



CONNECTING CANADIANS
Canada's Community Access Program
A Case Study of Government Strategic Investment on the Internet

Prologue

As deadlines loomed for Industry Canada to complete the connection of thousands of schools and rural Community Access Program sites to the Internet, Pictou Island sat placidly amidst late winter ice packs five miles off the northern shore of Nova Scotia, a community of 40 with a school population of 3, unlinked.

Kim McKinnon stared at the lobsterman's boat idling dockside on the Nova Scotia mainland. It was late March 1999, and McKinnon and Industry Canada teammate Ian Cameron had just completed a last-minute flight from Ottawa to install a Direct PC satellite link on Pictou's schoolhouse roof. Days before, on March 26, the ministry had received a letter from Nova Scotia provincial officials, inquiring when Industry Canada planned to wire Pictou's school. Little time remained to meet the commitment of Industry Canada Minister John Manley to link all Canadian schools to the Internet by March 31.

The note caught Industry Canada staff by surprise. They had understood that all the Nova Scotia connections were in place. McKinnon tried to contact Pictou's schoolteacher, but there was no telephone at the school. She called the aviation company on the mainland. The proprietor, who knew the teacher, offered the teacher's home telephone number, which McKinnon quickly dialed. "You're not connected to the Internet yet?" she asked. "No," the teacher replied. "The provinces put all the plans together, but I think they forgot about us because we are too small."

On Monday morning, McKinnon and Cameron flew with a new computer and Direct PC dish to Halifax, and made the last leg by car to the coast. That was as far as the weather permitted. There was no bridge. The weekend's foul weather had grounded the Cessna service to the island, leaving passage by boat as the only means of crossing. Warm-season ferry service was months away. With three days to make the installation and the deadline, McKinnon and Cameron appeared land-locked.

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The lobsterman had been kind to offer his boat. As they rumbled through the ice patch and entered the open waters of the Northumberland Straits, McKinnon and Cameron huddled in its midsection with their gear against the wind. “I’m on a lobster boat, we’re in the middle of the ocean, and I’m a bit scared,” she called in on her cell phone, the wind palpable. “But we’re moving.”

On shore, all of Pictou Island had turned out to welcome McKinnon and Cameron with cheers and friendly excitement. Having finally reached the island, they went straight to the school to start the installation.

A momentary crisis occurred as Cameron discovered that he was missing a 6-inch connector cable. He had left it locked in the car, back at the landing. But Cameron was able to wire the connection a little differently, and to the crowd’s great pleasure and relief, finally got the system working. Kids had the Internet that day.

Kim McKinnon enjoyed her first meal in late afternoon with a strong drink. People were thanking them profusely. There is no hotel on Pictou Island, and it was too late in the day to return. She gratefully accepted the hospitality of her new acquaintances for the evening.

The next day, she and Cameron found that the lobsterman had gone. But the weather was clearing, and the Cessna soon flew over to return them to the mainland.

As for the kids on Pictou, they were just amazed with the Internet. “We can go anywhere we want now,” they exclaimed. Parents enjoyed it too, and began making plans to open Pictou Island’s new schoolhouse Internet link to all the island’s residents, young and old.

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Background

Canada has a proud history of firsts in telecommunications. Alexander Graham Bell made the world's first long distance telephone call from Brantford, Ontario, to Paris, Ontario. Guglielmo Marconi sent the first transatlantic wireless message from Newfoundland's Signal Hill. Canada owns and claims the world's first domestic digital microwave transmission network, the first geostationary satellite communications network, and the world's longest fiber optic communications network.

Communications are critical to Canada because of its imposing imbalance of geography and people. It has a population of 30 million, about the same as California. But by landmass, Canada is twenty-one times bigger. In fact, by landmass Canada is the second largest country in the world, stretching north-to-south from the North Pole to the United States border, and east-to-west across five time zones.

Canada's population tends to concentrate along two major demographic fissures. One separates the north from south, the other, urban from rural. Half of all Canadians live in or near one of eight major metropolitan areas, for example. Whether by force of history, trade or climate, from the Atlantic Ocean to the Pacific, 27 million Canadians now live within 100 miles of the US border. Somewhere north of that zone – somewhere in the 3.5 million square miles of prairie, forest, Arctic tundra, and islands comprising the remaining 99 percent of the Canadian landmass -- live the other 3 million Canadians.

Canada has relied on its communications infrastructure to narrow these physical gaps and to bridge any social divides that might arise between “haves” and “have nots”. The consequence, over the years, is a nation that is deeply invested in telecommunications, that is accustomed to government interventions in private markets to achieve policy goals, with a well-developed telecommunications infrastructure, and accepting of an ethos of guaranteed, near-universal access to telephones and televisions.

By the mid-1990s, surveys showed that 99 percent of Canadian households had telephones, connected by 16 million access lines running over 150,000 miles of public switched telephone and data networks. By 1998, wireless penetration had increased four-fold over five years, to 5.2 million subscribers. Two thousand cable television systems passed by 95 percent of homes. Scattered about the country were 250,000 satellite dishes. Broadcast media was ubiquitous: 617 AM stations, 1,000 FM stations, 2,025 television stations.

By 1998 the price of a five-minute long distance call of 2000 miles had fallen to equal that of a call of 250 miles. Leaders of Industry Canada, the government ministry responsible for telecommunications, acclaimed “the death of distance.” But this did not mean that full or complete north-south linkage had been achieved, for example. Nor did it mean that access to the communications infrastructure and all that implied – economic advantage, social integration, political enfranchisement – had been evenly distributed among all Canadians, urban and rural.

The Rural Access Challenge

A universal fact of rural life -- “fewer services at higher cost ” – applies to Canada.

Historically, urban telephone service subsidized rural and remote service, both local and long distance. Yet even with pricing schemes such as “route averaged pricing,” which kept the cost-per-mile of long-distance calls constant, the cost of extending single-line service into rural areas was often beyond the financial capability either of carriers or individual customers. As late as 1995, for example, 275,000 Canadian households, most rural, had only party-line telephone connections.

Similarly, upgrades of telecommunications networks for digital and high bandwidth access were principally planned for urban areas, where a reasonable return on investment was likely. A 1995 government report stated bluntly that, because such upgrades “may never be profitable at all” in rural areas, delays would be inevitable except for government intervention.

Government intervention in private markets – a history of “nation-building triumphs,” as one government report observed – is a venerable Canadian tradition. Where compelling national interests have warranted it, as in the laying down of the Canadian Pacific Railroad, or where market forces have created unequal access to goods commonly thought public, Canadian governments have intervened.

Nowhere has this been more forcefully evident than in telecommunications. Canadian governments have consistently sought to shape the format, content, and scope of the telecommunications services that Canadians receive.

The Broadcasting Act, for example, required that radio and television services be made available to all Canadians in French and English, conferring equal status and cultural weight to Francophone and Anglophone communities.

The Telecommunications Act legislated universal access to telephone networks as a policy objective in “all regions of Canada,” specifically rural and remote, reflecting the deeply held Canadian belief that access to telecommunications was a right, not a privilege, for every Canadian.

The Supreme Court, ending decades of independent provincial price-setting and disparate development of telecommunications infrastructure, affirmed federal jurisdiction over Canadian telecommunications in 1989. Until then, seven of the ten provincial governments regulated their own major telephone companies and over 50 smaller, independent ones.

Other laws sought to buttress Canada’s “cultural sovereignty” by requiring Canadian control over television and radio signal distribution, whether by cable, broadcast or

satellite. “Canadians have always accorded cultural and communications industries a special status in recognition of their strategic role in defining and maintaining Canadian sovereignty and cultural identity,” a government report observed. Laws required, for example, Canadian ownership of broadcast companies, the use of Canadian satellites for transmissions into Canada, and Canadian-approved signals.¹

Industry Canada’s Michael Binder summed up the Canadian experience:²

If there’s one difference between us and the U.S., it is in the strong belief in the U.S. that the market will solve everything, whereas here, we believe in partnership – the government absolutely has to get involved.

It’s based on our population distribution and geography, and economic nature. It’s a lot easier to go from Ottawa to Boston and Chicago and New York, than to fly to Vancouver. Not to mention going north, where there’s nothing. Our population is right on the border – within 100 miles of the border is 95% of the population. The rest of the country has some of the most isolated, remote communities in the harshest climates on earth.

