**Action Plan for
Knowledge and Talent**

Inventing
Montréal

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Introduction

With its high-quality network of higher-education institutions and research centres, Montréal Is recognized as a city of advanced knowledge and talents.

Over the years, the deepening connection between the City and its higher-education institutions has manifested itself in a variety of initiatives: funding for research, support for infrastructure projects, networking among research communities, industry, and municipal departments, and so on. This demonstrates the importance ascribed to university institutions as regards their fundamental role in enhancing economic development and in ensuring the international reputation of our metropolis.

The Action Plan for Knowledge and Talent has been designed in continuity with those existing initiatives. It also proposes new avenues for action. To meet the various urban challenges of our time, the City of Montréal must evolve into a learning organization with the ability to introduce new practices and become an inspiring model for the future.

Making Montréal into a "laboratory city," stimulating innovation and mobilizing talents within municipal bodies and in the community at large are keys to successfully contributing to the city's economic, social and cultural development.

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Vision

Montréal, a hub of innovation, talent, and economic, entrepreneurial, international, sustainable and social development

The 2018–2022 Economic Development Strategy in Brief

This strategy coincides with a promising economic climate for the city

Montréal's economy has never been so vibrant, dynamic and progressive. Employment has reached record levels, and the city is attracting more and more talent, investment and innovative businesses.

The city has unmistakable assets when it comes to quality of life, innovation, talent, in an array of promising sectors. This economic development strategy builds on Montréal's strengths to fully take advantage of the opportunities afforded by environmental, social, and economic trends such as changing demographics and climate change.

Moreover, with its newly recognized status as the metropolis of Québec, Montréal has been granted new powers enabling it to better fulfil its role as an economic driver and integrate more economic development initiatives locally.

Montréal faces a number of economic challenges, however, which it must overcome in order to keep up its momentum:

- Access to and matching of the available labour force with companies' current and future requirements;
- Strengthening entrepreneurship to support business creation, growth, and succession planning;
- Commercialization of discoveries and innovation;
- Improving the economic reach and influence of Montréal and the international development of its businesses;
- Stimulation of economic centers and support for the integrated approach to territorial economic development;
- Consistency and co-ordination of all economic development initiatives;
- Increasing the client focus as part of the city's economic development.

Five Guidelines to Accelerate Montréal's Economic Development

Focus on know-how and talent

Objectives:

- Reinforce work skills to improve economic productivity;
- Ensure the attraction and retention of talent;
- Improve the match between the needs of businesses and available workers.

Stimulate entrepreneurship

Objectives:

- Stimulate business creation;
- Support the growth of small and medium-sized businesses;
- Increase the rate of survival among businesses and support succession planning.

Rejuvenate economic centres

Objectives:

- Transform and densify industrial zones by favouring quality amenities and attractive settings;
- Improve the accessibility and the mobility of people and goods to centres of employment;
- Ensure industrial complementarity and synergy, and highlight the territory's economic advantages;
- Boost retail and local business.

Boost Montréal's international reputation

Objectives:

- Reinforce the City of Montréal's reputation as a place of business;
- Ensure the development of Montréal businesses on international markets;
- Draw foreign investment to the city.

Ensure a powerful economic development network

Objectives:

- Ensure a client-focused approach;
- Enhance the City of Montréal's internal processes to boost the productivity of economic development programs and services;
- Reinforce Montréal's economic development ecosystem

Five High-Potential Sectors to Uphold the Guidelines of the Economic Development Strategy

The aim of the economic development strategy is to ensure ideal conditions for growth across all sectors of Montréal's economy. It prioritizes five high-potential sectors that will allow Montréal's economy to be more forward-looking and competitive, and make more productive use of city resources.

Because these five sectors are cross-cutting, supporting them will strengthen other sectors as well as future niches.

Cultural and Creative Industries

As a mainstay of Montréal's distinctive identity and character, the cultural and creative industries are a meeting point for creativity, culture, technology, and innovation. These industries include architecture and design, fashion, multimedia and video games, digital arts as well as traditional visual and live arts:

- Close to 92,000 jobs and $8.6 billion in annual economic benefits to the Greater Montréal Area.[1]

Life Sciences and Health Technologies

The life sciences and health technology sector encompasses activities ranging from research to product and service development, including medical equipment manufacturing, research and development (R&D) services, and pharmaceutical distribution.

