ONTARIO COMMERCIALIZATION NETWORK REVIEW

STEERING COMMITTEE REPORT

FEBRUARY 2009

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Transmittal Letter

February 24, 2009

The Honourable John Wilkinson
Minister of Research and Innovation
Ferguson Block, 77 Wellesley St. West
Toronto, Ontario,
M7A 1N3

Dear Minister,

The Ontario Commercialization Network (OCN) Steering Committee is pleased to submit our report and to have had this opportunity to assist the province in its efforts to bring new, innovative ideas to market.

The recommendations we are submitting come with our unanimous approval and reflect the principles and recommendations to build the OCN into a world-class commercialization network capable of moving Ontario to the forefront of global innovation.

A key recommendation is the formation of an independent body of successful innovators and entrepreneurs experienced in the commercialization process, to provide overall direction and governance to the Network. Furthermore, we believe that the client-focused OCN model provided will help Ontario toward the innovation goal of becoming best in class at taking new, leading-edge ideas to market.

Our commercialization system must be integrated and consistent, yet flexible and adaptable. The report calls for a systemic approach and immediate action.

We are grateful for the opportunity to make this contribution. As members of the Ontario Commercialization Network (OCN) Review Steering Committee, we are pleased and honoured to transmit the attached final report.

Sincerely,

Dr. Alastair M. Glass, Chair

On Behalf of Dr.Geoff Fernie, Mr. P Thomas Jenkins, Ms. Melissa McJannet, Ms. Maureen Piercy and Dr. Celia Ross, Dr.Robert Sutherland

Overview

The Steering Committee was brought together in September 2008 to guide the review of the Ontario Commercialization Network (OCN).

The Committee's responsibilities were:

- to provide advice to the Ministry of Research and Innovation;
- to identify overlap and duplication across the OCN;
- to provide input on program re-tooling, realignment, and identification of program gaps based on the expertise of its members; and
- to act as a sounding board regarding potential structures for both the Ontario Commercialization Network and the delivery of MRI programs.

The Committee met regularly during a six month period from September 2008 through to February 2009.

In developing our findings and recommendations, the Steering Committee was presented with the outcomes of PricewaterhouseCoopers' (PwC) survey of OCN clients and stakeholders, and a review of practices in other jurisdictions. The Committee also benefited from the input of an Expert Panel regarding global best practices on commercialization.

The Committee conducted interviews directly with a number of Network stakeholder organizations, including: Communitech, Ottawa Centre for Research and Innovation (OCRI), Ontario Centres of Excellence Inc. (OCE), MaRS Discovery District (MaRS), Ontario Council on University Research (OCUR), Council of Academic Hospitals of Ontario (CAHO) - Council of Ontario Research Directors (CORD), Colleges Ontario, and the investment community.

Key Findings

From our study of the Ontario Commercialization Network, including contributions from a wide range of Network stakeholders and clients, the Committee established a series of Key Findings which best describe the Network's current condition.

1. Ontario has a rich and varied history of innovation with a number of success stories. The current OCN service delivery model has several positive attributes, creating opportunities to build on the existing model.

2. Except possibly for the life sciences sector, a large fraction of start-up companies arise outside the academic environment. The OCN should therefore support the commercialization of research from all sources.

3. Within the OCN there are examples of service delivery best practices by specific organizations. These, however, are not shared across the Network.

4. Among clients and potential clients, there is a lack of awareness and clarity around the OCN and its services. The OCN itself does not operate as a network but rather more as a fragmented collection of organizations.

5. There is no clear entry point to the OCN for potential clients and it is not a fully effective and efficient service delivery model, primarily due to a lack of centralized direction and coordination, resulting in inconsistent roles and responsibilities.

6. The fragmented nature of the Network and its service delivery model results from the lack of overall governance.

7. The OCN generally lacks measurable objectives and performance metrics for OCN member organizations.

8. The investment community clearly indicates that it is important to remove barriers and add incentives to promote investment in Ontario-based Canadian companies.

9. There is a need for partnership between the provincial and federal governments with respect to support for commercializing innovation.

