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TR-07-2001
Canadian Police College Library Catalogue
on the Internet

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TECHNICAL REPORT
June, 2001

Submitted by:
Canadian Police Research Centre

Executive Summary

The Canadian Police College (CPC) is a centre for professional education for members of the Canadian and international policing community. Education services are offered by the Police Executive Centre, a centre for continuous education and learning for police executives, and the Police Sciences School, a centre for training in specialized areas for experienced police officers. The CPC Library is a research and reference centre for the Canadian police community.

With the help of RCMP Informatics, the Canadian Police Research Centre (CPRC) and the National Research Council's Canada Institute for Scientific and Technical Information (CISTI), the Library's catalogue was made available via the Internet in May 2001. Canadian police personnel can now research information on police-related subjects, and are able to request the loan of books and videos by using the "shopping cart" feature of the catalogue.

To request a document from the CPC library go to their website:

http://www.cpc.gc.ca/library_en.html and click on "**Library Catalog**".
For the French version go to **http://www.ccp.gc.ca/library_fr.html** and click on "**Le catalogue de la bibliothèque**".

Sommaire

Le Collège canadien de police (CCP) est un centre de formation professionnelle destiné aux membres de la communauté policière canadienne et internationale. Les services de formation sont offerts par le Centre des cadres policiers, un centre de formation et d'apprentissage continus pour les cadres policiers, ainsi que par l'École des sciences policières, un centre de formation spécialisée à l'intention des policiers d'expérience. Par ailleurs, la bibliothèque du CCP est un centre de recherche et de référence à l'usage de l'ensemble de la communauté policière du Canada.

Grâce à l'aide de l'Informatique de la GRC, du Centre canadien de recherches policières et de l'Institut canadien de l' information scientifique et technique du Conseil de recherche du Canada, le catalogue de la bibliothèque du CCP est accessible sur Internet depuis mai 2001. Le personnel policier canadien peut désormais obtenir de l'information sur des sujets se rapportant à la police et emprunter des livres et des vidéo en utilisant la fonction « chariot » du catalogue.

Pour obtenir un document de la bibliothèque du CCP, il suffit d'aller sur le site Web :

http://www.cpc.gc.ca/library_en.html et de cliquer sur "Library Catalog".

Pour la version française, aller à http://www.ccp.gc.ca/library_fr.html et cliquer sur "Le catalogue de la bibliothèque".

Canadian Police College Library Catalogue on the Internet

Background

The Canadian Police College (CPC) is a centre for professional education for members of the Canadian and international policing community. Education services are offered by the Police Executive Centre, a centre for continuous education and learning for police executives, and the Police Sciences School, a centre for training in specialized areas for experienced police officers. The CPC Library is a research and reference centre for the Canadian police community.

The CPC Library staff have been endeavoring to provide their catalogue to the policing community at large since 1990. The catalogue has gone through a number of changes over the years. From November 1981 to November 1997, it was maintained on the same RCMP mainframe which also housed highly secure information. This meant that while the catalogue was still on the mainframe it would never be accessible to anyone outside of the RCMP. Since the CPC Library serves the entire Canadian police community, it was essential for the Library to provide the catalogue to a wider audience.

In 1990, discussions were held with RCMP Informatics about migrating the Library's catalogue from the secure mainframe. Agreement in principle was reached. However, without funding and resources the project did not progress any further. In 1993, the mainframe software was changed to another mainframe software. The migration of the catalogue records to this new software further delayed the project. In 1996, a consultant was hired to assess the catalogue and make recommendations. A library-specific integrated system was strongly recommended to replace the existing mainframe catalogue and to meet both present and future requirements. Inmagic's DB/Textworks was recommended as the best buy in terms of both cost and functionality.

"Inmagic" is a leading provider of information management and library automation solutions deployed on desktops, networks, the Web and intranets. Inmagic DB/TextWorks is designed to manage a variety of data sources with their proprietary textbase management system, including text, images, and multimedia.

