INFORMATION TECHNOLOGY
ASSOCIATION OF CANADA

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Expanding Ontario's Productivity, Competitiveness and Capacity for Innovation

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ITAC is the voice of the Canadian information and communications technology industry. Together with its affiliated organizations across the country, the association represents 1300 companies in the information and communications technology (ICT) industry in all sectors including telecommunications and Internet services, ICT consulting services, hardware, microelectronics, software and electronic content. ITAC's network of companies accounts for more than 70 per cent of the 566,000 jobs, $130 billion in revenue, $5.2 billion in R&D investment, $20.7 billion in exports and $11.5 billion in capital expenditure that the sector contributes annually to the Canadian economy.

ICT, Productivity and Incentives for Adoption

Over the past five years, the link between investment in information and communications technology (ICT) and productivity growth has evolved from hypothesis to mainstream economic and public policy orthodoxy.

A paper from the Federal Reserve Board (The Resurgence of Growth in the Late 1990s: Is Information Technology the Story" by Stephen D. Oliver, Daniel E. Schiel) was among the first to identify the contribution that IT had made to the dramatic growth in labour productivity in the United States in the 1990s. This work contributed to transformation of Federal Reserve Board Chairman Alan Greenspan from a skeptic to a believer in the productivity improving power of ICT. He famously credited the resurgence of American productivity to "the revolution in information technology growth".

> "At a fundamental level, the essential contribution of information technology is the expansion of knowledge and its obverse, the reduction in uncertainty. Before this quantum jump in information availability, most business decisions were hampered by a fog of uncertainty. Businesses had limited and lagging knowledge of customers' needs and of the location of inventories and materials flowing through complex production systems. In that environment, doubling up on materials and people was essential as a backup to the inevitable misjudgments of the real-time state of play in a company. Decisions were made from information that was hours, days, or even weeks old."[1]

The first study of the impact of ICT investment on Canadian productivity growth was released in November of 2000 by the Conference Board of Canada. The study concluded:

> "The recent surge in information technology investment in Canada has made a significant contribution to both labour productivity and output growth in the last decade. This has been especially true over the 1996 to 1999 period. We found that IT investment increased its contribution to the GDP growth rate from virtually nothing in the 1980s to about 0.4 percentage points in the last 1990s, up from

[1] Greenspan, Alan. Speech before Boston College Conference on the New Economy, March 6, 2000.

about 0.1 percentage points in the early 1990s. This is a significant and accelerating change. In fact, the impact on GDP growth of investment in IT capital is almost as much as that of investment in non-IT capital. This is especially remarkable when IT capital accounts for only about 5 per cent of the capital stock, and non-IT capital the other 95 per cent.

The Canadian results follow a similar pattern to that found for the United States, although the Canadian numbers tend to be somewhat weaker. The difference is attributable to several factors, including a stronger U.S. economy over the past ten years as well as a sharp upturn in labour productivity in that country. However, our investment in IT is now increasing at a stronger pace than the U.S. and as such, we are in a position to play catch up in the coming years."[2]

A number of studies followed examining the sectoral impact of ICT investment and the role that relative levels of investment in ICT play in accounting for the growing productivity gap between Canada and the United States. Andrew Sharpe, of the Centre for the Study of Living Standards, published a paper in the Spring of 2003 that analyzed factors contributing to this gap. He estimated that the lower capital intensity of economic activity in Canada was a key contributor to the gap.[3]

Peter Nicholson's 2003 review of Canada's prospects for economic growth also underscored the importance of innovation and technology adoption:

"An economy grows (i) when more people are put to work (growing labour supply); and/or (ii) when workers collectively produce more value of goods and services in successive intervals of time (growing productivity). To enhance productivity, one can invest to augment raw labour with (a) increasing amounts of "human capital" (e.g. formal education; on-the-job training; or simply acquired experience) and (b) increasing amounts of physical capital. Thus *investment*, and the savings needed to finance it, lies at the heart of the growth process.

The other key determinant is *innovation* interpreted broadly to encompass not only activity associated with lab coats, but also incremental improvements emanating from the shop floor; more effective managerial techniques (working smarter);

[2] Conference Board of Canada, Jim Frank, Luc Bussiere, "IT and the New Economy: The Impact of Information Technology on Labour Productivity Growth".
[3] Andrew Sharpe, "Why are Americans More Productive than Canadians," International Productivity Monitor 6, Spring 2003.

