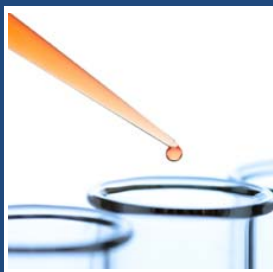


# An Action Plan for Innovation in Mississauga

Prepared for:  
**RIC Centre**

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HAL Ref: 8017



# Executive Summary

## Purpose of Study

This study was commissioned by the City of Mississauga and the RIC Centre, with support from the province, to assess the need and opportunities for an Innovation Centre in Mississauga. As part of the terms of reference, consideration has been given to the role that human capital can play in driving innovation in Mississauga and to the directions established by the city's strategic plans. To this end, an analysis was undertaken of the strengths and weaknesses of both Mississauga's innovation economy and the local innovation support system to identify gaps and opportunities that could be addressed with additional support.

## Overall Finding

In recent years, various calls for an innovation centre in Mississauga have been made, each with different ideas as to what such a centre should be about. Ideas have included establishing a centre as: a place where small high-tech businesses can access resources, programs and services to help them thrive; a meeting place for companies and individuals to meet, interact and engage on innovation issues; an incubator and accelerator that can support the development startups and small technology firms; and as an organization that can anchor an innovation hub in the city and align the region's educational resources with business needs.

What this study finds, however, is that the current innovation support system in Mississauga is already delivering on a number of elements captured by these ideas. The RIC Centre, for example, which has been enhancing its services this past year since receiving a multi-year funding commitment from the province, has established a core of support for small high-tech businesses and startups. The city also has some incubator capacity for start-ups that is being offered by some established firms in the region. What the city does lack, though, is a meeting place to promote connectivity and a coherent approach to better capitalize on the postsecondary assets for training, education and R&D purposes.

However, before Mississauga can act any further on its innovation agenda, it requires a much stronger civic leadership capacity that can be engaged to deliver on the kinds of initiatives that have been identified as being important for innovation by the community. Establishing such leadership is therefore a first step to strengthening innovation and spearheading initiatives such as a talent development project or a go-to meeting place that can create an innovation buzz and foster connections among the city's R&D oriented industry sectors.

For this reason, this study sets out an action plan that goes beyond an innovation centre *per se* to address factors for strengthening innovation in Mississauga as whole including ways to build a talent advantage for the city's innovation economy.

## Assessment of Mississauga’s Innovation Economy and Innovation Support System

In support of the analysis of the innovation economy and innovation support system, this study drew from a survey of Mississauga firms and interviews with key stakeholders. The results are highlighted in the following table.

### Strengths and weaknesses of innovation in Mississauga

Aspect	Main Strengths	Main Weaknesses / Gaps
<b>Mississauga Innovation Economy</b>		
Company base	<ul style="list-style-type: none"> <li>• Strong diversity of economic activity</li> </ul>	<ul style="list-style-type: none"> <li>• Innovation activity not reaching potential</li> </ul>
Labour Force	<ul style="list-style-type: none"> <li>• Overall quality of labour force is high</li> <li>• Major locational factor for firms</li> </ul>	<ul style="list-style-type: none"> <li>• Need for specialized skills including specialized trades / senior management skills</li> </ul>
Innovation Assets	<ul style="list-style-type: none"> <li>• Well-regarded postsecondary education institutions committed to regional economy</li> </ul>	<ul style="list-style-type: none"> <li>• Sheridan S&amp;T Park is not a catalyst for innovation in region</li> </ul>
Business Environment	<ul style="list-style-type: none"> <li>• Cost</li> <li>• Transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Undeveloped innovation culture</li> </ul>
<b>Innovation Support System</b>		
	<ul style="list-style-type: none"> <li>• Locally focused innovation support organizations</li> <li>• Growing range of innovation support services and impact</li> </ul>	<ul style="list-style-type: none"> <li>• Weak Private sector leadership and engagement</li> <li>• Limited incubator capacity</li> <li>• Absence of meeting space</li> </ul>

### Towards making Mississauga a ‘global city for creativity and innovation’

Based on the forgoing assessment, a framework was created to structure the development of recommendations for strengthening Mississauga’s innovation system that is in keeping with the vision of making Mississauga a global city for creativity and innovation as set out in the city’s 2009 strategic plan. The framework, presented below, identifies four action areas: building leadership capacity; building a talent advantage by developing and linking skills for innovation; building a connected innovation community; and leveraging existing innovation infrastructure.

## A Framework for Action



## Recommendations

This report makes recommends for ten actions (see table below), each responding to one of the action areas identified in the above framework. Of the ten recommendations, the following four have been identified as priorities:

**Priority Action (1):** *Establish a Mississauga Innovation Leadership Alliance comprising leaders from the private sector, postsecondary institutions and the city that can provide strategic direction, support and commitment to overseeing initiatives designed to strengthen the innovation economy in Mississauga.*

A ‘Mississauga Innovation Leadership Alliance’ (MILA) is an essential first step to driving the innovation agenda. With experienced, respected and energized private-sector and postsecondary leadership, the Alliance will be able to reach out to the necessary partners and stakeholders, to initiate actions, make appropriate connections, resolve any emerging issues and ensure that progress is made towards innovation goals and objectives.

This group will have the flexibility to respond to needs and opportunities identified in this study and other strategies, including the city’s economic development strategy, as well as be able to address any emerging issues requiring its leadership.

- ▶ *Undertake a review of local governance to position MILA for success*

It is recommended that the Mayor, in consultation with the Economic Development Advisory Council, the Mississauga Board of Trade, the RIC Centre Advisory Board, and the Ministry of Research and Innovation, play a lead role in catalyzing the MILA and in clarifying respective roles and responsibilities with the goal of ensuring coordination and alignment with the new leadership body.

In reviewing governance implications for the MILA, consideration should be given to having overlapping membership with the RIC Centre Advisory Board so as to ensure alignment.

In addition, as part of its initiation, the MILA should be temporarily chaired by the Mayor who would be tasked with identifying appropriate members from the business and postsecondary sectors, including a full time Chair.

**Priority Action (2):** *Hire a minimum of three resource personnel who can animate and implement the initiatives identified by the Mississauga Innovation Leadership Alliance.*

It is recommended that at least three people be hired for the purpose of building community capacity in Mississauga to the point where the community can be engaged to support implementation of local initiatives.

The first and most important resource must be an energetic community-builder that can forge partnerships, and build the innovation community with the assistance of the MILA's leadership. This individual should be entrepreneurial, with an ability to act on opportunities and work across boundaries, be they functional, political or geographic, to achieve objectives as determined by the MILA. Key competencies required are as follows: networking / relationship building and maintenance; partnering; and community and environmental awareness.

The second resource is that of a project manager who can develop and manage initiatives identified by the working groups of the Mississauga Innovation Leadership Alliance. This individual would work closely with the community builder and the RIC Centre to achieve objectives. A third resource, an administrative assistant, will also be required to support the various projects and meetings of the Mississauga Innovation Leadership Alliance.

This new 'Mississauga Innovation Connections' group can be located within the RIC Centre and report directly to the Mississauga Innovation Leadership Alliance.

**Priority Action (5):** *Implement a Mississauga Talent Project comprising a series of pilot projects designed to connect and develop human capital in support of innovation.*

Attracting, creating, integrating, and enriching talent and connecting people to the right jobs in the right firms is a key driver of innovation. Building on the collective work of the Strategic Plan and the Economic Development Strategy for the City of Mississauga, and the Mayor's Jobs Summit and the Task Force on Post-Secondary Education Action Plan, it is recommended that the city launch the Mississauga Talent Project to develop, coordinate, and implement a series of pilot projects to support human capital development in Mississauga. This emphasis on developing skills and matching them to the human capital needs of local industry to drive innovation would clearly differentiate Mississauga's innovation support system from others in the region and help position Mississauga for the 'next economy'. Suggested pilots are as follows:

**Pilot 1:** a ‘Talent Team’ pilot program to connect individuals with relevant business and industry-specific skills to address business problems in start-up firms.

**Pilot 2:** a ‘Talent Development’ program between the University of Toronto Mississauga and Sheridan College to explore the development of local industry-focused experiential education programs.

**Pilot 3:** a ‘Talent Partnership’ program to connect business students from UTM and Sheridan College with local entrepreneurial start-up firms to support commercialization and business development.

**Pilot 4:** a ‘Talent Pathways’ program involving local industry, post-secondary institutions, and secondary schools to create interest in and develop careers pathways for jobs needed by local industry beginning in high school.

**Pilot 5:** a ‘Talent Connection’ program involving local industry and local networks of immigrant employment and settlement organizations to connect foreign-trained professionals with jobs that use their skills.

**Pilot 6:** a ‘Talent Enrichment’ program involving local employers and post-secondary educational institutions to identify opportunities and develop customized programs for skills upgrading for employed workers.

**Priority Action (10):** Launch a marketing campaign to showcase existing support services and foster awareness of Mississauga as a location for innovation.

Given the relatively low level of recognition among firms of existing innovation support services, it is recommended that the city launch a marketing campaign that brings visibility to these services, the RIC Centre and to innovation in Mississauga as a whole.

### **What success will look like**

A critical shift in the business culture of Mississauga to one that embraces innovation will be the ultimate indicator of success. Indeed, it is this transformation in culture that will ensure that Mississauga can continually adapt to, and prosper from, the economic change that is inherent to a global economy. Fundamental, however, to the creation of a vibrant innovation culture is strong and sustained leadership from the MILA. To track progress towards building such an innovation culture, the MILA should be tasked from the outset to develop a set of relevant indicators that capture the different aspects of innovation culture and connectivity within the Mississauga community.

### Summary of Recommended Actions

ACTION	PRIORITY	IMPACT	TIMEFRAME	COST	LEAD	PARTNERS	FUNDERS
Action 1: Establish a Mississauga Innovation Leadership Alliance comprising leaders from the private sector, postsecondary institutions and the city that can provide strategic direction, support and commitment to overseeing initiatives designed to strengthen the innovation economy in Mississauga.	1	High	Short term	Low	Mayor	RIC Centre, EDAC, MBOT, MRI	MRI / City
Action 2: Hire a minimum of three resources that can animate and implement the initiatives identified by the Mississauga Innovation Leadership Alliance.	1	High	Short Term	High	EDO	RIC Centre	MRI / City
Action 5: Implement a Mississauga Talent Project comprising a series of pilot projects designed to connect and develop human capital in support of innovation.	1	High	Short Term	Medium	MILA	RIC Centre, PHWDG, MBOT	-
Action 10: Launch a marketing campaign to showcase existing support services and foster awareness of Mississauga as a location for innovation.	1	Medium	Short Term	Medium	RIC Centre	EDO	RIC Centre / EDO
Action 3: Establish a go-to hub where people involved in innovation can meet regularly.	2	Medium	Medium Term	High	MILA	RIC Centre, EDO	MRI / City
Action 4: Task the Mississauga Innovation Leadership Alliance with identifying two or three clusters around which to develop focused cluster strategies.	2	Medium	Medium Term	Medium	MILA	RIC Centre	-
Action 7: Identify incubation, lab and other specialized R&D space within established firms or underutilized industrial properties that can serve the needs of start-ups and SMEs.	2	Medium	Medium Term	Low	RIC Centre	MILA	RIC Centre / MRI
Action 8: Establish a Research Exchange with Sheridan College and UTM that identify opportunities for accessing specialized research equipment and collaborative research opportunities.	2	Medium	Medium Term	Low	RIC Centre	UTM / Sheridan College	RIC Centre / MRI
Action 9: Engage Sheridan College, IRAP and other relevant stakeholders to take advantage of the new funding programs for industry-postsecondary collaboration to leverage existing physical assets, resources and capabilities at the college so as to serve the unmet needs of existing manufacturing establishments in Mississauga.	2	Medium	Short Term	Low	RIC Centre	Sheridan College / IRAP / OCE	-
Action 6: Hire interns to assist with the community-building work of the Talent Project.	3	Low	Medium Term	Low	MILA	RIC Centre	-

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# Acknowledgements

This report has benefited greatly from the input and time of many in the Mississauga community. The study was conducted over a two month period in the middle of the summer, requiring more than a few to make special accommodations to participate. The level of enthusiasm, interest and engagement shown is a testament to the potential for future success in developing an innovation culture that can turn Mississauga into what it aspires to be, namely a global city for creativity and innovation. HAL would like to thank all those who were interviewed and who participated through a survey and workshop.

