MONTRÉAL SMART AND DIGITAL CITY

2014-2017 Montréal Strategy

Montréal
MONTRÉAL INTENDS TO BECOME AN INTERNATIONALLY RECOGNIZED LEADER AMONG SMART AND DIGITAL CITIES IN 2017.

AS PART OF THIS PROCESS, THE CITY AND THE COMMUNITY PLAN TO INVEST IN INNOVATIVE, GROWTH-GENERATING PROJECTS.

“MONTRÉAL, SMART AND DIGITAL CITY” IS AN AMBITIOUS PROJECT THAT BUILDS ON OUR COLLECTIVE INTELLIGENCE TO FORGE A DISTINCTIVE MONTRÉAL-BASED MODEL.

THE INSTITUTIONAL AND PRIVATE SECTORS HAVE JOINED WITH CITY WORKERS AND MONTRÉAL CITIZENS IN AN ONGOING DIALOGUE, PLAYING ACTIVE ROLES IN FORMULATING THIS STRATEGY. MONTRÉAL, SMART AND INTELLIGENT CITY, WILL BE BUILT BY OUR CITIZENS, FOR OUR CITIZENS.”

Mr. Denis Coderre,
Mayor of Montréal.
“ULTIMATELY, A SMART AND DIGITAL CITY MEANS BETTER SERVICES FOR CITIZENS, A UNIVERSALLY HIGHER STANDARD OF LIVING AND HARNESSING OUR METROPOLIS’S RESOURCES TO ENSURE ITS DEVELOPMENT IN LINE WITH THE POPULATION’S NEEDS. MONTRÉAL WILL BE A CITY THAT LISTENS TO ITS CONSTITUENTS AND THEY WILL BE AGENTS OF CHANGE.”

Mr. Harout Chitilian,
Vice Chair of the Executive Committee,
responsible for the Smart City Initiative.
BY AND FOR CITIZENS

1. Vision
   Collecting
   Communicating
   Coordinating
   Collaborating
   Establishment of the Bureau de la Ville intelligente et numérique (BVIN)

2. Listening
   Consulting:
   Citizens
   City workers
   Community
   International models
   Identifying:
   Needs, issues and priorities

3. Strategic Orientations
   Defining:
   Criteria
   Orientations
   Seeking approval:
   From decision-making bodies

4. Action Plan
   Prioritizing:
   Short-term projects
   Major projects
   Seeking approval:
   From decision-making bodies

5. Implementation and Follow-Up
   Deploying:
   Initiatives, ongoing review and key performance indicators

Spring-Summer


Ongoing dialogue with citizens

Vision
Listening
Strategic Orientations
Action Plan
Implementation and Follow-Up

Consulting:
Citizens
City workers
Community
International models

Identifying:
Needs, issues and priorities

Defining:
Criteria
Orientations

Seeking approval:
From decision-making bodies

Prioritizing:
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Major projects

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Deploying:
Initiatives, ongoing review and key performance indicators

Vision Listening Strategic Orientations Action Plan Implementation and Follow-Up
LISTENING
Analysis of the international scene

- **7 international case studies**
  - Eindhoven, Lyon, Barcelona, Toronto, Columbus, New York, Arlington

Data analysis

- **1,033,345 calls and 40,000 emails to the 311 service**
  - (year: 2013)
- **7,601 people responded to 4 surveys**

Consultations

- **190 expert participants in 2 local co-design activities**
- **203 participants in 5 town hall meetings at 5 libraries**

Listening has made it possible to:

- Define a strategic reference framework
- Identify international best practices
- Identify and prioritize citizens’ key concerns
- Prioritize focus areas
- Validate a project analysis matrix
## Summary of Main Strategic Frameworks Studied

### Main Focus Areas

<table>
<thead>
<tr>
<th>Urban mobility</th>
<th>Direct services to citizens</th>
<th>Way of life</th>
<th>Democratic life</th>
<th>Sustainable development</th>
<th>Economic development</th>
</tr>
</thead>
</table>

### Structural Components

- **High-speed telecommunication services**
- **Accessibility, availability and use of open data**
- **Open, interoperable technological architecture**
### SEVEN INTERNATIONAL CASE STUDIES