So for us to provide telecommunications service to all Canadians has always been a challenge. What we’ve done is we’ve enshrined it in legislation. We’ve said that we want all Canadians to have affordable access to telecommunications, wherever they are – *wherever they are*. Now, when we said that, we of course thought, voice telephony. But the Telecommunications Act doesn’t say “voice telecommunications,” it says, “telecommunications.” So as telecommunications evolve, so must affordable access.

Less is More

In the early 1990s, Canadian governments began to focus more on doing less. Thirty cents of every Canadian tax dollar was going to service the national debt, dragging the economy to a crawl. A new Liberal Party government had pledged itself to tax relief, cost cutting, and restoring open market competition to highly regulated markets.

In 1992, for example, with federal hegemony over telecommunications established, the Canadian Radio-Television and Telecommunications Commission (CRTC) introduced

¹ When pressed by American negotiators to open Canada to signals beamed from American-owned satellites, Canadian officials became irascible. “Culture is not on the table. Never was, never will be. We are not budging on this issue,” stated Michael Binder, the senior civil servant responsible for the Government telecommunications policy. With 93 percent of movies in Canadian theaters America-made, and 60-70 percent of television programs American-sourced, Binder wondered what the worry was about: “For goodness sake,” he quarreled, “do they want a higher market share than that?”

² Binder’s title is Assistant Deputy Minister of Telecommunications and Spectrum Management

long distance competition. Soon after, the CRTC authorized the increase of local monthly telephone tariffs closer to market rates, and at the same time opened up local telephone service to competition by cable television, satellite, cellular, and other providers.

The reversal of trend coincided with increasing concern in Canada over its ability to compete in an emerging global information economy. The Internet had reached into Canada by the late 1980's, principally through the aegis of university research networks that linked institutions in Ontario, Quebec, and British Columbia. By 1993, most universities were online and businesses were moving quickly to connect. Many of Canada's elite accessed the Internet through such university or corporate links.

Other Canadians encountered the Internet for the first time by a variety of means – some over American-owned megaportals such as CompuServe, Prodigy, and America Online. Others came to it by subscription to a handful of Canadian Internet service providers; and others over Freenets – highly subsidized community bulletin boards systems that offered dial-up access to email, discussion groups, and limited Internet services.

The common and distinguishing feature of each of these methods was their limited availability, high true cost, and, in some instances, severe service shortages.

The Internet, for example, was ordinarily available by local call only in the south and in urban areas. In the north and rural areas, long distance charges effectively made Internet access a privilege of the few. In addition, institutions and governments subsidized university and research use, as well as Freenets. Although they appeared “free” to users, their true costs were substantial and hidden. Eventually, Freenets became jammed – some reported as many as 110,000 registered users, but only 150 access lines. Delays were common, and businesses never regarded Freenets as a reliable solution.

Although many Canadians' first encounter with the Internet was limited to an adventurous few, constrained to an elite group of users, shaped by American megaportals, and characterized by access delays to “free” networks and a distorted view of true cost, Internet clamor grew. It made out the Information Highway to be a place of risk, daring and opportunity. Interest – and with it, demand -- increased.

“This past summer,” one media outlet reported in 1993, “Boswell James accidentally turned his Halifax bookstore into a global business....” Another recounted that “in Canada, the Internet has bedeviled the courts by carrying banned information about the Karla Homolka and Paul Teale murder trial in a newsgroup called alt. Fan.karla-homolka.” Another chided provincial officials whom the Internet opened to international opprobrium. “When the Innu of Davis Inlet were bracing for an RCMP invasion last September, they alerted the world by posting running commentaries to the Usenet groups alt.native and soc.culture.natiive.... Newfoundland's Justice Minister called the Innu's foray into cyberspace ‘pathetic’ after he received a pile of faxes from concerned and outraged people across Canada and the US.”

The Government Notices

With popular interest in the Internet increasing, the federal government itself had an eye on the global economy and its trading partners -- the United States, European Union, the Pacific Rim, Japan. It did not like what it saw. "If Canada does not match the efforts of its competitors in accelerating infrastructure development," a government report warned, "opportunities for network, product and service development -- and the resulting economic growth and new jobs -- will be seized by firms in other countries."

By 1994 the government of Canada was ready to act, but was unsure how best to position the nation, the government, and the economy to compete. Its Information Highway Advisory Council would soon set out clear objectives: "to build the highest quality, lowest cost information network in the world... to make Canada number one in the world in the provision and utilization of the information highway, creating substantial economic, social and cultural advantage for all." But in its early deliberations, the Council seemed to prevaricate: how fast, it wondered, should the advanced information infrastructure be built? Who should pay for it? How should Canada balance competition and regulation? How can Canadian content be protected? How could Canadians be assured of universal access at reasonable cost?

As it pondered, important initiatives were already underway by federal and provincial entrepreneurs -- government officials with a vision and passion for Canada -- that would open Canada to the information economy and accelerate its ascent to the peaks of connectivity.

SchoolNet

With a little encouragement Doug Hull could easily skip a few milestones. "I figured that if it was so easy to get 12 computers into the schools, why not 12,000?"

In 1993, Hull was Director-General, Science Promotion and Academic Affairs, at Industry Canada (three ranks below Minister). His unit was beginning to distribute scholarship application materials electronically. "We knew nothing about the Internet," he said, "and it was costing us a fortune." Exploring his options, a staff member gave him strong advice. "The Internet has so much more power than dedicated networks," she told him. "Use it."

Hull quickly set to "looking at what the Internet was all about and how we could begin to wire the schools." It took him little time to make up his mind. He told staff the Internet had "vast potential... it was an incredible medium to promote and enrich learning environments," and it would henceforth be their domain of operation.

Also in 1993, Hull's group was initiating the first transfer of surplus government computers to Canada's K-12 schools. Earlier, the government had announced its intention

to increase the schools' access to information technology. Following that announcement, one of Hull's staff noticed surplus computers waiting to be discarded in the basement, and thought, "Why throw them away?" A plan took hold to give the discarded computers – Michael Binder described them as "perfectly fine machines bound for landfill" -- to schools. The government adopted the initiative as a formal program, and announced its goal to deliver 300 computers to schools by year's end.

As Industry Canada delivered its first refurbished computers, connectivity took center stage. Hull turned to it to establish SchoolNet.

First Trials

In 1993 the Internet was still a risky place to be – socially, politically, technically. "With something so new," recalled Elise Boisjoly, who is today Executive Director of SchoolNet, the program that has connected 16,500 Canadian schools to the Internet, "our way to achieve it was to bring people from all across the country that have a shared vision."

A dozen advisers from government, industry and education met with Hull in Toronto for a day in May 1993. "SchoolNet basically mushroomed out of that," Hull said. From that meeting, Industry Canada sprouted a small, first trial, wiring local Ottawa schools across the Internet, with a full-fledged pilot planned for an October launch in Newfoundland.

"We talked to some schools in the local Ottawa area," Hull recalled, "and they said that they were prepared to be guinea pigs, but not if it was going to cost them anything. We got the computers out of the basement of Industry Canada headquarters. Bell gave us some telephone lines. The university donated the server. We hired some students to do the engineering work and put stuff up on the web. They made an initial set of index stuff – before Mosaic, back in the Gopher days – listings of educational material."

The Ottawa trial passed muster and the full-fledged pilot linking schools to the Internet launched in October 1993, using satellite links between a school in Newfoundland and one in Niagara.

Expanding the Scope

With the first SchoolNet pilots operational, Industry Canada sought plans for a national implementation. But it faced a quandary.

Education in Canada is a provincial matter – there is no federal education ministry. How could Industry Canada, a federal ministry, remain visible and active in the SchoolNet initiative, move things forward nationally, connect more and more schools across all

provinces, and still keep the federal presence muted and within bounds? The last thing anyone needed was a federal-provincial spat over the Canadian Internet.

The ministry's next move mirrored its first: bring all parties to the table. In late 1993, Industry Canada convened a National SchoolNet Advisory Board comprising 50 members, including leaders of education, industry, and federal, provincial, and local governments. "Totally unmanageable," Elise Boisjoly recalled, but broadly representative.

At its first meeting, the Advisory Board ratified a goal of connecting 300 schools to the Internet by the end of the 1993-94 school year.

