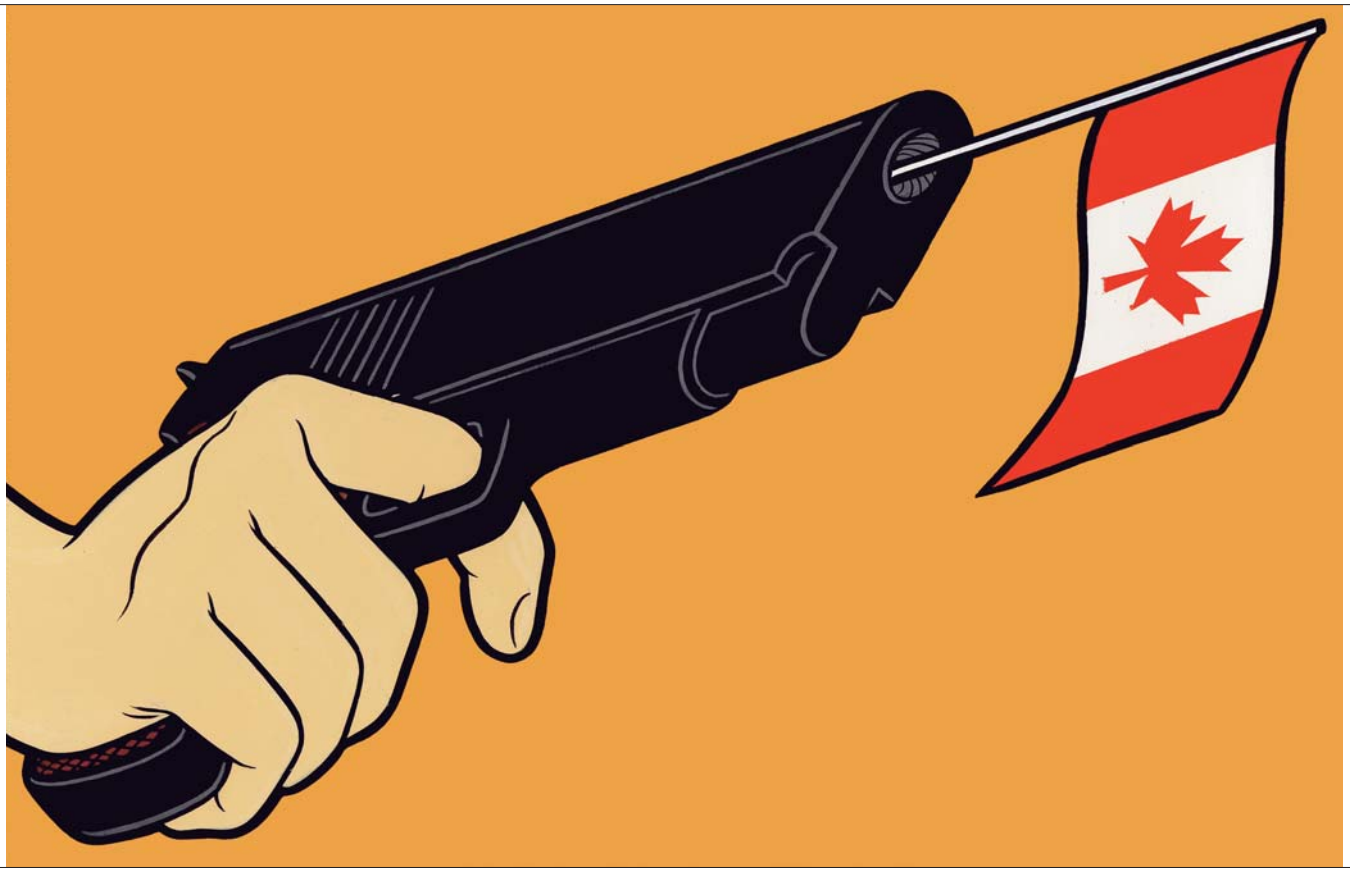


Armed Robbery

A national computerized firearm registry in Canada was supposed to cost taxpayers $2 million. Instead, it has held them up for more than $1 billion. BY MEL DUVALL

ON DEC. 6, 1989, MARC LEPINE WALKED INTO THE University of Montreal's engineering school and fired a semi-automatic military rifle at every woman he saw. Before turning the rifle on himself, Lepine shot 27 women. Fourteen died.