- In Montréal, this sector represents 40,000 jobs, or 80% of direct jobs in life sciences, along with 65% of Québec GDP in the sector.[2]

Digital Industry

The digital industry, at the root of innovation sectors, provides leverage for attracting both domestic and foreign investment. Increasingly widespread, it has proliferated through all other activity sectors, allowing new business models to emerge. Its primary sub-sectors are artificial intelligence and deep learning, virtual augmented reality, big data, advanced manufacturing, software and IT services, as well as telecommunications services:

- More than 100,000 jobs in the city, or 8% of Montréal jobs overall, and 72% of jobs in information and communication technologies (ICT) across Québec[3];

- $12 billion of Québec's GDP is generated by the ICT sector.[4]

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1   Chamber of Commerce of Metropolitan Montréal (CCMM), *The creative industries: Catalysts of wealth and influence for Metropolitan Montréal*, 2013.

2   Montréal InVivo, Window on the life sciences in Greater Montreal, 2013.

3   Techno Montréal, Profil des TIC, 2014.

4   *Ibid.*

Mobility and Transport

Serving most economic sectors, including public transport, manufactured goods, distribution centres, wholesale and retail trade, e-commerce, and last-mile delivery, this key industry combines all modes of transport and their disparate logistics. The development of new sustainable and intelligent transport systems is an opportunity to strengthen Montréal's place within the industry:

• 63,000 jobs in the Montréal agglomeration in 2015 [5];

• $6.1 billion of the agglomeration's GDP in 2014.

Cleantech Sector

An emerging and fast-growing sector, cleantech reconciles economic growth with environmental performance. Ensuring the transition to a low-carbon economy, this sector promotes innovation through the creation of products and services that impact other sectors of economic activity, while fostering the creation of innovative companies. The cleantech sector consists primarily of green chemistry, energy efficiency, renewable energy, sustainable mobility, waste management, water management, remediation of contaminated sites, treatment of ambient air, etc.:

• 120 foreign subsidiaries employing more than 15,300 people;

• 60% of jobs in the cleantech sector are based in Montréal.

5 Montréal en statistiques, *Profil sectoriel : Transport et entreposage* (SCIAN 48-49), juillet 2017.

Five Overall Indicators targeted by the Economic Development Strategy for 2018–2022:

Achieve an **employment rate** in the Montréal agglomeration of 65% of the population aged 15 and over by 2022 (2017: 61%)

Increase the share of **full-time employment** in total employment for the agglomeration to 82% (2017: 81%)

Reduce the share of the population aged 15 and over without a **high school diploma** in the Montréal census metropolitan area (CMA) to no more than 12% by 2022 (2017: 15%)

Achieve a **university graduation** rate among the population aged 15 and over in the CMA of at least 32% by 2022 (2017: 29%)

Increase the **employment rate of immigrants** aged 25 to 54 in the agglomeration to at least 80%, thereby reducing the gap between the employment rate of immigrant populations and those born in Canada (2017: 78%)

8 Action Plans to Achieve the Vision and Objectives of the Economic Development Strategy

Action Plan for Entrepreneurship

Action Plan for an Efficient Network

Action Plan for Design

Action Plan for Knowledge and Talent

Action Plan for International Economic Affairs

Action Plan for Social Innovation

Action Plan for Commerce

Action Plan for the Economic Development of the Territory

Bringing knowledge to the fore and ensuring the availability of talent are core challenges for Montréal's economic development

- The Action Plan for Knowledge and Talent directly addresses the goals of the "Focus on Know-How and Talent" orientation stated in the Economic Development Strategy;

- It acts in cross-cutting fashion with the other orientations and priority sectors of the Strategy;

- It aims to maximize the rich potential of the city's innovation ecosystem, comprising, among other things, a network of high-quality institutions of higher learning that includes 11 universities, 12 CEGEPs and 10 College Centres for Technology Transfer;

- A further goal is to support high-potential initiatives targeting availability of skilled labour so as to properly meet the needs of companies and define Montréal's economic growth.