# 1. Introduction

## 1.1 Context for Study

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Mississauga is one of a growing number of cities across North America that is turning to innovation strategies to strengthen its regional economy and secure its future prosperity in a highly competitive global economy. This trend is due, in part, to the growing recognition that innovation performance can be influenced by changes in local conditions and support, thus providing a locational advantage to local firms. Talent attraction, retention and development, cluster networks that foster learning among related firms, industry-postsecondary collaborations that support innovation, and the mentoring of firm development can all be influenced through local action and decision-making.

### Objectives

In recognizing the potential for fostering innovation through local action, the City of Mississauga, with support from the RIC Centre and the Ontario government, is exploring a range of actions, along with the feasibility of an innovation centre for Mississauga, that can address local needs and build on the innovation assets within the region. The purpose of this study is to assist this effort by assessing and making recommendations on the opportunities for strengthening innovation support in the city. Three guiding contexts have been important to the study's scope. These are:

**Actual needs:** Mississauga's innovation centre must respond to actual innovation support needs and gaps in the local innovation ecosystem. There are a number of organizations that already contribute to the local innovation ecosystem and which have been established as part of the Ministry of Research and Innovation's Ontario Network of Excellence (ONE) program that seeks to build a province wide innovation support system. The Mississauga RIC Centre is one such organization that is currently building initiatives to help accelerate the commercialization of products and services within the Peel Region. Another is the Ontario Centres of Excellence, which provides province-wide support for talent, technology transfer from research to industry, as well as technology commercialization.

**Alignment with strategic planning documents:** The City of Mississauga's 2009 Strategic Plan sets out five strategic goals related to achieving prosperity.<sup>1</sup> These are to: 1) develop talent; 2) attract innovative business; 3) meet employment needs; 4) strengthen arts and culture; and 5) create partnerships for innovation. These goals and related actions have been given further articulation and support through Mississauga's Economic Development Plan which identifies steps to making the region a global business magnet, creating a culture of innovation and developing the knowledge economy.

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<sup>1</sup> City of Mississauga. 2009. Action Plan: Our Future Mississauga.

It is important, therefore, that an innovation centre for Mississauga offer services that will enable the region to achieve one or more of these goals. As identified in the Action Plan, key indicators of progress include: the number of accredited foreign-trained professionals per capita; the number of patents generated through Mississauga companies and the increase in employment in creative businesses.

**A focus on talent:** The City of Mississauga and the Ontario Ministry of Research and Innovation have indicated that the proposed Innovation Centre should be distinguished from other centers within the ONE network through a focus on talent. In particular, opportunities for the centre should include initiatives that develop and attract talent in ways that can drive innovation in Mississauga.

### **Calls for an Innovation Centre**

In recent years, amidst growing concern over unemployment levels that followed the recent recession, various calls for an innovation centre in Mississauga have been made, each with different ideas as to what such a centre should be about. Ideas have included establishing a centre as:

- a place where small high-tech businesses can access resources, programs and services to help them thrive (Action 21 - Action Plan: Our Future Mississauga 2009);
- a meeting place for companies and individuals to meet, interact, and organize events to engage on innovation issues (Accelerating Innovation in Mississauga, 2011)
- an incubator that can support the development and commercialization of startups (Action 3.2 Economic Development Strategy: Building on Success 2010);
- an private sector led accelerator, based in Sheridan Park, that can foster the growth of small technology firms (Conor Pacific)
- an organization that can anchor an innovation hub in the city and align the region's educational resources with business needs (2010 Task Force on Post-Secondary Education Action Plan).

This study has been informed by each of these ideas.

## 1.2 Study Approach

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The development of this action plan has benefited extensively from the involvement of a significant number of stakeholders engaged through 20 interviews, and a survey of firms in key technology sectors that received over 140 responses. These sources, together with a review of documents, literature and community proposals for innovation initiatives, informed the analysis of both the city's innovation economy and innovation support system, and an assessment of opportunities.

This analysis was subsequently presented to a workshop of key stakeholders, each of whom gave input regarding needs and directions for enhanced innovation support. Drawing on information from workshop, recommendations for action were developed and prioritized.

## 2. Driving Innovation from the Ground Up

### 2.1 The Role of Local Communities in Supporting Innovation

Communities and cities, like companies, need to innovate to remain competitive. Future development in city-regions will be driven by knowledge-intensive innovation and the creative and design-based activities associated with what the Brookings Institution has termed ‘the next economy’. Efforts to improve the economic performance of city-regions need to pay close attention to the underlying institutions that can support the growth of knowledge-based and innovative activities in their local economies. Strategies to encourage ‘next economy’ activities focus on developing distinctive specializations in knowledge-led activities, supporting entrepreneurial activity, developing sustainable economic activities, and talent attraction and creation strategies.

Innovation is the key to economic development at the regional and community level but successful innovation involves far more than the development of new technologies. It requires the development of new approaches to business organization, effective approaches to training and education that ensure the workforce acquires the skills needed to work with the new technologies, and the provision of the appropriate infrastructure to support the development of new technologies, including the access to financing. “Innovation-led development suggests that how a region makes use of what it has becomes, in many ways, more important than the initial ingredients with which it starts.”<sup>2</sup> This new approach to regional economic development is characterized by both ‘how’ it is done, and ‘what’ it focuses on.

A growing number of cities and regions across North America are attempting to create the right conditions for generating the growth of more innovative activities. This requires civic leaders to develop a concrete understanding of the existing physical and social assets and deficiencies in their cities.<sup>3</sup> Forging better linkages and fostering collaboration among a range of institutions and community-based actors is widely recognized as integral to the implementation of an innovation-based approach to urban economic development.

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<sup>2</sup> J. Montana, et al., *Strategic Planning in the Technology-Driven World: A Guidebook for Innovation-Led Development* (Washington, DC: Collaborative Economics and the Economic Development Administration, US Department of Commerce, 2001), p. 9.

<sup>3</sup> David A. Wolfe, *21st Century Cities in Canada: The Geography of Innovation*, Ottawa: The Conference Board of Canada, 2009.

A key to the success of these efforts is to build linkages and connections among civic actors and associations in their communities. Cities and communities that are able to do so effectively can establish the basis on which to design and implement new economic development strategies.<sup>4</sup>

## 2.2 The Need for Community Leadership

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A growing number of studies which have examined the factors that contribute to the success of cities and regions in improving their innovative performance identify the presence of strong civic leadership as central to that success. These cities and regions enjoy a strong degree of civic mobilization where business leaders, local politicians and other key actors, including post-secondary institutions, social and cultural organizations, come together to create a strong local organization to develop a coordinated approach to tackling local economic challenges. However, not every city or region that attempts this approach succeeds. What differentiates the success stories from the rest is an understanding of the critical dimensions of leadership that are required to build an engaged coalition of civic leaders in support of a plan of action.<sup>5</sup>

The source of that leadership may vary. In some regions, it comes from political institutions or industry associations. In others, it originates with an inspirational figure in a university setting or anchor firm that attracts or spins off like-minded individuals in other firms. In the end, their role is to mobilize those in the community with an interest in improving its growth prospects. The leadership for such an innovation action plan needs to create a broad buy-in from the relevant elements of the local community. Increasingly, however, that leadership has come directly from the business sector. In a growing number of cases, business leaders have recognized that the economic prospects for their own firms depend on a number of key factors that are common to the broader community in which they reside.

As recognition of this fact has spread, a growing number of business leaders across North America have acknowledged the need to work together to support the economic fortunes of their respective metropolitan regions. These collective efforts have emerged out of a growing recognition that coordinated efforts at a region-wide scale are necessary to promote the economic prospects of both their region and their individual businesses. Such civic-minded business leaders have come together in a large number of cities to forge new organizations or revitalize existing ones dedicated to working collaboratively with existing economic development organizations or creating new ones where necessary to promote their regional economies.

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<sup>4</sup> Judith Innes and Jane Rongerude, *Collaborative Regional Initiatives: Civic Entrepreneurs Work to Fill the Governance Gap*. Berkeley, California: Institute for Urban and Regional Development, University of California, Berkeley, 2005.

<sup>5</sup> Centre for Knowledge, Innovation, Technology and Enterprise, Newcastle University, *The Role of Leadership in Promoting Regional Innovation Policies in 'Ordinary Regions'*, NESTA Working Paper 02, London: National Endowment for Science, Technology and the Arts, July, 2007.

A principal hallmark of these new civic organizations is their collaborative nature, but relatively few of them succeed on the first try. Successful efforts at building new collaborative organizations requires the ability to learn from previous efforts, both those that have succeeded and those that have failed, in order to better coordinate the capacity of local organizations and governments to devise successful strategies to promote urban economic growth.

The essential criterion for success in building these new collaborative relationships is finding the right mechanisms to engage members of the community in a sustained effort to advance its economic opportunities. The recruitment of a committed, creative and collaborative leadership is the most essential element for the success these efforts. These kinds of collaborative leaders invariably share certain characteristics:

- They can see the opportunities opened by the emergence of the knowledge-based economy;
- They exhibit an entrepreneurial personality, in both a business and a ‘civic’ sense;
- They are willing to cross functional, political and geographic boundaries in pursuit of their strategic goals;
- They demand a sharing of both responsibility and results, and consequently are trusted as credible intermediaries; and
- They are committed to and comfortable working in teams.<sup>6</sup>

The City of Mississauga’s own Economic Development Strategy recognizes the importance of some of the key principles outlined above, namely that effective economic development efforts at the local and municipal level increasingly require the creation of a wide range of partnerships with representation from a broad cross-section of the local economy. It specifically emphasizes that a critical factor for the success of the strategy lies in the cultivation of broader and deeper relationships between the city and its business and stakeholder communities and the need to identify a broad team of civic leaders or stewards who are able to work collaboratively to advance the potential of the city.

## 2.3 What Other Regions are Doing

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Mississauga is not alone in recognizing the importance of these factors in laying a sound basis for its economic future. Cities and regions across North America, including several in southern Ontario, are currently in the process of implementing similar strategies. In fact, some of these cities have been engaged in these processes for much longer and have developed a strong base of civic leadership to support their efforts. Recent experience from these cities suggests that it is possible for local communities to formulate strategies to alter their economic trajectory and improve their prospects for economic development. What is required is the presence of an ‘economic community’ – places with strong, responsive relationships between the economy and

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<sup>6</sup> J. Montana, et al., 2001.

community that afford both firms and the community a sustained advantage. Here, the scope for individual agents and local politics to influence local and regional outcomes would seem to be considerable, since these relationships are mediated by key people and organizations that play a leadership role in bringing the economic, social and civic interests in the community together to collaborate.<sup>7</sup>

Places like Silicon Valley were in the vanguard of those that defined the idea of collaborative civic leadership.<sup>8</sup> Closer to home, Waterloo, provides an instructive illustration that economically successful regions rely on engaged leadership from the business community as well as other key community players such as local colleges and universities to build networks through which they collaborate to create a shared vision for the region and drive it forward. For example, in Waterloo, the Prosperity Council is a joint initiative of the Kitchener-Waterloo and Cambridge Chambers of Commerce, Canada's Technology Triangle, and Communitech that convenes top leadership from local business, post-secondary institutions, and community-based organizations that address issues of particular importance to the Waterloo Region. Hamilton's Jobs Prosperity collaborative focuses on economic development and job creation activities that benefit the entire community.