After testing, using a fully functional test version of the software, Inmagic DB/Textworks was purchased in early 1997 with financial support from RCMP Informatics. Within the Library, the migration of the catalogue records, barcoding of the collection and implementation of a number of functions (acquisitions, circulation and inter-library loans) would need to take place before a Canada-wide version of the catalogue could be implemented. The plan was to roll out the search-only version of Inmagic (DB/Searchworks) over ROSS (RCMP Office Support System) to serve RCMP Canada-wide, and to use Inmagic's Webpublisher software to provide access to the catalogue via the Internet. The catalogue migrated from the mainframe to Inmagic's DB/Textworks in November 1997. DB/Searchworks was installed on the OPAC (Online Public Access Catalogue) terminals in the library in December 1997. About the same time, the RCMP decided that an intranet would be implemented throughout the RCMP and the roll-out via ROSS would not happen.

As the RCMP standards for hardware had changed since the purchase of the Inmagic software, Inmagic Webpublisher now could not be implemented within the RCMP. Webpublisher required an NT Server and this was not supported by CPC IT personnel. Another solution had to be

found for the hardware. In addition, prevailing RCMP software standards required a uniform search engine for all applications on the RCMP's intranet (Infoweb) and Webpublisher did not qualify.

The Library prepared a business case for implementing the application on the Infoweb Canada-wide. In 1998, Marc Morin of RCMP Informatics Directorate, Applications Development Branch, Systems Development II Team, began work on creating a Verity/Cold Fusion front-end for the records in the catalogue to be implemented over the Infoweb. In January 2000, an official launch of BiblioCat (the Library's catalogue on Infoweb) took place at an open house attended by Commissioner Phil Murray and special invited guests.

By this time, the catalogue records were being created, maintained and searched, using Inmagic's DB/Textworks 3.1, by the Canadian Police College Library staff. A copy of this catalogue was now searchable by RCMP staff via Infoweb, with a front-end designed by Danielle Holden, RCMP Informatics Directorate, Applications Development Branch, Systems Development II Team.   Cold Fusion, Microsoft SQL and Verity software were used to create this front-end. However, most of the Canadian police community were still unable to access the catalogue.

In the 1999 Library Survey of clients it was determined that, "The vast majority of Library clients -- nearly 80% -- use the Internet to find work-related information," and concluded, "Taking into consideration the increasing electronic savvy of the Canadian police community, it is crucial that the Library catalogue be made available by Internet and intranet."   Neither version of the existing catalogues was available to police officers outside of the RCMP, or to RCMP staff who had no access to Infoweb.

Objective

To make the Canadian Police College Library catalogue available to police officers throughout Canada via the Internet.

What was done

Options considered

A number of alternatives were considered in the decision for putting the catalogue on the Internet.

Alternative 1. Status quo

Although the status quo allowed some police (i.e., R.C.M.P.) to have the ability to search for information remotely, this was not an alternative that would meet the needs of all police officers. The survey of Library clients in 1999 strongly supported the need for the Library catalogue to be available on the Internet.

Alternative 2.   Migrate BiblioCat to the Internet

BiblioCat required a host which was capable of supporting an NT Server, Cold Fusion Server 4.01, Microsoft SQL Server 7.0, Verity 3.01 and Netscape 4.6. A second version of BiblioCat would require regularly scheduled transfers of a second set of data to a separate host, unless the RCMP were to host it. (The RCMP Informatics Directorate had no immediate plans for hosting.)

Two private companies capable of hosting this combination of software were identified:

Option 1   ISP "A" $ 15,000 hardware and initial rollout
     + $26,000 per year support

Option 2   ISP "B" $1,600 initial rollout + $11,000 per year support (includes hardware and software lease)
     We would also have the option to purchase hardware up front, to reduce the annual support fee.

National Research Council's Canada Institute for Scientific and Technical Information (CISTI) was also capable of hosting this combination of software. The Canadian Police Research Centre (CPRC) had expressed interest in enabling the Library to tap into the expertise at CISTI. CISTI staff were willing to assist in the implementation for this version of the catalogue. Although, CISTI is not normally in the business of hosting external databases, they were willing to consider hosting the CPC Library catalogue since the CPRC was supporting the initiative. The CPRC indicated that they might be able to provide half of the funding (up to $5,000) for the development stage being undertaken by CISTI. The sole condition would be that the CPC Library prepare a Technical Memo on the implementation process, which could serve as a reference to other police libraries.