Public outrage to the massacre, the worst in Canadian history, set off a series of events, leading to the passage of a new firearms act in 1995. The measure stiffened Canada's penalties for firearms offenses and called for the creation of a national computerized firearm registry. Under the law, every gun owner would be required to have a license and undergo a background check, and every gun in the owner's possession, no matter how old, would need to be registered. All of that information would be kept in a database that could be accessed by police.

The country's gun lobby strongly opposed the registry, arguing that the cost of developing and running the system would be better spent fighting crime. The government, in turn, argued that the registry could be developed for $119 million Canadian ($88 million U.S.), a cost that would be offset by licensing and registration fees of $117 million. Projected net cost to taxpayers: $2 million.

Instead, the firearm registry turned into a huge embarrassment. "They were warned by their own people this thing wasn't doable. Now they're stuck with a system that's riddled with errors and just doesn't work," says Garry Breitkreuz, a Saskatchewan member of Parliament and a leading opponent of the program.

What was supposed to be a relatively modest information technology project ballooned into a massive undertaking. At last count, the program had amassed more than $1 billion in costs, and the system had become so cumbersome that an independent review board recommended that it be scrapped.

The Canadian gun registry project offers multiple lessons for government and corporate project leaders alike on the difficulties involved in undertaking a controversial project:

- **Define what you want.** From the start, the government failed to develop a clear understanding of the project's scope and the level of inter-government and inter-agency cooperation that would be required.
- **Put someone experienced in charge.** The Department of Justice managed this project, but had never undertaken a technology initiative of this size or scope.

ILLUSTRATION BY NICK DEWAR

CANADA FIREARMS BASE CASE

Headquarters: 284 Wellington St., Ottawa, Ontario, Canada K1A 0H8

Phone: (800) 731-4000

Business: Government agency responsible for issuing firearms licenses and registering firearms.

Commissioner of Firearms: William Baker

Financials: $16 million Canadian ($11.8 million U.S.) in revenue from user fees in 2003; $33 million in operating costs.

Program implementation forecast: $119 million

Actual cost: $1 billion

Challenges: To bring the program's annual operating expenses in line with revenues and overcome public hostility to the program's runaway implementation costs.

BASELINE GOALS

- Reduce annual operating expenses to $25 million per year, from $135 million in 2001.
- Cut waiting times for registration approvals to 30 days, from six months.
- Lower cost of processing licenses to $5.50, from $23.75, and registration forms to $4.60, from $16.28.
- Reduce follow-up inquiries to fewer than 20% of registrations, from 90%.

Freeze specifications. Constant changes were made to licensing and gun registration forms and approval processes as the computer system was being developed. By 2002 more than 2,000 orders for changes had been made, each requiring additional programming.

Don't expect users to comply on their own. The government thought it would have five years, until Jan. 1, 2003, to gradually register the country's estimated 7 million firearms. Instead, firearm owners delayed filing their registrations, leading to a backlog that overwhelmed the system.

The bottom line, says Raymond Hession, a former federal employee hired to review the project and its future, is that the billion-dollar price tag was likely inevitable. "This is a large, complex electronic database, with very large networks and a lot of people accessing it. It costs money," he says. "The problem is the original forecast was based on flawed assumptions."

Prior to 1995, Canada had a limited system of federal and provincial agencies in place to handle the licensing of new guns. However, that system only accounted for guns at the time of purchase—the government did not keep track of the estimated 7 million guns already in circulation. Initially, the federal government believed it could use the same agencies that issued firearm acquisition certificates to handle the registration. However, that plan had to be abandoned when several provinces, primarily those with strong hunting lobbies, refused to cooperate.

The federal government was forced to assume responsibility for the project. It created a new agency, the Canadian Firearms Centre, to act as a single point to manage and control the program, operating under the federal Justice Department.

One other factor dramatically altered the project's scope. A shooting spree in 1996 in British Columbia highlighted an obvious flaw in the planned licensing and registry system. In that instance, the killer applied for a license to purchase a gun and was approved, even though his estranged wife had complained to police several times that he had threatened to kill her. Because the man had not been convicted, the incidents were not recorded in the national police database, the Canadian Police Information Centre (CPIC).