## 2.4 Differentiating Mississauga through Skills and Innovation

Both the City's Action Plan and Economic Development Strategy recognize the importance of developing world-class talent. The Action Plan looks to harness the talent of foreign trained professionals and build linkages to identify talent and skill needs, while the economic development strategy calls for a strengthened post-secondary education and workforce attraction and the development of local innovation culture by developing partnerships between the educational communities, government and industry. This focus on talent and education in the context of strengthening a knowledge-based economy is very much in keeping with an emerging trend among cities and regions in advanced economies.

Indeed, the importance of human capital as a key driver of innovation and economic performance underscores a growing concern across OECD countries that despite increasing levels of education, the supply of highly skilled people will not keep pace with the predicted skill needs of the knowledge-based economy.

In recognition of the fact that innovative firms choose to locate where there are high concentrations of talented and educated people, many cities are turning their attention to developing their human capital in order to stay competitive. This rising awareness about the importance of the skills and knowledge base of the local labour market is overlaid with concerns

<sup>7</sup> Douglas Henton, John Melville, and Kimberly Welsh, *Grassroots Leaders for a New Economy: How Civic Entrepreneurs Are Building Prosperous Communities* (San Francisco: Jossey-Bass Publishers, 1997).

<sup>8</sup> Douglas Henton, "Lessons from Silicon Valley: Governance in a Global City-Region." In *Global City-Regions: Trends, Theory, Policy*, ed. Allen J. Scott. Oxford and New York: Oxford University Press, 2001.

about projected skilled shortages in particular industries, including science and technology based industries such as health care and ICT, as well as in the skilled trades.

While many cities have begun to focus on talent attraction and retention strategies, competing in the global “war for talent” is not the only way to meet local labour market needs. The most progressive cities are developing talent strategies that build on the assets they have and that make sense for their particular needs. Though industries often require highly specialized personnel who are not available locally, effective local human capital strategies are built on more than talent attraction and retention. They also include mechanisms for talent *creation*, talent *integration*, and talent *enrichment*.

**Talent creation** involves training and educating students in the skills needed for local industry and includes:

- specialized college and university diploma and degree programs targeted to local industry sectors;
- highly specialized graduate degree programs that focus on innovation in emerging industries; apprenticeship programs that provide hands-on experience and training in the skilled trades required by local industry; and
- building career pathways for occupations in local industry that begin in high school.

This requires regular and concerted private sector engagement to provide input into course and curriculum development, and opportunities for experiential learning programs such as co-ops and internships that give students industry experience and give employers access to a highly trained talent pool.<sup>9</sup>

**Talent integration** involves not just attracting foreign trained professionals but finding ways to actively integrate them into the local economy. This includes tapping into networks of organizations that support newcomers to local communities, many of whom have specialized skills sets that are difficult to find in Canadian labour markets, providing mentorship opportunities and assisting foreign-trained professionals to build their own professional networks; and providing skills upgrading and credential recognition programs.

**Talent enrichment** involves providing opportunities for skills upgrading to keep the skills of the existing workforce current to allow them to adapt to the changing technology demands of their industry. Employed workers need access to industry-specific educational upgrading programs and training for entrepreneurs who often have industry expertise but lack business and management skills.

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<sup>9</sup> Some of these activities are already occurring in Mississauga: UTM has the MBIotech program that provides graduate level training in business management for the life sciences sector, and Sheridan College consults with industry-led Program Advisory Committees on curriculum development. There is however, clearly an opportunity to experiment with other innovative talent creation strategies and support to the opportunities set out in the report of the Task Force on Postsecondary Education for the Mississauga Summit 2010.

### **Matching Supply and Demand in Local Labour Markets**

There is little debate about the importance of a skilled and educated workforce to economic competitiveness. Education and training are critical to economic growth. But along with an over-emphasis on talent attraction and retention strategies at the expense of local talent creation, integration and enrichment strategies, there also tends to be an over-emphasis on supply side approaches to human capital development. People are trained and educated and often expected to somehow find their way to the right jobs. But local labour markets do not always operate very efficiently on their own. Many industries are reporting skills shortages while recent graduates often have difficulty finding employment for which they have been trained. In addition, recent immigrants, many of whom are highly skilled, experience difficulty integrating into the labour market because Canadian employers and licensing bodies do not recognize their credentials. As a result, in the near future, the Canadian labour market is expected to face skilled labour shortages alongside a large under- or unemployed potential workforce.

In a departure from traditional supply-side education and training policies to develop the human capital required for economic growth, emerging research has begun to emphasize that to be most effective, human capital strategies need to establish direct links between the supply of potential workers with the demands of firms that require their skills. The most critical element of a successful local human capital strategy therefore, is to match supply and demand in the local labour market. This means connecting the right people to the right jobs in the right industries.

Local human capital development reflects cities' efforts to fashion responses to their own particular labour market needs. This approach advocates the development of locally-driven cluster strategies that identify the development of the region's most promising industries, as well as the talent creation, integration and enrichment programs to provide the human capital to support them. Effective human capital development initiatives, therefore, tend to be designed and implemented at the local level through 'bottom-up' community networks of education and training institutions, local and regional governments, and the local business community, including firms and local business associations. Working together, they seek to match the skills development activities of individuals with the human capital requirements of local firms.

Successful partnerships share five key attributes:

- they incorporate the interests of both firms and workers;
- they go beyond simple job matching and seek to change the supply side of the labour market by improving career ladders, job quality, and overall competitiveness;
- they act as integrators of funding streams, public and private sector services and programs and information sources;
- generate ideas and innovations about what workers, firms, and communities need in order to prosper;

- and finally, rather than acting as a single purpose mechanism, they seek to co-ordinate services across a community.<sup>10</sup>

Building strong networks, and creating partnerships among governments and community-based service delivery organizations, as well as engaging employers at every juncture in the strategic planning process, is therefore essential to building successful human capital development strategies. If Mississauga is to succeed in its efforts to strengthen its local labour market so as secure a talent-based competitive advantage, it will have to ensure that it has strong civic networks in place that can set and act on clear and achievable objectives to drive local skills development and link up skills development priorities with broader local economic development strategies.

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<sup>10</sup> Giloth, R., ed. 2004. *Workforce Intermediaries for the Twenty-First Century*. Philadelphia: Temple University Press.

## 3. Assessment of Innovation in Mississauga

### 3.1 Overview

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Mississauga is an economically successful region of Canada with many of the essential attributes of a global innovation centre. It has a strong and highly diversified base of R&D oriented firms, a competitive business environment that has attracted many Canadian headquarters of multinationals, and a highly qualified workforce that is widely recognized as a key location factor for industry. Geographically, the City of Mississauga also benefits from its central position within Canada's largest metropolitan area, and as a destination for many of Canada's immigrants. All of these attributes have helped Mississauga to reach a level of prosperity that is higher than both the provincial and national averages.<sup>11</sup>

In recent years, Mississauga has also benefited from the development of a local innovation support system that can support firm development through mentoring, linking with public sector research organizations, commercialization support and venture capital. This aspect of the innovation support system is set to be strengthened further should private sector plans for establishing an accelerator at Sheridan Park along with a venture fund, proceed.

Yet for all of these strengths, Mississauga, as several noted in our consultations, is not recognized for its innovation. We also find that the local innovation support system is not reaching its potential in acting as a catalyst for capitalizing on the region's assets and innovation opportunities in a manner that can help forge a distinct identity and competitive advantage as a dynamic and cost effective hub for innovation. One of the challenges facing the local innovation support system is a general low level awareness within industry of the range of support available.

The following assessment first examines the strengths and weaknesses of Mississauga's innovation economy in terms of the base of companies, labor force, innovation assets and business environment. This is followed by an assessment of the gaps within the innovation support system.

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<sup>11</sup> At \$44,780 (2009), the City of Mississauga sustains a GDP per capita level that 8 and 13% higher than the Ontario and Canadian average respectively.

## 3.2 Innovation Economy

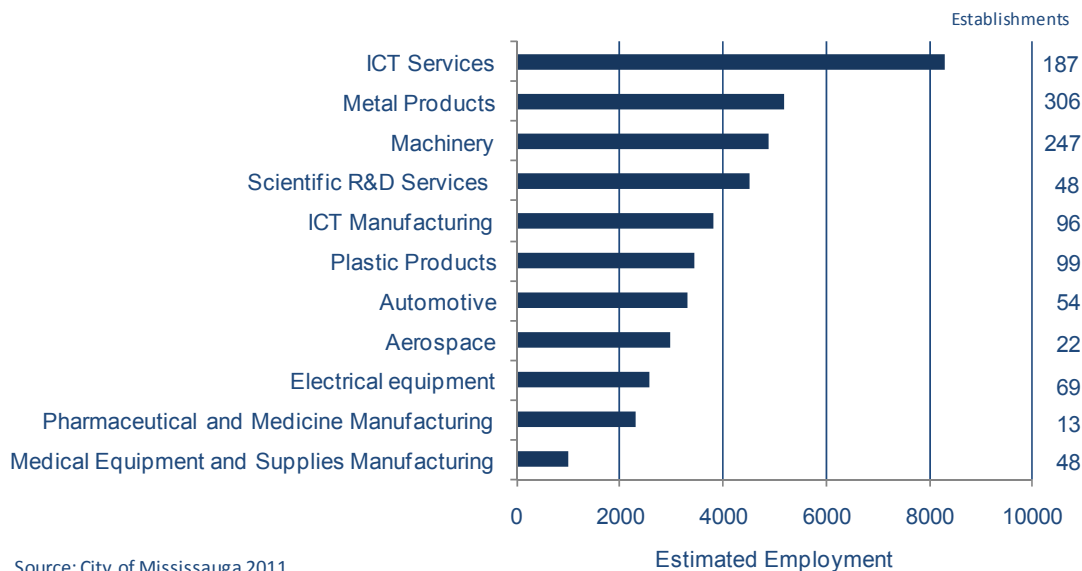
### 3.2.1 Company Base

#### Strong diversity of economic activity

One of the key strengths of Mississauga's economy is the high degree of diversity in the region's economy. In addition to being home to a prosperous base of manufacturing firms in a number of established and emerging sectors, Mississauga's economy also supports a wide range of specialized services that can meet their specialized needs.<sup>12</sup> Indeed, this mix of older and newer industries provides the region with a diverse knowledge base upon which newer industries have and can continue to emerge.

As is indicated in Figure 1, along with a notable presence in manufacturing sectors such as ICT, and aerospace, there is a strong representation among metal products and machinery firms, which can play an important role in meeting local demand for manufacturing inputs across a range of sectors. On the service side, ICT and scientific R&D services figure prominently in the employment base, underscoring the technology driven nature of the local economy and the opportunity for fostering innovation opportunities within the diversity of firms. Also prominent is the life sciences cluster which cuts across several of these sectors including pharmaceuticals, medical equipment and scientific R&D services.<sup>13</sup>

**Figure 1: Mississauga's Innovation Sectors, by employment levels and establishments counts**



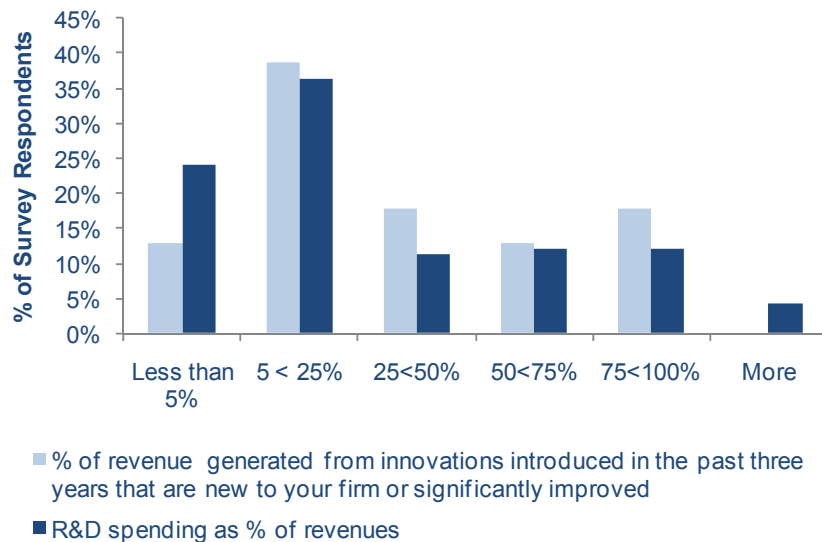
<sup>12</sup> See for example N. Lowe and M. Gertler. 'Diversity and the Evolution of a Life-science Innovation System: the Toronto Region in a Comparative Perspective'. In D. Wolfe and M. Lucas eds. "Global Networks and Local Linkages". McGill Queen's University Press, 2005.

