

BC Skills Connect Tracking and Invoicing System

This project was entirely managed and completed by **SPOT SOLUTIONS** for the Ministry of Economic Development. The majority of the development and programming work was completed at our Vancouver offices. Spot Solution's Project manager spends the majority of his week in Victoria and is available to meet with the User representatives who were located in Victoria. Project meetings were held in Victoria with the Spot Solutions project manager, and other members of the team in Vancouver joining in by teleconference. The Business Analysts traveled to Victoria whenever necessary to meet with the Client.

Project Summary

The BC Skills Connect Tracking and Invoicing System were built for the Ministry of Economic Development in 2006. This project was to design and develop an Internet/Intranet web based application in .NET to support the program.

The project included creating:

- Three multi-tabbed forms with intuitive and flexible page tabs to capture data.
- An extensive Search capability.
- A complex role based security model.
- 10 pre-defined reports and an ad-hoc user reporting tool.
- An automatic invoice generating engine
- An invoice approval process
- Web services to import data from external databases

Extensive user training was conducted upon release of the new system.

Technology Synopsis

Programming	ASP.NET, VB.NET, XML, HTML, JavaScript, Java, IIS 6.0, MS Internet Explorer 5.0 → 6.0, Netegrity Siteminder, Office Automation, Crystal Reports ... plus misc. Utilities
Database	SQL Server 2000, .NET DataReader ... plus misc. Utilities
Networking & Protocols	HTTP, TCP/IP, VPN, LAN, WAN ... plus misc. Utilities
Graphics	Corel Draw / Photo Paint 10.0 ... plus misc. Utilities
Operating Systems	Windows 2000 & 2003 Server ... plus misc. Utilities
Business Analysis	JAD, UML, Use Cases

The Challenge

The Ministry of Economic Development created a new program, BC Skills Connect, to provide financial support for recent immigrants to obtain job related skills in the BC workplace. One of the major challenges was defining the requirements, as the program was not yet up and running and many of the details had yet to be worked out. Extensive consultation with the Ministry and the Service Providers was required to define the system and program requirements.

The Solution

A Requirements study was conducted at the onset of the project. Many of the details were not yet defined, so extensive consultation was required with the Ministry and the Service Provider. This was done through multiple interviews and stakeholder meetings. The information gathered at these meetings formed the basis of the first draft of the Requirements document. Spot Solutions then worked closely with all the Stakeholders to ensure the design of the system would meet the needs of the program, and remain within the project scope and budget.

Once the Requirements were defined and sign off of the Requirements document was received from the Ministry Project Authority, a draft Design Specification document was created. This document detailed the rules of the tracking and invoicing system, the user interface guidelines and screen mock ups. The document was then circulated to all of the Stakeholders. An iterative process was then begun through meetings, phone calls and interviews. The document was circulated three times before the final document was then created. Once sign-off was received from the Ministry Project Authority, the final Design Specification document was the blueprint for the new system.

This new system was to be completed on a limited budget. Spot Solutions suggested that we could re-use some of the components from a previous project; the Fast Track Project Tracking System completed for the Ministry's predecessor. By reusing components of the Fast Track system, the cost of base development could be reduced. Developing on an existing system allowed the client to use their budget for features they would not have otherwise been able to include.

Although the base application is very similar to the Fast Track Project Tracking System, the BC Skills Connect Project had many unique features and functionality that were custom built.

A complex security system was implemented using BCeID and application level security. There are three different 'groups' in the system.

1. Client – The immigrant receiving the services
2. Service Provider – The organization facilitating the services and invoicing for the Ministry for those services
3. Ministry – The Ministry approves invoices and compensates the Service Provider

The first component of the system was tracking Client Information. To be accepted into the program, a Client needed to meet a strict acceptance criteria. The BC Skills Connect Tracking and Invoicing System has built in rules that will not allow a Client to be entered if they do not reach those criteria.

In addition, a Client must sign a form that consents to the collection of their information before they can receive any services from the Service Provider. A

form is available within the system that is printed by the Service Provider and signed by the Client. There is a checkbox in the system that confirms the user has signed the privacy consent form. The system ensures this is completed by not allowing the Service Provider to generate any invoices for services provided to that Client until the privacy consent checkbox has been checked.

Once a Client has been accepted into the program the Service Provider can record the details of the services they receive. There is a maximum financial contribution from the Ministry for each Client. The system monitors the Ministry contribution for a each Client, and will not

The screenshot shows the 'Client' information form in the BC Skills Connect Tracking and Invoicing System. The form is titled 'Client' and includes a navigation menu with tabs: Intake, Planning, Assessment, Enhancement, Workplace, Outcome, Costs, Comment Summary, and Electronic Document. The form is divided into several sections:

- Client Information:** Includes fields for Client ID, Client Name, Service Provider, and a 'Client Unique Identifier' dropdown. A note states: 'Please enter the Client name exactly as it appears on their CC documentation.'
- Immigration Information:** Includes fields for Date of Arrival in Canada, Country of Birth, Immigration Category, and Province of Origin.
- Employment Information Prior to Arrival in Canada:** Includes fields for Education/Qualification (highest level obtained), Responsibility Area, and Previous Employment Sector.
- Current Employment Information:** Includes fields for Current Work Status in Canada, Employment Status, and English Proficiency.
- Program Admission:** Includes fields for Accepted, Accepted Date, Program End Date, and File Closure Date.