Leveraging Partnerships for Connectivity

It was a difficult time for program expansion. The Canadian economy was under fierce pressure. The government was reducing costs and services. There were few resources on hand to achieve any new programmatic goals. Recognizing this, the Advisory Board counseled Industry Canada to leverage schools' connectivity nationally through third parties rather than pay for it directly. The key to this would be partnerships with private industry, volunteer groups and associations, and government organizations.

Over the winter of 1993-94, Canadian efforts to link schools to the Internet began in earnest and on a national scale. Partnerships took hold. Human Resources Development Canada, for example, another Canadian federal government ministry, committed its own funding to support the connectivity. Provincial governments and education associations promoted SchoolNet's possibilities to local schools, which were largely oblivious to the Internet. The private sector donated long distance service, and provided modems and equipment at discount.

The adoptions went well. "Very quickly," Boisjoly recalled, "it went into the classroom."

It was not all done out of charity. As one cable executive remarked, "Schools aren't interesting from a commercial point of view." What was interesting was the visibility, the opportunity to create connectivity over a variety of media, and the prospect of tax savings from laying in media – cable, telephone, satellite – that could later connect more significant markets. Home users – "that's the real target audience," the executive stated.

As for Industry Canada, "its role on the connectivity front," said Boisjoly, "was to motivate the private sector to support the connectivity of schools by building demand from schools for Internet access."

At the time, there were few quality K-12 educational services on the Internet, and fewer still from Canada. There was little good reason that Canadian schools would want to connect.

To fix this required content. Rather than build content directly and risk provincial wrath, Industry Canada supported independent efforts to digitize lesson plans, to initiate collaborative projects using email, and to develop online services such as connections to databases of maps of cities and provinces. Staff was careful to describe these as “not curriculum or activity for the classroom, but a service that teachers can harness and use in their classroom.”

The National Implementation Gathers Steam

That winter, competition began to heat up for inclusion in SchoolNet. Provinces looked to their neighbors and, as the *Calgary Herald* reported, sometimes found themselves wanting:

Alberta is running last in the country in linking elementary and high school students to a countrywide computer network of experts and resources. Compared with other provinces, Alberta has connected only a fraction of public and private schools to the SchoolNet – despite having one of Canada’s highest concentrations of science and engineering professionals. ‘As a westerner, it hurts when part of the West isn’t moving as fast as the rest of the country,’ Dr. Jon Gerrard, Secretary of State for Science, Research and Development, said in an interview.

Having induced private sector investment, aroused and corralled government support at all levels, stimulated school demand and breached the invisible barrier of strangeness that till then held the Internet in check at the school house door, Industry Canada had surpassed its goals for SchoolNet by an order of magnitude. In June 1994 it had linked not 300, but 3,000 schools across Canada. Even if most schools had only one computer linked online to the Internet, it was a remarkable accomplishment.

First Nations

The achievement was all the more striking considering some of the geographical, technical, and climactic hurdles involved.

This challenge was particularly acute in wiring First Nations schools of indigenous peoples – “remote dots all over Canada,” as one Industry Canada staff member described them. Many communities had not a single telephone, never mind Internet tools or access. They were “so poor that the Internet could not travel.”

With no telephone landlines, Industry Canada turned to Canadian satellite and telephone companies. It negotiated bulk rate charges of \$30 per month per school for satellite services – a steep discount from the market rate of \$3,000 for equivalent service, with the companies making up the difference. Where necessary, Industry Canada combined two different satellite systems. For the uplink – requests to the Internet -- it used MSAT, which had slow transmission times. For the downlink, it used DirectPC for fast download of the large files answering the requests.

By the end of 1994, SchoolNet had emerged from trial, grown to pilot, and triumphed as a national project. The federal government included \$13 million annually for the succeeding four years, and set as its target the bringing online of all 16,500 Canadian schools by March 1999.

Community Access is Next

“I recall where the idea came from, and it’s ironic,” Doug Hull said. “It was a General Services Administration report, page 42 or something, talking about the delivery of government services. There was a little line in there that said that schools could be good distribution points for government services if you’re going to go online. ‘Son of a gun,’ I said, ‘that’s absolutely right. Why shouldn’t we turn schools into distribution points for government services? We could broaden access from the schools, and give them more bandwidth for less in trade.’”

The idea created both opportunity, and risk.

“Once you make this leap out of the box into giving computers to kids,” Michael Binder observed, “you say, ‘Well, what are you going to do with this? How are you going to connect them?’” SchoolNet came about as a result. “And once you start talking about rolling out access to the Information Highway, what are you going to do about the ‘haves’ and ‘have nots’ – people who don’t have computers?” The problem of equal access loomed. “People hear about this. They don’t want to tell anybody, even their friends, that they don’t have computers. So you have to have a public access point where kids and adults can go in and test the thing.”

“That’s where the idea came to take SchoolNet, experiment, see if schools could become CAP (Community Access Program) sites,” Hull explained. “I remember reading it sitting at a desk one afternoon when I had nothing else to do, and I can tell you, it stopped me from ever having an afternoon like that again.”

New Brunswick Opens

“Usually, if the federal government does anything that works reasonably well they crow about it all over the place,” stated Frank McKenna, former Premier of the Province of New Brunswick. “But this was an obscure program that never really got a lot of press.” It was, he said, “just one of a number of innovations that was spawned directly out of this small unit at Industry Canada. They didn’t try to get political credit for it, or a high profile on it, they just went out there and did it.”

Convinced of his vision and the soundness of the “leverage-through-partnership” strategy, and with the national SchoolNet implementation under way, in early 1994 Hull polled his provincial government counterparts. Were they interested in piggybacking wider community access onto existing SchoolNet sites? His first stop was Byron James and Dave Roberts in the New Brunswick ministry of education.

“It was logical that they would pick New Brunswick as the first site,” McKenna observed. New Brunswick had turned to the information economy to deal with economic collapse in its traditional labor markets. Jobs in the natural resources sector -- forestry, fishing, farming and mining -- were in “meltdown,” McKenna said. “It became obvious to us that we had to replace them.”

“We were investing a large amount of money into making our schools technologically proficient, and having success in attracting call centers and developing value-added technology industries,” McKenna said. “We also had a very strong mandate to transform our economy,” he continued. “We were quite nonpartisan about it. And we were organized to move quickly – everybody in Ottawa who had an idea knew that New Brunswick could get into motion right away.”

The New Brunswick schools were flush with computers. “The idea,” Hull said, “did cross our minds that all of this computer equipment was being put in the schools, but they were closed in the evenings. It was just an observation that we had more capacity than we were using, and we could easily allow the general public in at night.”

New Brunswick and Industry Canada quickly signed on to a pilot. But there was a twist.

Rural First

Hull wanted to concentrate on rural areas first.

“Urban areas will generally find a solution of their own,” Hull explained. But rural was different. “You go into a rural community – people are used to working together, which is good, but they need the help. They don’t have all of the

resources.” Michael Binder concurred. “Downtown Toronto, Montreal, in Ottawa and Vancouver – it’ll happen, because it will make business sense,” he said.

Industry Canada was determined to implement community access to the Internet starting from Canada’s rural periphery, and to work only later toward the urban center. “The industrial age,” Hull observed, “has hallowed out the hinterland around most urban areas. These communities get the sense that they are dying and withering away.” With rural Internet access, Hull stated, “people can realize that the world is available to them and that is a two way street.”

Dave Roberts agreed and identified six pilot sites: three English-speaking, two French, and one First Nations.

Barriers to Success

In general, two obstacles stood in the path of a “rural-first” roll out, though each was less acute in New Brunswick, with its technology advantage.

First, at the local level, Industry Canada would have to bring rural Canada forward to the 1990s world of the Internet computing. “You’re talking about rural communities, who don’t know anything at all about information technology,” said Wayne Tosh, who now directs CAP nationally for Industry Canada. “This was a big sell-job to get people used to it in the early stages.”

Second, rural sites almost always required a long-distance link to the Internet, which was a prohibitive cost. It would cost money to install and operate.

Opening the Sites

Industry Canada used New Brunswick to test approaches to solving both problems. With its technology advantage, New Brunswick was a good place to work out any kinks. In the rural north, Canada would be much more demanding, and less forgiving.

To orient local residents to Internet computing and build their skills, Industry Canada and New Brunswick hired contract coordinators who managed the sites and provided training. They sold the program locally, helping to create local awareness and build individual Internet computer skills. “Getting people there,” Tosh said, “getting people exposed to the tools, learning how to use some of the Internet – that was what it was all about.”