<sup>13</sup> A 2002 report on the Mississauga BioCluster identifies some 94 core bio firms within a broader cluster of 540.

### Level of Innovation Activity

As might be expected from a technology driven local economy, most of the Mississauga firms surveyed indicated some level of innovation activity either through ongoing investments in R&D or from having generated revenue from new products or processes or services. Indeed only about 10% reported having no innovation activity at all, a percentage that is largely consistent with recent national survey results on total expenditures on innovations within manufacturing and professional, scientific and technical services sectors.<sup>14</sup> And while most firms are engaged to some degree in developing new products, processes or services, the majority are dedicating less than 25% of their revenues into financing R&D activities and generating less than 25% of the revenue from innovations introduced in the past three years (Figure 2).

**Figure 2: Innovation Activity in Mississauga**

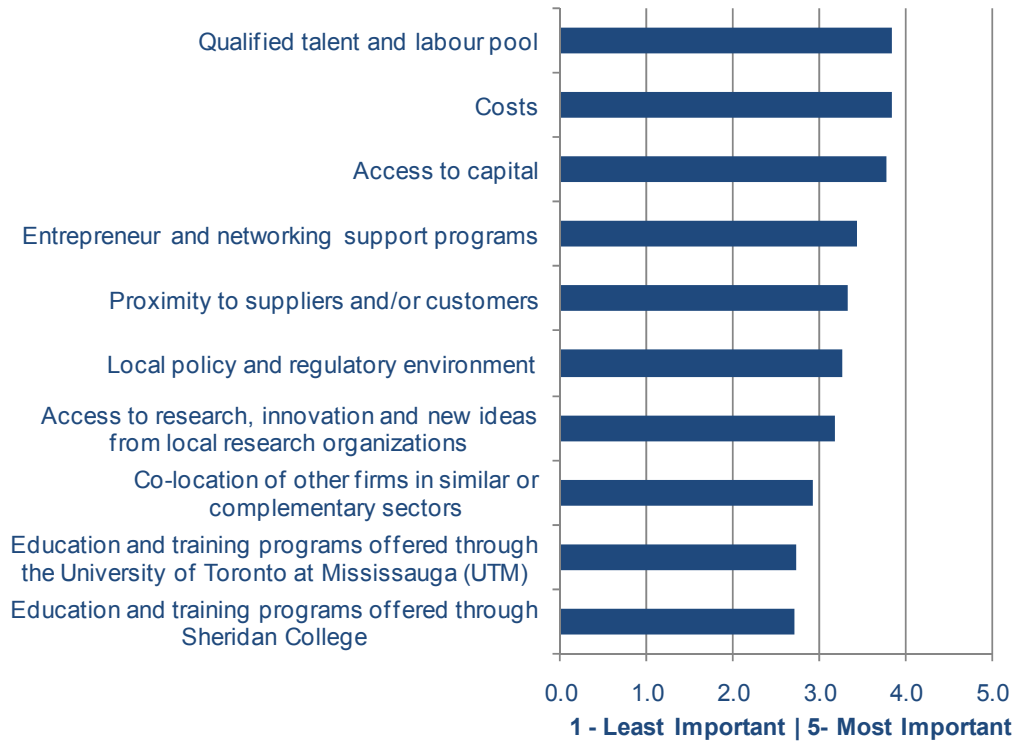


### 3.2.2 Labour Force

The quality of the labour force is clearly a major attribute of Mississauga's economy. Among survey respondents, it is identified as the most important local factor supporting innovation (Figure 3) with firms reporting that on average 43% of their employees are sourced from within Mississauga.

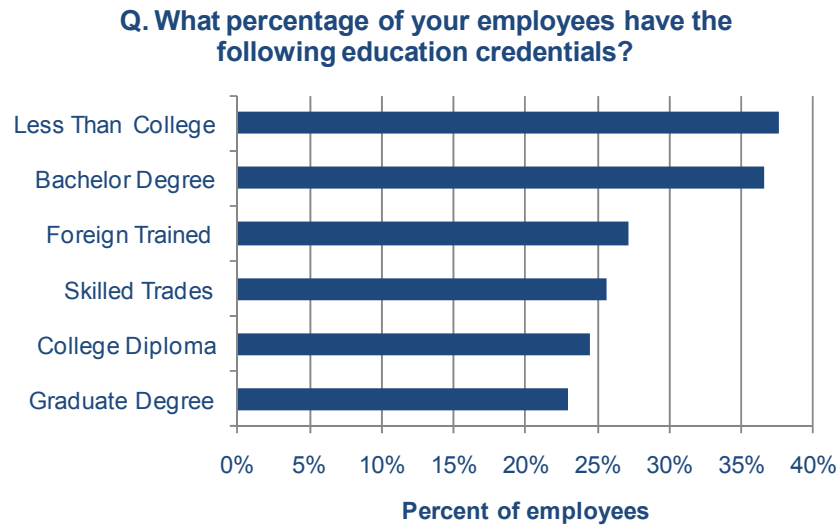
Despite this widely recognized strength, accessing qualified labour remains an issue for most companies. Some 53% of firms surveyed noted that they face shortages of skilled labour in their sector. Availability of specialized trades and management skills are two areas that have been identified as an area of weakness. Further development of advanced manufacturing is seen by some as crucial to the attraction and retention of such workers.

<sup>14</sup> See Government of Canada. 2011. State of the Nation: Canada's Science, Technology and Innovation System. Science, Technology and Innovation Council. 2010. Figures 11 & 12. p. 25. See also Highlights of the Survey of Innovation and Business Strategy (SIBS) 2009. [http://www.ic.gc.ca/eic/site/eas-aes.nsf/eng/h\\_ra02118.html](http://www.ic.gc.ca/eic/site/eas-aes.nsf/eng/h_ra02118.html)

**Figure 3: Important of local factors supporting innovation**

As the above figure also indicates, despite a recognized shortage of specialized skills, the education programs offered by local higher education institutions are considered the least important factors supporting innovation. This finding may be indicative of a disconnect between program offerings and industry needs, and thus highlights the potential value of the UTM and Sheridan College proposal for the creation of Mississauga Innovation Network to ensure that the educational offerings of the post secondary institutions are tailored more closely the labour force needs.

Figure 4 reveals the educational credentials held by the firms in the innovation economy. Of note is the importance of foreign trained professionals, and the potential need for training among the largest segment of the workforce – those without any college credentials.

**Figure 4: Educational credentials of firm employees**

### 3.2.3 Innovation Assets

#### Engaged Postsecondary Institutions

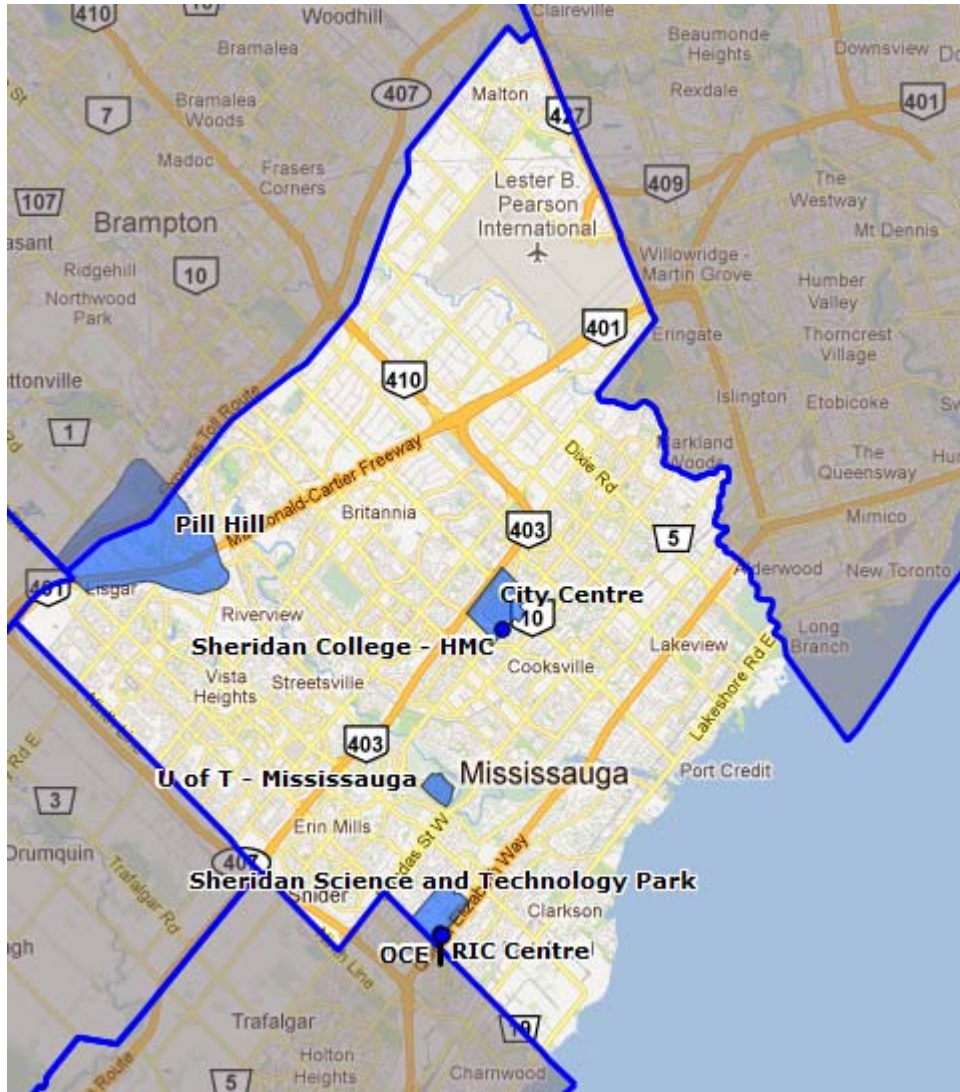
Within its city boundaries, the main assets that support innovation, other than the firms themselves, are two educational institutions, the University of Toronto at Mississauga (UTM) and Sheridan College. UTM maintains a student population of 11,600 undergraduates and 470 graduates who are enrolled in some 148 programs in 89 areas of study. Among its notable programs include such as a Bachelor of Business Administration, Masters in Management of Innovation, a Master of Biomedical Communications, a Master of Biotechnology, and a Master in Management and Professional Accounting.

As a university, UTM is also important for its commitment to regional economic development and its willingness to engage in related collaborative initiatives. It has been engaged for example, in the Mississauga Summit, the Healthy City Stewardship Centre; the Research Innovation and Commercialization Centre; and the City of Mississauga Economic Development Advisory Council. This level of commitment and leadership is in itself a key benefit to the city's efforts to support a broader innovation agenda.

As for Sheridan College, its Brampton-based advanced manufacturing centre together with the new Hazel McCallion Campus in downtown Mississauga are indicative of a growing capacity for industry relevant support within the region for innovation and talent development. Indeed, with new federal programs encouraging collaboration between industry and universities and colleges, the importance of Sheridan is likely to grow. In 2010, federal research agencies introduced two programs to facilitate interaction between community colleges and private industry: the Canada Foundation for Innovation created the College-Industry Innovation Fund with \$32.5 million in funding and the newly

formed Federal Economic Development Agency for Southern Ontario established the Applied Research and Commercialization Initiative with \$15 million of funding support. This funding represents a real opportunity for Mississauga firms to support their R&D efforts and access the specialized equipment available.

