of .NET technologies. Since the advent of .NET, the QcBU has proceeded with important investments that have given it an excellent reputation in its local market.

As early as 2001 – pre Microsoft Application Block era - the .NET Practice proceeded with the creation of the CGI .NET Toolkit: an ensemble of components aimed at accelerating all project life cycle activities. With enhanced productivity in mind, these components, particularly those in the development phase, were designed to help create best of breed applications with a reduced time to market of up to 25%. Since then, the .NET Practice has completed a proven set of assets for automating the application development process by leveraging Patterns and Practices deliverables.

Recognized as CGI's .NET Center of Expertise, the QcBU and its .NET Practice supports many other BU's in .NET related work. This involves the creation of a near-shore model to export end-to-end services. The virtues of this model are proven, as .NET has been central in developing long-term relationships with clients such as Russell Investment Group and the Cirque du Soleil.

Today, the .NET Practice provides thought leadership to over 200 members of a community within the QcBU. Its purpose is to enrich the expertise and experiences of its members to enable them to fulfill the promise of our .NET offering for our clients.

In the end, the sole objective is to ensure that our .NET offering – local and near-shore – conveys the message that CGI is the prime partnership candidate for clients who wish to meet their needs by harvesting the benefits of .NET related technologies.



Consulting/Systems Integration/Management of IT and Business Functions/ [www.cgi.com](http://www.cgi.com)  
ISO 9001 Certified

For additional information or to discuss an opportunity, please contact the Microsoft .NET Center of Expertise at:

**MicrosoftDev@cgi.com**