CANADA'S AUTOMOTIVE CLUSTER: ITS FUTURE IN THE DIGITAL AGE

David A. Wolfe and Elena Goracinova
Innovation Policy Lab, Munk School of Global Affairs
University of Toronto

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RESEARCH QUESTIONS AND DATA

- Research questions
  - Is Ontario's growing automotive research capacity incentivizing OEMs to increase their R&D footprint?
  - What are the opportunities for Canadian digital firms to participate in emerging automotive supply chains?
- Data
  - Semi-structured interviews with OEMs, tier 1 suppliers, high-tech start-ups and scale ups, program executives, research center staff.

CURRENT POLICY APPROACH TO THE AUTOMOTIVE INDUSTRY

- Attracting foreign automotive R&D by strengthening domestic research capabilities
- Few systematic policy initiatives aimed at facilitating technology transfer to the existing supply chain
- Support for digital technology entrants

Figure 1. GM Markham Technical centre

Figure 2. OCE connecting start-ups with established companies

OEM'S & DIGITAL INNOVATION

→ Some increase in foreign and domestic automotive R&D, driven by Ontario's vast technical talent pool.

→ Linkages between automakers and Canadian digital technology companies are weak, but have the potential to develop (e.g. GM's participation with Ontario universities, startups and Communitech Corporate Innovation Lab).

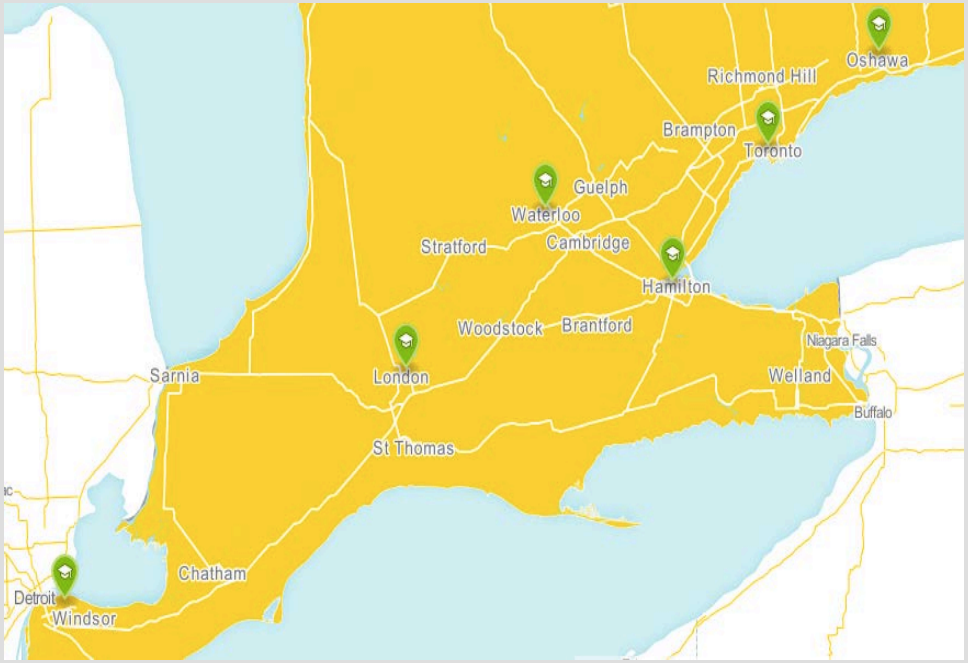

Figure 3. Geography of automotive R&D
Source: Invest in Ontario

CANADIAN OFFERING IN SMART MOBILITY

- Growing interest in the tech sector around not only automotive innovation, but also urban transit and automated transportation in general.
- With the exception of QNX and Kinaxis, companies generally don't have a significant market share or revenue from the automotive industry, but a number are trying to enter the connected mobility and smart city space.