Action Plan
for Knowledge
and Talent

Summary of the Action Plan

Area	Strategies
1 **Develop talents and knowledge**	• Support for employability projects developed in the priority sectors as well as in traditional sectors undergoing change • Closer alignment of the various service offerings of the PME MTL Network • Standardization of the quality of employability services provided by the PME MTL Network • Making Montréal into a research-driven city generative of talent and knowledge
2 **Propel Montréal as a living lab**	• Support for collaborative projects in research and innovation between the City and its partners • Stimulation of research and innovation within City departments • Encouraging the valuing and commercialization of innovations
3 **Enhance Montréal's reputation as a centre of knowledge and talent**	• Promotion of Montréal as an international university and higher-learning city
4 **Support entrepreneurship in higher-education institutions**	• Optimization of the entrepreneurial potential of Montréal's higher-education institutions

Knowledge and talent in Montréal

Bringing knowledge to the fore and developing talent: a long-standing priority for the City of Montréal

In 1989, the City acknowledged the contribution of its universities to Montréal's economic, cultural and intellectual development in the publication Montréal, ville universitaire ("Montréal, a university city"). From that moment forward, the knowledge economy was given priority in the City's economic development initiatives.

The importance of positioning Montréal as an international-scale city of learning, knowledge and innovation found broad consensus at the 2005 Montréal Summit. To support that strategic guideline, the City, in partnership with Montréal International and the Conseil régional de développement de l'île de Montréal (CRDIM), established an advisory committee tasked with recommending courses of action to optimize Montréal's potential as a city of advanced knowledge and to support talent development.

In June 2017, the City of Montréal, the rectors and principals of its universities, and representatives of local CÉGEPs signed a five-year agreement stating the willingness of the City and its higher-education institutions to collaborate and contribute to the economic and social development of the city. The agreement acknowledges and promotes the benefits provided by the significant presence of institutions of higher learning in the city, and calls for the implementation of mechanisms for optimizing and strengthening the connections between the City and those institutions.

This Action Plan for Knowledge and Talent builds on the ongoing efforts made to support the innovation ecosystem, acting both on development of knowledge and transfer of research results (**knowledge**) and on the presence of skilled labour responsive to the needs of businesses (**talent**).

Montréal, City of Higher Learning

Distinguishing traits of a knowledge city include the wealth of knowledge acquired, essentially structured around its higher-education institutions, research centres, and businesses. They also include the city's vibrancy and ability to transform new knowledge into economic and social value.

Montréal boasts firm foundations on which to strengthen its positioning as a city of higher learning. Its innovation ecosystem comprises, among other assets[6]:

- A network of high-quality postsecondary institutions made up of 11 universities, 12 CÉGEPs and 10 College Centres for Technology Transfer (CCTTs);

- More than 150 centres and 1,500 institutes active in research and development;

- More than 5,600 university researchers generating some $1.2 billion in university research investment per year, making Montréal the leading centre of university research in Canada;

- Nine metropolitan clusters[7] bringing together business associations, sector-based labour force committees, and the research and education community;

- The soon-to-be-implemented AI-Powered Supply Chains Supercluster (SCALE.AI), which will bring the retail, manufacturing, transportation, infrastructure, and information and communications technology sectors together to build intelligent supply chains;

- Leading-edge sectors driving a comprehensive innovation structure with experts collaborating internationally;

- Between 1,800 and 2,600 start-ups, placing Montréal among the world's top 20 cities for start-up ecosystems.

The leveraging effect of this innovation ecosystem, however, is not fully optimized:

- Creation of economic value through innovation depends on the transfer of new knowledge to companies able to profit from it. In Montréal, commercialization of innovations has yet to reach its full potential, in spite of the predominance of research and development activity in the city;

- The level of communication and sharing of knowledge between researchers and business, and between researchers and City of Montréal departments, remains insufficient.

