

Bell Canada Leverages Zend Platform for Montréal Exchange



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Francis Blondeau,
Manager of Web Development,
Montréal Exchange

Customer: Montréal Exchange

Geography: Canada

Industry: Securities Exchange

Challenges:

- 30,000 online documents to manage
- Multiple past development efforts from multiple providers
- Defects hard to pinpoint, user experience was suffering
- Difficult to manage application delivery lifecycle

Solution: Zend Platform, Zend Core, Zend Framework, Zend Studio, PHP

Bell Canada is Canada's largest communications company, providing the most comprehensive and innovative suite of communication services to residential and business customers in Canada.

Bell Canada's Professional Services branch provides services such as telecommunications, web hosting and web development. Its clientele includes most of the Canadian Fortune 500, looking for innovative solutions and how to leverage their existing architectures. Among Bell Canada's clientele is the Montréal Exchange.

Montréal Exchange (MX) is the Canadian derivatives exchange. MX offers trading in Canadian interest rate, index and equity derivatives. Clearing, settlement and risk management services are provided by an AA rated clearing house.

MX has interests in: the Boston Options Exchange (BOX), a U.S. automated equity options market; the Canadian Resources Exchange (CAREX), a corporation dedicated to developing the Canadian energy market; and the Montréal Climate Exchange (MCeX), a joint venture with the Chicago Climate Exchange®, which aims to establish the leading market for publicly traded environmental products in Canada.

The Montréal Exchange approached Bell Canada in July 2007, with needs for production support and development. The Montréal Exchange marketing department manages 13 websites, including 3 intranets and 4 extranets all developed in PHP over the past 5 years. Having had multiple providers, different implementation techniques were used in coding these websites. The main MX website hosts over 30,000 web document pages and pdf files.

Challenges

Aware that certain of their websites and web applications had flaws, the Montréal Exchange has decided to gradually migrate them to a more robust architecture. The reasons behind this decision were:

- Non-uniform code fragments of older, legacy code—making maintenance difficult
- Code duplication—meaning more than one place to fix any defects that arose
- Database queries, presentation, and business logic in one monolithic block for each web page—making separation of design and programming work difficult & error-prone
- Fixing bugs in one area of their application had cascade effects to other areas, due to the high level of coupling in their components—leading to more time spent by staff

The Montréal Exchange is a self-regulated organization. As such, the Montréal Exchange must ensure that client information and financial data are secure at all times. The Montréal Exchange's applications are also subject to daily audits and security tests.

Solution

The Montréal Exchange's manager for web development, Francis Blondeau, has chosen to engineer the MX site with a Zend-based solution. Using Zend products the Montréal Exchange confirms their commitment to open-source, meaning they gain from a wide and open community, talent pool, and robust/widely vetted code. Additionally they benefit from having a commercial concern, Zend Technologies, backing them with products that provide manageability, monitoring, and performance of their PHP solution with the Zend application server and environment (Zend Platform and Zend Core, respectively).

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Zend's web application server environment (Zend Platform in combination with Zend Core) was deployed to monitor the Montréal Exchange's web applications, more specifically code bottlenecks and errors caused by user inputs that would not have been found otherwise. This production environment strengthens their development efforts as well.

Blondeau continues, “Zend Framework's pre-built, tested, and open-source components save us a lot of time: we can write 1 line of code rather than 100 and at the same time shorten our QA cycles and deliver higher quality end-results to our users.”

“The best practices in Zend Framework are key for us to train our new developers and keep our implementation professional, object-oriented, and maintainable—while still delivering our applications in less time,” said Blondeau.

“Plus, using Zend Framework means we get maximum benefit from the rest of the Zend Solution with Zend's application server and PHP environment.”

Zend Framework is being integrated gradually over time for two reasons:

- To reduce development time with pre-built components
- To standardize code development with best practices for object-oriented PHP 5

All of Montréal Exchange's new projects are now being developed using Zend Framework, they are now much easier to maintain, and less prone to development bugs, as the framework becomes more robust with each new implementation release.

Development Solutions

When Bell Canada stepped in, the Montréal Exchange had planned the re-architecture of their infrastructure. They had also installed Zend Platform, and had been using it extensively for bug tracking and code profiling.

