

QUÉBEC'S INFORMATION SUPERHIGHWAY POLICY

(ABRIDGED VERSION)

A SUPERHIGHWAY POLICY FOR A KNOWLEDGE-BASED SOCIETY

Since the mid-sixties, the major orientations of Québec's economic development have witnessed numerous adjustments and even a few major compromises, but have always been the subject of a broad consensus on the part of the public and Québec's economic partners.

Québec has chosen a liberal economy, open to the outside world, one that is responsive to the needs of all its citizens and one where business circles can rely on the support of public authorities and the community to fully assume their role as key players in economic development and progress.

This consensus has allowed Québec to achieve a high standard of living while recognizing the need for solidarity and fairness, giving all citizens, whether individuals or groups, both past and future generations, the hope of finding a place, their place, in this constantly changing world. All Quebecers can be proud of the result, a result which they owe solely to themselves.

Like many other societies, Québec has entered the knowledge era where the creation of wealth and where access to prosperity are based less and less on the exploitation of resources and local advantages. Increasingly, it is knowledge and know-how which are taking center stage in the world economy thanks in large part to new information and communication technologies (NICT). In Québec, as elsewhere, jobs are the key to a successful transition to this new economy, the outlines of which are already visible and where information will play a very important role.

NICT have become a fundamental tool, transforming all aspects of our economies and societies. For the first time since the Industrial Revolution of the last century, technological changes are modifying not only our work environment, but also the very nature of work and the place that it occupies in our societies. If there is a major evolution, it is not in the number of television sets or in multimedia prodigies that we should look for it, but rather in the profound transformation that is occurring in the work place, in the life of individuals and in their integration in society.

Finally, in a context where knowledge, know-how and information have taken on such importance, is it possible to envisage a policy statement that is itself not based on knowledge, know-how and information? One of the important contributions of every policy is to inform all partners and players of the development, vision and orientations that the government plans to give to its action. In addition, the policy must offer the entire community a perspective and provide actions allowing citizens to better understand and, above all, to better evaluate the environment in which they are called upon to play an active role. A policy statement is also a statement of observations and an overview.

THE INFORMATION SUPERHIGHWAY, AT THE HEART OF CHANGE

Just a few decades ago, no one could have predicted the unlimited perspectives offered by the digitization of texts, pictures and sound. Today, at a time when digital communication networks are being set up around the world, we can now speak of a historic rupture, a veritable revolution, the effects of which, according to some observers,

can be compared to those of the invention of the printing press or of the Industrial Revolution.

Information highways, initially composed of private networks based on closed protocols, are now increasingly made up of a multitude of overlapping digital communication networks, which manage to work together thanks to the adoption of common communication protocols. It is these protocols which govern communications on the Internet.

With these rapid and interactive channels of communication, which are now used to transmit information in the form of text, images and sounds, comes a new means of communication combining the advantages of all previous means of communication. The Internet allows tens of millions of citizens from around the world to communicate, obtain information, play, create and learn thanks to millions of servers.

While information highways are the product of a technology that is still developing, they have already begun to transform the daily life of individuals and organizations. Distance and isolation are no longer obstacles. Monetary and commercial barriers are falling. Today, it is possible to make purchases, visit a museum or a library, reserve airline tickets or hotel rooms, transmit information which once was only accessible on paper, receive training, give medical consultations or offer engineering consultant services remotely, by computer.

MAJOR STAKES FOR QUÉBEC

In the face of the radical transformation of the circulation of information, all societies are hoping to leave their mark on this new universe and to take advantage of it to revamp the world in which they already live. Indeed, the stakes are high. There are economic stakes, of course, but also social and cultural stakes. However, with these new challenges come incredible opportunities.

SOCIAL STAKES

In a society where information is of such importance that already over half of the labour force holds a job where information must be produced, gathered or analyzed, it is essential to make sure that this wealth of information made available via information highways is accessible to the largest number of people and not only to the most well-off or to people living in the most urbanized areas. The access must, of course, be physical, but it also assumes a mastery of the new technologies and the training to achieve this mastery. The

information superhighway offers the regions an opportunity to become connected with the international community and contributes to the wealth and diversity of Québec society.