To defray long distance costs, Industry Canada and New Brunswick each contributed sums -- a total of \$200,000 for both training and long distance connectivity. By October 1994, NBTel, the local telephone company, had linked each of the six test sites to the Internet over its system.

Gagetown, New Brunswick was one of the first Community Access Program sites to open. Visiting the school, Hull found 20 computers operating, and was reminded of New Brunswick's strong prior investment in computing. He also witnessed, firsthand, the value that Internet linkage added, and what community access meant. Hull recalled his conversation with town officials:

The Mayor said, 'When trade was by river, we used to be right on the main route. Then came the real highway, which bypassed this town, and we've been languishing for the last 100 years. Now, with this program, the information highway is here and we don't mean to be left behind. We're tired of our kids leaving town. We want them to stay here. Until now there has been no prospect for development here, because the only highway has been far away. The Internet is changing all that.'

Ramping Up

The pilots set the stage for CAP expansion. Over the fall of 1994 and early winter 1995, Hull had energetically recruited his other provincial counterparts throughout Canada to host their own CAP pilots in schools.

"We arranged 40 sites across the country," Hull recalled, as though it had been effortless. He offered an example. "When we did Saskatchewan, I phoned the people we'd been working with on SchoolNet. Remember that we were using schools exclusively. 'Well Bob,' I said, 'SchoolNet was so good, what about the idea of turning schools into access points?' 'Well, leave it with me,' he said, 'and we'll get it going.'"

McKenna Steps Up and Sparks the Fire

Frank McKenna recalled that the early CAP site tests was so low-key that his first encounter with CAP, even in his own province, was quite by accident.

"I was campaigning for re-election in 1994 in a little community called Blackville, a small rural village, speaking at a school," McKenna remembered. "And the principal took me around the school and showed me this program, explaining to me how parents were coming in the evening, and they were actually working on the computers, sometimes side by side with their children."

“So I filed it away in my head,” McKenna explained, but came back to it as soon as the election was over. He was amazed when he was later briefed on what was taking place at Blackville and the other pilot sites.

“What I discovered,” McKenna said, “was that this was a federal program that had been introduced. That was somewhat of a shock to me because at the risk of sounding cheekish there is very little innovation that traditionally comes out of the federal government. But this was, and it came from Industry Canada.”

Mr. McKenna Goes to Ottawa

McKenna learned that Doug Hull was leading the federal side of the initiative, and went directly to him. “I always found,” said McKenna, “that when you wanted to do something, if you wanted the freshest drink of water you went right to the head of the stream.”

“I’ll never forget the day that McKenna came in to meet with Doug and me,” Wayne Tosh allowed. “‘Great idea,’ he said. ‘Wished we’d thought of it first. But we’re pleased to work with you.’”

“I realized that this was just exactly what it was that we needed to fill in one of the blanks in our province,” McKenna said. “And that was the large number of people who were illiterate on computers and who we needed in the labor force.”

Wayne Tosh winced recalling the furor at Industry Canada caused by McKenna’s violation of protocol, having gone straight to Hull, skipping the ministry’s Deputies, and the Minister himself. But McKenna didn’t blink. “We established a relationship where I would rather deal with him than most of the other people in Ottawa. Doug Hull is one of the finest civil servants I’ve ever dealt with. He was a “get it done now” guy. He had a lot of vision, and a lot of drive. It was a real pleasure to work with him. He felt comfortable with us,” McKenna held.

McKenna laid his cards on the table. “As I recall it,” McKenna said, “We said, ‘We know that you want to roll these out in Canada. We just want to tell you: we want as many of these as you can offer, and we’re prepared to sit down and put some of our own money in, and work with communities in getting them set up, so that you can roll them out in our province quicker than anywhere else.’”

“And that’s exactly what we did – after that pilot, we just opened them by the dozens.”

Ottawa Considers

As the remaining 40 pilot sites came online across Canada in late 1994 and early 1995, Hull returned to Ottawa with victories under his belt, blazing hot provincial support from influential backers like Frank McKenna, and an Industry Canada proposal to the federal government. Fund 1,000 CAP sites, with the federal share capped at \$30,000 per site, for 18 months of operations at each site. After that, the sites would be on their own.

The climate in Ottawa was at once stingy, but favorable.

“In ’92, ’93, ’94,” Binder observed, “we were a basket case. Canada was running one of the largest deficits in the G-7, and there was enormous pressure to eliminate deficits. Which is what the government did – reviewed programs, cut all subsidies.” Industry Canada’s resources were slashed by 60 percent.

At the same time Ottawa was resonating to the draft recommendations of the Information Highway Advisory Council. Finished with its initial report, the Council recommended a speedy, full-court press of investment – with a focus on universal access.

Hull was confident that the request would prevail. “Doing something like this in rural Canada is not a problem,” he observed. “Yes, there aren’t as many voters out there, and yes, the MPs from those areas aren’t as strong politically. But generally speaking,” Hull said, “people are persuaded by a right idea. And,” he added, “we’re not using a lot of money.”

Hull was counting on the success stories from the early pilots to help make the political case. “It’s more important to get momentum than leverage,” he observed. “We got away with it because we were not using a lot of money. The key to this is that if you try to do something really big, there are many people who try to deflect you in a certain direction. Do something small, you can make a lot of progress.”

Strong as its momentum was, Industry Canada was unveiling another weapon in its war for broad-based support for community Internet access: a youth employment strategy.

Diversifying CAP: Industry Canada’s Youth Employment Strategy

“Having come up with this idea for government to make the Internet universally accessible, to focus it on youth and the underprivileged minority groups in the county – be it language, economic or geographic, or social groups -- has worked like a charm,” Hull asserted. “The feedback from these groups through the political process has been incredibly powerful.”

In Ottawa, Pierre Gendron wondered how his Computers For Schools unit could possibly keep up with the growing demand from schools for rebuilt computers. To restore and ship large quantities of “perfectly fine machines bound for landfill,” as Binder called them, Gendron had recruited the Telephone Pioneers, a group of telephone company retirees. The companies themselves had contributed repair space, and Gendron persuaded the railroads and airfreight services to ship the computers he’d collected, in Ottawa, once repaired, back out to the provinces.

But demand was outstripping Gendron’s capacity. In 1994, he diversified. Computers For Schools, which he directed, started a computer repair workshop in Industry Canada’s backyard, Ottawa, staffed with young technicians just graduating from area technical schools, and overseen by Telephone Pioneers. “The technicians needed something to do until their first job,” Gendron explained. “They work for us for three months, learn how to repair computers, get real practical experience, and meanwhile they go job hunting.” The workshop initiative, which Gendron exported to provincial partners, induced strong support national support, and pushed the repair operation to the local level. “We are building friends and champions across Canada with this,” he observed. By 1999, the Computer For Schools Program operated 65 such workshops across Canada.

The concept of computer repair workshops soon migrated into the school curriculums themselves. School boards noticed it was easy and valuable to get kids working on fixing the machines. In Gloucester High School in Ontario, for example, all Grade 9 children were to spend two weeks in the school’s computer workshop, working in teams of three to repair computers that Gendron’s unit shipped.

In Quebec, computer repair became the focus of at-risk youth programs. “For dropout kids,” Gendron explained, “they started a program where in the morning they learn English, French, math and Computers, and in the afternoons they are fixing our computers or stripping and recycling parts.”

Computers For Schools soon found itself supporting independent community-based repair organizations that sprouted up to train older, dislocated workers in the same skills.

Beyond computer repair activities, Industry Canada discovered that the Community Access Program sites themselves could provide direct opportunities for youth employment – as trainers and computer service providers. Industry Canada sponsored a provincial youth employment program with Quebec, for example, situating a CAP site in an old bank building in a depressed, “at-risk youth” area, as one staff member described it. Industry Canada’s investment of \$20,000 leveraged over \$800,000 in provincial and private sector support for the site – 25 computers open for public access, 21 for training purposes, fiber optic linkages to the Internet, in operation seven days per week.

“The youth are the primary clients of the site,” one Industry Canada staff member explained. “Once they are trained, they provide direct services to the site, and themselves search for jobs. It acts as a platform for them to get involved in the work environment,” and most found jobs within 6-9 months of entering the program.