> entrepreneurial creativity; and acts of sheer imagination that end up creating new sources of value."[4]

One of the strongest affirmations of the link between innovation, ICT adoption and productivity appears in the Federal Budget Plan of 2004. "…The Government recognizes the importance of information and communications (ICT) equipment. Improved productivity in several countries since the mid 1990s, including the U.S., has been associated with higher ICT investment. Similarly, in Canada, productivity growth is faster and has increased more rapidly since 1997 in ICT-intensive sectors, most notably in services.[5] This argument and supporting data was used to explain an increase in the capital cost allowance rate applying to computer equipment, broadband and Internet infrastructure, thereby reducing a disincentive to investment in this technology.

More recently, published work from key departments underscores the link between ICT investment and growth in productivity and competitiveness. Economists with Finance Canada declare, "The increase in ICT investment in Canada was followed by an acceleration in labour productivity growth in the latter part of the 1990s," and conclude "…. Our analysis contributes cross-sectional evidence for Canada that computer use, university education and computer skills development are associated with higher productivity."[6] Another article examining organizational innovation and ICT adoption concludes:

> "Our analysis suggests that Canadian firms have actively engaged in organizational changes in the areas of production and efficiency practices, HRM practices and product and quality-related practices. These practices combined with ICT are strongly associated with better firm performance. We find that the firms that implement organizational changes and introduce ICT have a higher incidence of productivity improvement, and also of sales and profit increase and product and process innovation."[7]

[4] Peter Nicholson, "The Growth Story: Canada's Long-run Economic Performance and Prospects," International Productivity Monitor 7, Fall 2003.
[5] The Budget Plan 2004, page 150.
[6] Julie Turcotte and Lori Whewell Robinson, "The Link Between Technology Use, Human Capital, Productivity and Wages: Firm Level Evidence," International Productivity Monitor 9, Fall 2004.
[7] Surendra Gera and Walong Gu, "The Effect of Organizational Innovation and Information and Communications Technology on Firm Performance," International Productivity Monitor 9, Fall 2004.

And an Industry Canada study of four of Canada's economic clusters stresses the productivity enabling impact of ICTs. "The importance of ICT as an enabler of broad economic development has surpassed that of ICT as an economic sector in its own right …. In this regard, it is important to facilitate ICT technology development and lever ICT skills capacity at the interface between the ICT sector and other sectors of the economy."[8]

In another recent paper, Andrew Sharpe pondered the post-2000 improvement in productivity growth in light of the fall-off in ICT investment in recent years. He concluded that more research is needed on this, but offers the following explanation:

> "But in my view the most probable factor behind the acceleration is the more effective use of ICT investments. The full productivity impact of ICT investment has taken time. It has required changes in organizational structures and a higher level of workforce computer literary. These developments have now happened and the productivity payoff from ICT is now being realized."[9]

As the evidence accumulated, ITAC began a call for the examination of policy instruments that accelerate the adoption of ICTs across the economy. In our 2004 pre-budget submission to the Federal Finance Committee, we called for incentives to encourage the more rapid adoption of technology, particularly in sectors where there is a high potential to improve competitiveness such as the small and medium-sized business sector.

Recognizing that a survey of incentive adoption instruments in use in other jurisdictions would contribute to this exploration, we commissioned Jacek Warda to study measures in use among a number of states, provinces and nations. He noted:

> Models for encouraging ICT adoption by business are diverse and policy initiatives combine many different elements. Adoption strategies include tax incentives, infrastructure development, procurement policies and R&D support initiatives. An important set of initiatives is aimed at the firm level. These comprise incentives for corporate training and organizational change, and information on and demonstrations of best practice and benefits from use. Most

[8] Strategis.
[9] Andrew Sharpe, "Ten Productivity Puzzles Facing Researchers," International Productivity Monitor 9, Fall 2004.

commonly, the international policy focus has been on adoption of ICT by small countries.[10]

The study found that the increased rate of Capital Cost Allowance introduced in 2004 has positioned Canada favourably against some competitive jurisdictions. But a number have introduced more activist measures to increase technology use. These include Japan and Spain, which both employ tax credits for ICT equipment. France and Germany are also more competitive than Canada. France boasts a depreciation rate of 40% declining balance. Germany offers a 33⅓ per cent straight line. And the United Kingdom offers small companies a depreciation allowance of 50 per cent on all technology capital investments.

In Canada only, Saskatchewan and Manitoba have a general investment tax credit (10% and 5% respectively) for manufacturing, machinery and equipment. These incentives are broadly based and relatively small so their impact on ICT adoption may not be great.

The complexity of modern ICT systems also presents a challenge to small businesses in particular. Frequently, they cannot spare the resources or the time for the training necessary to achieve maximum benefit from ICT investment.