Moreover, when one considers the potential effects of the information superhighway on various problems facing society such as school drop-out rates or the progressive abandonment of rural areas, on the delivery of public and private services, on access to knowledge and culture, on territorial development or on professional training, there is good reason to have bold ambitions. Technology is a means which, when used for the good of society, can offer solutions to many problems which seemed unsolvable.

LINGUISTIC AND CULTURAL STAKES

What makes this information superhighway policy stand out among the many policies that have been put forward thus far is that only a single jurisdiction in North America will make language a key element. For Québec, insisting on the fact that Québec's entire population be able, via the information superhighway, to learn, work, play and do business in French constitutes an additional asset and helps to distinguish Québec.

Québec, like all countries whose common language is not English, faces a major challenge at the cultural level. Indeed, the information highways do not impose bilingualism where the use of English is for all intents and purposes a necessary prerequisite, but instead open the way to plurilingualism, where all languages are on an equal footing.

If French-speaking Québec seems to be somewhat behind in the use of NICT and information highways, it is all too often the result of the more difficult access to computer tools corresponding to the common language of the majority of its citizens and the organizational culture of its businesses. Hence, the problem lies in the production of French language content.

Although information highways, and in particular the Internet, are not characterized by a legal vacuum in the copyright legislation field, the application of copyright laws also poses a number of challenges. The doing away with the uncertainty concerning respect for intellectual property rights - and respect for private life - may permit a massive dissemination of high quality content on the information superhighway. Over the next few years, these questions will be the topic of numerous debates at the international level.

Finally, the information superhighway radically renews the very concepts of openness and intercultural exchanges, at a time when dialogue and interaction are only a keyboard away. Cultural affirmation now has a planet-wide reach, and the most dynamic cultures will be the first to take advantage of this development. This explains the concern, shared by a large number of countries, to ensure that their cultural heritage is visible on the information superhighway and to re-examine their cultural promotion strategies in light of the great flexibility of tools like information highways.

ECONOMIC STAKES

Whereas most of our economic analysis tools, statistics and indicators are based on an economy that centers on natural resources, construction and the manufacturing industry, the tertiary sector already represents 70% of the economic activity of Québec.

Québec's economy is increasingly a service-based economy, in which information, knowledge and intellectual skills occupy an ever-growing place. A few years ago, the tertiary sector was considered the emerging locomotive force. This is true now more than ever.

The competitive advantages on which Québec's economic growth was built from the sixties to the eighties -- numerous natural resources and one of the lowest energy costs in the world -- no longer suffice to support our economic dynamism and job creation, at a time when technological innovations demand an increasingly qualified labour force and the globalization of production is transferring low skill activities to regions where wages are low. Major concentrations of persons who hold and produce information and knowledge will attract businesses of this new economy.

The winning job creation strategy is not to delay the use of NICT for fear of losing jobs, but rather the exact opposite, namely to occupy the field in all areas linked to the production of goods and services, which will increasingly be based on these technologies. In addition to the production of goods and services directly linked to NICT, information highways have given rise to new fields of activity such as on-line content and services, multimedia, interactive catalogues, etc.

The objective is clear: to take the necessary steps to obtain as many jobs as possible from the new trade zones resulting from the information highways. Indeed, the information superhighway will open a new space for border-free trade. It will become increasingly difficult for businesses, at least those that reach beyond their local market (or that have competitors abroad), to not adapt to electronic commerce given the proliferation of goods and services, the shorter life cycle and the power of systems providing access to information (the instantaneous comparison of prices for example). These changes are very much in keeping with Québec's long-standing desire to remain open to the world and its support for free-trade policies with its economic partners.

FIVE MAIN PRIORITIES

To take up these challenges, Québec's Information Superhighway Policy is based on five main priorities.

These priorities and the ensuing action proposals are not a series of distinct elements but rather a whole, the various components of which are closely linked together.