Building Canadian content on the Web provided additional youth employment opportunities. In a small pilot in 1995, for example, Nora Hocken, now director of Industry Canada’s Digital Collections program, raised private sector support to digitize the Canadian Books of Remembrance – hand-lettered books that commemorate the men and women who gave their lives in war for Canada. The first Book, when digitized, was put up on the SchoolNet website to enormous acclaim. Industry Canada

Doug Hull persuaded Industry Canada to rapidly fund an additional 32 demonstration projects, each a contract to a firm to employ young workers to digitize national cultural treasures from Canada’s archives, museums and libraries, and put them up on the Web. The ministry’s strategy was again to use limited government sums to leverage larger private investment. Collections owners were eager to get their materials onto the web and were often happy to donate space, equipment, and supervision to youth workers under the contracts.

Industry Canada’s youth employment strategy evolved quickly, and gained diverse support for its Internet initiatives from the grassroots up through local and provincial governments. It soon rattled Ottawa’s gate. “The key point to make is that we haven’t done any marketing,” Hull asserted. “We went out, and connected schools and communities using their local infrastructure. We got a lot of community buy-in, with the end result that communities tell the MPs about this wonderful program. We don’t have to do any persuading, the communities do it by themselves.”

First Formal Support

In December 1994, the Government announced its support for the Community Access Project, part of a federal initiative it called “Building A More Innovative Economy.” CAP and SchoolNet were formally recognized. In its 1995 budget, the Government approved Industry Canada’s request for 1,000 CAP sites across the country, at a cost of \$22.5 million. About 300 sites were to be selected and funded each year in 1995, 1996, and 1997.

Manley Launches National CAP at Picton, Ontario

The principal of repeatedly celebrating “firsts” is a well-established political tradition: spread the news often and wide. With new government support and increasing visibility for the Community Access Program, on February 17, 1995, Industry Canada Minister John Manley launched Picton, Ontario’s CAP site. Although Picton was to be among the last pilot sites to come online, Industry Canada capitalized on the momentum the program was generating, and on the proximity of Picton to Ottawa (100 miles), to launch Picton as the nation’s first official CAP site, with the Minister present and backing it strongly.

The Picton launch drew national press attention. “The information highway has a new off ramp into this rural Ontario town,” wire service reports held – “the first municipality in Canada to open a public center with Internet computers.”

Picton’s rollout reassured Hull that Industry Canada was exactly where it should be:

We went to a pre-site planning meeting at Picton, thinking we’d meet with four or five people. When we got there the community hall was jam-packed. This was on a Thursday afternoon. People had taken the afternoon off to attend. I was really surprised. The reason why this was important was because it was going to put them back on the map, and it’s been the same in every town since.

Picton was also the first clear evidence that government investment would stimulate consumer demand for Internet service, and that the private sector would respond and build out the needed infrastructure.

Picton had recently tried and failed to persuade telephone companies to lay in a high-speed line. That situation changed once Industry Canada announced its plans for a Picton CAP site. Even before the CAP site opened, an Internet service provider appeared. 300 Picton residents had apparently signed up for training, enough to convince the ISP that Picton was a market it wanted.

Manley Shapes the Future

At Picton, Minister John Manley announced the first round of competition for 300 sites, released the CAP application form, indicated there would be a formal selection process, and said he would name winners later that year, in December 1995.

Behind that process, Michael Binder recalled, was Industry Canada’s quite explicit logic.

“What we’ve done here, and it’s really important,” he explained, “is this. When we started out, very quickly we decided not to pick winners and losers

ourselves, but to have a competition instead. Let communities come to us and say we want to set up a community access point.

“So right away,” Binder said, “we moved from choosing where, and instead set up, at arm’s length, advisory committees to select communities.” The virtue of this was strategy was unambiguous to Industry Canada. “It’s really crucial,” Binder observed. “If the community doesn’t want it, it won’t work.”

The First Year’s Applications

“I was responsible for Industry Canada CAP sites in Quebec,” recounted Michel Carrière. By December 1995, Industry Canada had received 59 applications from Quebec towns and villages with populations ranging from 250 to 50,000. Carrière remembered one application well:

St. Clement had lost its post office. The loss of this was considerable for the community. At the time Canada Post was restructuring, relocating smaller post offices into greater areas. This community was upset about losing this vital tool. They said that if they were going to lose this tool they were going to buy a new one. Instead of living in a state of sorrow, we will simply energize our community into finding a new avenue, develop a tool that will allow us to see into the future, rather than brood about what we have lost in the past. They decided to replace their Canadian post office with a community access center to the Internet. CAP gave that community a national profile as a community that was taking its own future in its hands.

Carrière worked from nominations of knowledgeable provincial and local partners to establish his review panel. He included “champions” – men and women of local industry, government and civic life. His plan, like Industry Canada’s nationally, was to avoid using “massive amounts of federal bureaucrats to run the program,” as Doug Hull characterized it, relying on a small federal staff to support a process “running itself through other partners.”

The Quebec review panel considered its 59 applications based on five criteria. Applicants had to demonstrate need, the ability to provide the basic physical components of a CAP site – location and equipment –, the existence of an organization to sustain the operation, and support from the community.

“I mean by that not just a letter saying ‘We support blah blah blah for this CAP site here,’” Carrière said, “but ideally, ‘We support this application because this is a type of service that members of our community need.’”

For example, one town that prevailed requested a CAP site so that its volunteer Fire Department could gain access to Internet courses on fire prevention and new types of fires.

But a town's need could just as well be unanticipated, and more diffuse.

La Tres De Mont

La Tres De Mont was one such place, in northern Quebec. It has a population of 285 full time residents, and it was actually one of the last regions open to colonization. When the 1929 crash occurred many urbanites lost their fortunes; whole territories were opened to people who would drive from the cities to populate the north. The government offered 75 acres and ownership: once they cut the wood and sewed the land, it became theirs.

La Tres de Mont was settled in this way, initially with a population of 3,000. But in La Tres De Mont, as in many rural areas, there was special concern over the loss of young people. "Without youth your future is dim," Carrière warned. "With youth comes leaders and people with ideas and capacity. It became quite critical to retain young people."

It was accepted that young people would go to the university outside such small rural communities. Yet it was also necessary, now, "to provide the proper environment for their return." That was the rural promise of CAP – to make it possible to engage the information economy without relocating away from the rural heartland.

In La Tres de Mont, the town located its CAP site in what was the community health clinic – five computers for 275 people. In the first two weeks since it opened, more than half the population had tried the CAP site.

Openings ("Inaugurations")

CAP site "inaugurations," as they were called, were extraordinary in their uniformity. They were always cause for community celebration.

Industry Canada exploited these small-town convocations to build support and favor within rural communities for Internet linkages to the Information Highway. "We insisted that the mayor be the host," Michel Carrière said, "that he give the signal in a press conference, that he say that we are moving in a new knowledge economy and a new society which promotes knows as being the foundation of our future wealth." Carrier also insisted that the Mayor invite at least three other mayors. "I did that because inevitably the others would become interested."

Common sense dictated that the events be held at larger communities, because of the facilities. Carrière always did it in small communities instead – and his contrarian instincts

often paid off with national news attention. “‘Why,’ they would ask me, “ ‘would a department such as Industry Canada do such a big event in such a small place?’”

Industry Canada’s Internet Strategy for Community Development

With the application and selection process underway, Industry Canada had established its basic operating principles.

“Everything we’ve done we have done in partnership,” observed Wayne Tosh. Financially, for example, Industry Canada worked out a cost-sharing agreement with New Brunswick and other provinces, in which each put up 50 percent of the government resources. Communities made a 50 percent match of in-kind or cash resources.

Above all, the idea was to keep “ownership” local. “The way we designed the program, it’s really run by local groups,” Doug Hull said. “You have to apply. We don’t care where you locate it or how you get it done,” he said. “We give you resources to make it happen and here is what we want in general terms: *public access, training help, convenient location, and so many hours per week.*”

The drive for linkage could only succeed if it came from extremely local levels, and it often did. “The communities get quite passionate about it,” Hull noted. “There is always a missionary who thinks that everyone should get wired, and they make it happen.”

The process of coming together around an application would itself “get people talking about how they are going to make this happen,” according to Hull. This had the added benefit of creating new awareness and support for institutions such as schools. “The idea of using it in schools is important,” Hull claimed, “because it makes the infrastructure work for the communities and the schools. After a while, a community says that if we are going to use this for our own adult use in the community we will put more resources in it so kids can have it during the day and adults can have it at night. There becomes a strong bond between the community and the school.”

