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THE INFORMATION TECHNOLOGY REVOLUTION AND THE
EXPANDING ROLE OF NON-CENTRAL GOVERNMENTS
IN INTERNATIONAL RELATIONS

by

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An Era of Unprecedented Change

In September of 2000, 150 leaders from the 188 nations represented in the United Nations gathered in New York City to participate in the Millennium Summit. The principal theme of this historic conference was how globalization and rapid technological change could be combined to foster international cooperation and ease the plight of billions of people around the world. The summit concluded that cooperation, appropriate technology transfer, and bilateral and multilateral assistance could by the year 2015 cut in half the one billion people currently living on one dollar or less per day, reduce by half the one billion people who do not have access to clean water on a regular basis, ensure that all children receive at least a full primary school education, and halt the spread of AIDS. The UN members also agreed to set up a “Net Corps”

composed of volunteers who would travel to developing nations and help close the digital divide between the North and the South. These volunteers would train people to set up Internet networks and to use computer technology to improve local conditions in the fields of health, education, the environment, and small enterprises.

All nations, whether situated in the North or the South, are coping with the implications of globalization and the so-called Information Technology (IT) revolution. For many, globalization is already a fact of life with the international mobility of goods, services, capital, technology, and people standing at record levels. World trade in goods and services is approaching seven trillion dollars annually, and is growing at a rate almost three times faster than the aggregate growth in national economies. The growth in commercial services, international direct and portfolio investment, and international tourism is easily outpacing the expansion in merchandise trade. For example, trans-border merger and acquisition activity approached a record 800 billion dollars in 1999, up almost 50 percent from the previous record levels of 1998. The 500,000 affiliates of transnational corporations also produce sales of 11 trillion dollars per year, over 50 percent greater than the total cross-border trade in goods and services.ⁱ In addition, international currency transactions have reached astronomical heights, averaging over 1.5 trillion dollars per day.

Yet, even with this proliferation in international economic exchanges, economic globalization may still be in its early stages. E-commerce still represents a very small fraction of total retail sales in the northern tier of nations.ⁱⁱ Business-to-consumer and business-to-business transactions via cyberspace are also very modest, although growing rapidly on a percentage basis. In the international business arena, McKinsey & Associates estimates that only one-fifth of world output is currently open to global competition in products, services, and ownership.

However, within the next 30 years, four-fifths of world output should be “globally contestable,” leading to a dramatic intensification in global economic integration.ⁱⁱⁱ

National governments are struggling to keep up with the changes not only in the economic arena but many other arenas as well. As an illustration, governments within individual nation-states can no longer singlehandedly find and implement workable solutions to environmental, energy, and resource problems linked to global warming, ozone deterioration, air and water pollution, the depletion of fish stocks and fossil-based fuels, and a host of other problem areas.

In particular, national boundaries are almost totally irrelevant within cyberspace, and activities which occur or decisions which are rendered outside the nation-state may now penetrate deep into local neighborhoods or even households. As a result, more responsibility has been placed on local and regional governments to protect and enhance the well-being of their local constituents in an era of regional and global integration and rapid technological change. This is especially true for the 350 major non-central governments (German länder, Canadian provinces, Swiss cantons, American, Australian, and Mexican states, etc.) found in the two dozen federations scattered around the globe.

Global and regional interdependence is being accelerated because of the IT revolution. The remainder of this paper will discuss how the IT revolution is touching upon governance at the constituent level, describe what non-central governments are doing to represent their interests internationally, and suggest some strategic planning options in order for these governments to take full advantage of globalization and the IT revolution. Pro-active policies will be needed for non-central governments to succeed, for as Jeremy Rifkin has warned: “Never before in history has humanity been so unprepared for the new technological and economic opportunities,

challenges, and risks that lie on the horizon. Our way of life is likely to be more fundamentally transformed in the next several decades than in the previous one thousand years. By the year 2025, we and our children may be living in a world utterly different from anything human beings have ever experienced in the past.”^{iv}

The IT Revolution and Non-Central Governments

The *Encyclopedia of the Future* estimates that scientific information is doubling every 12 years and general information every 2 ½ years.^v Bill Gates predicts that more change will occur in the world’s business community over the next decade than during the past half century. He depicts this first decade of the new century as being characterized by **velocity** and adds that “the forces of digital information are creating a business environment of constant change. This is constant upheaval marked by brief respites—this is **punctuated chaos**.”^{vi}

The IT revolution includes the proliferation of powerful computers, the rapid expansion of the Internet via cyberspace, digitization, wireless technology, miniaturization, fiber optics, and bandwidth expansion. Above all, knowledge has become the new basis for wealth, and interconnectedness and interactivity have reached unprecedented levels. In cyberspace, distance and the presence of national borders are of little consequence. Location is also less important with telecommunications operating in space rather than tied to a specific place or location.

