

CAUGHT IN THE COMPUTER WEB

By Richard Liskeard

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One of the better rib-tickers that can be thrown into the Keystone Kops Kontinentalism file the Liberals are so impressively amassing happened almost two years ago.

A man of no less stature than George McIlraith was Solicitor-General at the time, and it came to pass that he got a free tour of the FBI computer centre when he was down in Washington.

Much to his surprise, a request for information on a stolen car came pounding out on the computer from RCMP headquarters in Ottawa. Apparently an RCMP constable in Swift Current, Sask. was checking out an Ontario car that had been parked in his town for two days. He radioed his local dispatcher who queried RCMP headquarters on the teletype network.

While the constable waited in his car, Ottawa headquarters perused their file on stolen cars and came up with nothing. Ottawa apparently decided to check with the FBI in Washington if they had any record of the car.

As McIlraith watched, the computer in Washington replied that the car had been stolen in Scarborough, Ont. only four days before.

No comment was made by McIlraith as to why data was being stored in an FBI computer and not in RCMP headquarters. But RCMP Commissioner W.L. Higgitt said his force was using the FBI computer because it "... can locate the information and transmit it to Ottawa faster than the RCMP can search own files manually."

Although the RCMP got its own computer, following this episode, this only accelerated the exchange of data between them and the FBI.

The episode is only a tiny example of what is becoming one of the greatest threats to Canadian sovereignty: Losing control of our data and information transfer systems to the United States. This has implications for security, industrial development, education, and scientific research. It is such a threat that the Science Council of Canada recently declared it one of the nation's top priorities to kill this trend.

The head of the federal task force on computer communications, Dr. Hans Jacob von Baeyer, likes to tell another story. He says it's true, and it goes like this:

A man brought a large suitcase full of computer punch cards to a Canadian customs shed as he came in from the U.S., and was told he'd have to pay duty.

The customs official decided the cards should be assessed as paper for import purposes. Then he noticed that there were holes punched in the cards.

"This paper is used," he said, "used paper comes in at a lower rate." And the man brought the cards in as cheap used paper.

"There could have been a hundred thousand dollars' worth of programming on those cards," Baeyer says. He offers it as proof of how impossible it is to stop the flow of computerized information into and out of Canada.

The historian Harold Innis devised what is probably the most significant theory of Canadian communications, as related to the survival of the nation. Briefly it runs like this: Canada, in order to survive, must link itself horizontally along the 49th parallel. Canada ceases to be a political entity when communication lines go north-south. On the basis of this, he calls the building of the CPR in the 19th century the sine qua non of the Canadian nation.

This theory became the basis of all Canadian nationalism, both conservative and socialist. Both these political groups allied to found the Canadian Broadcasting Corporation, an electronic CPR on the theory that otherwise American broadcasting

would kill us. The National Film Board, and Air Canada are similar pieces of government legislation that are per se economically illogical, but politically critical if you start from the premise that you must keep the nation a political reality. The traditional enemy of this view, as George Grant points out in *Lament for a Nation*, is the Liberal continentalist — the politician who says economics cannot be interfered with.

In a small report issued a few weeks ago the Science Council, a government advisory group like the Economic Council, declared the computer data flows of this country to be on the verge of being lost to the U.S., and stated that at all costs an "east-west" flow of data must be established by the government, linking it in urgency to the past need to build a CPR and a CBC.

Compared to the great debates that preceded the CPR and the CBC, the crisis has crept up on most Canadians. The report may sound alarmist. The fault lies at least partially with the press. First of all, the papers gave only small notice to the publication of the Council's report. Only two smaller-town papers wrote editorials on its appearance. It has, in short, been buried. Secondly, the growing crisis facing the computer industry, and the magnitude of its implications, were never even touched on by the press.