“You can walk into any community in North America or the world,” Michael Binder explained, “and find the volunteer sector, however defined – either the industry leader, or an elected official, or a teacher, or a hospital administrator – that really wants to do something for the community they live in.” The task of government – its opportunity – is to “get those guys charged up, energized. You say to them,” Binder continued, “‘We will help you if you bring the community together to help your kids.’ It’s a winner. They get together, they come together, and they say, “‘This is what we want to do.’”

The process unfolds. “Before you know it, somebody volunteers a facility that is not used 100 percent. For example, a library, or a school.” Government offers the solution. “You say, ‘All you need to do is keep it open on Saturday and Sunday, and you don’t have to invest anything.’”

Voluntarism is important to the equation. “Sometimes,” Binder observed, “volunteer teachers come in – its amazing the level of voluntarism here.” And the leverage can be tremendous. “We did the calculation and normally to do a site costs \$80,000,” Binder said. “We normally like to give \$20,000. We want the province to give \$20,000. And \$40,000 comes from the community in kind – building, teacher time, kids’ time.”

Industry Canada’s arm’s length process created an outpouring of diverse applications and proposed uses. Even had the ministry wanted to, it could not have anticipated or scripted the breadth of needs and promised impacts evident in the applications. “We are giving them money to accomplish a local project rather than shoving some pre-conceived program into their face that was dreamed up in Ottawa. There is a high degree of flexibility in these programs. We don’t expect them to all be the same. That is really a cornerstone of the success of the program,” observed Hull.

“And it’s working,” claimed Michael Binder. “It’s an incredible buy-in by the community, grass roots involvement.” Binder was especially pleased at government’s arm’s length role. “It’s so wonderful because the government is out of this. Anything we touch, on our own – if we had to go in there and set up a shop, with my people – it would be a disaster. I can guarantee you that. It’s the fact that it’s done by the community for the community that works.”

The First Returns

By year’s end, 1995, the results were in, and any doubts that Hull and his team may have had vanished. Industry Canada received over 750 applications for 300 slots the first year. “I had no doubts that had to do with communities and whether they would ever take this up,” claimed Doug Hall. “There were so many of them determined to use these technologies. They were way farther ahead than we were on this. Communities basically just rose to the challenge.”

Hull did have doubts, though – mostly about whether CAP, as an Industry Canada program, could possibly attain its target of linking 1,000 CAP sites by 1998. Industry Canada put out the applications, but it had little money to do marketing. Naysayers in other departments warned Hull that Industry Canada would never recruit rural Canada to the CAP programs. ““It takes years to raise the awareness and they are very negative about Ottawa, they won’t apply,”” he remembers hearing. “Why didn’t we just turn the money over to *them* instead – ministries who already had other programs up and running, natural funnels to the grassroots?”

With his Minister’s backing and the support of Industry Canada senior management, Hull held firm. He didn’t want CAP communities force-fit into an already established channel. And he liked the economics of Industry Canada’s approach – connectivity through partnership:

We get a lot of leverage. Provinces have matched our funding, and a federal agency probably wouldn't do that. They would take our money and roll it into their programs. Provincial organizations and local groups in urban areas have good capabilities on the ground. federal government tends to be much thinner on the ground at the community level. Municipalities are much more heavily involved in transactional services. Those are good partners for us. Many of the facilities that we are using are provincial facilities. The communities may control them but they are still provincial facilities. We are getting access to these and in most cases not even paying a cent for them. If we were to do this through a federal agency they would locate it in their regional office but you have to pay square footage and floor space, etc

On December 19, 1995 Industry Canada Minister John Manley announced the 271 winners from 1995's competition – "rural communities [who] will soon have an on-ramp to Canada's information highway." In early 1996, the government increased the target rollout to 1,500 CAP sites, all to be linked by the original target date of 1998. To support the new goal, it created an internal reallocation of \$10.5 million for CAP.

The Lanark Launch

One of those winners was a cluster of communities in Lanark County, Ontario, a rural community of 58,000 situated in Eastern Ontario, 18 miles west of Ottawa and 30 miles north of Kingston.

Lanark County is sparsely populated, 2,470 miles square. Just half the population lives in one of the county's four principal towns. Its residents have traditionally made their living in agriculture, logging, and light manufacturing. But during the 1990s, farm employment collapsed – some years it fell by as much as 20 per cent. The county's economic fortunes bottomed out: plants and services closed, and Lanark rapidly lost 1,320 light manufacturing and service jobs. A striking and ominous outmigration of young people followed – nearly all the decade's declines in the Lanark County labor force were attributed to workers age 15-24 simply leaving.

Today, more and more residents of Lanark County commute to Ottawa, especially those in the center and east of the County who are closest to the capital city. But Lanark is not content to lose its rural character, its main streets and downtown, or to become a mere bedroom for Ottawa commuters. "We want to ensure that we are not left in the backwater because we do not have an adequate telecommunications infrastructure, nor do we have IT-literate workers or residents in our communities," observed Barrie Crampton, a local technology advocate.

In 1993, five local government civil servants organized themselves as the Lanark Community Action Group and embarked on a search for connectedness: a way to bring

their stressed community together around available jobs, training, small business information, and resources in Lanark. Their vision was a county Bulletin Board System (BBS), with toll free access through home or public access computers.

In 1994, with federal grant support, Lanark launched *Umbrella*, its BBS. *Umbrella* offered Lanark County residents free email, discussion fora, Internet access, and other services. Although *Umbrella* was free to county residents, it was subsidized, and the true cost was not insignificant: *Umbrella* paid \$1,500 per month for toll-free access for its 600 members. As federal grant aid expired, *Umbrella* instituted user fees, but eventually the guarantee of toll-free access could not be met, and *Umbrella* folded.

Still, the Lanark Community Action Group felt confident enough about its vision that it incorporated itself formally in October 1995 as the Lanark County Community Info Net (LCCIN) to promote the use of telecommunications for economic development and social cohesion.

At about the same time, another Lanark County citizens' group was active trying to figure out a way to resuscitate the County's fortunes. The *Lanark Launch* was a federally supported visioning effort that led to the establishment of the Lanark Communications Network (LCN), with objectives similar to the LCCIN.

LCN and LCCIN joined forces in 1995 to apply for funding under the first round of the Industry Canada's Community Access Program, which, it was hoped, would bring publicly available Internet access to Lanark County. Industry Canada encouraged the partnership and accepted a single application for 24 proposed sites in Lanark, the first such grouped application that would be managed under a single grant.

Industry Canada approved funding for 15 of the proposed sites in 11 different communities. One of them was Smith Falls.

The Smith Falls, Ontario CAP Site

Smith Falls, Ontario is a small town on the Rideau River with a hearty idea of itself. Loyalists who fled New York at the close of the American Revolution settled Smith Falls, as they did much of southern Ontario. Today, it has about 9,200 full time residents – twice its population at the last millennium. At the Town Hall a visitor can find promotional brochures that favorably cite Smith Fall's distance to "other major centres" such as Montreal (261 kilometers), Toronto (338 kilometers), and Ottawa (77 kilometers).

Lanark's original application was 15 separate applications collected into one. "We got \$200,000 as a contract for 11 different communities the first year," recalled Barrie Crampton, the local technology activist. "We took a little out of each budget to pool for a central coordinator to look after them. It allows us to commit resources to bulk buying computers, services, hire Gord Wilcox here to coordinate installations." Before that,

Crampton would go pleading to local firms to contribute their IT staffs time to proposal and spec development. “Now, Gord takes care of it all.”

Not all Lanark towns participated in the first round. “That was back in the days when Internet was a fuzzy word in books,” Crampton recalled. “We made a presentation to Montague Township asking if we could apply on its behalf – talking about benefits using Internet to elevate IT literacy of the community. I wasn’t engaging them at all. We’re talking about a rural town with a very conservative approach to things. They had no concept of what this Internet was all about.”

Cathy Duey, Smith Falls’ town clerk, elaborated. “‘You’ve got to show me...’ That’s the rural mentality: ‘Show me it works.’ It’s a cost, it’s a trust, it’s building the knowledge – ‘You’ve got to show me there’s a benefit to it, before I’m going to invest in it.’”