At the bottom of the form, there is a checkbox for 'Client has signed a statement regarding the collection and use of their personal data:' and a 'Save' button. The footer of the page contains the text: 'search.aspx - Rev: 29 May 2006 | Version: 1.3.1 | Build: 26154' and 'COPYRIGHT | DISCLAIMER | CONTACT | ACCESSIBILITY'.

allow Service to be entered if the exceed the maximum amount. The program has three different types of services they offer. They also require that the Client contribute to the cost of the services. The required client contribution is dependant on the type of service provided. The service tabs automatically calculate the required client contribution for each service and records the cost incurred by the Service Provider to provide that service. The latter is used to generate the Service Providers invoices for the Ministry.

The second component of the system is tracking the Service Provider information. This is done through a similar interface to the Client tracking, but captures information detailing the Service Provider's consortia members, service deliverers, and the details of their contract with the Ministry.

B.C. Skills Connect Press SPACERBAR or ENTER to activate and use this control

You are logged in as: Cy Naumenko (Administrator)

Service Provider Delete This Service Provider

Service Provider Number: 2
Service Provider Name: Spot Connect

Service Provider Information | **Services** | Contracts | Consortia | Comment Summary | Electronic Document | Invoices

Service Provider

The required fields are marked with *

*Service Provider Name: Spot Connect

Address Line 1:

City:

Province: BC

Phone 1:

Phone 2:

Address Line 2:

Postal Code:

Country: Canada

Fax:

Website:

serviceprovider.aspx - Rev: 30 Aug 2006 | Version: 1.3.1 | Build: 26359 COPYRIGHT | DISCLAIMER | PRIVACY | ACCESSIBILITY

The Invoicing functionality is the most complex portion of the application, and is available to the Service Provider Administrators. A Service Provider Administrator can generate a draft invoice which will detail the services and related costs for their Clients. The information is drawn from the aforementioned Client Services tabs. There are many rules regarding the invoice content and invoice period. When the Service Provider is satisfied with the invoice they click a button to submit the invoice to the Ministry.

The third component of the system is the Ministry Invoice Approval process. When a Service Provider has submitted an invoice it appears on the Ministry tab. The Ministry user can review the invoice, add any required adjustments, then accept or reject the invoice. The status of the invoice is changed on both the Ministry and Service Provider screens when the invoice is through the approval process.

B.C. Skills Connect Tracking System Press SPACERBAR or ENTER to activate and use this control

You are logged in as: Cy Naumenko (Administrator)

Service Provider Delete This Service Provider

Service Provider Number: 2
Service Provider Name: Spot Connect

Service Provider Information | **Services** | Contracts | Consortia | Comment Summary | Electronic Document | **Invoices**

Invoice History

Report type: PDF (hold down Ctrl key when clicking Open)

Invoice Period	Invoice Name	Total Invoice Amount	Date Submitted	Ministry Approved	Status
Initial Adv. Pymnt	Spot Connect_Initial Adv. Pymnt.pdf	\$0.00			Draft <input type="button" value="Open"/>

Generate Invoice

This will generate an invoice for your latest invoice period: . . .

Submit Invoice

This will submit the invoice for your latest invoice period (insert latest pay period here) to the ministry. Once an invoice has been submitted it may no longer be edited.

invoicehistory.aspx - Rev: 30 Aug 2006 | Version: 1.3.1 | Build: 26359 COPYRIGHT | DISCLAIMER | PRIVACY | ACCESSIBILITY

Web services were built so that some of the Service Providers could continue to use their own tracking systems that were already in place. The web services allowed the Service Provider to import Client data from their database into the BC Skills Connect Tracking system so that they could generate invoices.

BRITISH COLUMBIA
B.C. Skills Connect Tracking System

Ministry of Economic Development
B.C. Skills Connect Tracking System

Search
Service Provider
Add New Service Provider
Ministry
System Administration

B.C. Skills Connect Tracking System
You are logged in as: Cy Naumenko (Administrator)

Ministry

Invoice

Ministry Invoice

Invoice Search

Service Provider: Spot Connect Invoice Period: -

Search

Invoice Search Result

Report type: PDF [Hold down Ctrl key when clicking Open]

Invoice Period	Date Submitted	Invoice Name	Total Invoice Amount	Date Ministry Approved	Ministry Amount Paid			
Initial Adv. Pymnt	22-May-2007	Spot Connect_Initial Adv. Pymnt.pdf	\$0.00		\$0.00	Open	Approve	Reject

Save

ministry.aspx - Rev: 30 Aug 2006 | Version: 1.3.1 | Build: 26359

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As the BC Skills Connect Program has developed and undergone changes, the Tracking and Invoicing system has had to undergo changes as well. Three significant phases of the system have been released. **SPOT SOLUTIONS** continues to provide maintenance support for this system.