10. The conditions of the existing OCN and the current economic climate demand quick action.

Principles/Framework for the OCN

To address the challenges outlined in the Key Findings, the Steering Committee recommends a core set of guiding principles on which to develop a new, revitalized OCN:

1. **Client Focused**
   Everything the Network does must be focused on supporting its clients: the researchers, entrepreneurs and businesses capable of commercializing new technologies in Ontario. The Network must be oriented to react to the demands of the marketplace with its program support structured to allow innovation to occur at the rate of the market. While the intent should be to minimize program and service overlap and duplication, support must be available for the full range of potential clients including emerging businesses, small and medium sized enterprises and large domestic and multi-national companies.

2. **Accountable and Transparent Governance**
   The OCN requires co-ordinated, effective governance with broad oversight and authority for the entire Network while supporting strong leadership of the individual component organizations.

3. **Standardized, Quantifiable Measurement System**
   A common measurement framework must be in place to ensure each Network organization is focused on the agreed upon measurable goals and outcomes (both short and long term).

4. **Efficient and Effective**
   The Network must be fully capable of delivering high quality service through its component organizations, using the best resources in the province, regardless of the location of those resources.
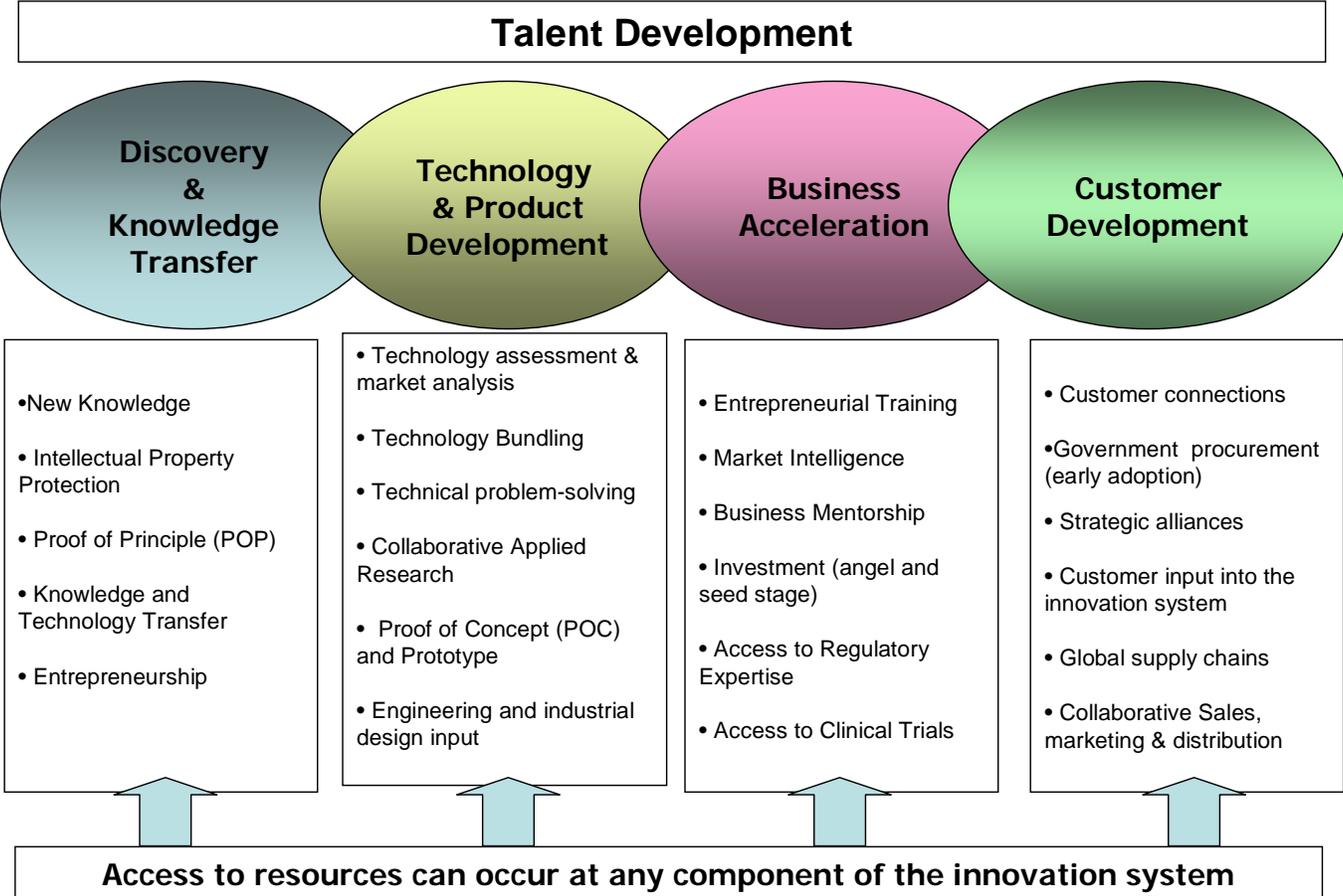
5. **Accessible Quality Support Across the Province**
   A client-focused network must be capable of delivering quality support based on the nature of the innovation, regardless of the location of the researcher, entrepreneur or business.