In reaction to globalization and the IT revolution, subnational governments in several federations have decided that they must be actively engaged in the international sector in order to protect the interests of their local constituents. In most federal systems, international trade, investment, and tourism now represent a record percentage of overall jobs. For example,

upwards of 18 million jobs are directly linked to the international economy in the United States, or roughly 1 in 6 full-time jobs in the private sector, and in Canada the number is 1 in 3.

Indirectly, even more jobs are tied to the international economy because import penetration is at record levels and local companies must compete in their own domestic marketplace against goods and services originating from abroad. Because such a large percentage of subnational government revenues is generated from local business activity, these governments consider that it is imperative to be engaged both nationally and internationally.

Secondly, the intrusiveness of the international level onto the local level is also prompting activism on the part of some non-central governments in federal systems. In an age of interdependence, Joseph Schumpeter's notion of capitalism as "creative destruction" is more appropriate than ever before. Between 1980 and 1997 in the United States, 74 million jobs were created and 44 million disappeared. The net creation of 30 million jobs is quite impressive, but some human tragedies were inextricably linked to the 44 million jobs which were terminated. Globalization and rapid technological change combine to have an uneven effect on businesses and regions. For example, among the *Fortune 500* companies listed in 1955, 70 percent no longer exist.^{vii} Detroit has lost 70 percent of its manufacturing jobs since its peak productive years of the 1960s, whereas employment in Silicon Valley has increased by almost 1000 percent over the past two decades.^{viii} With many subnational governments in federations having primary responsibility for business regulation, unemployment programs, and social-welfare functions, they must deal on a daily basis with this turbulent creative destruction in an era of globalization.^{ix} In addition, international or regional agreements entered into by their national governments, such as membership in the World Trade Organization (WTO), the European Union (EU), or the North American Free Trade Area (NAFTA), have also intruded into areas of responsibility

constitutionally mandated to these non-central governments. This intrusiveness limits policy prerogatives at a time when state, provincial, länder, or other non-central governments are increasingly engaged in a range of activities which often overlap the local, national, and international arenas.

The expansion of non-central government involvement in the international arena is impressive. In the United States, 4 states maintained offices abroad in 1970, compared with 42 states and Puerto Rico which currently operate 180 foreign offices in almost 30 different countries. Many governors and big-city mayors lead at least one international mission annually, and state governments are allocating about 100 million dollars per year to their international programs, in addition to pledging billions of dollars in grants, loans, or tax holidays to foreign companies setting up subsidiary operations on American soil.

Proportionally, the Canadian provinces have more offices opened overseas and spend appreciably more on international programs than their counterparts in the United States, with Quebec being the leading subnational government in the entire world in terms of its commitment to international programs. Quebec's Ministère des Relations internationales alone employs over 550 personnel and has a budget of nearly 109 million dollars (Canadian).^x Hundreds of additional personnel are assigned to immigration tasks and commercial, cultural, and educational endeavors which reach well beyond the borders of Canada, activities which cost tens of millions of dollars each year. The Quebec government also maintains foreign offices in 36 cities located in 26 different countries, the most extensive international network of any subnational government and larger than the foreign presence of several nation-states.^{xi} Moreover, representatives of the Quebec government lead over 120 foreign commercial, political, and cultural missions each year, more than any other subnational unit in the Americas and probably

in the world.^{xii} Since the mid-1960s, the provincial government has entered into over 400 ententes with foreign nations and international organizations in areas such as energy, agriculture, education, transportation, telecommunications, and the environment.^{xiii} To put Quebec's international activism in perspective, its annual gross domestic product of 140 billion dollars would rank 22nd among the 50 U.S. states, but the Quebec government has as many employees devoted to international programs and spends about the same amount of money on these programs as all 50 U.S. states combined.

