

SEIZING GLOBAL OPPORTUNITIES: Ontario's Innovation Agenda

www.ontario.ca/innovation



ONTARIO'S INNOVATION GOAL

The goal of Ontario's innovation agenda is a high and sustainable level of prosperity, and healthy communities, that provide high-quality jobs and better lives for people in Ontario.

To achieve this Ontario must:

- Extract more value from all provincial investments in research and innovation
- Attract the best and brightest innovators and entrepreneurs from around the world and keep homegrown talent here
- Invest in, generate and attract a workforce with first-rate skills in science, engineering, creative arts, business and entrepreneurship
- Stimulate increased private-sector investment in knowledge-based companies and capital that boosts productivity
- Be globally recognized as a commerce-friendly jurisdiction that supports the growth of innovative companies and activities.

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EXECUTIVE SUMMARY

Ontario is investing in an aggressive innovation agenda to ensure we are one of the winning economies in the 21st century. Supported by close to \$3 billion in spending over eight years and a focus on seizing global opportunities, this agenda builds on the strength of Ontario's creative environment, diverse culture, highly skilled workforce, world-class educational system and internationally recognized research community.

The innovation agenda reflects the valuable insights of the Ontario Research and Innovation Council (ORIC), made up of business and research leaders. In particular, the council provided an understanding that successful innovation depends on people with the right talent, training and attitudes, working quickly and nimbly in a culture of commerce.

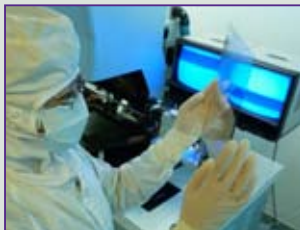
By acting on this advice the innovation agenda is helping Ontario to achieve the greatest value from existing markets, create new companies and industries and address social problems. It is a key driver of the government's five-point plan for Ontario's economy that is investing in skills and education, accelerating provincial investments in infrastructure, lowering business costs and strengthening key partnerships to maximize Ontario's potential, as well as supporting innovation.

THE KEY ELEMENTS OF THE ONTARIO INNOVATION AGENDA

Extracting value from excellence. The innovation agenda is built on an ongoing commitment to excellence in world-class, peer-reviewed, basic and applied research. Attention will also focus on extracting value from investments in public research through commercialization.

Focusing investment in global opportunities.

The innovation agenda, through government programs like the Next Generation of Jobs Fund, supports industry-academia partnership investments in areas where Ontario is or will be identified as a global leader. Initial areas of focus include the bio-economy and clean technologies; advanced health technologies; pharmaceutical research and manufacturing; and digital media and information & communications technologies.



Leveraging skills and knowledge. To compete successfully in today's demanding global market Ontario is placing a strong emphasis on commerce skills, which are critical to innovation because they focus both on achieving value through meeting customer needs and creating a comfort level with risk. This new emphasis is being felt throughout the entire post-secondary educational system, with a focus on providing these skills across disciplines – including the sciences, technology, the humanities and the arts. It is also reflected in a commitment to grow the culture of innovation by engaging young people in the excitement of discovery from the earliest grades right through to high school.

A business-friendly climate. The agenda is committed to continuous improvement in the business climate. This includes helping innovative companies gain access to capital at every stage of their growth. It also means a commitment to modernizing the provincial regulatory framework and enhancing Ontario's competitive taxation system.

Ontario's government: catalyst for change. The innovation agenda's goal is to align all provincial activities with the needs of an innovative culture and economy. As well as providing support for innovation and good jobs in Ontario through the Next Generation of Jobs Fund the agenda is acting on the need to work at the speed of business with programs that are focused, streamlined and easy to understand and access. It also recognizes the need for Ontario to work across boundaries to gain maximum leverage for its research strengths and to focus on innovation as a way of addressing social challenges. Above all, the agenda is ensuring that innovation-related programs and activities extract value and create measurable benefits for people in Ontario.

FOCUSING ONTARIO'S INNOVATION AGENDA

- Extracting value from investments in research and innovation
- Targeted investment in opportunities where Ontario can be a global leader
- Working faster – at the speed of business

WHY INNOVATION MATTERS

THE INNOVATION AGENDA: MEETING CHALLENGES, SEIZING OPPORTUNITIES

People in Ontario have long enjoyed a high standard of living based, in part, on a rich endowment of natural resources and proximity to major North American markets. But today Ontario faces challenges: increasing competition from lower-cost countries, a stronger dollar and lagging worker productivity.

Broader social challenges include climate change, poverty reduction, health care and northern development.

Ontario is responding to these challenges, and turning them into opportunities, by harnessing the power of innovation.

Markets grow and new customers are won with innovative products and services. Economies that do not understand that are seeing jobs, investment capital and prosperity slip away. The winning societies in the 21st century will be those that, like Ontario, invest in aggressive innovation agendas that build on the talent and creativity of their people.

Ontario is well positioned to become one of the most innovative economies in the world. We offer a creative environment, a diverse culture and a highly skilled workforce that has attracted some of the world's best talent.

This is founded on a legacy and ongoing commitment to Ontario's world-class educational system and internationally recognized research environment.