6. **Centralized Coordination, Regional Delivery**
   A coherent and effective provincial network requires programs that are developed and supported centrally, but delivered regionally — where the innovators are. While services must be available throughout the province, resources must also follow demand, ensuring areas with a critical mass of ideas and talent receive enough support to compete globally.

The Components of an Innovation System

Talent Development

Discovery & Knowledge Transfer

Technology & Product Development

Business Acceleration

Customer Development

Discovery & Knowledge Transfer
- New Knowledge
- Intellectual Property Protection
- Proof of Principle (POP)
- Knowledge and Technology Transfer
- Entrepreneurship

Technology & Product Development
- Technology assessment & market analysis
- Technology Bundling
- Technical problem-solving
- Collaborative Applied Research
- Proof of Concept (POC) and Prototype
- Engineering and industrial design input

Business Acceleration
- Entrepreneurial Training
- Market Intelligence
- Business Mentorship
- Investment (angel and seed stage)
- Access to Regulatory Expertise
- Access to Clinical Trials

Customer Development
- Customer connections
- Government procurement (early adoption)
- Strategic alliances
- Customer input into the innovation system
- Global supply chains
- Collaborative Sales, marketing & distribution

Access to resources can occur at any component of the innovation system

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Steering Committee Recommendations
OCN Governance Model

The success of the OCN will depend on quickly establishing an effective governance model — one that is capable of ensuring a coherent strategic direction and constancy of service across the province, yet allowing for effective regional delivery of commercialization support.

Phased Implementation
Given the need for urgency of action and for the evolution of governance over time, the Steering Committee recommends a two-phased approach to developing a more effective OCN governance model:

- **Phase I** involves the formation of an Advisory Board providing advice on policy, program and metrics development including funding for a dedicated OCN Secretariat within the Ministry of Research and Innovation.

- **Phase II** involves the replacement of the Advisory Board and Secretariat by an arms-length Agency that reports to the Minister of Research and Innovation while determining all policy, program and funding decisions independently and assuming overall responsibility for co-ordination and operation of the Network.

Expert Advice
The Advisory Board should be comprised of six to twelve people, the majority of whom should be successful innovators and entrepreneurs with direct experience in the commercialization process. There should also be representation from commercial enterprises (entrepreneurial start-ups, SMEs, and large companies). Technical expertise should be provided to the Board through the formation of specific expert panels connected to the governing body.

There should be strong co-ordination between the Ontario Research Fund Advisory Board (ORFAB) and the OCN Advisory Board to ensure the best use of opportunities for commercialization, while not excluding the best discovery research.

Role of Board
Important initial activities of the Advisory Board, while not limited to, should include:

1. The creation of a clear mandate and charter for the OCN and for OCN organizations outlining the goals of the Network and specific roles for each OCN organization. The Board will also develop clear performance metrics for individual OCN organizations based upon defined strategic objectives. Measures must be transparent with financial support to organizations reflective of their performance.

2. To ensure both the most effective and efficient delivery of services to clients, the development of a uniform database using a common nomenclature to enable the tracking of client interactions, progress and the potential achievement of desirable outcomes. The database should be as transparent as possible and accessible to all OCN member organizations.