Because we, as a society, refuse to give in to fears regarding NICT but instead want to take all the necessary steps to ensure that as many jobs as possible are created from the possibilities offered by NICT and information highways, by banking on the development of the economy and jobs, we must foster the development of a multimedia content and electronic services industry, in particular one that focuses on electronic trade. If such an industry is to develop and create jobs, a dynamic domestic market is needed. This market could not exist if the State does not set the example by becoming a model user of NICT and information highways, thereby reducing its costs and making it possible to free resources to intervene more effectively in the development of the economy and jobs. Québec must seize the possibilities offered by these technologies to bring the State closer to citizens and businesses. Efforts must also be made to generalize the use of the information superhighway by citizens and businesses, if only to ensure that the services offered by the State can increasingly be provided via this new avenue. Users must be able to have access to the information superhighway and its services in full confidence and be able to rely on appropriate measures intended to protect their private life and to ensure the confidentiality and security of electronic transactions, which explains the need for an encryption policy. But access cannot become generalized without first increasing the quality and quantity of information highway content and services corresponding to the language and culture of these citizens. We must therefore build a section of the information superhighway that reflects our culture. To make this program a reality, the public, young people in particular, must acquire the skills and know-how needed to make full use of the resources of the information highways and be able to take advantage of the ensuing jobs. Consequently, we must prepare the younger generation for the universe of new technologies.

GENERALIZE THE USE OF THE INFORMATION SUPERHIGHWAY

Within the context of an information society and an emerging knowledge-based economy, the growing importance of NICT in everyday life and the work place is

accompanied by the threat of the development of a two-tier society: on the one side, the information-rich and on the other, the information-poor. Rather than democratizing access to information, the information superhighway might contribute to the creation of a rift between the various components of society.

To avoid such a rift and to improve the level and quality of life of citizens, in particular by allowing them to receive information and services that are better adapted, faster and less expensive, it is vital that priority be given to generalizing the use of information highways in Québec. The information superhighway will be all the more efficient if its use is widespread, easy and inexpensive. In other words, the benefits of the information superhighway will depend on its use, namely on the extent to which it is accepted and adopted. The faster and the more widespread the adoption of the information superhighway, the sooner and the greater the benefits.

This generalization of the use of information highways is already under way. It will be stimulated by setting up community access points in various public places such as libraries. Provision will be made for greater support for popular training, for means to make available wide-band infrastructures providing access to more evolved information services on the superhighway, at an affordable cost and over the entire territory, and by seeking to give all Quebecers who want one, a free e-mail address that would allow them to take advantage of the benefits of e-mail from any Internet access point.

PREPARE THE YOUNGER GENERATION FOR THE UNIVERSE OF NEW TECHNOLOGIES

Increasingly, information highways are penetrating various spheres of human activities, and having a good knowledge of the new information and communication technologies has become almost as important as knowing how to read and write. Giving priority to the acquisition and development of skills on the part of the entire population – young people in particular – surely represents one of the most decisive investments to prepare our collective future.

Schools are, of course, at the heart of this priority. The education system, the main body responsible for training citizens who tomorrow will be called upon to work in a "connected" universe, will have to incorporate information highways and new technologies both in the design of educational material and in teaching methods, and adapt programs accordingly.

The challenge of the successful integration of NICT requires that we make an energetic effort on several fronts at the same time. To accelerate the education system's move towards the information highway, the government, via the measures proposed in this policy, will support the intervention plan already implemented by the ministère de l'Éducation.

First, by supporting the emergence and the dissemination of a "network-oriented" culture. Indeed, it is the links between computers that will allow students, teaching staff, adult learners and groups in the education field to work together, to have access to information and knowledge from various countries, and to exchange ideas with other students, colleagues and experts.

Secondly, by increasing the number of school microcomputer enrichment centres, structures that have already proven effective as places for training school personnel in NICT, and by giving schools sufficient pedagogical and technical support to accompany

educators in their efforts to master these technologies and to incorporate them in the teaching and learning process.

Thirdly, by supporting the design, development and acquisition of educational software and content suited to the use of NICT and information highways in schools.

Finally, by establishing a plan to support the deployment of Internet II, a broad band network and a strategic tool for advanced learning and research.