By pulling these elements together and bringing government investments and programs in line with our innovation goals, Ontario's government is ensuring that knowledge and skills translate faster and more efficiently into economic growth and prosperity for Ontarians.

Recognizing the importance of innovation and the need to act quickly, the Ontario Government created the Ministry of Research and Innovation in 2005 as the nexus for innovation policy in Ontario. The Ontario Research and Innovation Council (ORIC), a distinguished group of business leaders, entrepreneurs, researchers and public policy experts, was established to provide advice on shaping and acting on the innovation agenda.

ORIC members were central to providing an in-depth understanding of how innovation creates prosperity. Their insights explain why support for research, for example, must go hand in hand with support for the commercial activities that harvest its economic benefits.

This strong focus on the links between innovation and prosperity is in line with the government's five-point plan for economic growth.

The plan makes investments in the skills and education of Ontarians, accelerates provincial investments in infrastructure, supports innovation, lowers business costs and strengthens key partnerships to maximize Ontario's potential. It is helping Ontario families adapt to change by making that change positive and turning challenges into opportunities.

Driving the innovation agenda is an important part of this forward-looking action plan for Ontario's economy. This plan is supported through a commitment of almost \$3 billion over eight years to support innovation and help Ontario seize opportunities for global leadership.

This document brings a broader vision to innovation and a new framework for integrating all efforts to build a strong and vibrant culture of innovation across Ontario. It outlines the measures that Ontario has taken, and the bold steps to come, to make our province a place where innovation is inevitable.

UNDERSTANDING INNOVATION

The concept of innovation used here is a broad one: an openness on the part of people to new ways of thinking and doing that bring about improvements, whether to an individual business, an industry, government, the economy or society as a whole. Throughout history innovation has been the major force driving social and economic gains.

Above all else, successful innovation depends on people with the right talent, training and attitudes working quickly and nimbly in a culture of commerce. Innovation helps to achieve the greatest value from existing markets, create new companies and industries and address social problems.

The increased prosperity that results from successful innovation enriches people's lives and puts more opportunities within their reach.

This builds an innovative, creative and inclusive society that is a magnet for talented people. Whether in business, the sciences, engineering, health care or the arts, these innovators trigger new discoveries and ideas.

Winners in the new economy – like Finland, Ireland, Japan and South Korea – emphasize the commercialization of science and the creation of innovation-based societies. This, in turn, requires a different approach to education, research and business.

Ontario's government clearly gets it. ... Recent investments in biotechnology, alternative energy and basic science all point in the right direction at the provincial level.

Ken Coates, Dean of Arts
University of Waterloo

Carin Holroyd, senior research
analyst, Asia Pacific Foundation,
and senior research fellow,

The Centre for International
Governance Innovation

The Kitchener-Waterloo Record,
May 26, 2007

SETTING A SUCCESSFUL INNOVATION AGENDA

ORIC's advice stressed that research endeavour, business skills and market awareness are all integral to innovation, a view that was endorsed by stakeholder consultations across the province.

This stakeholder input emphasized that efforts must aim to:

- Deliver real results in terms of greater social and economic prosperity
- Focus on areas in which Ontario can be a world leader
- Act on opportunities to turn Ontario's strengths into global leadership
- Support and build a commerce-friendly culture in Ontario
- Respond nimbly to a rapidly changing world economy yet keep sight of the longer time horizon that a strategic approach demands
- Ensure government resources are coordinated and sustainable
- Be accountable and transparent
- Ontario's economy and its people are resilient and ready to meet challenges. With the support of its provincial government Ontario is moving confidently into a future in which we fully harness the power of innovation to achieve the greatest value possible from our strengths.

"If Canada is to achieve its full prosperity potential, we need to embrace the current changes in the global environment – moving from policies aimed at maintaining the comfortable status quo towards encouraging innovation and risk taking. We should strive for an environment that is conducive to creating more Canadian global leaders. We have many now, in addition to RIM and Barrick, but we need more."

Canadians Can be World-Beaters,
If Only We Were Not
So Sheltered Embassy

July 18, 2007

Roger Martin and James Milway
Institute for Competitiveness
and Prosperity

EXTRACTING VALUE FROM ONTARIO'S EXCELLENCE

STRATEGIC SUPPORT FOR KNOWLEDGE CREATION

Knowledge is the ultimate competitive advantage in the 21st century economy. Basic research is central to creating knowledge, which is why Ontario supports world-class research in post-secondary institutions.

The opportunity to be part of an exciting, leading-edge research community is a strong attraction for high-achieving researchers. It is also central to growing Ontario's next generation of innovators. Particularly at the post-graduate level, universities offer students the chance to engage in serious research, hone their problem solving and research skills and see how knowledge and creativity can spark new ideas. Providing state-of-the-art research facilities and other infrastructure helps to attract, develop and keep talented researchers in Ontario.

Past investments by Ontario and other funders have given this province a public research community that is considered world-class in many areas. In addition to a continued commitment to research, Ontario's new innovation agenda is also focusing on how to create widespread value from this research excellence in terms of jobs, prosperity and opportunities for Ontarians.

Greater strategic focus in provincial funding for basic research and the infrastructure to support it will help pull together pockets of strength that are too often scattered. The goal is to create critical mass and extract more value in areas that offer significant economic and social potential to Ontario.