3. Direct the development of a clear branding and communications strategy for the OCN and its members.

Steering Committee Recommendations
The OCN Delivery Model

Through the Review, the Steering Committee found many positive attributes among the organizations that currently make up the OCN. The goal is to move from good to great: to build on these successes, adopting best practices right across the province, while ensuring the result is client-focused and world-class.

Specifically:

1. Changes to the OCN service delivery model should be evolutionary, building on the current state as the OCN moves towards its desired future state.

2. The OCN should be based on a "mesh" network with multiple entry points rather than hub and spoke model. A mesh network is designed to bring the best resource and expertise in the province to support the defined needs of any client, regardless of the location of either.

   A successful mesh network is achievable by ensuring all members are capable of both exchanging and gaining access to information and resources across the network

3. Funding structures should be established to enable organizations to build trusting relationships with other member organizations as well as to ensure alignment and foster collaboration.

4. OCN services and resources should be scaled to regional demand related to the critical mass of researchers, entrepreneurs and companies. Regional demand for services and their subsequent delivery should determine how resources and funding will be deployed for organizations and provincial programs.

5. Sector-based expertise should be provincially focused and co-ordinated to deliver sector services to regions. Financial support for sector expertise should be dynamic, with the ability to flow to areas of greatest client demand and expertise both in areas of existing provincial focus as well as in identified newly emerging opportunities.

6. OCN programs and services must be clearly defined, communicated, and easily accessible to potential clients at any stage in the commercialization process.

7. Colleges should have the opportunity to be more engaged in the innovation process, in order to increase their capacity to support technical problem-solving, and productivity improvement capabilities for companies.

Steering Committee Recommendations
OCN Programs and Services

The creation of a mesh network allows individual organizations to excel at delivering specific services, while allowing their clients to access effective programs delivered by other organizations in the network.

The Steering Committee recommends that the overall suite of OCN programs and services adhere to the following principles:

1. Both companies and research institutions need direct access to funding to drive innovation to the market. Funding to commercialize ideas should be milestone driven.

2. With the involvement of Network member organizations in specific stages of development, there needs to be clear handoffs from one organization to the next as a client moves through the innovation system. It is critical that clients know the next steps and which organization(s) will be supporting them.

3. It is important to ensure the funding process is expedited at the pace of industry-driven innovation, without compromising the need for accountability in the distribution of public funds.

4. The provincial government should seek out opportunities to partner with the federal government to align programs and leverage additional program funding.

5. Programs and services should be aligned with the company evolution from start-up to mature company and ensure funding and resources are available at each step of the process. The lack of funding and capital to take innovation to market is not just a problem for start-ups but also for Ontario companies of all sizes.

    Recognising current economic conditions, industry matching funds should be considered an advantage but not a requirement to receive commercialization support.

6. Customer and market input is critical at all points of the innovation system. Programs must reflect this by encouraging meaningful relationships between innovators at all stages of commercialization and the customers whose needs they seek to satisfy.

7. The Ontario government should develop the capability within its purchasing systems to trial innovative new products and services, thereby becoming an early adopter of technology developed in the province.

Summary: Key Elements of the Proposed Model

A renewed OCN, based on the Steering Committee's recommendations, would bring together the following elements to create a truly effective, world-class commercialization network in Ontario:

Centralized Coordination
- Oversee all MRI funding for OCN.
- Develop vision and strategy and align mandates of OCN organizations.
- Align funding with demand.
- Track efficiency and effectiveness (inputs and outputs) using appropriate performance metrics.
- Results will be rewarded — OCN funding to be aligned with demand, input and outcomes and tracked by organization using appropriate performance measures.

Discovery and Knowledge Transfer Expertise
- Support leading edge research in areas where applicant can demonstrate significant provincial business opportunity and appropriate customer/supplier engagement.
- Solicit proposals in areas of provincial focus.
- Use expert (international) review to determine quality and strategic value to Ontario.
- Track progress toward goals.
- Support the capture of intellectual property and technology transfer to Ontario companies.