A previous report of the Science Council noted that "the electronic computer may well be the basis in the 1970's of the world's third largest industry, after petroleum and automobiles, and just as these existing industrial complexes have wrought innumerable industrial changes in contemporary society, so the computer industry will play a major role in shaping the society of tomorrow."

The report wasn't exaggerating.

The computer industry is the world's fastest growing industry. Worldwide revenue for it has grown from \$975 million (U.S.) in 1960 to \$10 billion in 1969 — a more than tenfold increase.

By 1974, it's expected to more than double from that to \$24 billion.

A British example dramatizes it another way: by 1980 it's predicted that the computer industry will approach four per cent of the Gross National Product. In France it's expected to overtake that country's large automobile industry by 1976.

In Canada it's projected that by 1979, if our GNP is estimated then at \$145 billion, the computer industry might be up to five per cent of that GNP. By way of comparison, we spent four per cent of our GNP on new cars in 1968.

This makes it all sound peaches for Canada's computer industry, much of it concentrated in Calgary (because of the oil industry). Growth. Profits. Markets. No fundamental factor seems to bar the road.

But instead, it's reeling. Or as the Science Council put it: "The Technology of Technologies is sick in Canada."

Canadian computer firms are beginning to die like flies. Takeovers by American data giants are taking place as regular as clockwork. One estimate is that Canadian computer firms have suffered a 30 per cent decline in business. In Calgary in 1970, about 300 people are estimated to have lost their jobs in that city's computer industry alone. In Kitchener-Waterloo, over 40 highly trained computer-programmers are listed with the unemployment office. A national estimate is as yet impossible to arrive at. It has reached the proportions of an industrial crisis, in the assessment of the Science Council, an organization not usually noted for alarmist tendencies.

The key factor in this anaemic death in the industry is illustrated by Baeyer's story of the man with a suitcase full of computer cards.

A request for information on a stolen car was put through on the teletype to RCMP headquarters in Ottawa by a constable in Saskatchewan. Ottawa came up with nothing in their files on stolen cars, but they had a friend. They decided to check with the FBI computer in Washington to see if they had any record of the car. The computer in Washington replied that the car had been stolen in Scarborough, Ontario, four days before.

Calgary subsidiaries of U.S. oil companies send their data in the form of magnetic tape or telephone lines to parent firms' computers in the U.S. The processed data comes back to Canada and is charged duty on the cost of the tape — \$30 to \$40.

This isn't restricted to the oil industry. The key point is that what has hit a hundred other industries that have high American ownership here has hit the computer industry too. An American firm, almost invariably a subsidiary, will use either the facilities of the parent firm, or the subsidiary in Canada of the computer company that the oil company's parent company uses in the States. Keeps the billing simple.

The process is illustrated by what's happening to Canada's ad agencies — over a dozen have folded in a period of three years through the following mechanism: If Ford in the U.S. has an account with an agency in New York, then Ford in Canada uses as its ad agency the Canadian subsidiary of the New York ad firm. Foreign ownership reaches its own cruising speed in the victim territory — the effects of foreign ownership extend far beyond who owns the plant itself. It affects the development of the entire industrial sector.

If Canadian ad agencies fold, so do supportive graphics industries; freelance photographers are forced out of work; copywriters are driven out of the market.

The Science Council's report recognizes this: "... the creation of source material for services, such as information banks and computer-assisted learning, would migrate to the points of supply of these services. Thus much of the information and many of the ideas and values which underpin our society would eventually become largely alien. The Science Council, as a group of concerned and informed Canadians, consider these trends to be unacceptable."

Not only are supportive industries — (everything from the companies that make computer cards, to electronics firms that make the circuits, to fine metal firms that make the bodies, to the electricians whose skills provide the construction, to the university engineering faculties that research and provide the trained manpower) — going to die off with the nub industry dying, but much more. Accessibility to data transmission and data banks play a large role in determining where a new industry will locate. If there isn't a good terminal in Quebec City, a company won't be too interested in locating in the economically depressed Gaspé. A computer trunk line is a road. And you don't build an industry where a road doesn't extend.