Ontario is committed to investing in long-term basic and applied research that is internationally peer reviewed for excellence and demonstrates strategic value to the province.

Ontario is committed to supporting the attraction and retention of world-class research talent and the creation of the next generation of excellent researchers and innovators.

The 2008 Ontario Budget announced \$250 million over the next five years to the Ontario Research Fund for investment in research infrastructure, such as laboratories and equipment, at Ontario institutions.

This investment will help institutions leverage at least \$375 million from the federal government, private sector and other sources. It will also help to attract and keep talented researchers in the areas identified by Ontario for strategically focused investments.

MOVING KNOWLEDGE TO THE MARKETPLACE

Innovation is about the complex interplay of ideas and the market to create the products and services that the “customer” wants and needs to achieve economic and social prosperity. Innovation often results from the translation of new research discoveries and new technologies through commercialization and is most effective when the process is customer or market-driven. Whether the process is driven by discovery (“push”) or by market needs (“pull”), it is complex because the development of commercially viable products often creates the need for more research – sometimes across a wide range of disciplines.

Government has an important catalytic role in facilitating the interaction between researchers, ideas and the market. In this role, Ontario’s government supports close partnerships between industry and academic research teams as an important way to support the innovation system, create new knowledge and harvest its benefits.

An important return on research investment is intellectual property (IP). It consists of both patents, which legally protect IP, and know-how or background knowledge. At present, industry is often unaware of the IP generated within Ontario research institutions and cites poor access as a barrier to partnerships with them. To encourage industry-academia partnerships IP agreements must be sufficiently flexible to protect companies’ business interests, as well as to reward inventors and contributors to invention.

Many institutions have technology transfer offices but IP policies and practices vary from one to another. Access to IP can be impeded by complex and time-consuming licensing agreement negotiations, often with multiple institutions with different policies.

Both federal and provincial funding bodies delegate IP control to institutions on the expectation that the IP will be managed in the best interests of Canada and Ontario.

The logo for MaRS Innovation is a square with a dark orange background. It features a stylized, glowing orange and yellow pattern that resembles a network or a cluster of nodes, with some lines connecting them. The text is white and positioned in the center of the square.

MaRS Innovation, a commercialization partnership of 14 Toronto-based academic research institutions, is focused on accelerating the commercialization of promising research from its member institutions

Straightforward access to IP is integral to achieving this. Institutions need to show clearly how they plan to make IP more readily available to businesses; provide incentives to inventors to identify, protect and commercialize IP; lower or eliminate existing barriers to rapid use of IP; and provide access for companies that develop the IP in Ontario. As well, research institutions should consider pooling their IP to offer a more effective means of communicating and commercializing technology.

Ontario strongly encourages public research institutions to use best practices in managing IP and transferring technology to marketplace.

CLUSTERS AND CONVERGENCE

Industrial clusters form naturally in response to abundant opportunities. These clusters both inform and benefit from academic research. By attracting firms whose activities are complementary successful clusters increase economic benefits.

Another type of cluster brings together more diverse participants, often with the goal of prompting the creation of new businesses. The MaRS Discovery District in Toronto provides an example of one of North America's largest and most concentrated convergence centres. MaRS puts researchers and research networks, technology expertise, business people and venture capital under one roof to help generate new ideas and move discoveries to the marketplace.

Government investments can create networks of expertise in specific areas without a physical hub. These connect academic research with market opportunities and help early-stage companies to become investor-ready.

The concept of the "convergence network", where innovators, entrepreneurs, educators, businesses and investors can meet and share knowledge, aims to dramatically increase the speed at which beneficial interactions happen within successful clusters. Depending on the needs and goals these may be physical spaces or virtual knowledge networks. Linking networks through convergence hubs maximizes opportunities for success.

Ontario's government is fostering greater interaction among innovators across the province to create new opportunities.

The 2008 Ontario Budget proposed a 10-year Ontario income tax exemption for new corporations that commercialize intellectual property developed by qualifying Canadian universities, colleges or research institutes. Legislation is expected to be tabled in the fall (2008).

CELEBRATING SUCCESS

To compete globally for investment and innovation talent Ontario must tell its story at home and abroad. We must continue to celebrate our successes at every opportunity and promote Ontario's innovation excellence to the world.

- Ontario is the birth place of Research in Motion's BlackBerry, which has revolutionized wireless communication.
- Ontario is where insulin was discovered, where the pacemaker was developed and where 3D imaging techniques originated.
- Stem cells were discovered at the Ontario Cancer Centre in 1961. While initial research studied effects of radiation, today stem cell research promises treatments and cures for numerous conditions.
- The first successful childhood meningitis vaccine was developed at the National Research Council (NRC) in Ottawa by Dr. Harold Jennings.
- The Toronto Stock Exchange Group is second only to NASDAQ in the listing of life sciences companies.
- In 2005 Gerhard Hauck of the University of Waterloo produced the world's first multi-point theatrical performance streamed onto the web. Participants 1,300 kilometres apart staged a live, interactive performance of scenes from Strindberg's A Dream Play to a worldwide audience.
- Ontario is home to one of the most highly-published and highly-cited biomarker researchers in the world, Dr. Eleftherios P. Diamandis of the University of Toronto.
- The Waterloo Pump created in 1976 by Alan Plumtree and Alfred Rudin (both from the University of Waterloo) is an inexpensive, easy-to-repair pump that still supplies clean drinking water to millions of people in developing countries today.
- The Geographical Imaging System was created in Ottawa in a partnership between Roger Tomlinson and IBM. It has since become an indispensable tool world-wide for geographical and land use planning.
- The Institute for Quantum Computing houses one of the world's largest computing devices. The 12-qubit (quantum bit) device represents a big step towards the realization of actual quantum computers.