Many jurisdictions have introduced incentives for training. (Ontario offers a significant 35% tax credit to employers for apprenticeship training.) Leaders in applying corporate training incentives include Austria, France, Japan, Korea, the Netherlands and Spain. Spain is notable in that its policies seek to incent both equipment acquisition (through a 10% tax credit) and incentives for training.

In addition to understanding the global landscape regarding incentive adoption, ITAC also felt it was necessary to better understand why Canada's rate of ICT adoption compares so unfavourably with that of the United States. The report noted that "Canadian ICT investment per worker has declined to an alarming 45.1 per cent of the U.S. level."[11]

While the CSLS study was unable to point to one single cause for the gap, it did suggest a number of contributing causes. These include significant structural differences between the two

[10] "Incentives for ICT Adoption: Canada and Major Competitors," by Jacek Warda, July 2005, page 3.
[11] "What Explains the Canada-U.S. ICT Investment Gap?" Andrew Sharpe, Centre for the Study of Living Standards, International Productivity Monitor, Fall 2005, page 25.

economies. Canada, for example, has a relatively larger portion of small firms than the United States. It also notes:

> There is a large amount of empirical research that indicates that firm size has an influence on ICT adoption. Data on e-business from Statistics Canada's Survey of Electronic Commerce Technology revealed that the adoption of more advanced ICTs such as websites and e-commerce was dominated by large firms.[12]

The prospect of changing the structural nature of Canada's economy is unlikely. But we can adopt measures to ensure that our small and medium-sized business sector can achieve a higher rate of productivity growth through expanded adoption of ICTs. ITAC believes that our economy would benefit from the introduction of tax measures to encourage ICT adoption, especially among small and medium-sized businesses.

As our review of ICT adoption incentives from other jurisdictions illustrates, there is a broad range of instruments available to spur adoption. ITAC believes that the tax-based instruments will be more effective than program-based incentives especially with SMBs. A number of our members have examined this issue closely. Bell Canada, for example, has called for specific incentives in its submission to the 2005 Telecom Policy Review. It recommends:

- For a five-year period, the Government of Canada should introduce a special 50 per cent capital cost allowance bonus in one year for all ICT investments.
- Based on the U.S. model, Canadian SMEs should be permitted to expense 100 per cent of the first $100,000 of ICT investment for a five-year period.[13]

Ontario indisputably leads the Canadian economy. Its diversity and its structure present a microcosm of the larger national economy. Innovation and leadership demonstrated in Ontario will not only be emulated elsewhere, it will have a profound impact on the prosperity of the nation as well as the province.

[12] Ibid, page 33.
[13] Bell Canada, Canadian Connection: Strengthening Canada's Leadership in Telecommunciations. A summary of Bell Canada's submission to the Telecommunications Policy Review Panel, page …

ITAC, therefore, strongly urges the Ontario Government to adopt tax-based measures to spur the adoption of technology. Such measures might include waiving the retail sales tax on software. The province also has the scope to encourage ICT training of short or long duration. For example, expanding the apprenticeship training incentive program to explicitly include ICT training would be helpful. So would measures to reduce the burden business owners bear to ensure their staff have appropriate ICT knowledge.

In addition, there are several other measures to improve the province's capacity for innovation, competitiveness and productivity that we would like to bring to the Minister's attention. These would be timely, innovative public policy measures that would in turn improve Ontario's productivity, competitiveness and capacity for innovation – objectives high in priority for the Ontario Government.

Harmonization of Federal and Ontario Provincial Corporate Income Tax

In the fall of 2004, the federal and Ontario provincial governments announced that they would harmonize their corporate income tax programs. This has the potential to be of enormous benefit to taxpayers, while providing administrative savings for government. For this proposal to achieve the greatest benefit to all parties it will be important to harmonize from a legislative, administrative and process-related perspective.

Harmonizing the legislative and administrative provisions will allow the filing of returns and subsequent audit to be streamlined, providing maximum savings to government and taxpayers alike. Similarities in taxing regimes will not only reduce administrative burdens, but will also improve compliance by eliminating differing rules between the two systems. This will also result in reduced audit issues, and lead to a reduction in the number of items taken through the appeals process, again saving time and money for all parties. Taking advantage of a common appeals process will significantly reduce the current backlog at the provincial level, and provide taxpayers with common rules to be followed.

We recommend that as this program is examined and rolled-out, government make every effort to harmonize from a legislative, administrative and process-related perspective to ensure that benefits to all parties are maximized.

The implementation of this project also raises opportunities to further encourage the growth of research and development in Canada. Currently, Ontario does not subject the federal SR&ED Investment Tax Credit to corporate income tax. If the harmonization process could be leveraged to convince the federal government to also remove their own SR&ED Investment Tax Credit from the federal corporate income tax base, this would provide a significant incentive to locating R&D activities in Canada.