But we're talking about even more dangerous implications. To understand the threat of not having national control of the computer industry and the data network, we must understand the vast implications of computers.

The U.S. DATRAN company has predicted a volume of some 8,000 computer communications "calls", or transactions per second in the United States by 1980. An article in *Fortune* has predicted

that 50 per cent of U.S. computers will be interconnected by 1974. Britain expects 50,000 computer terminals by 1973 and half a million by 1983 — that's active computer data units, each an outlet of its own, like a telephone, seeking information from each other and from central data banks. By 1980, DATRAN predicts, there will be 2,500,000 data terminals in the U.S.

The trick will be not whether you have a computer, but who has the massive data banks. Universities in the United States are already linking specialized information pools. A chemical data bank is linked to a biological data bank, for the smaller computers anywhere to query either or both.

Central data banks are assembled where there is a vast network of computers worth serving. If Canada does not assemble its data banks, it will have to plug into American data banks, and we'll have to file our information into American pools. The real power in this system lies in who controls what goes in and out of the banks. As in many things, it's not the information itself that frequently determines the product, but what kind of information is gathered, and how it's assembled and joined. If every Canadian university didn't have a library of its own, it would have to depend on U.S. university libraries, and whether or not they felt like building up Canadian history sections. Medical students go where the best medical faculties and libraries are. A computer data bank is analogous.

It's critical not only to build up banks, but much more vital to build up a central network of access to the banks. For this reason, the Science Council report states that it is imperative to create a "National Spine", with branch lines, linking an east-to-west network, or it will flow north-south.

From his desk in downtown Ottawa, Baeyer pulls a full-page ad from the Calgary *Albertan*, announcing extension of the Cybernet data network into Canada.

Cybernet is a U.S.-based computer system with a linked chain of giant computers and data banks in Washington, New York, Cleveland, Chicago, Los Angeles and other big U.S. cities. Customers in any one of these points can rent use of part or all of the facilities, and that allows them free access to the entire multi-million dollar network.

The *Albertan* ad meant Calgary computer-users would have partial access to Cybernet's U.S.-based equipment. Of course, even with a healthy Canadian system, there would be massive intercourse between Canadian and American data banks — Canada can't try to assemble the last word on everything and hide itself from the data banks of the world. But that's not the danger lurking in the Cybernet ad.

A Calgary subscriber to Cybernet would get services for the same price as a subscriber in Palo Alto, California — despite the added distance from the computers.

Somebody has scribbled the word "dumping" beside this paragraph in the ad in Baeyer's hands.

That term is normally applied to more tangible commodities, and refers to selling an item in a foreign country below the price in the country where it's made. In Canada, most dumping is illegal.

Should a U.S. company be able to sell computer services cheaply in Canada because their biggest costs are already paid for by their U.S. operations? If such unrestricted competition should be allowed, Canadian firms, who have higher costs, would go under in no time. And that's exactly what's happening.

Baeyer says he isn't sure whether anti-dumping laws could be applied to selling information — which is what Cybernet does.

The Science Council's thin 42-page report is historic in its importance because it drops the statement that chills most of Ottawa: "... it will be necessary to restrict the free play of market forces." Careers have been ruined for lesser slips in the cafeterias of the civil service. The analysis contained in this document falls short in few places, and merits close attention.

Nothing the healthy start the Canadian computer industry got in the 50's, it goes on to state: "This initial effort has been replaced by branch plant manufacturing sustained by tariff barriers and industrial incentive funds. Canadian participation in the broad range of opportunities for hardware development and manufacture has been extremely small, and the software and computer service industries are generally weak and shaky. Most of our computer service bureaus are reporting annual losses and several have been taken over by U.S. firms. (The lion's share of revenues... is enjoyed by foreign-owned computer firms.)..."