Examples of Projects Observed

<table>
<thead>
<tr>
<th>Focus Areas and Structural Components</th>
<th>City</th>
<th>Examples of High-Potential Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Way of life</strong></td>
<td>New York City</td>
<td>› Hudson Yard Project, new neighbourhood (architecture, parks, arts, culture).</td>
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<tr>
<td></td>
<td>Eindhoven</td>
<td>› Brainport Health Innovation, healthcare platform</td>
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<tr>
<td></td>
<td>Barcelona</td>
<td>› 22@Barcelona, facilitates use of public space to make tests.</td>
</tr>
<tr>
<td><strong>Direct services to citizens</strong></td>
<td>New York City</td>
<td>› City 24/7, one-stop platform integrating information from government programs, local businesses and citizens</td>
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<tr>
<td></td>
<td>Arlington</td>
<td>› Emergency Communications Center, coordinated regional emergency respond.</td>
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<tr>
<td><strong>Economic development</strong></td>
<td>Columbus</td>
<td>› TechColumbus, hub for technology entrepreneurs.</td>
</tr>
<tr>
<td></td>
<td>Eindhoven</td>
<td>› Design Connection Brainport, design consortium.</td>
</tr>
<tr>
<td><strong>Sustainable development</strong></td>
<td>New York City</td>
<td>› LED traffic signals and streetlights, with conversion of 250,000 street lamps to LED use.</td>
</tr>
<tr>
<td><strong>Telecommunication services</strong></td>
<td>Toronto</td>
<td>› Waterfront, redevelopment of Lake Ontario shoreline and ultra-high speed Internet access.</td>
</tr>
<tr>
<td><strong>Urban mobility</strong></td>
<td>Lyon</td>
<td>› Optimod’Lyon, integrated platform for innovation on multimodal urban mobility.</td>
</tr>
</tbody>
</table>
Prioritized Focus Areas

Urban mobility

Direct services to citizens

Way of life

Democratic life

Economic development

Citizens’ Primary Concerns

Difficult to get around

Inadequate supply of direct digital services to citizens.

Virtual absence of physical or virtual platforms to talk about, experiment with, test or learn about solutions to urban issues.

Access to democratic life issues. Culture of transparency and accountability must be enhanced.

Support for wealth and job creation, high-potential future sectors and the community’s economic momentum.

Corroborated by

Priority #1: Web and phone surveys

Priority #3: SOM, Web and phone surveys

Consistently brought up in all town meetings and co-design activities

Priorities #1 and #2: SOM and intercept surveys

Only 18% of participants thought the economy has had a positive impact on their quality of life
KEY FORCES IN INNOVATION
MONTREAL’S INNOVATION ASSETS

10 — Living Labs
$21 B — Annual sales by technology firms
5,000 — IT firms
TOP 21 — 2014 Intelligent Community Forum
92,000 — IT jobs

Innovative Montréal

11 — Academic institutions
10 — Business accelerators
750 — Free Wi-Fi hotspots
171,000 — University students
TOP 10 — 2013 UBM’S Future Cities
150 — Research centres
5,120 — Self-service bicycles
40,000 — Aerospace jobs
8 — Industrial clusters
1 — Fab Lab

$21 B Annual sales by technology firms
5,000 IT firms
92,000 IT jobs
171,000 University students
5,120 Self-service bicycles
40,000 Aerospace jobs
3

STRATEGIC ORIENTATIONS
DEVISING AND DEVELOPING AN OUTSTANDING QUALITY OF LIFE AND A PROSPEROUS ECONOMY WITH AND FOR CITIZENS THROUGH COLLABORATIVE INNOVATION PROJECTS, STATE-OF-THE-ART TECHNOLOGY AND A BOLD NEW APPROACH, COMBINED WITH MONTRÉAL’S TRADEMARK CREATIVITY.
MONTRÉAL’S STRATEGIC FRAMEWORK

5 Focus Areas

- **Economic development**: Promote growth of a leading-edge sector by employing the smart city strategy as a catalyst for bringing the project to fruition and as an engine of economic development.
- **Urban mobility**: Optimize mobility throughout the island in real time.
- **Direct services to citizens**: Increase the provision of direct digital services to citizens and businesses.
- **Way of life**: Develop spaces supporting urban innovations and diminish the digital divide.
- **Democratic life**: Improve access to democratic life and bolster the culture of transparency and accountability.

4 Structural Components

- **Telecommunications**: Develop ultra high speed multiservice telecom infrastructure.
- **Open data**: Release and use prioritized open data.
- **Architecture**: Create an open, interoperable technological architecture.
- **Community**: Develop, in co-creation with the community, solutions to urban issues.
Develop ultra high speed multiservice telecom infrastructure

1. Give citizens free public Wi-Fi across the island
2. Support access to ultra high speed last mile telecom services for homes and businesses
3. Include telecom networks in city planning, particularly in the urban plan and project charters
Get the most value from open data prioritized under the strategy and develop apps facilitating the lives of citizens (such as a MTL SnowInfo App).