Option 3   CISTI $10,000 initial rollout + $5,000 per year support
     (The CPRC offered to cover up to $5,000 of the initial rollout costs for this option.)

This BiblioCat alternative would permit a single public face to the Library's catalogue to all Library clients. Library staff would have to maintain three catalogues (Inmagic, BiblioCat and the Internet version of the catalogue -- the latter two would be twin catalogues which would require two separate scheduled transfers of approximately 10 megabytes of data to keep them up to date.

Alternative 3.   Use Inmagic's Webpublisher software

The Webpublisher software from Inmagic was purchased at the same time as the other modules for Inmagic DB/Textworks. This software converts the DB/Textworks records, screen displays and print forms into a format that is compatible with the Internet. Since it was originally purchased, there had been two upgrades to the DB/Textworks software. Consequently, an upgraded version of Webpublisher (approximately $12,000) would also have to be purchased to make it compatible with the upgraded version of DB/Textworks.   Software support costs would be an additional annual expense (approximately $1,500).

Option 1   Host the Webpublisher catalogue at CPC.

Webpublisher requires an NT Server.   In order to comply with RCMP security guidelines, this server would have to be physically separate from the rest of the CPC network.   CPC IT Section was not able to support an NT server and had no immediate plans to do so.

Option 2   Host the Webpublisher catalogue at CISTI.

The CISTI library at NRC was using Webpublisher for one of their applications. CISTI staff were willing to assist in the conversion of records and forms for this version of the catalogue. Although CISTI is not normally in the business of hosting external databases, they were willing to consider hosting the CPC Library catalogue since the CPRC was supporting the initiative and Inmagic's Webpublisher is not readily supported in the non-library environment. The CPRC indicated that they might be able to provide half of the funding (up to $5,000) for the development stage being undertaken by CISTI. The sole condition would be that the CPC Library prepare a Technical Memo on the implementation process, which could serve as a reference to other police libraries.

Webpublisher requires a direct link to the DB/Textworks catalogue and its indexes; however, due to RCMP security, the CPC Library catalogue cannot be directly linked to Webpublisher, whether at CPC or at an external host. Consequently, either option in this alternative would require a replication of the DB/Textworks catalogue, with some modifications, to be transferred to a separate host/server on a regular basis for use on the Internet.

This Webpublisher alternative would present two entirely different public faces to the Library's catalogue. For Library staff there would be three distinct catalogues to maintain (Inmagic, BiblioCat and the Webpublisher version of the catalogue for the Internet). The BiblioCat catalogue would still require the weekly transfer of data, and the Webpublisher catalogue would also require a separate scheduled transfer of 66 megabytes of data to keep it up to date.

Alternative 4.   Design new catalogue for the Internet

Design a catalogue front-end commonly used by the majority of hosting providers. This new design would require expensive, extensive programming (approximately 1200 hours at $90/hour).

This alternative would present two entirely different public faces to the Library's catalogue. For Library staff there would be three distinct catalogues to maintain (Inmagic, BiblioCat and the "designed" version of the catalogue for the Internet). The BiblioCat catalogue would still require the weekly transfer of data, and the "designed" catalogue would also require a separate scheduled transfer of an unknown quantity of data to keep it up to date.

Decision

After an analysis of costs, benefits and financial requirements, as well as an analysis of the human resource impacts, accommodation impacts and risk assessment (see Appendix A), the Library concluded that Alternative 2 (Migrate BiblioCat to the Internet), Option 3 (CISTI) was the most viable choice.