Ontario's government is making this province known internationally as a preferred location for business, innovation and investment.

FOCUS ON GLOBAL MARKET OPPORTUNITIES

An economy the size of Ontario's cannot compete globally in every area. Public investments in research and innovation need to be focused to achieve maximum value, to be relevant to economic growth and to support Ontario's areas of greatest academic strengths and greatest economic potential.

This new focus grows from a better understanding of what innovation really means: to reap benefits for society by ensuring that the ideas triggered by research need will move to where people can put them to use. This happens fastest when researchers understand what society needs. And very often this means a stronger focus on markets, customers and the other end-users of new ideas, products and services. Through the innovation agenda Ontario's government has highlighted specific areas of the economy – bio-economy and clean technologies, advanced health technologies, pharmaceutical research and manufacturing and digital media and information and communications technology – for initial strategic investment. These are areas of strong growth where Ontario already holds a position of global importance or can quickly mobilize existing resources and skills to do so. The agenda will be adaptive to new and emerging economic opportunities.

The Ontario government's \$1.15 billion Next Generation of Jobs Fund is delivering a five-year program through the Ministry of Research and Innovation, the Ministry of Economic Development and Trade and other ministries to help fund strategic, industry-led programs and projects in targeted areas of strength for Ontario:

- Bio-economy and clean technologies
- Advanced health technologies
- Pharmaceutical research and manufacturing
- Digital media and information & communications technologies.

The funding will support strategic opportunities – that is, ones where a large-scale global market opportunity exists, coupled with a unique strategic position that favours Ontario. It is focusing on areas where Ontario has a demonstrated competitive advantage in industry, the research community, or both.

Bio-economy and clean technologies

Ontario's investments are supporting the development of clean automobiles, fuels and technologies in line with the government's comprehensive climate change plan and recognition that innovation is key to "greening" the economy.

Global investment in new, clean technologies – and new opportunities – is growing rapidly. Besides reducing energy use, emissions and waste, these new technologies can also reduce production costs.

Ontario has the natural resources, industries and research strengths to become a global leader in clean technology. New areas such as alternative energy, fuel cells and biomaterials are growing strongly in Ontario, with developments that include:

- Wind, solar and energy-management companies
- Companies offering water and waste-water, mineral processing, air emission reduction and other environmental technologies, as well as environmental management systems
- Opportunities to combine existing strengths in forestry and agriculture with new technologies to create bio-based industries and boost regional development, especially in rural and northern Ontario.

These examples underline that clean technologies can add value to Ontario's traditional industries, as well as create new ones. For example, fossil fuel-based plastics and similar materials are being replaced with biodegradable and plant-based versions. The estimated North American market for bioplastics alone is expected to be in the order of \$10 billion. This presents opportunities for companies serving Ontario's automotive sector, among others.

Advanced health technologies

Ontario is home to one of North America's leading concentrations of biomedical research and development, with universities and teaching hospitals investing \$1.7 billion a year in health research.

Opportunities in the field of advanced health technologies to build on Ontario's research excellence include regenerative medicine, bioinformatics, genomics, medical devices and infectious disease prevention and control.

With changing demographics such products and services as enhanced health, diet and fitness monitoring products, assistive devices, new therapeutics, functional foods and personalized medicine, health communications networks and imaging technologies will likely present additional opportunities in future.

As well as creating jobs growth in these are as will help to provide better services, improved outcomes and lower costs in the healthcare sector.

Pharmaceutical research and manufacturing

With 25 research and academic hospitals employing 10,000 scientists, clinical investigators and other researchers conducting \$850 million in research annually, Ontario is the largest hub of biomedical activity in Canada and the fourth largest biomedical research centre in North America.

The Biopharmaceutical Investment Program, part of the government's Next Generation of Jobs Fund, is a \$150-million fund designed to secure global mandates for biopharmaceutical R&D and advanced manufacturing.

Digital media and information & communications technology

Ontario is recognized globally as a leader in these new industries, with over 5,000 digital media and ICT companies in Ontario.

The 2008 Ontario Budget introduced strategic investments to develop skills and research capacity in digital media: \$10 million to the University of Waterloo at Stratford and \$9 million to the Ontario College of Art and Design.

Leadership in digital media requires excellence in wireless technologies, software, content creation, broadband communications, art and design – all areas of strength in Ontario. The projected global market for the digital media sector alone is projected to reach \$1.5 trillion by 2009.

The Next Generation of Jobs Fund's investments will build on Ontario's strengths in these areas, allowing Ontario companies and their partners to increase their share of a fast-growing global market.