That all changed on the second round of CAP funding. “Here in Smith Falls we now have four CAP sites – the library has two, and here’s one in the Town Hall,” recalled Duey. “The idea is to make the Internet available to anyone who walks in and signs up. They can get easily accessible information that those in the global market would like, but also those more locally. Everything from ‘Who do I talk to about rental properties?’ to ‘How to deal with garbage pick ups.’”

“What was interesting was that Montague started to see its residents coming into Smith Falls to use the CAP sites and doing all those things you can do in Smith Falls – shopping here, instead of Montague,” Crampton said. “It’s a lot of ‘have and have not.’ When you don’t know that you need something, or don’t care that you want it and somebody else gets it – it’s a very basic human trait. You end up saying, ‘Well they have it in Smith Falls, and they have it in Drummond Township, and they have it in Bathes, Burgess and Sherbourne Township, but *we* don’t have it...”

“Montague saw the transformation outside their community, and not in their community,” Crampton observed. Duey added, “At county meetings, the clerks and treasurers were saying, ‘We can get this off the Internet, or we can email this, and you can’t get it through the mail.’ Montague’s officials were out of the loop.” On the second round of funding Montague asked Lanark to apply on its behalf, which it did.

Even with the CAP site located at the Smith Falls Town Hall, the town offices are not yet fully networked or linked to the Internet. But it will soon happen.

“We had one Internet site here in the Town Hall, and there are 40 people who work in this building,” Cathy Duey said. “We would all have to run down to the CAP site to see what was going on, on the Internet. I would get all the email for the town coming to my desk, and I would have to distribute it, because the address was no different from the CAP terminal.”

“We could not convince our council that it was a needed thing,” Duey said. “It’s coming, though. It was a learning process. We learned, our staff learned, they went out to whatever organizations or connections that they had, *they* learned, and it just kept on growing...Now,” she said, “it’s a need.”

“There’s about five computers here that are linked now,” Duey continued. Smith Falls now has in its budget to link all 40 of its town employees.

“As it grows here, it grows in business out there,” Barry Crampton explained. “Someone from the business community would come up and grab their e-mail off of the Internet. Well, that gets really tiring. They saw the benefit here, and that’s now in their own business.”

The CAP program has coincided with increased demand for residential and business service in Lanark County. “Once the funding came along,” Crampton recalled, “there was one Internet service provider that we could use. Within six months of starting the CAP program there was another one. And now there’s a competition. We actually did a survey after the first year of CAP and found out that we significantly increased the business for the Internet service providers by exposing people to Internet at the CAP sites. They would then go out, try it, and then get Internet at home. Today, they might pay anywhere from \$10 or \$15 a month, to \$30 a month. A local call, everything’s local.”

The Milestones Pile Up

By early 1997, as CAP rollouts continued, Industry Canada Minister John Manley announced 429 winners of the 1996 competition, intended to benefit an additional 700 rural communities across Canada. A new round of competitions was announced, with winners to be named in late 1997.

CAP rollouts were popular and successful, and CAP support continued to be strong. The Information Highway Advisory Council had released its Phase I report, stressing equity in access to the Internet, ubiquity in rollout, partnerships between industry and government, efficiency through competition, Canadian content, and most of all, urgency. Manley had thrown his full weight behind CAP as one way to achieve this.

But recognition at the highest level – that of the Prime Minister – and with it strong financial backing -- was still missing.

“CAP really was very well received,” observed Michael Binder. “And anybody in town – the way the bureaucracy operates, as all bureaucracies do – if people see that the government picks up on something, and it looks like it’s getting the support of the prime minister, and cabinet, then every other department starts looking at this.”

Yet, as successful as SchoolNet, CAP and related initiatives were, they were highly leveraged, Binder observed, and “operated on a shoestring.” Nothing in Canada became real – acquired full public support and resources -- unless and until it was enshrined in official pronouncement, as “a milestone cast in concrete” of the Prime Minister and his government

For that purpose, no pronouncement is more important than the Government’s *Speech from the Throne*, the equivalent of the American President’s *State of the Union*, delivered annually by the Prime Minister to open the new session of Parliament. During 1997, Minister John Manley and his staff worked hard to have language supportive of the ministry’s information strategy included in the Government’s September *Speech from the Throne*. They achieved a small but important mention:

The Government will explore innovative policies and measures that give particular attention to increasing opportunity for Canadians in rural communities. It will adapt its programs to reflect the social and economic realities of rural Canada. Further, the Government will redouble its efforts to ensure that rural communities and all regions of Canada share in the economic benefits of the global knowledge-based economy.

“It’s the first time you’ll see formal government acknowledgement, at the level of the Prime Minister, that we’re moving into a knowledge based economy, onto the information highway,” Binder observed. “And in February of ‘98 there are some resources to deal with it.”

And new targets: 5,000 rural sites, with additional resources of \$30 million. Further, the government announced its support for expanding CAP to 5,000 urban sites by March, 2001, for a total of 10,000 community access sites across Canada.

Urban CAP

“That was the big change,” recalled Keith Richardson, who in 1999 was assigned leadership of Industry Canada’s Urban CAP initiative. “The 1998 federal budget said that there shall be unspecified additional funds to expand CAP from the rural into the urban neighborhoods.” To Richardson, the implications were clear. “It said,” he observed, “that in effect coverage should be ubiquitous.”

We’ve got 4,000 communities in the rural universe connected, moving to 5,000. They use a different measure in the urban context. The goal is 5,000 sites in 85 target communities because you get 50 percent of the population in the 5,000 rural communities with populations under 50,000, and the other 50 percent in the 85 urban communities, with populations from 50,000 to 2.5 million. It will be a beast of a different order because of the sheer concentration and diversity.

“The harsh reality right now,” Michael Binder reasoned, “is that we have a society that is really polarized --the ‘haves,’ and the ‘have nots’.” Binder pointed to the distribution of computer by income level, with high penetration at high-income levels, and low penetration at lower levels.

“The problem,” observed Michael Binder, “is that in many ways the ‘have nots’ are more prominent in urban society.” Poverty being more evenly distributed in rural Canada, urban polarities were stark. “We’ve got very, very poor neighborhoods, young kids at risk, families at risk, single mothers, etc.” But exposure to the Internet could make an even larger difference to the urban poor -- “to educate, train them, let them have email, allow them accessibility to a place you can deposit resumes, not to mention unemployment insurance, and job opportunities.”

It was not at all clear to Industry Canada how to seize this opportunity. In mid-summer, 1999, Keith Richardson was struggling to define Industry Canada’s program model for Urban CAP. Looking at least to recent Industry Canada experience, Richardson had concluded that its rural model “demonstrates that libraries and schools are cornerstone institutional partners, prime players running about 2/3 of the total sites. The other 1/3 could be senior centers, women’s centers, and health centers, colleges, reflecting the makeup of the community itself.”

Other elements of an urban Internet strategy were more elusive. “We’ve been having a really rough time deciding where you put them,” Michael Binder admitted. How many do you need? How do you get the municipalities to go along with this?”

Strategically, Urban CAP would force Industry Canada to clarify the extent to which CAP sites should be self-sustaining. “As we come into the urban rollout out,” explained Chuck Wilson, the newly-appointed executive responsible for sustainability at Industry Canada, “we will revisit basic issues, such as should CAP sites be making money or should they be seen as essential services.” For Wilson, this issue marked off rural from urban CAP. “The issue for rural Canada,” Wilson said, “the reason CAP got put in in the first place, was to connect people who were unconnected. In urban Canada it is really an equity issue. The people who will come in for the most part don’t have computers.”

Who would receive the government funds was also an open question, according to Richardson. “To cover the individual community there will be a process of self-identification. But – should we go into community X and name the number of access sites that will be located in these spots? Or,” he asked, “should we go in and say that we will engage in a community building process, building social development whereby we turn the whole thing over to a self-identifying citizen group, who would do the whole thing – set criteria, receive the petitions?” Richardson expected that Industry Canada strategy, when announced, would blend the two approaches.

Sustainability

During the 1990's, Canada had set huge goals for itself, and met many. It became the first country to connect all of its public schools and libraries to the Internet – nearly 20,000 individual facilities, and was poised for the next phase – “extend connectivity from the schools to the classroom.” Over 125,000 computers had been delivered to schools. 4,000 rural communities had gained Internet access, with a goal in view of 1,000 more, and a new goal set to link 5,000 urban communities. Canada set its sights on linking 10,000 volunteer and charitable groups to the Internet. Over \$15 million had been earmarked for Industry Canada's youth employment strategy, and nearly 100 contracts issued to digitize Canada's cultural collections, with 257 already up on the web. The nation ranked first among the G-7 in telephone and cable penetration, had the lowest telephone charges, and was second in per capita computer ownership. Canada's data communications market for large companies, excluding Internet business, was pegged to reach \$2.2 billion by the year 2000.