The government then decided to include all violent incidents reported to police, whether they resulted in a criminal conviction or not, as grounds for further reviewing a license application. This involved tapping into the computer records of every police agency in the country and having information on any reported threats, domestic violence or related incidents pushed out to a new central database, the Firearm Interest Police System (FIPS). This database in turn would be integrated with CPIC and the new firearm registry in Ottawa.

Instead of a simple database where citizens registered their firearms, the scope of the initiative had been expanded to that of a large computer networking project.

In June 1997, Electronic Data Systems of Plano, Texas, and U.K.-based SHL Systemhouse were awarded a $30 million contract to build the system. EDS headed up development of the main registry database and application. SHL took on responsibility for the interfaces with other government and police agency systems and databases. At the heart of the system: an Oracle 7 database to collect licensing and registration information, such as the make, model, caliber, and serial number of firearms. An application to input information from mailed-in registration forms, and perform the electronic checks with other systems such as the national police computer database, was created using Sybase's PowerBuilder software.

Dwayne King, the lead developer of the Oracle database, says even with the project's expanded scope, the computerized registry was well within the technical capabilities of the development team. He and others such as Hession attributed ensuing problems to the circus-like atmosphere surrounding the gun registry.

Political wrangling and pressure from the gun lobby and government officials prompted numerous changes to license and registry forms, rules and processes. By 1999, the development team had dealt with more than 1,000 orders for changes to the system, which created headaches for programmers.

Changes to the software required dealing with close to 50 different department or agency computer systems, from the Royal Canadian Mounted Police (RCMP) to each provincial ministry of transportation for driver's license checks, says King. Sometimes requests were completed right away; other times they took a week or longer.

"A project of this size is like turning around the Titanic," King says. "Up until a week before we were due to go live, they were still changing the forms that were going to be filled out."

The changes were not part of the original contract, requiring the government to pay for additional work at contractor's rates.

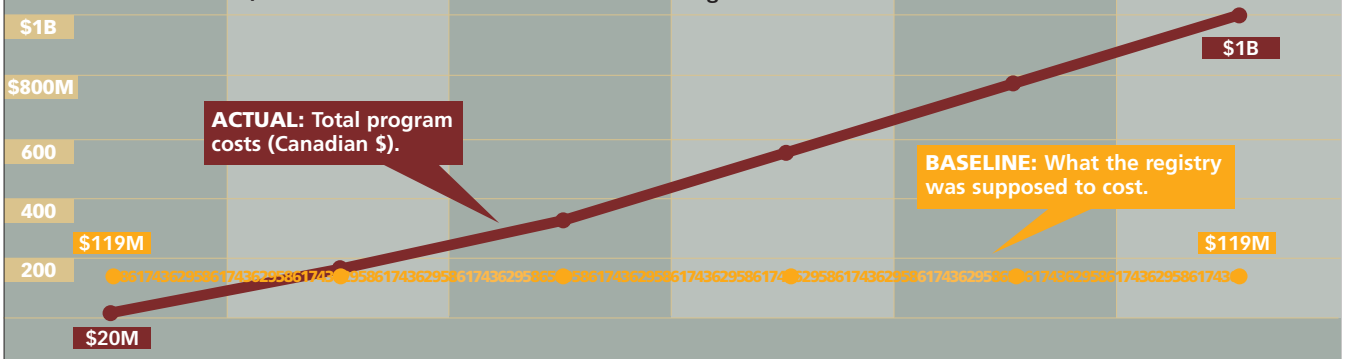
Other unexpected labor costs emerged. When the project was conceived, it was forecast that only 10% of applications would require follow-up by an employee involved in the registry. Instead, nine out of 10 applications required follow-up, either from a call center agent or a local police department, to correct information on a form. Some errors were deliberate—the gun lobby had encouraged people to fill out forms incorrectly to protest the system—but the department admitted that many of the errors were unintentional.