The innovation agenda recognizes the importance of remaining open to new directions. Areas of focus will evolve as new markets develop and social needs evolve. What will remain constant is the need for an area to prove its relevance to Ontario's economy. Our research investments must strive to create leadership not just in the academic community but in the global economy as well.

New industries emerge at the intersections of industries and sectors. As information and communications technology has intersected with other sectors new markets have exploded, for example: advanced communications products, digital animation, interactive gaming, advances in the delivery of financial services and healthcare. By supporting multi-disciplinary research in areas of intersection Ontario is helping to further develop new ideas for new industries.

All of this reinforces the need for Ontario's government to continue to support and encourage research in a broad range of disciplines that underpin the knowledge-based economy. Both basic and applied research is important, since each informs the other and their interplay stimulates new knowledge.

Ontario's innovation agenda will support industry-academia partnership investments in areas where Ontario can, and will, be identified as a global leader.

LEVERAGING SKILLS AND KNOWLEDGE

BUILDING COMMERCE SKILLS

Ontario is competing with jurisdictions around the world that are setting the bar high. To ensure our success we must do a better job of developing commerce skills. These skills are critical to innovation because they focus on achieving value through meeting customer needs. They create a comfort level with risk and an openness to seizing opportunities by leveraging innovation – whether to gain new markets or create entire new industries.

Commerce skills are formed in many ways – in universities and their business schools, by starting new companies, from the lessons of successful entrepreneurs. We need to expand the ways students and others in Ontario develop commerce skills, whether through real-world experience, co-op programs, on-the-job training, combining business training with science and technology training, professional programs, or cross-fertilization between new and existing enterprises and the people who run them. A particularly important goal is teaching people how to better manage technology-driven companies.

The innovation agenda supports the development and teaching of commerce skills across sectors and disciplines.

Entrepreneurs are people who see and act on business opportunities. Their success depends on understanding and managing risk. There is a close link between the quality of entrepreneurship in a society and its economic growth.

Entrepreneurship and innovation are driven largely by the openness of a society to change and growth.

Entrepreneurs, like most other components inputs of the innovation system, are mobile. They tend to move to where opportunities abound, access to capital is plentiful, and their efforts are best rewarded.

(In the new economic paradigm) knowledge, innovation, and creativity are key. At the cutting edge of this shift is the creative sector of the economy: science and technology, art and design, culture and entertainment, and the knowledge-based professions.

The Future of the American
Workforce in the Global
Creative Economy
Richard Florida
June 4, 2006

SKILLS FOR SERVICE INNOVATION

As services play a stronger role in developed economies, the efficiency of the services sector is becoming increasingly important. Future improvements in the quality of life of Ontarians will rely increasingly on greater productivity in services.

There is a growing interest in developing appropriate performance indicators to measure innovation in the service sector. For example, the European Commission's Pro Inno Europe included an index for the European businesses services sector in its European Innovation Scorecard for the first time in 2006.

This is also leading to a rethinking of European innovation policy and an evaluation of the steps that might be needed to remove or reduce the policy bias towards manufacturing.

Ontario recognizes that innovation can boost the productivity of the manufacturing sector and of the services sector alike and thus ensure economic prosperity.

Ontario's innovation agenda recognizes that post-secondary graduates need skills to support innovation in all sectors, including services.

THE ARTS, HUMANITIES AND SOCIAL SCIENCES

The arts, humanities and social sciences are essential components of a creative, knowledge-based economy. A vibrant culture is not just the hallmark of a prosperous society it is a key element that attracts innovators in all disciplines and a driver of economic growth on its own.

The arts and humanities underpin the success of creative industries. One clear example is the digital media sector, but many other innovative ventures benefit from the creative and intellectual stimulation that the liberal arts can provide. And the work of artists, writers, performers and musicians can contribute to economic activity on its own. The Toronto International Film Festival, for example, is a major draw that brings thousands of people from the film and other industries to Toronto. Its impact on the province's cultural scene includes numerous creative spin-offs such as Hot Docs, a festival focusing on documentary films, and the ImagiNative aboriginal film festival.

Government can do much to encourage the rich and rewarding interplay among economic, social and cultural innovators through support for the arts, leadership in recognizing cultural and social innovators and showcasing Ontario's cultural strengths as well as its economic strengths.

Ontario's innovation strategy recognizes the role of the arts, humanities and culture in fueling creativity and innovation, and encourages partnerships across disciplines to advance social and economic goals.

GROWING THE CULTURE

Ontario is already recognized as the home of two outstanding science centres, the Ontario Science Centre in Toronto and Science North in Sudbury. They have an important role in showing young people the excitement that is generated by the ideas that science and technology spark. The Ontario Science Centre, for example, offers a family innovation centre that encourages "problem-solving, myth-busting, creating and exploring new ways of thinking" using science and technology as a starting point.

"We want our students to leave here as successful entrepreneurs as well as expressive people."

Sara Diamond, President
Ontario College of Art and Design
Now magazine
May 17, 2007

Ontario's government is working across ministries to refine and coordinate programs that make young people more aware of science, technology, entrepreneurship and innovation and inspire them to choose careers that support the new economy.