Encourage sharing and analysis of open data (from the boroughs, the urban agglomeration, the CMM and public/parapublic partners).
<table>
<thead>
<tr>
<th>Structural Components</th>
<th>Architecture</th>
</tr>
</thead>
<tbody>
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<td>Create an open, interoperable, technological architecture</td>
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</table>

› Define a technological architecture that will promote system decompartmentalization and data flow, including third parties

› Use the Three-Year Capital Program (3-YCP) to upgrade the city’s IT infrastructure and permit better sharing of its data, especially with partners.
Engage businesses, public institutions, universities and citizens in finding and testing solutions to daily problems.

Develop solutions to urban issues in co-creation with the community.
Optimize travel across the island in real time

Collect, process and disseminate travel information in real time to:

- Improve the flow of all kinds of transportation (public transit, alternative, individual, intermodal and freight).

- Let people optimize their trips in real time by providing them with all useful information (public transit schedules, construction site locations, traffic and accident reports, detours, blockages, etc.)
Increase the availability of digital municipal services (permits, taxes, 311, jobs, library schedules, etc.) to citizens and businesses:

- Give citizens and businesses more freedom to use municipal services
- Provide an integrated user experience to citizens who communicate digitally and non-digitally with the city.
7. Develop spaces supporting urban innovations and diminish the digital divide

› Create “public innovation laboratories” enabling citizens and businesses to test new public services in their beta phases.

› Set up workshops to teach citizens about using these new apps.
Improve access to democratic life and strengthen the culture of transparency and accountability

› Through new technologies, provide better access to all forums for public discussion, in terms of participation and information

› Improve distribution of the city’s KPIs (budgets, financial statements, project monitoring, service level targets, etc.) and develop new tools for presenting this information
Support growth of a leading-edge sector using the smart city initiative as a catalyst for bringing the project to fruition and as an engine of economic development.

Maximize the economic benefits generated by the smart city initiative:

- By stimulating local businesses
- By attracting top companies
- By promoting networking between the research, industrial, venture capital, institutional investor and start-up sectors to build on Montréal’s existing expertise so it becomes a world leader.
NEXT STEPS
DEFINE AND ROLL OUT THE INITIATIVE

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   Communicating
   Coordinating
   Collaborating
   + Establishing the Bureau de la Ville intelligente et numérique (BVIN)

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   Deploying:
   Initiatives, ongoing review and key performance indicators
   Ongoing dialogue with citizens

Timeline:
- Spring–Summer 2014
- Oct. – Nov. 2014
- Nov. – Dec. 2015
- March 2015
MUNICIPAL LEADERSHIP IN PROJECTS

Project Promoter

Project Facilitator

BVIN*

Project Support

*Bureau de la ville intelligente et numérique
FORMULATION OF ACTION PLAN

232 Ideas
- 2014

Prospective projects
- January and February 2015

Prioritized projects
- February and March 2015

Action plan
- March 2015

- Citizens
- I see mtl
- Models of international initiatives
- Formulation of projects with stakeholders
- Start-up of short-term projects
- Project charters
- KPIs and goals
- Submission of plan
4 PROJECT SELECTION

Selection Criteria

Projects Reviewed

1. Impact on structural components
2. Contributions to stated strategic orientations
3. Scope (impact on citizens)
4. Cost-effort-return on investment
5. Short or long-term implementation period

Selected Projects
IMPLEMENTATION AND FOLLOW-UP
**MONITORING PROJECT PROGRESS**

Project progress will be posted to the BVIN site

<table>
<thead>
<tr>
<th>Needs</th>
<th>Prototyping</th>
<th>End-to-end prototyping</th>
<th>The service is officially launched</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmarking in conjunction with stakeholders</td>
<td>Modification of scope</td>
<td>Public trials</td>
<td>Feedback mechanisms</td>
</tr>
<tr>
<td>Tests</td>
<td>Corrections</td>
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</tr>
</tbody>
</table>

Discovery → Alpha → Beta → Fully operational
HEARD AT CONSULTATIONS

Urban mobility

› Issue #1 of the convergence activity.

Direct services to citizens

› A city that provides accessible and effective services.
› An urban laboratory in which citizens can test new products and services.
› Issue #3 of the convergence activity: hygiene, maintenance, garbage pickups and snow removal.

Economic development

› A city that develops services enabling small and medium-sized businesses to grow and create jobs.
› A city that supports immigrants and job seekers.
› A city that pools its resources more efficiently to generate collective wealth (fab labs and virtual spaces).

Democratic life

› A city that makes citizens part of the public decision-making process.
› A city that benefits from digital resources to increase its transparency.
› A city that brings together citizens, elected officials and the decision-making process
› Issue #2 of the convergence activity

Sustainable development

› The sustainable development concept was mentioned as being notably absent during the convergence activity.