BUILDING A SECTION OF THE INFORMATION HIGHWAY THAT REFLECTS OUR CULTURE

In the fall of 1996, a central issue fueled the debates at the public hearings of the National Assembly's Commission on Culture: was the information superhighway a threat or an opportunity for the French language and Québec culture?

The answer was clear. Of course, one could pity one's lot, become alarmed and even become resigned to the inevitable domination of English on the Internet. However, one could also, and this was the option chosen by the majority of persons and groups consulted, choose to see in the information superhighway a unique opportunity, for all national cultures, to give a new impetus to cultural democratization and to have an influence both in one's own country and abroad.

If the efforts to develop the use of French on the information highways are to bear fruit, we must first be able to count on computer equipment capable of processing, adapting and understanding French. What we are referring to here goes well beyond simply integrating accents and concerns the entire chain of computer equipment: software, games, operating systems, navigation and browser tools, interfaces with other languages, automatic translation and natural language research tools, character recognition and voice recognition tools.

Special efforts will be made to make known and make more widely available tools that are likely to contribute to the francisation of NICT, in particular those of the Office de la langue française.

Efforts must also be made to substantially increase the quantity and quality of Québec content available on the information superhighway. As was the case with television, it is through the availability of content that suits the tastes and responds to the concerns of the public, that the latter will decide to make greater use of the resources of the information superhighway. Consequently, it seems essential to set up, with private partners, an on-line multimedia programming corporation, making it possible to assemble a critical mass of relevant high quality products and services and to maintain the interest of consumers regarding the information superhighway. Measures will also be taken to accelerate the digitization of documents that are part of the public heritage of Quebecers, to connect local, regional and national cultural institutions, and to showcase Québec cultural and artistic products.

RELY ON THE DEVELOPMENT OF THE ECONOMY AND JOBS

The information society and the knowledge-based economy are not mental constructions and cannot be reduced to the ephemeral and virtual world that the media sometimes depict. It is in this new economy that the majority of productive investments, most exchanges of service and the lion's share of new jobs will be concentrated. Like several countries, Québec must quickly adopt a strategy to accelerate the transition to this new

economy and in so doing support job development. The transition is also vital for the global competitiveness of Québec's economy.

Provided that appropriate steps are taken to enhance its potentials, the new knowledge-based economy represents a fertile ground for job creation. In this respect, a winning strategy consists of occupying the field in growth sectors associated with the development of NICT, particularly those which, in Québec, offer an interesting job creation potential. These fields of activity are of three types: first, those of the NICT industries (in particular telecommunications), whether it be for the production of goods (relays, telephones, satellites) or services (computer services, networking services); secondly, the sectors of the economy resulting from NICT, such as electronic commerce, language industries, remote medicine, home automation; finally, in the field of content for the information superhighway, on-line services and multimedia.

For Québec, the challenge lies in taking steps to make the most of the opportunities offered by NICT and the information highways in terms of job creation.

To take up this challenge, it is first necessary to ensure a better understanding of the knowledge-based economy and the new framework imposed by NICT. It is with this goal in mind that we will develop a statistical tool that will document the evolution of businesses of the new economy, using performance indicators that are meaningful in terms of the evolution of jobs and the economy. Moreover, we will create an "observatory" on jobs and work responsible for carrying out a large scale reflection on the new framework conducive to the emergence of a knowledge-based society and, in particular, on telecommuting.

However, it is through the generalization of electronic commerce that Québec's economy will be able to take full advantage of the contribution of information highways. With this goal in mind, Québec will extend the use of the information superhighway to most of its exchanges and transactions with businesses, will take steps to support the deployment of electronic commerce in businesses through training, information and technical support, and will implement the necessary measures to establish a secure electronic environment, in particular by devising an encryption policy.

Québec has played a pioneering role in the establishment of a legislative and regulatory framework to ensure respect for private life and the protection of personal information, in both the public and private sectors. This attitude of Québec society must be reflected on the information superhighway.

But there is no use supporting the development of electronic commerce, multimedia content and electronic services if, in the end, businesses are not able to find competent human resources to make the most of these developments. Training is the key to a lasting improvement in the job situation. It is for this reason that the government will devise an action plan seeking to meet manpower needs in the NICT sector and that it will implement, in all regions of Québec, a Youth information highway workshop program to create summer jobs and in-company training opportunities for young people, so that they can turn to good account their skills in the NICT field.