It is also providing additional training and resources, so that teachers from kindergarten through high school are better able to teach the full range of skills that support innovation, strengthening the linkages between innovators and schools.

The innovation agenda is working to spark the interest of young people in innovation and give their teachers the skills to support them.

INTEGRATING THE SPECTRUM OF SKILLS

Universities and colleges play a vital role in innovation. They form the highly qualified people in the sciences, engineering, technology and health, as well as in commerce, law and economics, that an innovative economy needs. Their graduates represent the transfer of knowledge in its broadest sense because they are the people whose actions and decisions will help determine the success of companies in the global marketplace.

The government's \$1.5 billion Skills to Jobs Action Plan complements the innovation agenda by promoting the success of industries, and helping workers to get ahead, with the high-paying jobs of tomorrow.

A very important role for universities is therefore to ensure that students in all disciplines will be open in their future careers to opportunities to translate new knowledge into social and economic benefits.

Students in all programs who are interested in business careers should be given a better understanding of how successful innovative companies operate.

The innovation agenda supports greater cross-fertilization between business education and other fields of study to give graduates the full range of skills needed for innovation.

Ontario's community colleges are highly responsive to the needs and interests of local communities and industries, making them an important link in responding quickly to changing skill requirements. Many colleges also work closely with small and medium-sized firms in particular, using their capacity for applied research and development to solve company-specific problems. A deeper innovation role for colleges, building on this strength, would flow from partnerships with universities to support applied research and commercialization.

The innovation agenda supports closer partnerships among colleges, universities and industry to maximize innovation efforts.

A BUSINESS-FRIENDLY CLIMATE

The business climate is critical to whether innovation thrives or fails. Ontario must be – and be seen as – a jurisdiction where innovative businesses are welcome. Ontario is achieving this with a balanced approach of continuous improvement in our business climate, while making investments in human capital, skills, and a creative and secure environment – all of which are key to innovation.

The innovation agenda is committed to continuous improvement in Ontario's business climate.

ACCESS TO CAPITAL

Government can help to spark innovation through strategic investments, but for healthy growth innovative companies need an entire funding support system – which includes early stage investment, angel investment, venture capital, private investment, government support programs, and public markets.

Early-stage companies in particular have a critical need for access to capital and financial expertise. The Ontario government recently introduced programs to accelerate the speed at which small companies become investor-ready. Efforts are also focusing on encouraging increased private sector investment at the venture-capital and pre-venture-capital stages.

The Ontario Venture Capital Fund provides a government investment of \$90 million which has initially leveraged \$75 million in investment from private-sector venture capital funds, pension funds and the federal government. In time the private sector will contribute \$180 million. As well, through its \$29 million Investment Accelerator Fund, Ontario continues to provide seed capital to early-stage companies.

Ontario is working in partnership with the venture capital community and institutional investors to help innovative businesses get started and grow in Ontario.

REGULATION

Regulation plays a very important role in society by protecting the environment, consumers, workers, investors and others. It must balance these goals with an understanding that companies need to respond quickly to seize global opportunities.

Policy responses too often quickly move to adding another layer of regulation to deal with the unintended consequences of previous regulatory initiatives Knowing when to “get out of the way” can be as important as knowing when to intervene.

Professor Morley Gunderson,
University of Toronto

The Ontario government is modernizing its regulatory regime to strengthen Ontario's global competitiveness and respond to concerns raised by the business community.

Ontario's goal is to lead all Canadian jurisdictions with its efforts to measure and reduce the regulatory burden. Ontario's regulatory modernization will start with an aggressive cap-and-trade initiative for government regulations, which means that when new regulations are enacted, others must be eliminated.

The government will also actively engage the business community and its key leaders to help improve Ontario's regulatory regime and deliver meaningful change. This partnership will address priority areas and sectors with the goal of making government services simpler, faster, smarter and more connected. Discussions among provincial ministries involved in regulation highlighted the need to:

- Create an environment that rewards risk-taking and encourages business to innovate, invest and grow in Ontario
- Modernize and streamline regulations, bring them up to global standards and reduce delays
- Lower the regulatory barriers for pilot-scale projects, for example in cases with a public policy aspect such as waste management and electricity generation
- Ensure regulations are simple to understand, inexpensive to comply with, consistently applied, reasonable and practical
- Examine the benefit of a common regulatory framework to provide companies with a single point of contact for regulation, an approach Ontario's competitors are moving towards.

Ontario's government is modernizing the provincial regulatory framework and moving to global best practices, with a goal of continuous improvement.

TAXATION POLICY

The tax structure, which for Ontario companies reflects both provincial and federal taxes, is one of the factors in support of a competitive business investment climate.

Ontario continues to provide one of the most attractive R&D tax treatments in the world. A recent study found that in 2005 our tax support for large R&D performers ranked first among G-7 countries and third among OECD countries. For small companies Ontario ranked first among G-7 countries and second among OECD countries.

Ontario's competitive tax system helps to attract investment. Legislated reductions in the combined federal and provincial corporate income tax (CIT) rate by 2012 will further ensure that Ontario's rate remains competitive with its nearest trading partners, the U.S. Great Lakes states. As well, it will remain one of the lowest among other international jurisdictions, most notably those in Europe, that are also trimming their rates.