Implementation

Between August 2000 and April 2001, the Research and Innovation Support team at CISTI modified the source code provided by the RCMP's Informatics Directorate, Applications Development Branch, Systems Development II Team to meet the requirements for the Internet. Margaret Brignell at the CPC Library tested the changes and suggested modifications. The first full upload of data was successfully loaded on April 4, 2001. Some minor modifications were made to correct problems revealed during subsequent testing. Pop-up window links were created on all of the Library's Internet site pages, to connect the "Library Catalogue" and "New at the Library" links to the appropriate pages in the Internet version of the catalogue. These links were finalized on May 3, 2001. The first loan request on the Internet was received May 3, 2001, from the Sureté du Québec.

Funding

CPRC funded the development of the catalogue on the Internet in the amount of $2,050.

CPC funded the 2000 maintenance contract for this version of the catalogue in the amount of $5,000.

Results/Benefits

The Canadian Police College Library catalogue is now available to police officers throughout Canada via the Internet. Canadian police personnel can now research information on police-related subjects, and are able to request the loan of books and videos by using the "shopping cart" feature of the catalogue.

Contacts/Acknowledgements

The implementation of our catalogue has been dependent on both the immediate work and past work of a number of people:

For the actual implementation of the catalogue on the Internet, we would like to thank:

- Mary D. Zborowski, CISTI, Project Officer, Internet Services, Research and Innovation Support team
- Hans Vulker, CISTI Research and Innovation Support team
- Stephen Anthony, Internet Systems Specialist, CISTI Research and Innovation Support team
- Tammy Volume, CISTI Research and Innovation Support team

For the funding and moral support that allowed us to complete this long-standing project:

- Jamie Kerr and John Arnold, Canadian Police Research Centre

None of this would have been possible without the prior work of:

- Neil Hart, RCMP Informatics, who assisted in the funding and purchase of Inmagic's DB/Textworks, which allowed us to move the catalogue from the mainframe.
- Marc Morin, RCMP Informatics Directorate, Applications Development Branch, Systems Development II Team, for the promotion and early development of the catalogue on the intranet
- Danielle Holden, RCMP Informatics Directorate, Applications Development Branch, Systems Development II Team, for programming the application so that it was not only viable for the intranet, but was also easy to transfer to the Internet.

Thanks, also, to the management of the Canadian Police College for supporting and funding this initiative:

- Tonita Murray, Director General, Canadian Police College
- Nancy Park, Manager, Canadian Police College Library

Margaret Brignell
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Canadian Police College Library

Appendix A

CPCL Catalogue on the Internet
Cost/Benefit Analysis

August 8, 2000

Project	Value/Benefits	Ease of Implementation
Proposed Alternative 1 (Status Quo)	Cost avoidance	
	BiblioCat Accessible to some RCMP Library clients.	BiblioCat is now ongoing. The RCMP is not currently in the business of hosting Internet applications.
Proposed Alternative 2 (Migrate BiblioCat to the Internet)	Improved accessibility for all Library clients. Significant contribution to the Library's strategic objectives. Enhanced credibility and visibility to the Canadian Police College and the Library. If RCMP were to take over hosting functions in the future, this alternative would mesh with the existing RCMP Infoweb BiblioCat version.	Some modification to BiblioCat is required.
	ISP "A" Initial cost savings over Proposed Alternative 4.	Ongoing second update of 10 MB of data to a remote server would be required in addition to the current 10 MB to BiblioCat.
	ISP "B" Initial and ongoing cost savings over ISP "A" quote. Initial savings over other options.	Ongoing second update of 10 MB of data to a remote server would be required in addition to the current 10 MB to BiblioCat.
	CISTI Initial and ongoing cost savings over the ISP "A" quote. Ongoing savings over the ISP "B" quote. Initial and ongoing savings over other alternatives. Partnership with CPRC.	Ongoing second update of 10 MB of data to a remote server would be required in addition to the current 10 MB to BiblioCat.