Way of life

› A city that explores new forms of creation involving citizen participation to improve the built environment, the cityscape, our local communities, etc.
› A city that centralizes cultural information.
› A city that uses digital applications to enhance and promote its heritage (architectural, historic, intangible, etc.).
FACTS AND FIGURES

Urban mobility
- Priority #1 (Web survey\(^1\)).
- Priority #1 (phone survey\(^2\)).
- Priority #4 (SOM survey).
- More ideas submitted.
- Traffic congestion is a big problem (2010 AMT survey).

Democratic life
- Priorities #1 and #2 (survey by post-event intercept survey\(^3\)).
- Priorities #1 and #2 (SOM survey).
- Satisfaction with information access services: 4.3/10 (2012 SOM\(^4\)).
- Perception of how city informs citizens about municipal project and services: 5.5/10 (2013 SOM\(^4\)).

Direct services to citizens
- Priorities #3 and #4 (Web survey\(^1\)).
- Priorities #3 and #4 (phone survey\(^2\)).
- Priority #3 (SOM survey).
- Service quality below expectations of 61% of constituents (2013 SOM\(^4\)).
- 32% of citizens have trouble finding information on the city’s site (2013 SOM\(^4\)).

Sustainable development
- 18% believe development of green spaces, recreational facilities and access to the shorelines and rivers should be a priority (SOM 2013\(^4\)).

Economic development
- 18% of citizens believe the evolution of economic growth and job growth have had a positive impact on their quality of life (2012 SOM\(^4\)).
- 70% of businesses believe the metropolitan area is not as competitive as it was 5 years ago (2012 CCMM survey).

Way of life
- Priority #4 (survey by post-event intercept survey).
- City administration’s priority: 30% say affordable housing (2013 SOM\(^4\)).
- City administration’s priority: 21% says urban and land-use planning (2013 SOM\(^4\)).

\(^1\)Web survey of October 31, to November 12, 2014 on the city’s site.
\(^2\)Phone survey conducted from November 10 to 14, 2014.
\(^3\)2014 Callosum intercept survey.
\(^4\)2013 SOM survey conducted from November 25-29, 2013.
\(^5\)2012 SOM survey conducted from November 14 to 21, 2012.
SOM survey .................................................. November 14-21, 2012
SOM survey .................................................. November 25-29, 2013
Web survey .................................................. October 31-November 12, 2014
Phone survey .................................................. November 10-14, 2014

In the following libraries:
Du Boisé ...................................................... November 2, 2014
Mile End ...................................................... November 8, 2014
Maison culturelle et communautaire ........................................ November 9, 2014
Frontenac ..................................................... November 15, 2014
Marc-Favreau ................................................ November 16, 2014
Co-design Entretiens Jacques-Cartier ........................................ October 5, 2014
Co-design Centre Phi .......................................... November 23, 2014
3-YCP: Three-year capital program. Planning of municipal investments over three years.

ACCELERATOR: Generally, a for-profit business operated by venture capital investors to generate returns on investments in client firms. Accelerators provide a range of services to businesses at the start of their growth, including financial support, advice on business, office space, development and additional services provided through partner organizations. Source: Adapted from the Canada National Research Council

API: Interface containing functions required for application development. Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française

CMM: Community métropolitaine de Montréal

CO-DESIGN: Process of developing a typically innovative product or service involving the final user. Source: Adapted from wikipedia.org

DIGITAL DIVIDE: The digital divide is associated, in particular, with growing inequality of access to computing technology and the Internet, as well as disparity of income level, geographic location and ethnicity. Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française

DIGITAL LITERACY: Set of reading/writing knowledge (or by extension, in IT) enabling a person to function effectively in society. Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française

FAB LABS: A fab lab (from “fabrication laboratory”) is a site in which members of the public can use a host of tools, such as computer-controlled machine tools, to design and produce objects. Source: Adapted from wikipedia.org

INCUBATOR: Generally, an NPO that provides services similar to those of an accelerator, but tends to spend more time on the businesses. An incubator provides a broader range of services in terms of facilities and coaching services. Incubators are often sponsored by universities, colleges and economic development agencies. Source: Adapted from the Canada National Research Council

INTEROPERABLE: Ability of heterogeneous computer systems to work together, through the use of shared languages and protocols and to provide reciprocal access to their resources. Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française

LAST MILE: Set of agents, operations and associated equipment used for a telecom network’s final distribution segments. Source: Adapted from wikipedia.org

MULTIMODAL: Movement of passengers or freight involving different successive modes of transportation. Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française

PROTOTYPING: Prototyping is the process involved in producing a prototype. The prototype is an incomplete and not final model that could be the product or final object. Source: Adapted from wikipedia.org

ULTRA-HIGH SPEED: The ultra-high speed Internet service generally provided over fibre optic lines.