BRING THE STATE CLOSER TO CITIZENS AND BUSINESSES

The Québec State has often had a decisive role in the modernization of Québec society. In the sixties, Québec was able to catch up in the education and social services sector with the help of the State. It was also thanks to the action of the State that Québec was able to take control of major economic leverage tools, hydroelectricity development for example, and to carry out bold initiatives, such as the creation of the Caisse de dépôt et de placement, the viability of which has long been proven.

Today, the State's contribution to economic, social and cultural development must be defined in a context that has evolved considerably. Its contribution must be less omnipresent, more strategic and more oriented towards the needs of citizens by banking on innovation. The government must also ensure that Québec has a competitive position in relation to its neighbors. In this perspective, the improvement of public services through the use of the information superhighway becomes increasingly meaningful.

Indeed, information is at the very heart of the activity of the public administration. It represents a resource of exceptional value not only for the government itself in the carrying out of its missions, but also for society as a whole. A wise use of the information superhighway and NICT will make it possible to enhance information, which is truly a strategic resource. In this spirit, the idea of an on-line government has gradually become a reality in Québec over the last two years.

The efficiency of Québec's economy is dependent on that of the government apparatus. The objective is to provide information and services to the public and businesses at a lower cost and to offer a simpler procedure, in short to have a more efficient government apparatus. In turn, this will reduce the amount of money taken out of Québec's economy to fund the services of a modern democratic society. Hence, it is the entire economy that will benefit from an efficient State or that will have to pay the price for one that is not.

The Government of Québec can profit, and allow Quebecers profit, from a more intensive use of NICT, in particular the possibilities offered by information highways. By becoming a model user of NICT, the government will give a new impetus to Québec society as a whole, as the rapid putting in place of a government information highway represents an investment that will accelerate the deployment of all the other components of Québec's information highway network. In so doing, Québec will act on the supply of on-line services as well as on the demand for them, because it will be promoting a Québec expertise in these fields along with the creation of a critical mass of users and contents.

It was with this goal in mind that a plan to set up the government information highway was prepared in order to contribute to the creation of a State apparatus that is simplified, more transparent and more accessible.

Among the measures in this plan, mention should be made of the decision to make sure that departments and agencies make available free of charge, on the information superhighway, all the general information considered of public interest and which they produce and hold. This plan also provides for the creation on the Internet of a government directory to allow citizens and businesses to have access to the description of services offered to the public, to references concerning government documents, to the names and addresses of government employees, as well as to means allowing citizens and businesses to communicate directly and electronically with government employees in charge of providing information and services.

The socio-health network, one of the pillars supporting the State's action on behalf of citizens, also plans to embrace the information superhighway and NICT. The ministère de la Santé et des Services sociaux will make sure that citizens have access on the Internet to information services intended to help increase their autonomy in the prevention of illnesses and the protection of their health and well-being. This department will also prepare a policy and will define the details of the deployment of remote medicine, remote diagnosis and remote supervision services. Moreover, in cooperation with the Régie de l'assurance-maladie du Québec, it will define the orientations of a secure socio-health information network with a view to supporting the information needs of the various actors of the network.

CONCLUSION

Every society wants to leave its mark on this changing universe. Every society is working to create its own specific fabric, a reflection of its unique characteristics, identity and collective wealth. All the important aspects of collective life are involved: culture, education, public services, work, and, of course, language, the prime means of communication. To evolve in this universe, it is necessary to acquire new skills. Our economic progress and the social and cultural development of our society are at stake. In deciding to adopt an Information superhighway policy, the Government of Québec is not trying to simply adapt a new technology to Québec's unique characteristics. Through the solutions that the government has chosen, it is helping to shape a sociopolitical expression that is specific to information highways and, from there, to provide details for one of the components of its blueprint for society.

This policy is meant as a flexible and progressive tool, like the world it is endeavoring to describe. To fully achieve its goals, the policy must be able to count on the initiative, imagination and creativity of all Quebecers.