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6   ww.hec.ca/en/about/montreal-city-of-knowledge/index.html; www.tourisme-montreal.org/meetings/2013/09/05/montreal-city-of-knowledge

7   Aerospace, Aluminum, Clean Technology, Fashion, Film and Television, Financial Services, Information and Communications Technology, Life Sciences, Logistics and Transportation.

Montréal, City of Talent

In the new knowledge-based economy, the competitive ability of companies—especially those in high-tech sectors—depends on the availability of skilled labour and on those workers' capacity for innovation. Cities' economic prosperity is therefore largely dependent on how successfully they develop qualified labour as well as attract, retain and integrate talented individuals.

Montréal has great strengths in this area. The 2018 Nestpick Millennial Cities Ranking[8] places Montréal second among the world's 110 largest cities for attractiveness to the Millennial demographic. This is excellent for Montréal, whose economic growth will be increasingly dependent on its ability to attract and retain young workers.

In 2017, Montréal was number one in the Quacquarelli Symonds Institute ranking of the World's Best Student Cities. It is among the global leaders for graduation rates in leading-edge sectors.

There are challenges, however:

- The pool of workers is shrinking, because of weak demographic growth and the aging population, and this will remain a major issue in the years to come. Given that context, efforts to retain the 33,000 foreign students who study in Montréal each year (the largest body of foreign students anywhere in Canada) must be maximized;

- Another key factor is improving integration of immigrants into the labour market. Research on this subject conducted by the Organization for Economic Cooperation and Development (OECD)[9] found that Montréal ranked last among the 15 North American cities studied. According to the Québec Ministry of Finance, if the employment rate among 50,000 new immigrants were equal to that among people born in Canada, Québec's GDP would grow by 0.75%;

- Montréal has the lowest labour productivity among comparable American cities[10];

- The majority of the enterprise base consists of very small businesses that are not particularly innovative, which hampers creation of quality, durable jobs[11];

- It is increasingly difficult to recruit specialized workers. Graduation rates in Montréal in science, technology, engineering, and mathematics are the lowest among comparable Canadian cities;

- The dropout rate remains high. In 2014, 18.1% of young Montrealers dropped out of secondary school before completing their diploma requirements.[12]

8 https://www.nestpick.com/fr/millennial-city-ranking-2018/.

9 OECD, City of Talent Montreal – An Action Plan for Boosting Employment, Innovation and Skills, OECD-LEED, Montréal, 2017.

10 Communauté métropolitaine de Montréal.

11 OECD, op cit.

12 http://www.reseaureussitemontreal.ca/perseverance-a-montreal/perseverance-et-decrochage/decrochage-scolaire/.

Foundations of the Action Plan for Knowledge and Talent

Principles underlying the City's action

The City of Montréal's role includes granting strategic financial support, improving collaboration and knowledge-sharing, enhancing influence on internal practices and those of partners, and promoting Montréal as a city of higher learning talent.

Its actions are supported by the following principles:

- Support concerted efforts by stakeholders;
- Be an innovative organization and a laboratory for pilot projects.

Main challenges identified in the action plan

Attracting, retaining and training talents

Given the context of weak demographic growth and difficulty recruiting workers in key sectors of the economy, talent retention is a critical challenge for ensuring the city's economic growth.

Levers of action:

- Support employability projects;
- Get stakeholders to act in concert;
- Promote Montréal internationally as a university city and a city of higher learning.

Valuing and commercializing innovations

Research intensity is a major economic asset when it comes to commercializing inventions locally. But while larger corporations have the capacity to commercialize inventions, this is not true of smaller businesses, which make up the bulk of Montréal's economic fabric.

Levers of action:

- Support the commercialization of intellectual property;
- Make it easier for SMEs to commercialize innovations;
- Support entrepreneurship in higher-education institutions.

Urban innovation and expertise

The City of Montréal is increasingly innovative in its practices and in the solutions it offers for solving urban challenges. The expertise of researchers, however, could be used to greater advantage to address the various economic, social and environmental challenges that the city faces.

Levers of action:

• Identify and document existing areas of expertise and innovations;

• Facilitate networking between researchers and municipal departments;

• Support research projects by the municipal departments.