The report names the following causes for this malaise:

- foreign competition
- small and scattered markets,
- industrial fragmentation
- the effects of Canadian geography,
- high costs.

"The Council feels," the report states, "that branch plant status for the Canadian computer industry is just not good enough."

"Leaving aside questions of exports, excessive dependence on foreign suppliers and lack of worthwhile jobs for highly-educated Canadians, we are above all faced with the urgent need to exercise control over the shape and thrust of industry, so that its development may be harmonised with our social priorities." Mark, that last sentence refers to all "industry", not just the computer industry.

Predicting that by building our own national computer communications network "we will make a radical change in the mental resources of our society," the report adds: "... because of the pervasive influence of computers on social and cultural affairs, on national unity and on our sense of national identity we feel that Canadians must be able to control fully the development of computer communications networks in Canada."

The report argues for a national spinal communications network, tying together regional subnetworks, controlled by a single organization, with government participation and regulation.

It notes that "no long-range commitments to build (such a network) of a scale comparable to the commitments made in the United States... have been announced by Canadian organizations. Thus, in the absence of government initiatives, it seems likely that Canadian computer communications facilities will remain essentially in their present state for some time to come."

Dr. J. Kates, president of one Canadian computer firm, SETAK, Ltd., has said that there may be substantially no Canadian computer service industry five years hence, if the operating climate of these companies is not greatly improved.

The Council warns of the results:

- a continual outflow of funds for network charges to the U.S. "of a magnitude and growth rate largely beyond our control."
- little control by Canadians of privacy and security standards (Most Canadian life insurance firms already store their private data on customers in U.S. banks with parent companies; the possibilities of an international credit control system are staggering; and we already know about the RCMP and how jealously it keeps its data from the FBI — it doesn't take much to extrapolate into defence and political information).
- little opportunity for Canadian bodies even to verify that advertised standards of privacy and security are in fact being met.
- cheaper service from U.S. points, leading to the decline or death of our industry.
- social implications of basic information being calibrated to U.S. views, priorities and standards, thus affecting our own.

The report, in its description of the problem, is magnificent, even eloquent. It becomes disappointing in the solution it demands.

The need for a National Spine, with sub-trunks to get the service to more outlying areas is critical. But the ownership of such a vastly powerful system is even more critical. The report suggests a private organization, with federal regulation, presumably similar to the Bell Telephone, or the federal government holding "a controlling interest" in a mixed public-private venture.

It has been suggested that the Science Council, already fearful of having made radical suggestions, played "conservative" on this recommendation.

What in fact the Council has done is made the most eloquent case of the desperate need for nationalization of the computer industry, and its being conducted in the national interest in a manner similar to a crown corporation such as the CBC. Allying with private enterprise is merely to give such private companies cosy participation and handouts in what is going to have to be a massive investment effort by the public purse.

CTV is a privately owned but federally-regulated body, and it has devised every conceivable strategy to put out cheap and useless Canadian television content, drowning us in one-man quiz shows with sound-track audiences, as a guise for importing American programming. It has contributed relatively little to the encouragement and building of Canadian talent and resource. We will get a CTV of information systems under the Science Council's timid backing-off at the last, crucial step.

The Council may be forgiven for anticipating that any Liberal or Conservative, and probably NDP government would fear to nationalize in this area where nationalization is so critically needed, because such a move would be a recognition of the need to have government control of key economic and social sectors that would open floodgates — energy resources, dying media, etc. Might spread. Awful.

There has been no official government reaction to the report as this journal goes to press. The Science Council has no powers but to make recommendations. The government can totally ignore any proposals and doesn't even have to respond. An overall Communications Task Force report is expected sometime in January, and official reaction is perhaps being delayed until that report appears.

Or perhaps such an eloquent description of colonial status of our industry, coupled with an analysis of how foreign capital's effects are detrimental far beyond the bounds of the actual industry owned, is better not advertised by the Liberal government.