Appendix A

Project	Value/Benefits	Ease of Implementation
Proposed Alternative 3 (Use Inmagic's Webpublisher software)	Improved accessibility for all Library clients. Significant contribution to the Library's strategic objectives. Enhanced credibility and visibility to the Canadian Police College and the Library.	Some modification to the "Inmagic" catalogue for the second server is required. If RCMP were to take over hosting functions in the future, this alternative would be somewhat difficult to port to the RCMP host.
	CPC Ongoing cost savings over both Alternative 2 and Alternative 4. Ease of transfer of data.	The required 66 MB of data can be copied to a common backup media and walked to the second server for transfer.
	CISTI Ongoing cost savings over Options 1 and 2 in Alternative 2. Ongoing cost savings over Alternative 4 and the CPC option in Alternative 3.	The required 66 MB of data would need to be transferred to a remote server. Common backup media would be required.
Proposed Alternative 4 (Design new catalogue for the Internet)	Improved accessibility for all Library clients. Significant contribution to the Library's strategic objectives. Enhanced credibility and visibility to the Canadian Police College and the Library.	Full modification of the front-end to the data would take one to two months of a programmer's time. If RCMP were to take over hosting functions in the future, this alternative would be somewhat difficult to port to the RCMP host.
	Designed for Internet hosting requirements Ongoing hosting costs would be less than Alternative 2 and Alternative 3.	A separate distinct copy of an unknown quantity of data would have to be sent to a remote server for updating this programmed catalogue, in addition to the current 10MB of data to BiblioCat.

Financial Requirements

Appendix A

Project	Current Year	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Proposed Alternative 1 (<u>Status Quo</u>) Six year cost: $0	$0	$0	$0	$0	$0	$0
Proposed Alternative 2 (<u>Migrate BiblioCat to the Internet</u>) Option 1 ISP "A" **Six year cost:** **$171,000** Option 2 ISP "B" **Six year cost:** **$67,600** Option 3 CISTI **Six year cost:** **$40,000?**	$41,000 $12,600 $15,000	$26,000 $11,000 $5,000	$26,000 $11,000 $5,000	$26,000 $11,000 $5,000	$26,000 $11,000 $5,000	$26,000 $11,000 $5,000

Proposed Alternative 3
 (<u>Use Inmagic's Webpublisher software</u>)
     Option 1 CPC
     software
     hardware
     in-house expertise
 Six year cost:
 $68,500
 Option 2   CISTI
 Six year cost:
 $40,000?
	$13,500
	 $25,000
	 $7,500
	
	 15,000
		$2,000
		
		 $2,500
		
		 $5,000
			$2,000
			
			 $2,500
			
			 $5,000
				$2,000
				
				 $2,500
				
				 $5,000
					$2,000
					
					 $2,500
					
					 $5,000
						$2,000
						
						 $2,500
						
						 $5,000

Proposed Alternative 4
 (<u>Design new catalogue for the Internet</u>)
     common backup media
 	
     + hosting
 Six year cost:
 $135,000
	$108,000
	
	 $12,000
	 $1,250
		$2,000
		
		 $750
			$2,000
			
			 $750
				$2,000
				
				 $750
					$2,000
					
					 $750
						$2,000
						
						 $750

Appendix A

Human Resource Impacts

Alternative 1.   Status quo
The creation, updating and editing of the catalogue records is done on a daily basis in Inmagic's DB/Textworks (by two cataloguers, one acquisitions support person and one circulation clerk). This function is required in order to have an up-to-date catalogue database for uploading. The upload to the current BiblioCat catalogue takes approximately 1.5 hours per week.

Alternative 2.   Migrate BiblioCat to the Internet
The creation, updating and editing of the catalogue records is done on a daily basis in Inmagic's DB/Textworks (by two cataloguers, one acquisitions support person and one circulation clerk). This function is required in order to have an up-to-date catalogue database for uploading.

Some modification to BiblioCat is required by a programmer to make it viable for the Internet. This would be part of the initial development stage.

Regular uploads to the current BiblioCat and the Internet BiblioCat will be required. The upload to the current BiblioCat takes approximately 1.5 hours per week. An additional 1.5 hours would be needed for the Internet BiblioCat version.

Alternative 3.   Use Inmagic's Webpublisher software
The creation, updating and editing of the catalogue records is done on a daily basis in Inmagic's DB/Textworks (by two cataloguers, one acquisitions support person and one circulation clerk). This function is required in order to have an up-to-date catalogue database for copying to the Internet server/host.