SWOT Analysis of the Environment and Markets

Strengths

- **Presence of internationally renowned higher-education institutions and research centres**

- **Start-up ecosystem generating innovation**

- **World's Best Student City, 2017**

- **Attracts a significant number of foreign students (more than 33,000 in 2017)**

- **The highest rate of investment in research and development in Québec**

- **Specialization in high-tech and high-potential sectors such as artificial intelligence**

- **Signing of the "Montréal Reflex" framework agreement with the Government of Québec, allowing Montréal to fully play its role as a influencer**

Weaknesses

- **Low proportion of university graduates compared with other large cities in Canada and the U.S.**

- **Too many overqualified graduates for the jobs available in Montréal: the majority of positions require few intermediate- and high-level skill sets**

- **Commercialization of research lags behind**

- **Economic fabric comprised in the main of smaller business that achieve little or insufficient innovation and that operate only locally**

- **Poor retention of foreign students**

- **Little collaboration among stakeholders**

Opportunities

- **Maximize the rich potential of the innovation ecosystem**

- **Draw upon the City of Montréal as a living lab for innovation**

- **Maximize the potential multiplier effects of number of graduates, enterprise training, commercialization of innovation, and student entrepreneurship**

- **Boost Montréal's attractiveness through improved integration of higher-education institutions into City activities, including international trade missions**

Threats

- **Shrinking labour pool, attributable to weak demographic growth and the aging population**

- **Fierce competition among large cities to attract talents (researchers, students and workers in the high-tech sectors)**

- **High mobility of talents and companies, especially in the high-tech sectors**

- **Multiplication of initiatives and stakeholders relating to talent and know-how, making cohesion and convergence of actions more difficult**

A **$6.6 million** budget over four years.
4 areas of action.
18 actions.

Develop Talent and Knowledge

Developing the job skills of tomorrow, addressing a particular type of specialized labour shortage, finding innovative solutions to managing their talents, and boosting productivity are the challenges that Montréal companies must meet year after year to enhance their competitiveness and ensure their growth. The City's Economic Development department has decided to tackle this key issue, and invites its partners (sector-based organizations, higher-education institutions, employability groups, employers, labour unions, employees, government departments) and other organizations with a role to play to engage with this commitment.

AREA 1

Strategies	Actions	Performance Indicators
Support for employability projects developed in the priority sectors as well as in traditional sectors undergoing change	• Deploy initiatives targeting development of the labour force and skills required for the future, support for improving the match between businesses' needs and available workers, and integration of vulnerable individuals and those from diverse city backgrounds into the labour force • Actively play our influencer role with employability stakeholders (e.g., Emploi-Québec, Ministry of Immigration, Diversity and Inclusion) so as to help Montréal businesses tackle talent and labour issues	• Rate of creation and retention of jobs generated by the initiatives
Closer alignment of the various service offerings of the PME MTL Network	• Set up a roundtable comprising PME MTL, Emploi-Québec and the City of Montréal to identify actions necessary to ensuring a continuum of services	• Roundtable created and number of actions
Standardization of the quality of employability services provided by the PME MTL Network	• Promote best practices in talent management to the PME MTL centres	• Number of awareness activities
Making Montréal into a research-driven city generative of talent and knowledge	• Conduct a study of Montréal's positioning as to knowledge and talent in the relation to the issues and priorities identified by the higher-education institutions • Establish working groups to address the issues and challenges identified in the positioning study in collaboration with the representatives of the higher-education institutions, and ensure follow-up	• Study completed • Working groups created • Actions implemented

AREA 1

Propel Montréal as a Living Lab

Cities today face major social, economic and environmental challenges that are transforming traditional ways of living together. The contribution of higher-education institutions is essential to tackling these challenges, and it must proceed in collaboration with other economic stakeholders. Co-creation of solutions in real-world contexts is fundamental to the innovation approach needed to respond to the needs of Montrealers as well as the City's partners. The Action Plan for Knowledge and Talent will provide support for City departments and partners in their dealings with the higher-education institutions.