Sector-Based Expertise
- Develop provincial industry networks which include academia.
- Establish inventory of technical skills and resources.
- Support/develop industry academic partnerships both industry and or academic led.
- Deliver specialized commercialization resources to clients while employing expert review to assess technologies.
- Support prototyping and market validation.

Business Acceleration Expertise
- Support the deployment of business acceleration resources (people and funding) to early stage high performance companies across all sectors.
- Monitor progress.
- Assess global market opportunity.
- Develop investor relations on behalf of the Network.
- Offer business support and entrepreneurship training to OCN members and clients.
- Monitor the performance and facilitate the sharing of best practices.

Regions and Regional Organizations

- Regional resources should be aligned with critical mass of companies with regional proximity.
- Develop relationships with universities, colleges and municipalities.
- Guide clients though the OCN.
- Regional resources should be focused where an incremental investment can have a significant leverage effect.

OCN Review Steering Committee Members

Dr. Alastair Glass (Chair) – President, Transparent Solutions

Dr. Glass is currently engaged in consultative activities with his firm, Transparent Solutions. He is also the Chair of the OCN Review Steering Committee.

From 2006 to 2008, Dr. Glass was Deputy Minister of the Ontario Ministry of Research and Innovation. Prior to his role with the Ministry, he was Chairman of the Tyndall National Institute in Cork, Ireland, and the acting CEO.

For four years, he played a pivotal role in growing research and development programs in Ireland as the first Director of Information and Communication Sciences at Science Foundation Ireland, and in helping build effective partnerships between industry, government and academia.

Dr. Glass is internationally recognized for his work in photonics research and innovation. He has an impressive background in senior leadership positions at Bell Laboratories, and he has been a frequent advisor to U.S. government agencies and academic institutions, an invited speaker at international conferences and a published author and leader in technical societies.

Dr. Glass has a B.Sc. (Special) from University College in London and a PhD in physics from the University of British Columbia.

Dr. Geoff Fernie – Vice President, Research, Toronto Rehabilitation Institute

Dr. Fernie is Vice President, Research at Toronto Rehabilitation Institute. He is a professor in the Department of Surgery at the University of Toronto with cross-appointments that include the Institute of Biomaterials and Biomedical Engineering, the Graduate Department of Rehabilitation Science and the Departments of Mechanical and Industrial Engineering, Physical Therapy and Occupational Therapy.

A mechanical engineer, he has approximately 100 peer-reviewed journal papers and book chapters, and 24 families of patents. Dr. Fernie has a doctorate in Bioengineering from the University of Strathclyde.

P. Thomas (Tom) Jenkins - Executive Chairman and Chief Strategy Officer, Open Text Corporation

Mr. Jenkins has served as a Director of Open Text, a firm created as the direct result of basic research, since December 1994 and as its Chairman since June 30, 1998 and most recently as its Executive Chairman since June 30, 2005. From July 1994 to July 1997 Mr. Jenkins was President of Open Text and from July 1997 until July 2005, Mr. Jenkins served as Chief Executive Officer of Open Text. Mr. Jenkins was appointed Chief Strategy Officer of the Company in August 2005 and currently serves in that capacity. From December 1986 until June 1994, Mr. Jenkins held several executive positions with DALSA Inc., an electronic imaging manufacturer based in Waterloo, Ontario, Canada.

Prior to these positions, Mr. Jenkins was employed in a variety of technical and managerial capacities at a variety of information technology based companies in Canada. In addition to his Open Text responsibilities, Mr. Jenkins is currently a member of the board of BMC Software, Inc. a software corporation based in Houston, Texas. Mr. Jenkins received an M.B.A. in entrepreneurship and technology management from Schulich School of Business at York University, an M.A.Sc. in electrical engineering from the University of Toronto and a B.Eng. and Mgt. in Engineering Physics and commerce from McMaster University.

Melissa McJannet, Managing Director, TD Capital

Ms. McJannet oversees the origination, evaluation and monitoring of primary and secondary Fund Investments and Direct Co-Investments and is primarily responsible for the investment sourcing and manager research relating to TD Capital's venture capital and growth investments globally. Ms. McJannet serves on the advisory boards of several private equity partnerships within TD Capital's portfolio.