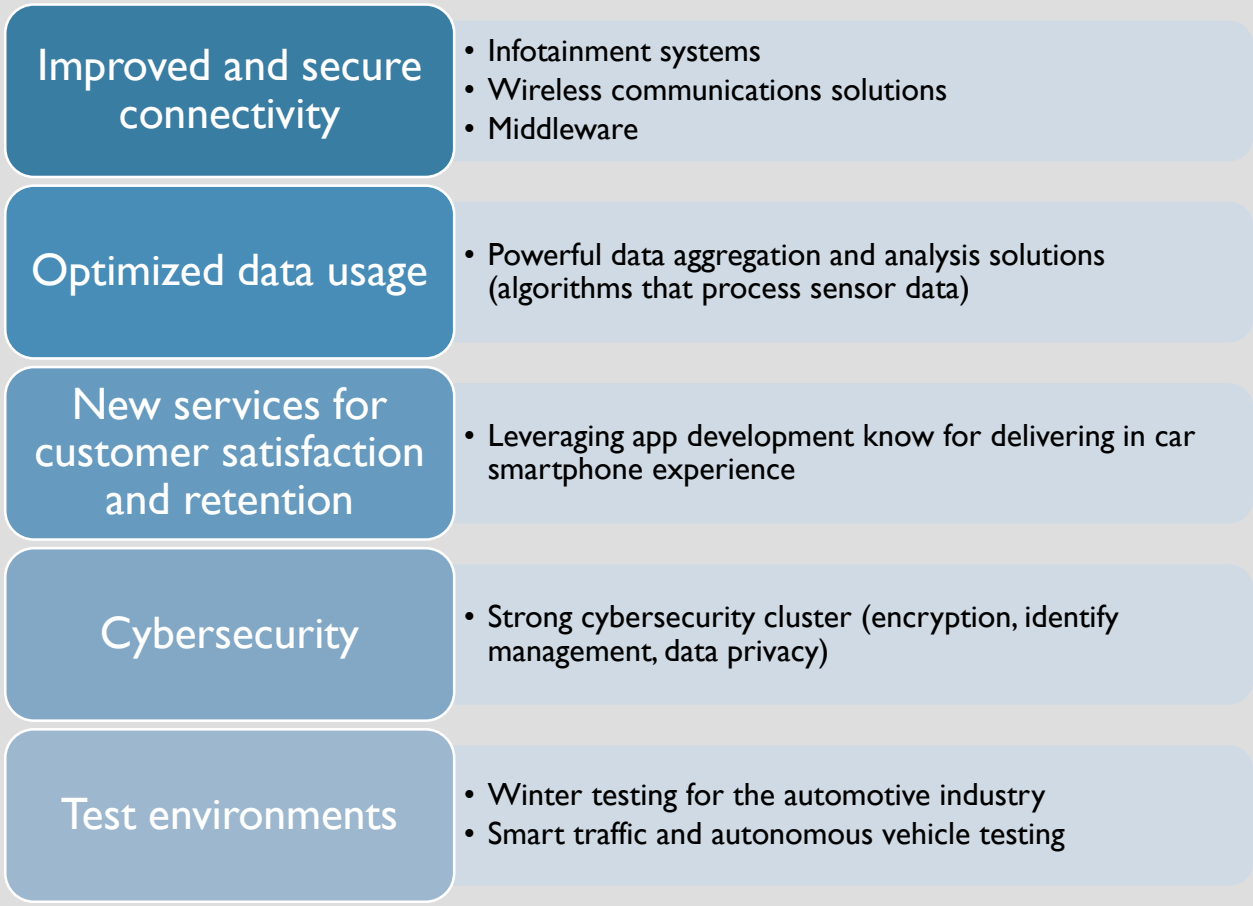

Figure 4. Canadian offerings in mobility tech

AUTO-TECH COMPANIES

→ Ontario software suppliers are operating in mobility segments where no clear market leader has emerged

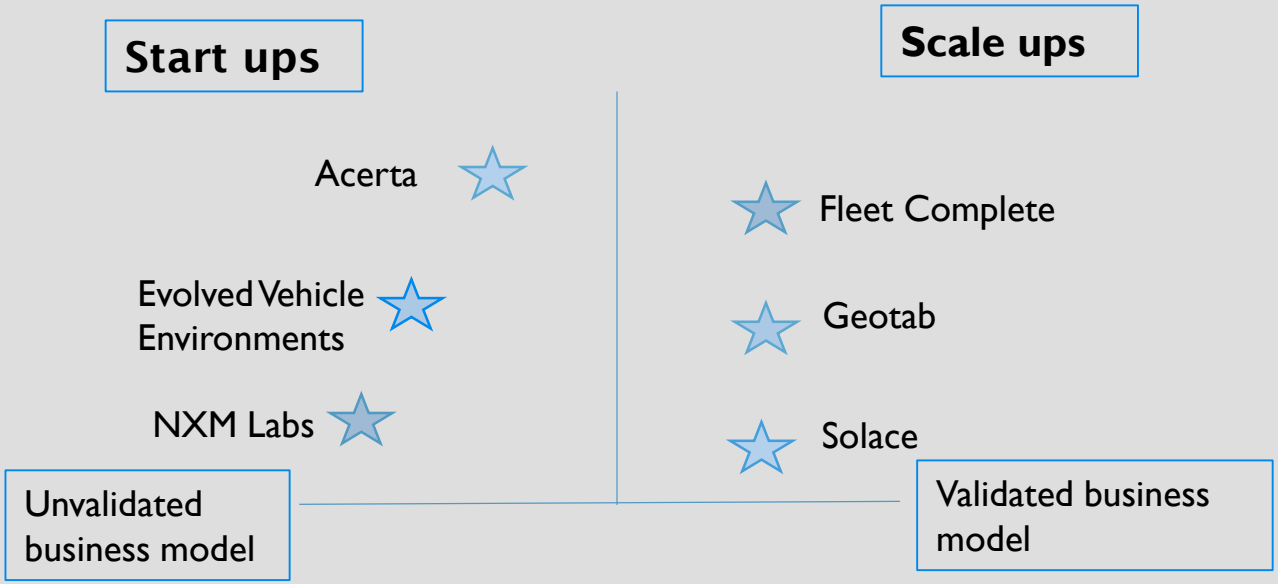

Figure 4. Sample of mobility tech companies

High-tech companies are creative and draw on the regional system to overcome barriers

POLICY IMPLICATIONS

- Our research findings raise the question of how much funding government should allocate to subsidizing automotive OEM R&D.
  - Economic policies focused on mobility should take a more holistic and strategic approach to the evolving transportation system.
  - They should aim to establish the capabilities to innovate, design and build Canadian-owned autonomous vehicles for export, but also the architecture upon which smart cities will function.
- The policy discussion should not be limited to automotive innovation, but extend into how to build sustainable mobility solutions for an autonomous on-demand world. Entrants should be supported in the following areas:
  - Access to markets (facilitating closer linkages and active collaboration between customers and suppliers in the smart mobility ecosystem; public procurement for smart city solutions)
  - Access to talent
  - The autonomous mobility-as-a-service system or smart city platforms tend toward natural monopolies. Policy makers should be strategic and invest in areas where Canada can capture market share.