AREA 2

Strategies	Actions	Performance Indicators
Support for collaborative projects in research and innovation between the City and its partners	• Document and monitor research and innovation projects involving the City, its higher-education institutions (universities, colleges and CCTTs) and other partners, and draw up a profile of best practices • Develop a strategy for commercialization of intellectual property generated by collaborations among the higher-education institutions, the City and businesses • Develop an effective model for concerted action between the City and the higher-education institutions to address the issues and priorities identified • Establish monitoring of the expertise types present in the higher-education institutions with potential to address the challenges faced by the City • Strengthen connections with the Montréal ecosystem so as to generate innovation in the City	• Completion and continual updating of the best practices profile • Strategy developed and applied • Working groups created and actions implemented • List of expertise types drawn up • Number and the diversity of partnership
Stimulation of research and innovation within City departments	• Develop a funding program for research and innovation projects co-developed with the higher-education institutions and ecosystem stakeholders • Provide support and guidance to City departments and higher-education institutions in developing joint research and innovation projects	• Funding awarded • Number of meetings
Encouraging the valuing and commercialization of innovations	• Bring together researchers, businesses and non-profit organizations via various initiatives to promote the emergence of partnerships and collaborative projects	• Number of researchers and businesses brought together

AREA 2

Boost Montréal's Reputation as a Centre of Knowledge and Talent

With its 11 universities and network of colleges, Montréal is a city of knowledge and talent. A vibrant metropolis well known for its arts and culture scene, it welcomes a large number of foreign students each year. The city is also a preferred venue for research, development of new knowledge, innovation, and productive business ventures. To differentiate itself and prosper, Montréal must boost its international visibility. The actions identified for Area 3 will be organized in coordination with the Action Plan for International Economic Affairs.

AREA 3

Strategies	Actions	Performance Indicators
Promotion of Montréal as an international university and higher-learning city	• Incorporate researchers in the City's international trade mission teams • Support higher-education institutions' promotional efforts to improve attraction and retention of foreign students, in collaboration with our partners • Strengthen university co-operation and student mobility between institutions within the UNESCO Creative Cities Network	• Number of researchers taking part • Number of initiatives supported • Number of collaborations established

AREA 3

Support Entrepreneurship at Higher-Education Institutions

Entrepreneurship is a preferred career choice for increasingly larger numbers of students. It is also a means of valuing and commercializing the results of university research. Several studies have shown that entrepreneurs who complete graduate studies achieve better results and greater success. To optimize the huge entrepreneurial potential within higher-education institutions, the City's Economic Development department will help promote initiatives, and support them financially. These actions will be organized in co-ordination with the Action Plan for Entrepreneurship.

AREA4

Strategies	Actions	Performance Indicators
Optimization of the entrepreneurial potential of higher-education institutions	• Provide support for and ensure development of entrepreneurship initiatives at the City's higher-education institutions • Incorporate a higher-education component into the PME MTL Network's Financial support initiatives favouring commercialization	• Number of projects supported

AREA 4

Conclusion

This Action Plan for Knowledge and Talent acts in cross-cutting fashion with the "Montréal: Geared up for Tomorrow" Economic Development Strategy, which aims to ensure our city's leadership in the strategic sectors of the future and make it a reference for inclusive, sustainable economic growth.

Through its action plan, the City of Montréal aims to support an environment conducive to the development and transfer of knowledge to industry and to the community, and develop conditions favourable to attracting and retaining talent. The plan is also meant to serve as an inspiration, encouraging and supporting novel practices.

The consultations begun during preparations for the strategy will continue this fall, when a forum on the action plans will be held. This will provide the opportunity for all stakeholders to engage toward concerted efforts ensuring the implementation of concrete actions.

Glossary of Terms

Industry 4.0: Refers to the use of new technologies and techniques (e.g., sensors, cloud computing, big-data analysis) to improve communication between enterprise objects and/or resources (people, machines, products, customers, etc.) and in turn improve real-time decision-making.

Valuing (French: valorisation): The ascribing of value, whether commercial or not, to the expertise, knowledge and know-how of researchers, and the results of their research, to make them more accessible.

Commercialization: The exploitation for commercial purposes of any form of creative output that is protected by intellectual property rights.

Economic Development Mobilization Forum

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