German länder, Swiss cantons, and Australian states are among the other non-central governments in federations which have been actively engaged in international activities, as well as some subnational governments in unitary systems such as France and Japan. This trend is likely to accelerate in the future, because the IT revolution is blurring the lines between local, regional, and national governments on the one hand, and international and domestic pursuits on the other. Even the smallest of businesses must prepare for international competition, because in cyberspace, one's nearest competitor is less than one second away, the time needed for the bits composed of 1's and 0's to travel from one part of the planet to any other part. Cyberspace is also permitting the creation of "virtual aliens," with millions of people fitting into this category in the year 2000 and millions more to be added in the near future. Both stock markets and business activity may now be considered as working on 24-hour cycles, roughly divided into 8 hours in Asia and the Pacific, 8 in Europe and Africa, and 8 in the Americas. This means that when employees leave their offices in Silicon Valley each evening, they can transfer computer software code-cutting and other tasks to workers in the Bangalore region of India, fully expecting that this work will have been completed when they arrive back at their desks in Silicon Valley the next morning. The employees in Bangalore will work for the U.S. company and

contribute significantly to the success of that company, but they will not reside in the United States, they will not pay federal, state, or local taxes in the United States, and they might dissuade the company from hiring new workers within the United States because of the economy-of-scale benefits that accrue to the company as a result of the “virtual alien” phenomenon. This decision to refrain from hiring new workers within the United States will have a ripple effect upon the local economy in Silicon Valley because retail establishments and other tertiary businesses will not have as many well-paid customers to buy their goods and services.

Both globalization and the IR revolution are contributing to a sense of malaise among many workers in the northern tier of nations, in spite of the general prosperity in many of these economies during the 1990s. Indeed, this sense of malaise is greater among American workers today than it was during the recession period of 1991, even though over 20 million net new jobs have been created over the past 8 years and trillions of dollars of wealth added to U.S. households during the same period. The malaise felt in North America and Europe in particular is linked to the following perceptions which may or may not coincide with reality: (1) globalization is perceived as opening the way for the transfer of jobs from high-wage countries to low-wage developing nations; (2) globalization is contributing to significant financial turmoil, typified by the crises in Asia in 1997, Russia in 1998, and Brazil in 1999; (3) globalization provides multinational corporations, which control most international trade and international direct investment activity, with greater powers at the expense of national and non-central governments which are responsible directly to the people; (4) the IT revolution is producing change that is too rapid, not permitting the public sector nor people in general to keep pace politically, socially, economically, or psychologically; (5) the IT revolution is creating two

distinct groups—the digital haves and the digital have-nots—and many people worry that they and their children will not be able to keep pace and will fall into the have-not category; and (6) the marvels of the IT revolution are actually spawning a new world culture patterned after the values of Hollywood and the United States in general, an insidious trend which threatens local cultures and languages other than English. This latter phenomenon is fed by movies, television and radio programs, cassettes and diskettes, and an Internet whose content and web sites are overwhelmingly in English.

Coping with Globalization and the IT Revolution:

Strategic Planning for Non-Central Governments

The expanding role of non-central governments in the international arena will certainly complicate intergovernmental relations within nation-states, but events and trends dictate that such expansion must occur as these subnational governments attempt to fulfill their traditional role of protecting and enhancing the well-being of the people whom they represent.

Each non-central government should develop a strategic plan of action so that it can best take advantage of globalization and the IT revolution. The first part should include a candid assessment of the area of jurisdiction's strengths and weaknesses vis-à-vis globalization, regionalism, and the IT revolution. For example, what are Niedersachsen's advantages and disadvantages within the framework of Germany, the EU, Europe in general, and the world, or Alberta's advantages and disadvantages within Canada, NAFTA, the Americas, and the world? Next, government authorities should develop a global checklist showing what is available locally in terms of global infrastructure, international companies, international transportation

capabilities, international organizations, international media presence, research and development facilities, higher education institutions, and ethnic groups and associations. This should be followed by an assessment of the strengths and weaknesses of intergovernmental linkages and public-private sector linkages. An evaluation of the regulatory and taxation systems should also be included, along with a critique of how well business development and entrepreneurship are being nurtured locally. The international pursuits sponsored wholly or in part by non-central governments must also be critiqued, including trade, investment, and tourism missions and the operation of overseas offices. The use of modern technology to further the economic interests of the region should also be scrutinized. For example, does the government make effective use of the Internet, is its web site user friendly, and how many languages are featured on the web site?