Some modification to the Inmagic DB/Textworks catalogue is required by an Inmagic specialist to make it compatible with the Webpublisher. This involves creating and/or converting screen displays, forms and queries. This would be part of the initial development stage and would take approximately two weeks to a month.

Regular uploads to the current BiblioCat and the Webpublisher will be required. The upload to the current BiblioCat takes approximately 1.5 hours per week. Additional time would be needed to transfer the records from the Inmagic DB/Textworks catalogue to the Inmagic catalogue, then transfer these files to the DB/Textworks catalogue being used by Webpublisher for the Internet, and deliver these files to the server/host. The size of the data will mean a physical transfer of files and data through some kind of removable backup media.

Alternative 4.   Design new catalogue for the Internet
The creation, updating and editing of the catalogue records is done on a daily basis in Inmagic's DB/Textworks (by two cataloguers, one acquisitions support person and one circulation clerk). This function is required in order to have an up-to-date catalogue database for uploading.

Appendix A

The design of an entirely new front-end to the catalogue would take several hundred hours (BiblioCat took approximately 1200 hours to create) at the going rate for programmers. (ISP "B" quotes $90/hr).

Regular uploads to the current BiblioCat and the newly designed catalogue would be required. The upload to the current BiblioCat takes approximately 1.5 hours per week. Additional time would be needed to export the records from the Inmagic DB/Textworks catalogue to the newly designed catalogue, and deliver these files to the server/host. This may mean a physical transfer of data through some kind of removable backup media.

Accommodation Impacts

Alternative 1.　　　　　　Status quo
　　None for CPC

Alternative 2.　　　　　　Migrate BiblioCat to the Internet
　　None for CPC.

Alternative 3.　　　　　　Use Inmagic's Webpublisher software
　　If CPC were to host there would be a requirement for space and equipment for this purpose.
　　If not being hosted at CPC. None.

Alternative 4.　　　　　　Design new catalogue for the Internet
　　None.

Risk Assessment

Alternative 1.　　　　　　Status quo
　　High risk of failure, since this does not address the problem. We have been promising a catalogue on the Internet for several years.

Alternative 2.　　　　　　Migrate BiblioCat to the Internet
　　Option 1 - ISP "A"

　　　　　　　　　　- low risk of failure with relation to technical feasibility, since the format is transferable with minor modifications.
　　　　　　　　　　- high risk of failure with relation to funding. Funding is needed beyond A Base to support this option.
　　Option 2 - ISP "B"

　　　　　　　　　　- low risk of failure with relation to technical feasibility, since the format is transferable with minor modifications.
　　　　　　　　　　- medium risk of failure with relation to funding. Funding could be needed beyond A Base to support this option.
　　　　　　　　　　- high risk of failure with relation to transfer of the source code. Legal requirements may not allow use of the source code by the private sector.

Appendix A

Option 3 - CISTI

- low risk of failure with relation to technical feasibility, since the format is transferable with minor modifications.
- low-medium risk of failure with relation to funding. Funding could be needed beyond A Base to support this option. However, there would be a strong possibility of some financial support from CPRC.

Alternative 3.
Option 1 - CPC

Use Inmagic's Webpublisher software

- medium risk of failure with relation to technical feasibility, since the format is compatible with Inmagic DB/Textworks.
- high risk of failure for maintenance, since in-house hosting is not currently done.
- high risk with relation to funding. Funding would be needed beyond A Base to support this option.

Option 2 - CISTI

- high risk of failure with relation to technical feasibility. Although the format is compatible with Inmagic DB/Textworks and CISTI has the software, the experienced person at CISTI is no longer on staff. Someone would have to be hired to implement this function.
- medium risk of failure with relation to funding. Funding could be needed beyond A Base to support this option.

Alternative 4.

Design new catalogue for the Internet
- high risk of failure with relation to technical feasibility, since the system has to be fully developed by an as yet to be selected systems analyst.
- high risk of failure with relation to funding. Funding would be needed beyond A Base to support this option.

Legislative/Regulatory Changes

Not applicable for any of the alternatives.