**Figure 5: Innovation Assets in Mississauga**



These resources come at a time when community colleges are starting to play an enhanced role in helping firms innovate. Through the Colleges Ontario Network for Industry Innovation (CONII), for example, additional funding support is offered for industry-driven applied research and commercialization projects. These services include prototype development, proof of principle projects, industrial design, business planning, market research, and marketing strategies.

On the training side Sheridan ensures that all programs are overseen by a Program Advisory Committee (PAC) comprising mostly industry representatives who help make sure that needed student competencies and skills are being met the curricula.

### **The Potential of Sheridan Science and Technology Park**

The 340 acre Sheridan Park, located to the south west of Mississauga in close proximity to UTM is an R&D zoned development that is home to a number of major R&D companies including Xerox Research Centre of Canada, Atomic Energy of Canada Limited, and Hatch Mott McDonald.

The park dates back to the mid 1960s and was further developed by the Ontario Government in response to the recession of the early 1970s. In its early days, Sheridan Park provided facilities for private companies engaged in industrial research work and was anchored by the presence of the Ontario Research Foundation, a publicly funded research institution created by the provincial government to stimulate a more R&D-intensive manufacturing sector. Yet despite its name and potential as a dedicated research and innovation district, the Park has yet to act as a catalyst for regional innovation in Mississauga.

Indeed Sheridan Park is very much in keeping with the original research park model of the 1960's which focused on recruiting firms as tenants, with little emphasis given to interactions with researchers at the nearby universities or federal laboratories. Today, the park fosters few connections among resident firms and between firms and public research institutions.

Research parks have evolved considerably over the past few decades, underscoring the potential of Sheridan Park as an innovation asset for the region. New parks are increasingly being developed with the following characteristics:<sup>15</sup>

- Research parks are placing greater emphasis on supporting incubation and entrepreneurship to grow their future tenant base and less on direct recruiting.
- Research parks are more likely to be targeted to a particular niche area. To compete in technology development, a region or state must differentiate itself and cultivate and sustain a specialized area of expertise where it can be a world leader. As a result, it has become more common for research parks to focus on key technology areas or industry clusters.
- Strategically planned mixed-use campus expansion is emerging as a key trend that includes space for academic and industrial uses. These mixed-use campus developments are designed to create an innovative environment with free and frequent exchange for information between academic research and their industry counterparts.
- Amenities will be an important offering of future research parks. On-site services, such as restaurants, art centres and retail stores, are considered important in attracting employees and tenants.

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<sup>15</sup> See: Battle Technology Partnership Practice, in cooperation with Association of University Research Parks, Characteristics and Trends in North American Research Parks:21st Centre Directions; October 2007

- Research parks are being developed in urban areas as a component of neighborhood revitalization plans,
- Research parks are now being developed to leverage the assets of non-university R&D organizations such as federal laboratories. In addition to universities, major medical research centres and public and private research organizations can be key drivers in technology-based economic development.
- More emphasis is being placed on sustainability as a design principle. Use of renewable energy sources and green building practices are becoming more prevalent.
- International partnerships are becoming more important in university research parks. Parks directors expect to see parks attracting more international tenants and have more of a global focus in the future.

### **Pill Hill**

The region of Meadowvale, known among locals as “pill hill,” (see Figure 5) is home to the majority of the over 350 pharmaceutical, bio-medical and related companies located in the city. As a vibrant centre to this bio/pharmaceutical cluster, this region continues to be a draw for firms relocating, expanding or establishing themselves in the sector. The region also gives visibility to what is now recognized as the third-largest life sciences cluster in Canada, behind only Toronto and Montreal.<sup>16</sup>

### **Accessing Resources Beyond the City’s Borders**

Mississauga is in close proximity to a number of important economic centres, many of which have complementary research infrastructure and sectors that can be leveraged by Mississauga firms. Toronto, Hamilton, Guelph and Waterloo, for example, are all within reach within reasonable commute times so as to make collaborations and access to specialized R&D infrastructure viable.

### **3.2.4 Business Environment**

One of the major locational advantages of Mississauga is its business environment. Its proximity to other major economic centres, ease of access to major transportation corridors, and hubs such as Toronto Pearson International Airport, are widely acknowledged as being advantageous to firms. The other main strength is the cost of locating and operating a business in the city. As is noted in Figure 4, cost is cited as the second most important factor among surveyed firms for locating in Mississauga.

### **A weak Innovation Culture**

From an innovation standpoint, however, the business environment has not engendered an innovation culture, a weakness that is recognized by many in the business community as was evident in the consultations carried out for this study. This lack of innovation culture manifests itself in fewer interactions among firms and a lower collective recognition of Mississauga’s

<sup>16</sup> R. Panjwani. 2008. 'Pill Hill' still destination of medical companies'. Mississauga.com.

potential, and also in the absence of a business led organization that gives primary focus to innovation. One of the contributing factors to this culture problem is a weakness in firms identifying with Mississauga. Many of the larger national or multinational firms, identify and have associational ties with the broader region, rather than Mississauga. These firms do nonetheless still prefer to be located in Mississauga over downtown Toronto which indicates that there is potential to address the innovation culture issue through greater connectivity and regional focus on innovation.

### **3.3 Innovation Support System**

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#### **3.3.1 Overview**

Mississauga's current innovation support system is defined primarily by provincial and federal organizations and programs which together provide a set of supports and incentives that foster the creation of new technology firms and commercialization within emerging and established industries. The central organization is the RIC Centre which delivers a number of key support services for technology and innovation focused firms in a range of established and emerging sectors.

The major gaps identified in the system are twofold: the absence of an accelerator or incubator that can support start-ups, and a weakness in private sector leadership that is necessary for achieving broad initiatives related to innovation.

#### **3.3.2 Private Sector Leadership and Engagement**

One of the most important ingredients to building and sustaining a successful local innovation environment is effective private sector leadership. This is leadership that can:

- a) build consensus around a strategic vision so as to ensure that all parts of the support system are working towards similar goals;
- b) act as a principle agent in developing the necessary collaborations to achieve innovation goals; and
- c) commit to a course of action until implementation is complete.

Mississauga is a vibrant local economy, but it lacks a cohesive leadership network that can be engaged for the type of leadership described above. This was noted not only by many of those consulted for this study, but also by the city's Economic Development Advisory Council (EDAC) which has identified this issue in the context of its wider focus on economic development more generally. The business community tends to be somewhat fragmented and firms even in the same sector tend not to interact with each other. Part of the challenge is that many firms are large multi-national companies that are more difficult to engage in local initiatives. In addition, despite a large concentration of firms in several different sectors, many of these larger firms do not belong to the Mississauga Board of Trade. And, as previously noted, they tend to identify

with and have ties with the broader GTA region rather than Mississauga. As a result, there is a weak identity among the Mississauga business community as a whole, and few easily identifiable candidates who can spearhead innovation initiatives.

### **3.3.3 Key Local and Regional Support Organizations**

The main organization within the local system is the Research Innovation Commercialization (RIC) Centre, a provincially funded organization that is now supported through the province's the Ontario Network of Excellence (ONE). ONE is a client-focused, province-wide innovation network comprising organizations from across Ontario, which includes the MaRS Discovery District in Toronto, Communitel in Waterloo and the Innovation Factory in Hamilton, each designed to deliver provincial innovation support services in the context of local needs and conditions. Its goal is to align the programs and resources that the Ontario government offers in support of innovators and entrepreneurs and act essentially as a branding mechanism to help simplify the process of finding resources for commercialization activities.

Since 2008, the RIC Centre has been focused on working with entrepreneurs in early stage and emerging companies to take their technical innovations to market, shifting from its former focus on networking academics into the life sciences business community.

Other provincially funded organizations complementing RIC objectives include the OCE, which supports commercialization by fostering links between public research organizations and industry across Ontario to solve technical problems and conduct collaborative R&D and develop talent. OCE maintains a regional office that is co-located with the RIC Centre, allowing for better interaction of support services. Ontario, in collaboration with the federal government, also supports the Agri-Technology Commercialization Centre based in Guelph, which offers province-wide support for startups, commercialization and R&D collaboration in the agri-innovation sector.

### **3.3.4 Support Services Offered**

Mississauga's local innovation support system is in a state of on-going development largely due to the fact that the RIC Centre has yet to fully roll-out its planned services, having only recently received a multi-year funding commitment from the province in 2010. It is worth noting that the city also offers support more general services for firms through its Mississauga Business Enterprise Centre (MBEC) for non-technology and innovation based firms.

#### **Mentorship**

The RIC Centre is developing a volunteer mentor network that will consist of 15 subject matter experts when fully established. Currently, there are four volunteer mentors and two entrepreneurs in residence providing advice for start-up companies. This service is designed to assess client needs, offer strategic planning and advice, identify resources and other networks of support. In

2010, the RIC Centre assisted some 65 new companies and has served over 200 in the past two years.

Though not locally focused, mentoring and advice for new technology firms is also offered through NRC-IRAP, and through the OCE by way of a federally funded Centre for Commercialization of Research (CCR). Startups with agri-related technology can also access mentoring and coaching through the Agri-Technology Commercialization Centre.

### **Incubator / Accelerator**

Despite past attempts at establishing an incubator in Mississauga, and a recognition of its value in the community, the city does not currently have a single such facility that can house a number of fledgling start-ups in a single location within a supportive low cost environment. The last attempt to create such a facility was in 2005 with the Mississauga Technology Business Accelerator (MTBA). The MTBA, however, lasted only for a short time before closing shop.

A number of firms in the Mississauga region, such as Fielding Chemical, have stepped in to partially fill this gap by offering space for start-ups within their own facilities. In addition to space for start-up firms to develop their technology and business, these firms are also engaging in the mentoring of start-ups, helping to establish their viability.

### **Access to Capital**

Largely through the RIC Centre, the innovation support system is able to direct new firms to sources of both public and private financing. The RIC Centre has partnered with the Maple Leaf Angels, a network of angel investors, to establish a west chapter to the largely Toronto focused organization to create new funding and investment opportunities within the region.

### **R&D linking**

Collaboration between industry and higher education institutes allows companies to access research, innovation and new ideas, as well as leverage costs in R&D projects. This opportunity is the focus of Ontario's Industry Academic Collaboration program which is delivered through the OCE and supported by the RIC Centre. This program is designed to help firms leverage the resources and capabilities of provincial research institutions, extract greater commercial value from the research base, and provide experience for innovators and entrepreneurs.