Sales Tax Reform

The compliance burden borne by both businesses and government in administering the Ontario Retail Sales Tax ("ORST") is progressively becoming a bigger competitive disadvantage for those located in or carrying on business in Ontario. Effective compliance can only be achieved through an in-depth understanding of both the legislative provisions and administrative positions taken by the province. This is becoming an exceeding difficult task for the small to medium-sized business, which often cannot rely on in-house experts to assist them in understanding and dealing with their compliance requirements. Reforming our sales tax, and replacing it with a value-added tax, identical to the federal Goods and Services Tax ("GST"), would provide significant administrative savings for both businesses and government, without impacting the current tax revenue stream. The Ontario government has recognized the benefits that will accrue to all parties involved in the corporate income tax process through its recent announcement that they are working with the federal government to design a single corporate income tax collection and processing system. Moving in the same direction for consumption taxes such as the ORST and GST is the next logical step.

To date, four provinces have implemented some form of harmonization of their sales tax with the GST. Quebec has developed its own legislation and administration, that while not identical to the GST, is similar enough to significantly reduce the administrative and compliance burdens for businesses located in that province. Newfoundland, Nova Scotia and New Brunswick have implemented a harmonized sales tax, which is governed by the same piece of legislation as the GST, and uses federal resources for compliance-related activities such as the filing of returns and carrying out taxpayer audits. Both systems achieve the benefits related to removing imbedded consumption taxes from the costs of those businesses that are undertaking

commercial activities in these provinces, as taxes are fully recoverable by business in these circumstances.

In creating a harmonized sales tax system, it will be important that tax-inclusive pricing not be mandated, but be allowed as an option. Retailers currently experience real savings through their ability to ticket once for a number of provincial markets. Mandating tax-inclusive pricing, would add significant costs to the retail sector, and severely impact their competitiveness. It is also important to ensure that consumers are aware of the amount of taxes that they are paying, so that they have a better understanding of government revenue streams.

Replacing our ORST with some form of a harmonized sales tax will confer a number of benefits on our province. Governments will benefit from improved compliance as taxpayers will not have two widely different consumption tax regimes to deal with. Government will also benefit from reduced costs in carrying out day to day compliance-related activities if they choose to take advantage of federal resources to carry out activities such as the processing of returns and taxpayer audits. Business will also benefit from reduced compliance burdens, arising from the ability to deal with one set of rules, returns and auditors.

Although the GST tax base is broader than that of the ORST, consumers will also benefit when businesses are able to lower their prices due to their ability to recover the tax they pay on supplies used to carry out their commercial activities. Exports will also be more competitive as they will bear no imbedded tax. This is an important consideration in the increasingly global environment in which we compete.

Businesses will also be encouraged to increase their investments in our province in general, due to lowered costs (related to both the elimination of previously imbedded ORST, and decreased compliance and administrative burdens). The acquisition of productivity-enhancing tools such as information technology equipment, computer software and certain related services will also be encouraged, again, due to the fact that the ORST component previously payable and non-recoverable, will be removed from the cost of these acquisitions for those carrying on commercial activities.

In a sentence, ease of administration, improved compliance, increased productivity, reduced costs, increased investment and enhanced competitiveness both inside of Canada and internationally can all be achieved by reforming our Ontario Retail Sales Tax.

Ontario should begin moving towards adoption of a harmonized sales tax, however Ontario's businesses need relief today. In particular Ontario needs to immediately extend the ORST manufacturing equipment exemption to include network equipment used by telecommunication service providers, and stop trying to collect additional RST from these service providers on their purported use of this equipment.

Ontario is currently collecting ORST on network equipment three times. This is patently unfair and discourages the development and construction of state of the art telecommunication networks in Ontario. ORST is collected on the purchase of the equipment by the telecommunication service provider, on the purported use of the equipment by the telecommunication service provider, and on the sale of the telecommunication service produced with the network equipment to consumers.

Ontario only taxes manufacturing equipment once. An ORST exemption is provided to manufacturers of goods on their production equipment. In addition manufacturers are not required to pay ORST on their own purported use of the equipment. Telecommunication service providers use their network equipment to manufacture a taxable product in the same manner that other manufacturers use their assembly lines to manufacture taxable products.

To ensure continued and increased prosperity for Ontario, a fairer tax system, and to stimulate capital investment and employment, Ontario should provide an immediate ORST exemption to telecommunication service providers on purchases of network equipment and stop requiring them to pay ORST on their purported use of said equipment.