Catalyzing Innovation in the Mobility Sector

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MaRS Discovery District
Toronto, ON, Canada
Overview

- Unprecedented Urban Growth being experience today
  *For example: GTA’s population projected to grow by 42.3% or 2.9 million people by 2041* (Ontario Min. of Finance 2016)

- More than **one-third of all Canadians**, 35.5%, live in the three largest census **metropolitan areas of Toronto, Montreal and Vancouver** (2016, Stats Canada).

- This Growth is driving transportation challenges around
  A. **Congestion**: quality of live & economic cost
  B. **GHG emissions**: largest & fastest growing source of emissions
  C. **Transportation Access and Equity**: congestion, time and cost disproportionately impact vulnerable populations

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Impacting people unfairly

MaRS stakeholder engagement and user research is showing that transportation and congestion is unfairly impacting:

- Mothers who don’t see their children before they go to bed
- Students decide their future by selecting courses and even schools based on when and where they have transportation options available
- Patients whose quality of health care and even lives depend on their access to transportation options
- Youth and low income workers whose ability to work is determined by the availability of affordable and reliable options to get to work
Innovative Mobility Solutions

- Convergence in IT, GPS, mobile, communications and transportation technologies is driving huge investments in the development of innovative mobility products and services. We have:
  - MaaS solutions: Car pooling/sharing, Ride hailing/sharing
  - Multi-modal solns/platforms: almost everyone is building a multi-modal mobility platform (bike sharing, ride sharing, transit companies – regional, municipal etc.)
  - AVs/CVs

All of these technologies are looking to generate evidence for why they are useful/what value they add – to consumer, to society, to the economy.

For that they need: datasets & models, early adopters, enabling policy environments and the creation of new market and business models.
Challenges in Canada Today

A. **Multiple levels of govt:** Fragmented market, complex regulations and limited partnerships, Province, Regional Planning Agencies, Regional transportation agencies, municipal companies & shareholders etc.

B. **Policy makers - lack of clear policy direction due to absence of information & evidence** around impact of new mobility solns:
   i. Safety
   ii. Transit
   iii. Congestion
   iv. Access and Equity

C. **Limited coordinated design and delivery projects** that result in
   - models for shared public – private operations
   - Conversion into scalable & sustainable business models
   - Sending clear market signal on pathways to adoption

D. **Challenges in accessing critical existing mobility/urban data-sets** to develop and deploy new and existing public and pvt mobility solutions
BRIDGING THE GAP BETWEEN INVENTION AND ADOPTION

INNOVATION SUPPLY
High-growth ventures

INTELLECTUAL PROPERTY

STARTUPS

INNOVATORS

ACCELERATORS

LIVES IMPACTED

REVENUE

GLOBAL DEMAND
Strategic customers, markets & systems

Health Systems Innovations

Advanced Energy Centre

Corporate Engagement Program

Centre for Impact Investing

Data Catalyst

Solutions Lab

Finance & Commerce

Work & Learning

Energy & Environment
Our work to date

I. Helped legalize Uber and Airbnb by supporting the City of Toronto and Ontario to develop regulation for the Sharing Economy

II. Produced a report for the Greater Toronto Hamilton Area and the Greater Montreal Area on the potential of Shared Mobility to reduce GHGs

III. Defined regional mobility challenges by convening 130+ key transportation stakeholders industry, govt/agencies and key user groups at the Urban Mobility Design Camp

IV. Researched and defined key commuter needs with a design firm to unearth key variables that impact user decisions around mobility
Mobility behavioral insights
Our work to date

V. Developed a methodology for **designing, selecting, testing, evaluating and scaling** innovative mobility deployments with a focus on developing a **sustainable business model**.
   a. Challenge definition
   b. Technology review
   c. Pilot Selection & Data collection frameworks
   d. Pilot evaluation frameworks
   e. Business Case development approach *(to be completed)*
   f. Market capacity development to scale *(to be completed)*

VI. Secured funding under Ontario’s Autonomous Vehicle Innovation Network (AVIN) program to be Toronto’s Regional Technology Development Site: focused on supporting ventures that use Artificial Intelligence and Machine Learning for AV & CV’s.

VII. Developing a **Urban Mobility Knowledge Hub** *(prototype under development)*
THE HUB

ACCESSIBLE DATA
- Accessible Datasets & Models:
  - Open & Managed Access

EXPERIMENTATION
- Procurement Portal
- Policy Database
- Opportunity Mapping Tool
- Benefits Calculator

PILOTS
- City of Vaughan
- Canadian Red Cross

COLLABORATION
- Members Network
- Procurement by Co-design
- Provide tools for pilot design, implementation and evaluation frameworks
- Knowledge dissemination: best practices