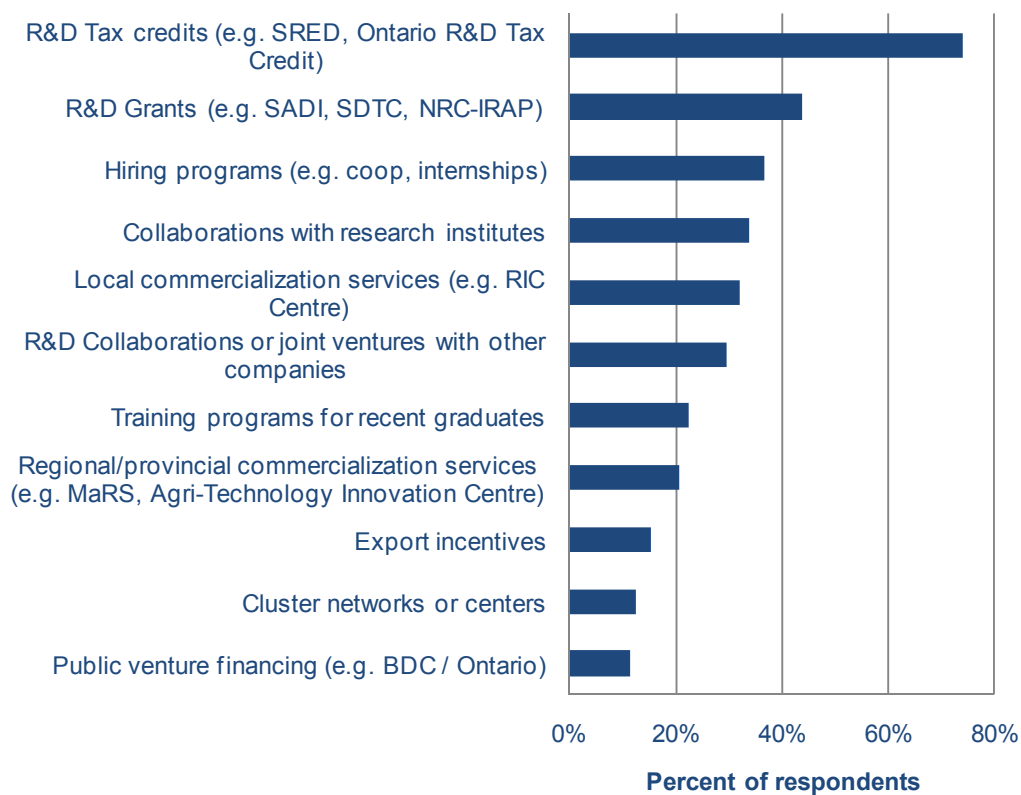
### **Meeting and Connectivity Space**

Unlike a number of other cities such as Waterloo and Hamilton, there is no physical meeting space in Mississauga that can support connectivity within the business community. Many from the community have expressed a need for such a physical space where individuals and firms can meet, interact, and exchange ideas on innovation related issues. Such a space is seen as a way to better engage the business community on innovation and is particularly important in a city where firms are spread throughout the region.

### 3.3.5 Current Usage of External Support

Among the various innovation supports that are external to the firm and which are available to Mississauga firms, federal and provincial R&D tax credit and grant programs are the most widely used (Figure 6). The data also indicates the importance of training and hiring programs, pointing to the importance of the higher education system in supporting firm competitiveness.

**Figure 6: External Innovation Resources Used by Mississauga Firms**



## 3.4 Summary

While Mississauga is benefiting from an innovation support system that is currently strengthening a number of important services, it is clear from the findings that Mississauga is not reaching its potential and that more needs to be done. Part of the problem is simply one of recognition, whereby the local industry is not fully aware of existing services available. Figure 7 below summarizes the rankings given by firms of local resources that would most likely improve their performance.

Talent development is one area that, in addition to being a focal point for the city's recent strategies, is also a recognized need in the business community. Another area is connectivity.

Unlike in a number of other localities, there is no dedicated physical space that is well suited for the community to meet, organize initiatives and discuss innovation opportunities and collaborations. Nor is there adequate virtual connectivity by way cluster networks, for example, that can engender an innovation culture within and across sectors.

**Figure 7: Local resources that would most likely improve firm competitiveness**



A key ingredient to addressing these gaps is also largely absent in Mississauga, namely private sector leadership that can be tasked with leading on talent development, sector connectivity and other such projects relevant to fostering a more effective local innovation system and culture. Without such leadership Mississauga's innovation potential will not be fully realized.

## 4. Making Mississauga a ‘Global City for Creativity and Innovation’

### 4.1 Strategic Directions

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#### Aligning Opportunities with Existing Strategies...

The City of Mississauga set out its commitment to innovation in a Vision Statement developed as part of its Strategic Plan whereby the city “will inspire the world as a dynamic and beautiful global city for creativity and innovation, with vibrant, safe, and connected communities...” This commitment was articulated further in the supporting Action Plan, which set out how the city would achieve its vision for the future through five Strategic Pillars of Change. The pillar most relevant to innovation is that of ‘Cultivating Creative and Innovative Businesses’, under which the city has committed to developing talent, attracting innovative businesses, and creating partnerships for innovation. These innovation priorities were given additional emphasis in the 2010 economic development strategy which identifies goals and objectives much of which relates to strengthening innovation in Mississauga.

Collectively these strategic objectives underscore the need for building connectivity and focusing on talent development. They have more specifically also called for strengthening support for entrepreneurs and small high-tech businesses through, for example, a centre for innovation and in considering the viability of an incubator for start-ups.

#### ...And Building on Existing Assets

Yet as indicated in the foregoing analysis of needs, Mississauga, through the RIC Centre, now has an established core of support for high-tech businesses, one that, with additional resources, could be tasked with delivering a broader range of services to address existing gaps in innovation support. The city also has some incubator capacity and other innovation assets within existing firms and institutions, as well as underutilized industrial properties that could be better leveraged to meet demand.

What it does not have, however, is a locus of private sector leadership that can give direction, commitment and importance to implementing actions designed to strengthen the local innovation support environment. Talent development, better connectivity within the innovation community and indeed a number of the commitments made in the city’s strategies all require such leadership to bring together the many partners needed to achieve objectives.

From these considerations, the following framework has been developed to give focus to the development of recommendations for strengthening Mississauga’s innovation system. The framework identifies four action areas: building leadership capacity; developing skills for

innovation; building a connected innovation community; and accessing existing innovation infrastructure. The opportunities that these areas represent are describe below

**Figure 8: A Framework for Action**



## 4.2 Opportunities for Strengthening Local Innovation

### 4.2.1 Building Leadership Capacity in Mississauga

Mississauga is lacking in the type of civic, private sector leadership that can deliver on the kinds of initiatives that the community requires to support innovation. It is also challenged by a weak identity among the Mississauga business community as a whole. Local and provincial governments, post-secondary educational institutions, and community-based organizations cannot build an innovation agenda for Mississauga on their own without active engagement from the local business community. In particular, developing a human capital strategy will only work if it is led by the private sector and sustains local employer participation and input.

**View from the Stakeholder Community:**  
 “I think what would be helpful is that we have more dialogue between what would constitute the industry leadership in Mississauga, a cross-section of key industry people from core sectors like life sciences, aerospace, manufacturing, and green tech, who have senior responsibility and senior people from the university and the college to talk about where we are falling down and what pieces are missing - some kind of an on-going venue for relationship-building.”

The time is right to build a leadership forum of business and community leaders in Mississauga. Mississauga already has two post-secondary institutions – the University of Toronto Mississauga

and Sheridan College – that have each expressed the willingness to work together and to participate in the innovation dialogue. Mississauga also has an engaged Mayor and an Economic Development Office who are actively supportive of an innovation agenda for the city, including the development of an innovative human capital strategy. The missing link is the private sector. Mississauga needs to create networks and linkages among its business community – between

**View from the Stakeholder Community:**

“The business community needs something to get them more actively involved with innovation in Mississauga.”

large and small firms, and between firms in different sectors – in order to build the collective capacity to develop a longer-term innovation agenda for the city. This will involve identifying key initiatives in which they are prepared to invest time, energy and possibly money, such as building cluster networks.

There is some willingness on the part of top executives to be more directly involved in supporting innovation in Mississauga. A few large firms have been active participants in the local economic community. But participation needs to be expanded to a much broader spectrum of large and medium-sized firms across different sectors.

#### **4.2.2 Building a Talent Advantage by Developing and Linking Skills for Innovation**

Now is also both an important and an auspicious time to build a talent-based strategy for Mississauga, particularly given the apparent disconnect in the local labour market indicated by the data collected for this study. While access to a qualified talent and labour pool is recognized as the most important factor for local firms in supporting innovation, it was also indicated among over half of survey respondents that they faced skills shortages. Furthermore, firms also indicated that education and training programs offered through UTM and Sheridan are considered to be the least important local factors supporting innovation, despite current efforts to align programs with industry. This suggests that there is a lack of business awareness of the value of what local post-secondary institutions have to offer as and a need for better coordination between the programs offered and the human capital needs of local firms.<sup>17</sup>

There is a requirement, therefore, for innovative ways to develop the skills needed to support innovation in local industry. Research indicates that it is difficult to develop a local human capital strategy without several key ingredients.<sup>18</sup> Many of these key ingredients are, however, currently in place in Mississauga. The Ministry of Research and Innovation has indicated an interest in developing a human capital focus for the regional RIC Centre.

<sup>17</sup> See 2010 Task Force on Postsecondary Education Action Plan, Draft Report p.10.

<sup>18</sup> Bramwell, A. (forthcoming). "Networks Are Not Enough: Urban Governance and Workforce Development in Ontario", Urban Affairs Review.

The Mayor and Economic Development Department of the City of Mississauga are also supportive of a human capital agenda, and the high levels of participation from individuals and community-based organizations in the Mayor's Jobs Summit of 2010 indicates that there is also broad base of support in the community. The Jobs Summit also resulted in several important human capital initiatives including the Mississauga Works Task Force and the Post Secondary Task Force under which both the University of Toronto Mississauga and Sheridan College indicated an active interest in this agenda. Sheridan College is building a new campus in Mississauga that will focus on business education and programs for foreign-trained professionals, and UTM has proposed the development of an Institute for Management and Innovation that will focus on graduate training in the management of innovation. Their joint proposal for a post-secondary education strategy focuses on building a "Mississauga Innovation Network" to integrate talent development activities across the Mississauga community.

**View from the Stakeholder Community:**

"[We need] to go back a little in time and revive the skilled trades in school programs where youth may learn a trade such as fabrication with real hands on experience through support of local businesses such as we did in the 70's and 80's instead of losing all our skills to other countries. My company would welcome and support such training as we have to either find people who currently work in the field and steal employees or train from the ground up and this takes a minimum of 5 years and only then to find out that some people are not cut out for this type of lifestyle.

There are many key players involved in developing and implementing a local human capital strategy including large and SME employers, the provincial government, the Economic Development Office of the city, local post-secondary institutions, the Board of Education, the local Board of Trade, and other community-based organizations. A human capital strategy also requires a mechanism to facilitate communication and coordinate efforts among these key players.

The missing ingredient, however, is active engagement from the private sector, without which a human capital strategy cannot work. This requires leadership from local business 'champions'

**View from the Stakeholder Community:**

"I think what will support innovation is the promise of the two post-secondary institutions that are there – UTM and the new campus for Sheridan college. I think we can create more synergy between the business community – both large Fortune 500 companies that have headquarters in Mississauga but perhaps even more importantly the SME community."

who can give support and strategic direction, as well as the sustained involvement of local firms from all sectors that can provide on-going input into program and curriculum development, provide co-op and internship opportunities for students, and mentoring opportunities for foreign-trained professionals and entrepreneurs. Canadian cities do not yet do this particularly well. Mississauga could be a pioneer in developing and implementing an innovation-based human capital strategy.

### 4.2.3 Building Connectivity in Mississauga

Following on from the importance of building business leadership capacity, the third core theme to emerge from the analysis is the critical importance of building overall connectivity in Mississauga. A number of respondents commented on the lack of connectedness not just in the leadership of the Mississauga business community, but also in the Mississauga business community as a whole.

**View from the Stakeholder Community:**

“We need an environment that allows the technical people, managers, and commercialization people to interface in a way that gets the whole package together and moving. Waterloo has an accelerator. Ryerson has the Digital Media Zone. Hamilton has the Innovation Factory. They all have a physical spot – an entrepreneurial hub – where you can go and meet other like-minded people.”

Two major objectives of the economic development strategy for the City of Mississauga are to build a culture of innovation and the knowledge economy, which they propose to accomplish by leveraging the diversity of their workforce and strengthening the relationship between business and education. This requires building connectivity on several different dimensions at once:

- connecting the private sector with local postsecondary institutions to shape and implement the human capital strategy and to improve the match of people to jobs
- connecting firms with public sector supports such as those provided through the RIC Centre, the OCE and Sheridan Park including incubator and accelerator space, R&D supports, and advisory services and mentoring programs for entrepreneurs
- connecting firms with each other through cluster networks where firms can meet regularly to build local supply chains, discuss business issues, and develop ways to work together to foster a cluster identity within Mississauga
- connecting large and small firms to provide mentoring supports and on-site demonstration facilities and lab space for start-up companies
- connecting people with each other – meeting spaces, networking events

All of these dimensions of connectivity are lacking in Mississauga and point to the need for a physical space where these connections can be fostered. Locating all of these activities in a single place creates a catalyst for innovation because it allows people to meet face to face and build the networks and linkages essential to the innovation process.