Ontario's government has taken several other steps to boost our competitiveness and free up resources that companies can invest in key drivers of innovation.

These include:

- A 2008 Ontario Budget proposal to introduce a new 10-year Ontario income tax exemption for new corporations that commercialize intellectual property developed by qualifying Canadian universities, colleges or research institutes, with legislation expected to be tabled in the fall
- A 2008 Ontario Budget proposal to extend the Ontario Innovation Tax Credit to more small and medium-sized corporations and for more qualifying expenditures
- A 2008 Ontario Budget proposal to enhance the Ontario Interactive Digital Media Tax Credit that would build on the enhancements announced in the 2006 Ontario Budget
- A 2008 Ontario Budget proposal to eliminate capital tax for corporations engaged mainly in manufacturing and resource activities, retroactive to January 1, 2007
- A proposal to cut capital tax rates for all companies by 21 per cent retroactive to January 1, 2007 – announced in the 2007 Economic Outlook and Fiscal Review – on the way to full capital tax elimination in 2010
- A temporary accelerated capital cost allowance incentive that will provide Ontario tax relief to manufacturers investing in manufacturing and processing machinery and equipment. The 2008 Ontario Budget proposed to extend the incentive to align with the rates and effective dates proposed in the 2008 federal budget
- A \$540 million cut to Business Education Tax rates over seven years, announced in the 2007 Ontario Budget
- Effective for taxation years ending after 2008, federal government administration of most Ontario corporate taxes, saving Ontario corporations up to \$100 million a year by simplifying tax compliance and \$90 million a year in Ontario Corporate Income Tax by harmonizing with the federal corporate income tax base.

Ontario's balanced approach and competitive tax system are encouraging more private-sector investment in innovative companies and activities.

ONTARIO'S GOVERNMENT: CATALYST FOR CHANGE

ALIGNING ACTIVITIES WITH INNOVATION

Ontario's government is taking a key role in fostering a strong innovation culture. Its policies send clear signals to entrepreneurs that Ontario doesn't just embrace positive change, it makes it happen, by investing in the development of ideas and talent, recognizing the special talents and abilities of entrepreneurs and successful businesspeople and working with the speed and agility that market forces demand. Ontario is committed to using best practices in decision making, including peer review and other expert advice.

Because the innovation-related investments and activities of Ontario's government are carried out by a wide range of ministries, programs and agencies, Ontario's efforts to strengthen the province's innovation culture are coordinated and comprehensive, led by the Ministry of Research and Innovation.

Most critically, Ontario's government is bringing a new strategic focus to its activities as well as investments to support innovation.

Ontario's government is integrating all efforts and activities to smooth the way to greater innovation.

FOCUSED INVESTMENT: NEXT GENERATION OF JOBS FUND

The government is making a \$3 billion commitment to research and innovation, in addition to other significant commitments, such as the \$1.5 billion Skills to Jobs program.

The \$1.15 billion, five-year Next Generation of Jobs Fund is the Ontario government's key initiative to support investment and innovation by supporting market-driven investments in key focus areas. Investments from the fund will be made through three program thrusts:

- Jobs and Investment Program to help companies in a wide range of sectors expand in Ontario and develop innovative products for global markets
- Strategic Opportunities Program to support industry-led innovation partnerships to build new opportunities and emerging industries in the focus areas
- Biopharmaceutical Investment Program to attract global mandates for pharmaceutical R&D and advanced manufacturing.

To receive funding companies and industry-led partnerships must meet several of the following requirements:

- Secure good jobs for Ontarians
- Use or develop innovative technologies, processes and/or materials
- Help establish Ontario as a global leader in an emerging market
- Build on existing, or create new Ontario-based expertise in research and commercialization
- Reduce greenhouse gas emissions in target sectors
- Create synergies among researchers, business people and entrepreneurs.

To ensure effective uptake of the program and maximize program effectiveness, companies are guaranteed a decision within 45 days of submitting a complete proposal.

The Next Generation of Jobs Fund is investing \$1.15 billion over five years to support market-driven opportunities in strategic areas.

DELIVERING PROGRAMS FASTER

Many Ontario programs and initiatives were created over the past decades to support research and commercialization, often to meet a pressing need or fill a gap in the province's innovation system at the time. Although generally successful individually, these efforts have left Ontario with a piecemeal approach that companies find confusing to navigate.

To make sure that programs align with goals and investments, Ontario's government is:

- Streamlining the suite of innovation-related programs and simplifying them to minimize overlap, make them easier to find and understand and shorten response time
- Clarifying criteria to enhance transparency and ensure that strategic goals are met
- Ensuring coordination – for example, linking investments in research infrastructure to research operation investments – so that good ideas are adequately supported.

The overarching goal is to ensure full accountability for investments balanced with the need to deliver programs at the speed business needs.

The Ministry of Research and Innovation, which has the main responsibility for the innovation agenda, is focusing on ensuring that all programs supporting innovation are aligned and seamless from the perspective of innovators.

Experience in other jurisdictions shows that to be successful, commitment to the innovation agenda must be sustainable and consistent. The mechanism for delivering on the innovation agenda must be aligned with long-term goals, ensure openness and transparency, support effective use of public funds and provide fast, uncomplicated access to programs.