The system went live on schedule in late 1998. Gun owners had until Jan. 1, 2001, to obtain a valid license and until Jan. 1,

CANADIAN FIREARM REGISTRY: A SHOT IN THE DARK

High price for safety: When the Canadian government proposed building a computerized database to track the estimated 7 million firearms in the country, it said the project would cost about $119 million Canadian ($88 million U.S.) to implement. Those costs were to be offset by $117 million in gun-owner registration fees, leaving taxpayers with a bill for $2 million. Instead, costs have soared to more than $1 billion.

98	99	00	01	02	03
New Firearms Act requires all gun owners to be licensed and all guns registered. Of estimated 7.9 million guns, **20,000 are registered**.	**Errors** in processing **raise cost of each registration to $16.28 from original $4.60 estimate**. **Annual owner fees** total **$300,000, up from $100,000**.	Every gun owner **required to have valid license by Dec. 31**. **Fee** for firearm license **reduced to $10 from $45**.	**Government extends amnesty program** to Dec. 31, 2002, to turn in newly restricted weapons such as .25 and .32 caliber handguns. **1.5 million guns registered**.	Canadian auditor general says **registry costs will exceed $1 billion**. Fees received from owners **reach $4.3 million, up from $1.5 million**.	Despite controversy, **majority of Canadians meet registration deadline**. 7 million guns registered, representing **88% of total firearms** believed to exist in Canada.



SOURCES: OFFICE OF THE AUDITOR GENERAL OF CANADA, HLB DECISION ECONOMICS REVIEW, HESSION REPORT, *BASELINE* RESEARCH

2003, to register all guns in their possession.

But ongoing maintenance, development and support costs rocketed out of control. Between 1996 and 2001, about $688 million was spent on the program. Of that amount, $250 million went to the computer systems. Support, such as call centers, accounted for $300 million. The remaining $138 million went to advertising and public outreach programs to encourage compliance.

By 2001, annual maintenance costs had risen to about $75 million, or 55% of the $135 million in operating costs for that year. This figure is significantly higher than the industry norm of 10% to 20%, according to a review by Strategic Relationships Sourcing. Project managers blamed the system's complexities for that cost.

Meanwhile, anticipated revenue from the program nearly evaporated. The government initially believed it could recoup $117 million of the development costs through registration fees, but it decided to wave or eliminate most of the fees to encourage gun owners to comply.

The Canadian government has capped annual spending on the registry at $25 million, down from operating costs of $48 million in 2002 and $33 million in 2003.

In all, Canada's auditor general Sheila Fraser estimates that at least $1 billion has been spent on the program to date—including an unanticipated request from provinces and the mounted police for $135 million to reimburse costs to upgrade their computer systems.

Is the program working? Debate on that topic is also highly charged.

As of May, the Canadian Firearms Centre said 2 million people had filed and received licenses to own firearms. More than 12,000 license applications were revoked due to public safety concerns. In addition, 7 million guns had been registered out of the estimated 7.9 million firearms in circulation.

"It's not the be-all and end-all, but it was never designed to solve all of our gun problems," says Edgar MacLeod, president of the Canadian Association of Chiefs of Police. He says the cost of the registry has become an embarrassment and a nuisance to all involved, but the program works and provides a valuable service.

In a typical domestic violence situation, he says, investigating police officers rely on the registry to determine if guns are present. Onboard computers in police cruisers, or a call to central dispatch, alerts officers to any firearms registered to occupants of the house. The Canadian Firearms Centre says police make more than 13,000 queries to the system each week.

Since 1989, when Lepine committed the Montreal massacre, annual firearm deaths (including accidents and suicides) in the country have fallen from 1,367 to 1,006 in 2002 (the latest figures available), a drop of 26%. Murders committed with firearms have fallen 32%, from 218 in 1989 to 149 in 2002.

Still, critics like Breitkreuz call the registry a "billion-dollar boondoggle" and are pushing hard to have it scrapped. Fellow opponents contend that the $25 million in annual operating costs—if that level can be achieved—would be better spent putting police on the streets.

Proponents of the registry like Wendy Cukier, president of the Coalition for Gun Control and an information technology professor at Ryerson University in Toronto, are digging in to protect a technology initiative they agree is flawed but necessary. "It's not unusual for government computer projects to go over budget, but all the attention this one has received has blown things way out of proportion," she says. "'Billion-dollar boondoggle' is now part of the lexicon."