### 4.2.4 Leveraging Existing Innovation Assets

Mississauga has the potential to support start-ups and SMEs with needed R&D infrastructure by leveraging existing resources. The city, for example, currently has available industrial space that is suitable for R&D activities, which if made accessible, could support the R&D needs of start-ups or SMEs that are not in the financial position to lease such assets in the long term. Another important asset in the city is firms that are offering incubator space and mentoring for start-ups. Finally, Mississauga is home to two postsecondary research institutions that can provide access to a range of specialized infrastructure, and equipment that could be of benefit to the city’s firms.

This potential diminishes the value and urgency of establishing any new physical space or special infrastructure that can support SMEs and start-ups. Indeed what is needed is a networking service that can bring together the supply of such specialized infrastructure such as lab space with demand from startups and SMEs.

## 5. Recommendations for Action on Innovation

### 5.1 Actions

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#### 5.1.1 Developing Leadership Capacity

**Action 1.** *Establish a Mississauga Innovation Leadership Alliance comprising leaders from the private sector, postsecondary institutions and the city that can provide strategic direction, support and commitment to overseeing initiatives designed to strengthen the innovation economy in Mississauga.*

A ‘Mississauga Innovation Leadership Alliance’ (MILA) is an essential first step to driving the innovation agenda. With experienced, respected and energized private-sector and postsecondary leadership, the Alliance will be able to reach out to the necessary partners and stakeholders, to initiate actions, make appropriate connections, resolve any emerging issues and ensure that progress is made towards innovation goals and objectives.

This group will have the flexibility to respond to needs and opportunities identified in this study and other strategies, including the city’s economic development strategy, as well as be able to address any emerging issues requiring its leadership.

- ▶ *Undertake a review of local governance to position MILA for success*

It is recommended that the Mayor, in consultation with the Economic Development Advisory Council, the Mississauga Board of Trade, the RIC Centre Advisory Board, and the Ministry of Research and Innovation, play a lead role in catalyzing the MILA and in clarifying respective roles and responsibilities with the goal of ensuring coordination and alignment with the new leadership body.

In reviewing governance implications for the MILA, consideration should be given to having overlapping membership with the RIC Centre Advisory Board so as to ensure alignment.

In addition, as part of its initiation, the MILA should be temporarily chaired by the Mayor who would be tasked with identifying appropriate members from the business and postsecondary sectors, including a full time Chair.

- ▶ *Establish working groups within the Mississauga Innovation Leadership Alliance to drive strategic initiatives.*

It is recommended that working groups be established within the Mississauga Innovation Leadership Alliance that correspond to key needs in the innovation support system. Accordingly, there should be working groups to lead the pilot talent development initiatives, establish a physical go-to hub for meeting and innovation; and bring together local industry sectors as part of cluster strategy development and networking (See Actions 3,4,5).

Each working group will comprise MILA members to drive the initiative as well as relevant members from the community who can contribute to the project in their respective capacities. Extending membership of the working groups to beyond MILA members helps build community and ensures that the right people with the necessary commitment to see through the particular initiative or project are at the table.

### **5.1.2 Building a Connected Innovation Community**

**Action 2.** *Hire a minimum of three resource personnel who can animate and implement the initiatives identified by the Mississauga Innovation Leadership Alliance.*

It is recommended that at least three people be hired for the purpose of building community capacity in Mississauga to the point where the community can be engaged to support implementation of local initiatives.

The first and most important resource must be an energetic community-builder that can forge partnerships, and build the innovation community with the assistance of the MILA's leadership. This individual should be entrepreneurial, with an ability to act on opportunities and work across boundaries, be they functional, political or geographic, to achieve objectives as determined by the MILA. Key competencies required are as follows: networking / relationship building and maintenance; partnering; and community and environmental awareness.

The second resource is that of a project manager who can develop and manage initiatives identified by the working groups of the Mississauga Innovation Leadership Alliance. This individual would work closely with the community builder and the RIC Centre to achieve objectives. A third resource, an administrative assistant, will also be required to support the various projects and meetings of the Mississauga Innovation Leadership Alliance.

This new 'Mississauga Innovation Connections' group can be located within the RIC Centre and report directly to the Mississauga Innovation Leadership Alliance.

**Action 3.** *Establish a go-to hub where people involved in innovation can meet regularly.*

In establishing a hub, Mississauga will have an recognizable centre for innovation that can serve as a go-to meeting place where people can go to access supports they need to grow their businesses, where firms can attend networking and cluster building events to meet other firms in related industries, where entrepreneurs can meet with each other to share common challenges and opportunities, and where post-secondary institutions can build linkages with the local business community.

Given that a number of viable locations have been proposed for such a centre, including Sheridan Park, Pill Hill and the city centre, it is recommended that a working group of the Mississauga Innovation Leadership Alliance examine alternatives to determine the most appropriate site. This facility could be managed by the RIC Centre, and encompass the OCE, and as well as liaison offices from UTM and Sheridan College.

**Action 4.** *Task the Mississauga Innovation Leadership Alliance with identifying two or three clusters around which to develop focused cluster strategies.*

The city benefits from having significant industry representation in a number of key sectors, including ICT, aerospace, life sciences and auto parts manufacturing. This presents an opportunity to develop cluster strategies and build linkages between sector firms so as to be able to respond locally to emerging challenges and opportunities. This potential has been recognized by both this study and the city's economic development strategy, where for example, one of the required actions calls for leveraging sector convergence with ICT and life sciences firms to capitalize on opportunities in bioinformatics. Building such networks will require the leadership of the Mississauga Innovation Leadership Alliance and the networking skills of the community-builder to bring together the relevant companies and take advantage of potential opportunities for collaboration.

**5.1.3 Developing Skills for Innovation****Action 5.** *Implement a Mississauga Talent Project comprising a series of pilot projects designed to connect and develop human capital in support of innovation.*

Attracting, creating, integrating, and enriching talent and connecting people to the right jobs in the right firms is a key driver of innovation. Building on the collective work of the Strategic Plan and the Economic Development Strategy for the City of Mississauga, and the Mayor's Jobs Summit and the Task Force on Post-Secondary Education Action Plan, it is recommended that the city launch the Mississauga Talent Project to develop, coordinate, and implement a series of pilot projects to support human capital development in Mississauga. This emphasis on developing skills and matching them to the human capital needs of local industry to drive innovation would clearly differentiate Mississauga's innovation support system from others in the region and help position Mississauga for the 'next economy'.

This will require active engagement from educational institutions and community partners, and active outreach to all sectors of the local business community to gauge labour market needs and solicit participation in talent development activities. To support this capacity-building, The Mississauga Talent Project would be overseen by the Mississauga Innovation Leadership Alliance and implemented by the new Mississauga Innovation Connections' team responsible for building connectivity in Mississauga (Figure 9). As outlined in Action 2, these staff could be affiliated and housed within the RIC which is well-positioned to align its activities with the innovation agenda of the province and the City of Mississauga. Given its knowledge of local labour markets and linkages with community-based employment services and immigrant settlement organizations, the Peel Halton Workforce Development Group could be another important strategic partner, as could the Mississauga Board of Trade, with its strong connection to the region's employers.

***Pilot 1:** a 'Talent Team' pilot program to connect individuals with relevant business and industry-specific skills to address business problems in start-up firms.*

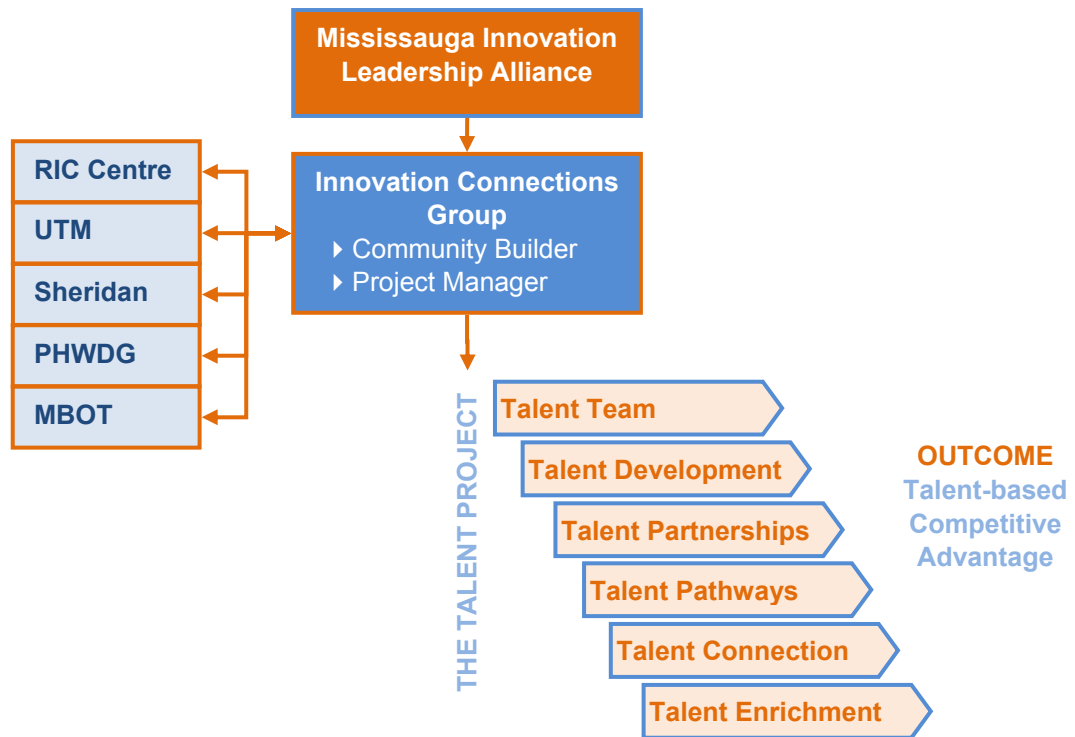
Entrepreneurial start-up firms often lack the resources to deal with business problems. The RIC Centre could identify start-up firms and the Talent Project could assemble 'Talent Teams' with appropriate skills to help address business problems in start-up firms. The Talent Team would operate on a short-term project-specific basis and be dismantled once the problem has been addressed. The Team could consist of local foreign-trained professionals and/or business students from University of Toronto Mississauga and Sheridan College, and volunteer mentors. This approach leverages existing skills in the community, provides low cost business services to start-up firms, and provides hands-on experience and network-building opportunities for participants.

***Pilot 2:** a 'Talent Development' program between the University of Toronto Mississauga and Sheridan College to explore the development of local industry-focused experiential education programs.*

As outlined in the Task Force on Post-Secondary Education Plan, there are many ways to develop linkages between local post-secondary institutions and local industry. The Talent Project could act as an intermediary between UTM and Sheridan College and local industry to expand existing programs, develop new ones, and increase the number of experiential opportunities available to students in local industry such as:

- Specialized degree programs (such as the MBiotech program at UTM that combines life sciences and business administration).
- 'Hybrid' programs for local industries such as joint college and university degree programs that combine theoretical and 'hands-on' technical experience
- Experiential co-op and internship programs at both the university and college level.

Figure 9: The Talent Project



**Pilot 3:** a ‘Talent Partnership’ program to connect business students from UTM and Sheridan College with local entrepreneurial start-up firms to support commercialization and business development.

Business students typically participate in business development projects as part of their program requirements. Business students from UTM and Sheridan could be linked with local entrepreneurial start-up firms identified by the RIC Centre to assist with and learn about the commercialization process.