The innovation agenda is ensuring that policies and programs are easy to access and understand, accountable and aligned with Ontario's goals – and above all, implemented at the speed the market demands.

STRENGTH ACROSS BORDERS

Ontario's research community is the strongest in Canada and one of the largest in North America. But in the global context, especially as developing economies ramp up their research investments, to achieve prominence it must collaborate nationally and build international bridges.

In May 2007 the federal government released "Mobilizing Science and Technology to Canada's Advantage", which takes a broader view of the importance of economic and commercial drivers of innovation, as does the Ontario agenda, and reflects many of the same priorities. These include investing in research and commercialization, creating a strong culture of innovation and focusing investments in such areas as energy, the environment, health and life sciences, and information & communications technologies.

Ontario and the federal government have a history of co-investing in research and innovation projects in Ontario. Projects include research and commercialization projects in conjunction with the Canada Foundation for Innovation, Genome Canada and Sustainable Development Technology Canada (SDTC). Other examples of jointly funded projects include the MaRS Discovery District, the Perimeter Institute and the Canadian Photonics Innovation Centre.

Ontario is working with the federal government to define new partnership models aligned to common goals, especially investments in strategic areas. Ontario welcomes opportunities to partner with the federal government and other provinces on projects that reflect and build on Ontario's research strengths and investment priorities.

Other important issues calling for joint effort include taxation, regulation, skills mobility and immigration policy, access to capital and granting programs – areas where improvements will increase prosperity for Canadians.

The innovation agenda also supports international partnerships through research agreements, funding visits and/or exchange programs for scientists and engineers and exposure to new ideas through sponsoring major meetings and conferences in Ontario.

Ontario understands the importance of forming partnerships and working across borders to maximize innovation efforts in areas of strategic focus.

FOCUSING ON SOCIETY'S CHALLENGES

Through its areas of focus Ontario's government can help align the research community and private sector with important social goals. This is what the Next Generation of Jobs Fund is doing, for example, in the areas of pollution, climate change and health care. Advances will not only help create prosperity, across the entire province, they will improve the quality of life for Ontarians.

Another way in which government can advance social goals in an innovative way is through support for social entrepreneurs. They are people who apply entrepreneurial skills and lessons from the marketplace to creative solutions to social needs, along the way building innovative and sustainable ventures.

Social innovation is important on its own as a way of finding better solutions to social problems ranging from homelessness to climate change. It can help Ontario in its goal of reducing poverty, for example. But it has other benefits. Like a vibrant culture it signals to the world a society's willingness to embrace new ideas and approaches in all areas.

We are bringing together partners from within government, as well as the MaRS Discovery District, to develop a Social Venture Capital Fund and a Social Innovation Generation Program to encourage the growth of social enterprises – enterprises that apply business models in an innovative way for the advancement of society.

Ontario's government is helping Ontario's social entrepreneurs build their skills and gain access to capital.

GOVERNMENT LEADING BY EXAMPLE

Government can lead by example by employing innovative approaches to its work and services. As part of the modernization initiative led by the Ministry of Government and Consumer Services, the Ontario Public Service Innovation Fund supports new approaches and initiatives that will lead to a modern public service by providing one-time seed money for innovative projects.

Procurement activities are another way in which government can help provide a market for innovative products and services developed in Ontario.

The innovation agenda supports more innovative approaches to the business and services of government.

MEASURING RESULTS

Given the significant investment in innovation it is important to assess Ontario's progress and provide comparisons between Ontario and its peer jurisdictions.

Based on recommendations from ORIC the Ministry of Research and Innovation is developing an "Ontario Innovation Scorecard." This report will include important conventional innovation metrics, such as dollars invested, publications, patents, licences, start-up companies, highly qualified people trained and venture capital investment. Moreover, it will focus on measuring investment impacts including, for example, wealth created per person and distribution of prosperity, the global share of knowledge-based firms, firm births and deaths, investment, and public support for innovation, education, immigration and the trade balance for knowledge-based firms.

We also need ways to measure not just the impact of innovation, but the speed at which it occurs. While this is difficult to evaluate on the basis of conventional data, work is under way with stakeholders and partners to define appropriate measures.

Ontario will develop an innovation score card to measure and report on outcomes of the Ontario Innovation Agenda.

CONCLUSION

Places that invest in innovation, that fuel the creativity of people and that market their ideas most effectively to the world will become home to the most rewarding jobs, the strongest economies and the best quality of life. We want Ontario to be that place. A place where innovation is inevitable.

Ontario's innovation agenda is achieving that vision. It is bringing together all the elements that an agile, innovative society needs – people with the right talent, training and attitudes, programs to provide strategic support and policies that allow innovation to flourish – and ensuring all parts of the system work as smoothly and as quickly as the global market demands. The agenda is celebrating Ontario's many innovation successes with the people of Ontario and around the world, signaling our strengths and capabilities. In all of these activities the agenda is helping Ontario, its companies and its people to achieve the greatest value from existing markets, create new companies and industries, and address social challenges.

Through its innovation agenda Ontario's government is helping to ensure that we achieve the greatest value possible from innovation – enriching both our economy and our quality of life.

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