Bell Canada and the Montréal Exchange decided to customize their development based on Zend Framework and the fast template engine Template Lite for the new Montréal Climate Exchange website that they were launching at the time (<http://www.mcx.ca>). Seeing the positive results that Bell Canada's solution yielded, the Montréal Exchange has decided to completely migrate their applications to that development model (Zend Framework and Template Lite) over time and based on ongoing priorities. The development model makes use of Zend Framework's MVC model, and has a localization (i18n) component and a routing module. It makes extensive use of Zend Framework's validation and email classes, and other classes are to be included as their codebase matures.

This provided the Montréal Exchange with a uniform codebase for all of their applications, reusable code, and a structure that can be extended upon, and is easily learned by new developers that join the team.

Production Solutions

In building their new infrastructure, the Montréal Exchange faced the problem of session management. This was solved by using Zend Platform's session clustering, a solution that Bell Canada endorsed, following a series of tests.

Zend Platform and Zend Studio are also extensively used for debugging and code profiling to ensure code quality. This allowed the Montréal Exchange to dramatically reduce their application defects before going into production.

Zend Platform was also used by Francis Blondeau in an original way during the migration of Montréal Exchange's code from PHP 4 to PHP 5: After the initial code migration was completed, Zend Platform was installed on a staging server, and the application was tested. Zend Platform's automated email alert feature was used to send alerts for any error encountered, and those bugs were then fixed by using Zend Studio to quickly find the line of code in question, all based on the priority determined after receiving the email alert. This method helped eliminate bugs in a short matter of weeks before finally pushing the website into production.

This is a technique that Bell Canada now uses with other clients to accomplish migrations.

"With professional services engagements in particular, it's important to save time and produce results that dramatically deliver above and beyond client expectations, especially with young, vibrant, & socially aware customers like we engage," said Arnaud VanDerVoorde, general manager of web solutions for Groupe Grandes Entreprises at Bell Canada.

"Bell Canada has chosen to partner with Zend because they simply provide the best ROI for our clients, bar none. The bottom-line savings to enterprises using dynamic languages like PHP means that, although we are technology agnostic and regularly deliver Java and ASP.NET solutions too, we are seeing an enormous, growing demand for lower cost PHP solutions over Java or ASP.NET implementations."

In order to improve productivity, Montréal Exchange and Bell Canada have put together a set of best practices that includes both document management and bug tracking. All together these constitute a comprehensive suite of practices delivering ongoing productivity for future development.

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General Manager, Web Solutions
Groupe Grandes Entreprises,
Bell Canada

Conclusion: Zend Solutions significantly improve business-critical deployments and make them happen in less time and at much lower cost

Bell Canada's experience using *Zend Platform*, *Zend Core*, *Zend Framework* and *Zend Studio* for the Montréal Exchange has helped them to standardize their tools & production environment, provide a manageable application lifecycle for development engagements, and to quickly implement using *Zend Solutions* for their clients' web applications. *Zend Solutions* constitute a significant part of Bell Canada's new approach to implementing PHP solutions for enterprise companies.



The PHP Company

Corporate Headquarters: Zend Technologies, Inc. 19200 Stevens Creek Blvd. Cupertino, CA 95014, USA · Tel 1-888-PHP-ZEND, 1-888-747-9363 · Fax 1-408-253-8801
Central Europe: (Germany, Austria, Switzerland) Zend Technologies GmbH Bayerstrasse 83, 80335 Munich, Germany · Tel +49-89-516199-0 · Fax +49-89-516199-20
International: Zend Technologies Ltd. 12 Abba Hillel Street, Ramat Gan, Israel 52506 · Tel 972-3-753-9500 · Fax 972-3-613-9671
France: Zend Technologies SARL, 5 Rue de Rome, ZAC de Nanteuil, 93110 Rosny-sous-Bois, France · Tel +33 1 4855 0200 · Fax +33 1 4812 3132
Italy: Zend Technologies, Largo Richini 6, 20122 Milano, Italy · Tel +39 02 5821 5832 · Fax +39 02 5821 5400

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