The government had fully embraced the CAP program. “The political juice,” Keith Richardson observed, “is now the Prime Minister's strong support to make Canada the most connected nation in the world, and to provide Canadians with ubiquitous coverage. Nobody will be left out.”

The government drew its direction from the reports of its Information Highway Advisory Council, and from successes like SchoolNet, CAP, Digital Collections, and Youth Employment. These became building blocks for a broad Canadian strategy, released in 1997, called “Connecting Canadians.” This vision statement brought all disparate Information Highway initiatives under a single strategic pavilion, with the defined purposes of achieving global connectivity, stimulating electronic commerce, fostering Canadian content, and providing ubiquitous local linkages.

CAP gained strong advantage in the new association. “It situated a lot of the stuff we were doing in a policy and strategic context, which we didn't have, and which we would not have had time to create within our shop.” Having that broad strategy, which was largely managed at the Industry Canada staff level by Michael Binder, was crucial to Hull “because it gave a policy rationale to some of the things we were doing.” The consequence, Keith Richardson noted, was, “in the CAP context, escalating budget resources that remained available as target numbers climbed.”

But the equity issues that animated both rural and urban CAP – closing the gap between the “haves” and “have nots” of access and gear – still resonated with Hull, as a risk to watch:

Information technology is an area where Canada can be a real leader. We've got good technology, a well-educated work force, and a very open democratic society. If we can harness this technology aggressively we'll be able to win with this technology big time. It could be as important as automotive and airplane technology. The only problem is that if it's left

only to a small portion of the Canadian population to benefit from -- the elite-- the end result will be some saying, "It's good for some people but not for me, so I won't support big government programs that will benefit the elite." If you want to have the political consensus to make long term investments in information technology and the information highway we have to make sure that all of the public can benefit.

Individual CAP Sites At Risk

"The final ultimate measure of a program," Doug Hull reflected, "is if you stop doing it and it keeps running."

Mid-way through 1999, Industry Canada was balancing a Darwinian "only the strong survive" strategy against a more nurturing one. "Once the infrastructure's in place, absolutely," Binder stated, "that's our idea of sustainability: the challenge is you build them, and now you have got to make sure it's sustainable, that the local community supports it, and that there are some revenues generated."

Binder was gambling that Internet penetration to the home would obviate any need for government to be "continually on the hook to support this infrastructure. But," he cautioned, "if there's going to be a significant segment of the population that doesn't have access as yet, we'll be in this business for a while."

To reduce the risk that some sites might fail prematurely, in 1998 Industry Canada shifted its funding strategy to provide a steadier stream of support over a longer period of time. "It was recognized that it would take CAP sites about 18 months to set up," Keith Richardson observed. Originally, government funding – shared evenly between provincial and federal governments – had been capped at \$30,000 over 18 months. In 1998, Industry Canada shifted to a maximum of \$40,000 in combined government funding – still requiring a 50% in-kind match – over 36 months.

"The increase in the allowable maximum over an extended period of time was one way of saying, 'We can provide you with some more money, and we can allow you to spend it over a longer time frame,'" Richardson explained. "It was a way of helping you keep yourself in business that much longer and gain that much more time to explore and develop revenue generation initiatives at your own level."

In 1999, Industry Canada also began to shift its award strategy to favor sites that were grouped together as a network in a single application, believing that they had a better chance of surviving. "If they are in a network with 20-40 other sites," asserted Chuck Wilson, Industry Canada's new manager of site sustainability "exchanging information and sharing technical people, it reduces their costs, helps them run their facilities, makes them feel part of something bigger. Their chances of sustaining themselves is greater."

One of Wilson's tasks was to quantify the sustainability problem. Some sites, he thought, had closed, and others he'd heard were floundering. But the CAP rollout had been so swift, little information had been maintained and tracked up-to-date. What was their exact status? In the summer of 1999, Wilson retained a market survey firm to track down and survey all the CAP sites. He had a handful of urgent questions in mind: who was the on-site contact for the CAP site? How many visitors had it recently had? How many computers did it operate? What and where were the basic facilities – were they greater or lesser than when the site opened?

Wilson's surmise, in advance of any data, was not optimistic. "Will these sites be able to generate their own resources?" he asked. "I personally think that they won't be able to survive alone. If we establish 10,000 sites, and we don't make an effort to sustain the effort, that number of sites will shrink."

"As we move forward," Michael Binder agreed, "sustainability will be a problem. Because we sure as heck don't want to see some of them after three years lose enthusiasm and die. What we want to make sure is our colleagues in town now use this infrastructure to deliver programs. We want to make sure it's interactive. Why can't a particularly remote community go online and get their drivers license, birth certificates, job opportunities, online? Not to mention, eventually – can I dream in color? – passports, or air tickets, everything, online."

But Industry Canada has a broader plan to make CAP sites self-sustaining: the Access Canada card.

The Future

"If we are all going to go and do shopping on line," Michael Binder asked, "how do we buy from the local grocery store, or the local book store? I mean, you can *kill* them all, wipe out the local merchants, unless they develop some capability of delivering content and services locally."

Protecting Canada's "main street" values and small town economies in the face of American online e-commerce megaportals is perhaps Binder and Hull's top priority.

"The challenges for the future are typified by the rural communities that we have linked to the Internet, who will experience trouble because of e-commerce," Hull observed. "The megaportals are a great danger," he assessed, "because they are highly financed, very sophisticated marketers. They've got the technical wherewithal, and they will flatten a lot of business across North America and globally."

If Hull has his way, CAP sites will be the genesis of “community Internet franchises.” Hull’s vision is to issue all Canadians a swipe card by mail, which when activated and swiped at a computer terminal can open the Internet to a user’s “personal portal account.” This account, developed locally and customizable, will provide each user with easy Web access for e-commerce to the portal area’s small town or neighborhood merchants.

Hull’s plan is to franchise personal portal development to the group sponsoring the CAP sites locally. Together with the area’s small business, they would operate the portal and develop it. “Very simple to run,” Hull observed. “Local entrepreneurs can take it over.” Their task is to bring local consumers on line, bring local businesses online, and create the local portal as a means of stimulating a local electronic marketplace.

The challenge is substantial, according to Hull.

The small business base in these communities is extremely conservative. They watch their pennies very closely and they are not likely to engage in e-commerce quickly because they can’t see any immediate return. That is a very deadly combination. These guys live on a very slim set of products with a high margin. If you are the camera store on Main Street in Smith Falls you only sell 2-3 digital cameras a month, if you are lucky. But if that is exactly the product that someone will buy off of the Internet, all of a sudden your high value products are being bought by your customers online and you don’t know why. You see your sales drop but you don’t know why, or where they’re going. If you are not online, the growth potential of small businesses in small rural areas is very limited. What we think is necessary is something to try and get Canadian businesses online very quickly so they can participate as the e-commerce market emerges.

As Hull surveyed the future, he had many questions. Can we get small town firms – firms in Smith Falls, Truro, and Picton, to want to go online, and how fast? Can we change the preferences and proclivities of small town residents – in Gagetown, St. Clement, and La Tres de Mont – to purchase online? Can government figure out a way through partnership in an e-commerce environment to reach every consumer – not a 30 percent share, but 100 percent of consumers – and to bring each as a citizen through a personal portal to the marketplace?

Conclusion

It was less a fixed plan than a continuously-evolving idea, animated by distinctively Canadian imperatives, driven by entrepreneurs in government and industry, buttressed by small wins and growing political support at small town levels and at the highest levels of government. Canadian Internet strategy emerged as a portfolio

of strategic investments, with remarkably few false starts. The drive for linkage from the periphery to the center; the strategy of leverage through partnership; the vision of individuals who saw opportunity from linkages waiting to be made; the housing of disparate, start-up initiatives in a pavilion of like-strategies; all summed to provide Canada with considerable, rapid growth in Internet access.

Gaps that Canadians have straddled in their geography and history -- between "haves" and "have-nots", rural and urban, north and south -- and which they have assiduously sought to close, are now smaller as a result. Whether and how this translates into economic prowess is quite uncertain; many variables intervene.