Special attention must also be accorded to all levels of education, both public and private. Alvin Toffler has suggested that illiteracy in the twenty-first century will not be defined as the inability to read and write, but rather the inability to learn, unlearn, and then relearn in a period of rapid technological change and creative destruction. To a greater extent than ever before in history, the most important resource possessed by regions will be the human resource, and men and women will change jobs frequently and require retraining on a regular basis. Lifelong learning will be the norm, and educational institutions will change dramatically to keep pace with technological change and the need to service clients within the home and business milieus.

Each non-central government must also prepare to reinvent itself. If the private sector will change more over the next decade than over the past half century, as Bill Gates has predicted, will the public sector be able to keep pace? How will governments be able to retain their best personnel and attract top-quality recruits in an era when higher wages, better fringe benefits, and more enticing perks are being offered by the private sector? Will local

governments be able to adapt new technology to provide services to their constituents 24 hours per day, 7 days per week, and 365 days per year? Will the Internet and its interconnectedness and interactivity features be used by non-central governments to provide more convenient services to their constituents? Will downsizing and decentralization occur within government structures, and will outsourcing of many services become commonplace?

Strategic Planning: The Case of Quebec

Quebec offers a concrete example of how one non-central government has planned strategically to build a New Economy Mecca within the province, with the Montreal region, home to 44 percent of all Quebecers, serving as its hub. As mentioned earlier, Quebec maintains the most extensive network of overseas offices and sponsors more international missions than any other non-central government in the world. Domestically, the Quebec government's strategic plan includes the following: (1) 475 million dollars (Canadian) per year in government assistance for research, development, and innovation, 42 million dollars (Canadian) per year in tax incentives for technology conversions for businesses, and 209 million dollars (Canadian) over three years to accelerate the adaptation of small and medium-sized businesses to e-commerce;^{xiv} (2) major tax exemptions, accelerated depreciation allowances, and other government grants or benefits for targeted business projects; (3) 121 million dollars (Canadian) in grants to low-income families over three years to assist them to buy computers and to log on to the Internet; (4) the development of the Montreal-based Cité du multimédia which has already produced over 8,000 jobs;^{xv} (5) the development of the Montreal-based E-Commerce Place which will have three million square feet of leaseable space; (6) the establishment of

Centres de développement des technologies de l'information (CDTIs) in various parts of the province; (7) the creation of Investissement Québec, a one-stop center for foreign businesses desiring to invest in the province; and (8) joint-venture partnerships with foreign investors through la Société générale de financement du Québec (SGF).

Montreal is the centerpiece for the New Economy and unlike the period of a few years ago when many shops were closed, buildings half vacant, and unemployment at double-digit levels, Montreal is much more vibrant today. In high-tech terms, Montreal is the logical candidate within Quebec for "clustering;" in other words, an area where various Information Age companies gather and then, through their successes and interactions, attract other high-tech firms to their region, *à la* Silicon Valley in California. Four major universities and various other educational and research institutions are already found in the Montreal area, providing a source for well-educated employees and collaborative R&D projects. Over 80 percent of Montreal's work force has high school diplomas, over 20 percent university degrees, and the province as a whole ranks first among the Organization for Economic Cooperation and Development (OECD) countries in the number of advanced-degree graduates per capita. Almost two-thirds of this work force is also bilingual and 16 percent is trilingual. The province is also responsible for 50 percent of Canada's information-technology output, 50 percent of aerospace production, 45 percent of pharmaceutical production, and 38 percent of high-tech exports, with the preponderant share of this completed within the Montreal region.^{xvi} Just as importantly, Quebec has attracted about 40 percent of all the venture-capital funding in Canada. Montreal ranks first in North America for the number of high-tech jobs in proportion to population, and has also been ranked as having the lowest costs for doing business among the major cities of North America and Europe.^{xvii} Furthermore, Montreal is emerging as a major center for global conferences and is

the headquarters for 75 international organizations, including the International Air Transport Association's (IATA) center for the Western Hemisphere.

Concluding Observations

Each non-central government must tailor-make its own strategic plan to cope with the opportunities and challenges presented by globalization and the IT revolution. Some will be uncomfortable with the degree of direct government involvement found in Quebec. These governments might concentrate on infrastructure and educational modernization as well as revamping their regulatory and tax climates, anticipating that entrepreneurs in the private sector will bear the primary burden in developing a world-class business sector. Some will also expect significant intergovernmental or even inter-regional cooperation within the context of the EU, NAFTA, or other regional entities promoting economic integration. Above all, there is no "perfect" model and one cannot anticipate replicating Silicon Valley on a worldwide basis. Nevertheless, internationally competitive business sectors and high-technology clusters are emerging in various parts of the world and there is much to be learned from all of them as non-central governments endeavor to customize their strategic plans.