**Pilot 4:** a ‘Talent Pathways’ program involving local industry, post-secondary institutions, and secondary schools to create interest in and develop careers pathways for jobs needed by local industry beginning in high school.

A critical part of building a local talent pool is to attract students into industry-specific occupations as early as possible. The Talent Project could work with local industry clusters, post-secondary education institutions and secondary schools to educate and inform high school students about careers in science, technology, engineering and math (STEM) and how to develop career pathways to ensure that they acquire the right education and skill sets.

**Pilot 5:** a ‘Talent Connection’ program involving local industry and local networks of immigrant employment and settlement organizations to connect foreign-trained professionals with jobs that use their skills.

TRIEC and the Peel Halton Workforce Development Group (PHWDG) are building networks to help foreign-trained professionals find jobs that make use of their skills in the local economy. The Talent Project could act as the intermediary to link local employers with employment and other community-based organizations that support immigrants.

***Pilot 6:** a ‘Talent Enrichment’ program involving local employers and post-secondary educational institutions to identify opportunities and develop customized programs for skills upgrading for employed workers.*

In order to make productive use of constantly changing technologies, the skills of employed workers also need to be kept up to date. UTM and Sheridan College can provide training and education programs customized to industry needs.

**Action 6.** *Hire interns to assist with the community-building work of the Talent Project.*

Building the community connectivity to support innovation in Mississauga will require many people working together to support the development of an ‘innovation culture’ in the city. There are numerous marketing tools and social networking media that can be used to support this process. Interns from UTM and Sheridan College could be hired to implement these types of networking tools.

#### **5.1.4 Leverage Existing Innovation Infrastructure**

Given its current role in supporting entrepreneurs and SMEs, the RIC Centre is best positioned to undertake the following recommendations. In making these recommendations, however, it is recognized that the RIC Centre is fully committed under its current mandate. As such, for these actions to be followed through, an expanded mandate will be required along with additional resources.

**Action 7.** *Identify incubation, lab and other specialized R&D space within established firms or underutilized industrial properties that can serve the needs of start-ups and SMEs.*

The service provides start-ups and SMEs with access to the cost competitive space that they required to succeed in their innovation efforts without the expense of establishing a new incubator or specialized lab space. It takes advantage of the fact that the city has companies that are currently providing incubation and mentorship support for start-ups and of the existence of vacant or underutilized industrial properties that could be made available on a short term basis. Depending on demand, there is a role for the RIC Centre, in collaboration with the community builder to expand the number of firms that could host and mentor start-ups on their premises.

**Action 8.** *Establish a Research Exchange with Sheridan College and UTM that identify opportunities for accessing specialized research equipment and collaborative research opportunities.*

This research exchange would be a user-driven ‘web 2.0 service’ maintained by the RIC Centre that would allow postsecondary researchers to post information on opportunities for sharing equipment and local firms to post information on technical problems that could benefit from research collaboration. As a user-driven information service, as opposed to a comprehensive database that readily becomes outdated, posted opportunities remain current with minimal upkeep required by the RIC Centre.

By advertising opportunities for sharing equipment and engaging in collaborative research, the research exchange would support outreach with the community and help maximize the potential value of UTM and Sheridan College.

**Action 9.** *Engage Sheridan College, IRAP and other relevant stakeholders to take advantage of the new funding programs for industry-postsecondary collaboration to leverage existing physical assets, resources and capabilities at the college so as to serve the unmet needs of manufacturing establishments in Mississauga.*

As noted in Section 2.2.3, both the federal and provincial governments have established new funding programs that support college-industry collaborative R&D. It is recommended that the RIC Centre together with IRAP and other suitable organizations work with Sheridan College to look for opportunities in industry that can be acted on with the support from these programs.

**Action 10.** *Launch a marketing campaign to showcase existing support services and foster awareness of Mississauga as a location for innovation.*

Given the relatively low level of recognition among firms of existing innovation support services, it is recommended that the city launch a marketing campaign that brings visibility to these services, the RIC Centre and to innovation in Mississauga as a whole.

## 5.2 Implementation Plan

In implementing the recommended actions, it is important to have early successes to show effectiveness, and help build credibility and momentum. To this end, Figure 10 prioritizes each action in terms of their importance to achieving success and time frame. It is expected that this prioritization will be revisited by the MILA once it is fully established.

The **importance** criterion is a measure of the impact the action is expected to have to achieving success in driving innovation. It is judged on a three point scale of high, medium and low.

The **timeframe** criterion is a measure of how quickly the action should or can be implemented. It is judged on a two point scale of short term (within a year) or medium term (1 year to 3 years).

The **cost** criterion is a measure of the new public investment that will be required to implement the action. It is judged on a three-point scale of low cost (under \$50,000), medium cost (\$50,000 - \$500,000) and high cost (over \$500,000).

As indicated in Figure 10, a number of lead and partner organizations are identified. These are as follows:

- Economic Development Advisory Council
- Mississauga Board of Trade
- Mississauga Innovation Leadership Alliance (MILA)
- Peel-Halton Workforce Development Group (PHWDG)
- RIC Centre
- Sheridan College
- The City of Mississauga Economic Development Office (EDO)
- University of Toronto at Mississauga (UTM)

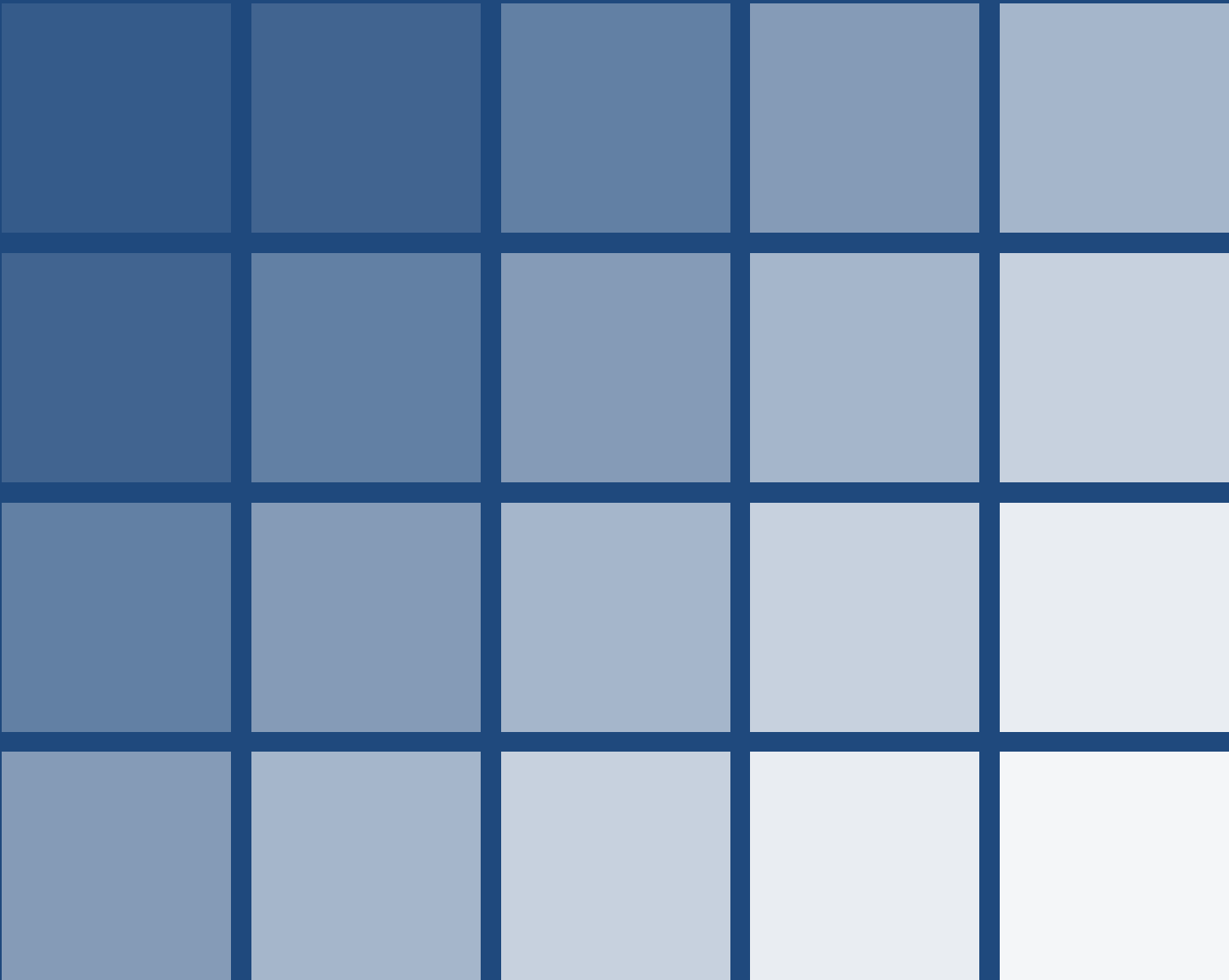
### **5.3 What Success Will Look Like**

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A critical shift in the business culture of Mississauga to one that embraces innovation will be the ultimate indicator of success. Indeed, it is this transformation in culture that will ensure that Mississauga can continually adapt to, and prosper from, the economic change that is inherent to a global economy. Fundamental, however, to the creation of a vibrant innovation culture is strong and sustained leadership from the MILA. To track progress towards building such an innovation culture, the MILA should be tasked from the outset to develop a set of relevant indicators that capture the different aspects of innovation culture and connectivity within the Mississauga community.

**Figure 10: Priorities and Responsibilities**

ACTION	PRIORITY	IMPACT	TIMEFRAME	COST	LEAD	PARTNERS	FUNDERS
Action 1: Establish a Mississauga Innovation Leadership Alliance comprising leaders from the private sector, postsecondary institutions and the city that can provide strategic direction, support and commitment to overseeing initiatives designed to strengthen the innovation economy in Mississauga.	1	High	Short term	Low	Mayor	RIC Centre, EDAC, MBOT, MRI	MRI / City
Action 2: Hire a minimum of three resources that can animate and implement the initiatives identified by the Mississauga Innovation Leadership Alliance.	1	High	Short Term	High	EDO	RIC Centre	MRI / City
Action 5: Implement a Mississauga Talent Project comprising a series of pilot projects designed to connect and develop human capital in support of innovation.	1	High	Short Term	Medium	MILA	RIC Centre, PHWDG, MBOT	-
Action 10: Launch a marketing campaign to showcase existing support services and foster awareness of Mississauga as a location for innovation.	1	Medium	Short Term	Medium	RIC Centre	EDO	RIC Centre / EDO
Action 3: Establish a go-to hub where people involved in innovation can meet regularly.	2	Medium	Medium Term	High	MILA	RIC Centre, EDO	MRI / City
Action 4: Task the Mississauga Innovation Leadership Alliance with identifying two or three clusters around which to develop focused cluster strategies.	2	Medium	Medium Term	Medium	MILA	RIC Centre	-
Action 7: Identify incubation, lab and other specialized R&D space within established firms or underutilized industrial properties that can serve the needs of start-ups and SMEs.	2	Medium	Medium Term	Low	RIC Centre	MILA	RIC Centre / MRI
Action 8: Establish a Research Exchange with Sheridan College and UTM that identify opportunities for accessing specialized research equipment and collaborative research opportunities.	2	Medium	Medium Term	Low	RIC Centre	UTM / Sheridan College	RIC Centre / MRI
Action 9: Engage Sheridan College, IRAP and other relevant stakeholders to take advantage of the new funding programs for industry-postsecondary collaboration to leverage existing physical assets, resources and capabilities at the college so as to serve the unmet needs of existing manufacturing establishments in Mississauga.	2	Medium	Short Term	Low	RIC Centre	Sheridan College / IRAP / OCE	-
Action 6: Hire interns to assist with the community-building work of the Talent Project.	3	Low	Medium Term	Low	MILA	RIC Centre	-



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