

Quebec's Policies in Technology

How Canadian Province is attracting new technology; need for high priority seen

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I am sure that you are aware of what we call "*Le Virage Technologique*." It could be translated as "The Technology Conversion." This economic policy has had an important effect on public opinion.

The basic ideas of that policy are the same here in Quebec as in the States. After all, we live in the same economic space on this continent. Nevertheless, though the targets are the same—more economic development and better jobs—some realities are different because of different political and economic institutions.

WHAT KIND OF TARGETS DO WE SHARE?

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- Help introduce new technologies and new commercial approaches into the business and other organizations so our products can be manufactured at less cost—so as to be in better shape toward concurrence on internal as well as external markets.
- Exert greater effort and investment in R&D in the private as well as the public sector.
- Accelerate the valorization of research in all the sectors of economy.
- Develop more and more the human resources without which nothing is possible.

Yes, we're North Americans but we, in Quebec, also are Quebecers, positively bound by our history and our culture. Far back over strictly political ideas like federalism or independantism, Quebecers, first of all, are Quebecers. After all, aren't Americans first Americans?

DIFFERENT CONDITIONS

Institutional and economic conditions here call for different governmental action in R&D than in the States, and more drive, if possible, than in the rest of Canada.

1. First, military expenses in R&D are quite marginal in Quebec.

2. It's now common to say that our private industries have often failed in dynamism. In the States,

*Minister of Science and Technology, Government of Quebec; paper prepared for delivery at the LES U.S.A./Canada Annual Meeting, Quebec City, Canada, September 1983.

firms invest more in R&D than here. Their tradition in R&D investments is strong. Ours too weak.

3. Our economic size is also a limit in generating financial resources. This makes it more difficult to get funds. Also, our banking system seems too shy to take risks on innovation.

4. Our internal market is small, so we have no other choice than to export, to get products based on complex scientific innovations, financial successes.

5. We don't have here in Quebec and in Canada that fantastic tradition of joint ventures between universities and industries. So our research working people often face that major problem not being tracked on specific commercial targets.

6. Our cultural difference in North America asks us for a lot of adaptations of new products or new technologies.

7. And finally, the N-G P part of R&D is clearly too low in regard of other industrialized countries (around 1% in Canada, 2% in U.S.A., and almost 3% in France and Japan).

Analyzing all those factors, as a government that thinks that science and technology will be its first aim of progress, we had to be responsible and act as a leader of a radical conversion in action here in Quebec. We've seen, for too many years, that the Federal Government, when it acts in that field, forgets Quebec for Ontario.

Last year our government published its strategy in science and technology. Since then, we invested \$200 million in R&D. Already, our government is spending \$60 million a year in scientific and technology matters. But for development in new, chosen fields we will this year spend \$200 million more. Sectors like microelectronics, biotechnologies, and energy will be helped. They are fields in which we are not really behind other countries and, in certain areas, we are ahead.

Let me expose you some aspects of our approach, based on what I told you before: our strengths and our weaknesses.

1. We created the Ministry of Science and Technology last June. That wasn't just to get me a job! A large public concensus asked for it. In Canada, we're the only provincial government to have such a department! *Business Week* quoted that sentence recently:

"Not since Sputnik ignited the space race in 1957 has Congress been as united as it is around the current push to revitalize U.S. technology. Democrats and Republicans, conservatives and liberals alike, have turned out more than 200 separate high-tech bills since January".

We are more restrained on bills—probably four in two years. Our approach is not a bureaucratic one. My department, when developed, will be based on around

150 persons. It will not get the upper hand on every science and technology prospect.

The purpose of the department is to stimulate and coordinate, first, the complete state matters linked with science and technology.

Second, it has to be the animator of policies and programs able to transfer to the existing institutions, private or public, the aim of scientific excellency.

Third, my department must get the Federal Government to stop its unbalanced financing of R&D. Statistics exist in Canada—and they are not independentist propaganda, but are recognized publicly by the federal authorities—Quebec, with 25% of Canada's population, only gets, year after year, 15% of federal investments in scientific matters. Other federal legislations are killing complete sectors of our R&D capacities, like the licensing law in drugs, illustrated by the closing of Ayerst Laboratory in Montreal. We think that licenses are a private matter and should be negotiated freely between economic actors.

AN AGENCY OF INDUSTRIAL VALORIZATION OF RESEARCH

This agency will be established this autumn and will end that eternal weakness we had through the lack of risk funds to help innovation. This agency will prospect research teams and establish with them what could be done to help an invention to become a commercial success. This kind of agency already exists in Great Britain, France, Finland, Germany, and Sweden.

A CAD/CAM Network

This network is being finalized, and I'll have some announcements in a few days. It will assume the goal of publicizing the know-how and the appraisal to the firms or other potential client. This network has to tighten the links between researchers and companies. Adapting to a similar strategy, we earlier established technological basic method training units (UFTM) in biotechnology with the purpose of sustaining the dynamism of a number of colleges and universities in that field.

Microcomputers in Schools

In a five-year program, we'll introduce 43,000 microcomputers in schools. This program will put Quebec on first line in data processing as a global cultural factor. The contract will be given to those firms, local or foreign, that will secure the most R&D and economic winning cards for Quebec.

To open markets for high-tech company development, we will accelerate equipment acquisition in other areas, starting with bureaucraties in government agencies.

FISCAL INITIATIVES

A survey by *l'Union des banques suisses*, puts Quebec ahead in fiscal initiatives for R&D. Complete current and capital expenses in R&D are free of taxes, like in the States. We add a tax credit of 10% on the wages paid for researchers by private companies. These are paid whatever the size of profit or benefit. We are studying new initiatives for the next budget.

I could enumerate for you a list of other programs, such as scientific job plan, cooperation programs with France, etc. We think we're on the way to being North America's most inviting state for R&D. It's not only a challenge, it's beginning to be a reality.

In conclusion, I shall tell you some asserts we believe in deeply:

—If North American governments don't rapidly change their habits, we will be very quickly behind other industrialized countries like Japan and those in Western Europe. Hi-tech shift is the first economic priority.

—Since 1960, we have given ourselves the human resources to take that technology conversion: we will continue our effort for new human resources.

—Of course, as a provincial government, a lot of tools aren't in our hands. But with what we have, we'll do the most with. Sovereignty association is an urgent goal of our government. In a world of continuous changes, in complete mutation through science and technology, it's absurd to believe that one would leave to another majority his own means of exchanges with the world. We aim to participate fully to the new world economy. In this direction lies the future of Quebec.