Prior to joining TD Capital in 2005, Ms. McJannet was an Associate at Mayfield, one of the leading venture capital firms in Silicon Valley, where she invested directly in early stage technology companies and worked closely with management teams to help grow their businesses. Previously, Ms. McJannet spent a number of years working in business development and finance roles for a telecommunications company in Chile and for the high-speed Internet access division of Rogers Cable in Toronto. Previously, Ms. McJannet was in the investment banking group of RBC Dominion Securities where she worked on a variety of mergers and acquisition assignments.

Ms. McJannet received a B.A. (Honours) from Queen's University and an M.B.A. from the Graduate School of Business at Stanford University.

Maureen Piercy - President, Loyalist College

Maureen Piercy was appointed the fourth President of Loyalist College January 1, 2005. Maureen is a 20 year resident of the Quinte area.

Prior to 2005 Maureen served as Vice President Academic at Loyalist for several years, and also held a number of senior administrative roles at Loyalist. Her experience also includes several years with Sheridan College and in the private sector as a reporter/writer/editor with Maclean's Magazine.

Maureen is very proud to be a Loyalist College Journalism graduate. She also holds an Honours B.A. in Psychology from Queen's University, a Master's of Education degree from Brock University, and has completed doctoral coursework with the University of Toronto's Ontario Institute for Studies in Education.

Recently, the Brock University Alumni Association named Maureen one of Thirty from the Past Thirty outstanding graduates of the University's first 30 years. She is a member of The Rotary Club of Belleville and has served on the Board of Directors of the Belleville and District Chamber of Commerce. She is a member of the City of Belleville Economic Development Committee and has acted as a resource member to the Quinte Economic Development Commission. She has also provided leadership to the Ontario College system through participating in and chairing a variety of provincial committees and initiatives.

Dr. Celia Ross - President, Algoma University

After completing a doctorate in 19th Century French Literature at l'Universite de Bordeaux III in France, Dr. Ross began teaching in the French Department at Algoma University College in 1982. Dr. Ross has served as President of Algoma University College since 1998. During her time as President, Dr. Ross has focused on the growth of Algoma University College. She has achieved much of this growth through the development of partnerships, both local and international.

Dr. Ross currently serves on the Board of Directors of the Sault Ste. Marie Economic Development Corporation, Science Enterprise Algoma, the Sault Ste. Marie Innovation Centre, and the Shingwauk Commission.

Bob Sutherland - Vice President, Commercialization, Ontario Institute for Cancer Research (OICR)

Dr. Robert M. Sutherland was appointed Vice-President, Commercialization for the Ontario Institute for Cancer Research (OICR) in March 2007. He is developing OICR's commercialization program including intellectual property management, identification of projects for early stage development and the engagement of market receptors and investor groups.

Before his appointment at OICR, he was from 1996 – 2007 President of Varian Biosynergy, Inc., a California-based biotechnology subsidiary of Varian Medical Systems. Previously (1988 – 1996), he was Executive Vice President in charge of the Life Sciences Division of SRI International (formerly Stanford Research Institute).

During his career he has served as a consultant/reviewer for many national and international government research agencies, universities, industry, and scientific journals. He is also a member of many professional associations including, among others, the Radiation Research Society, American Society for Therapeutic Radiology and Oncology, and the American Association for Cancer Research.

Some of his honours include the Radiation Research Award (1977) of the Radiation Research Society, National Cancer Institute MERIT Award (1987), Doctor of Science honoris causa (1985) Acadia University, and Senior U.S. Scientist Award of the Alexander von Humboldt Foundation (1983).

Sutherland, who holds a B.Sc. (Hons.) from Acadia and a PhD in Biophysics from the University of Rochester, is also a well published scientist with academic experience, including training of graduate students and postdoctoral fellows. He was the Associate Director of the Cancer Center for Experimental Therapeutics at the University of Rochester (1976 – 1988) and he was a faculty member of the Department of Biophysics at the University of Western Ontario (1967 – 1976). He was for approximately 20 years a Consulting Professor of Radiation Oncology at Stanford University.