Andy Grove, the former chair of the Intel Corporation, has asserted that "long distances used to be a moat that both insulated and isolated people from workers on the other side of the world. But every day, technology narrows that moat inch by inch. Every person in the world is on the verge of becoming both a coworker and a competitor to every one of us, much the same as our colleagues down the hall of the same office building are."^{xviii} Non-central governments must

prepare for this new type of environment where their private sectors will be cooperating with and competing against private sectors elsewhere in the world. Are the local private and public sectors prepared to compete regionally and globally, and what strategies must be implemented in order to harness the constructive features of globalization and extinguish the negative features? These are the formidable challenges which will face public officials at all levels of government over the next decade.

ENDNOTES

ⁱ John Micklethwait and Adrian Woolridge, *A Future Perfect: The Challenge and Hidden Promise of Globalization* (New York: Crown Business, 2000), xxi.

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- ⁱⁱ For example, in the second quarter of 2000, e-commerce represented only two-thirds of one percent of total retail sales in the United States, as reported by the U.S. Department of Commerce.
- ⁱⁱⁱ Micklethwait and Woolridge, xxi.
- ^{iv} Jeremy Rifkin, *The Biotech Century* (New York: Tarcher/Putnam, 1998), 1.
- ^v Quoted in Michael Marien, "The Information Revolution May Not Benefit Society," in *The Information Revolution: Opposing Viewpoints*, ed. Paul A. Winters (San Diego: Greenhaven Press, 1998), 23.
- ^{vi} Bill Gates, *Business @ the Speed of Thought* (New York: Warner Books, 1999), xiii and 412.
- ^{vii} Dale Neef, *A Little Knowledge Is a Dangerous Thing: Understanding Our Global Knowledge Economy* (Boston: Butterworth Heinemann, 1999), 10.
- ^{viii} Janet E. Kodras, "Globalization and Social Restructuring of the American Population: Geographics of Exclusion and Vulnerability," in *State Devolution in America*, eds. Lynn A. Staeheli, Janet E. Kodras, and Colin Flint (Thousand Oaks, CA: SAGE, 1997), 52-53.
- ^{ix} See E.J. Dionne, Jr., "The 'Glocalization' Problem," *Washington Post*, 6 June 2000, A27.
- ^x Ministère des Relations internationales (MRI), *Rapport annuel 1998-1999* (Québec: Gouvernement du Québec, 1999), 53 and 55.
- ^{xi} MRI, "Le réseau du Québec," November 1998.
- ^{xii} Ministère de l'Industrie et du Commerce, *Rapport annuel 1997-1998* (Québec: Gouvernement du Québec, 1998), 19-20. During the 1997-1998 fiscal year, this ministry sponsored 25 missions to the United States, 24 to Latin America, 20 to Asia and Oceania, 43 to Western Europe, and 17 to Central Europe, Africa, and the Middle East. Many additional international missions are sponsored by its sister organization, MRI.
- ^{xiii} MRI's web site at <<http://www.mri.gouv.qc.ca>>.
- ^{xiv} Ministère des Finances, *Quebec Focus on Jobs: An Integrated Fiscal Strategy for a Knowledge-Based Economy* (Québec: Gouvernement du Québec, 1999), foreword, and Ministère des Finances, *Quebec on Line* (Québec: Gouvernement du Québec, 2000), ii.
- ^{xv} Ministère des Finances, *A Financial Profile of Quebec* (Québec: Gouvernement du Québec, 2000), 14.
- ^{xvi} MRI, "Quebec Profile" at <http://www.mri.gouv.qc.ca/le_quebec_un_profil/economie/secteurs_an.html>.
- ^{xvii} KPMG, *The Competitive Alternatives: Focus on Quebec* ([NC]: KPMG, 1999), 5-10, and Ministère des Finances, *Quebec: The Best Choice for the New Economy* (Québec: Gouvernement du Québec, 1999), 7.
- ^{xviii} Andrew S. Grove, *Only the Paranoid Survive* (New York: Currency Books, 1996), 5.