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# Regional Resilience and Ontario's Automotive Cluster: It's Future in the Digital Age

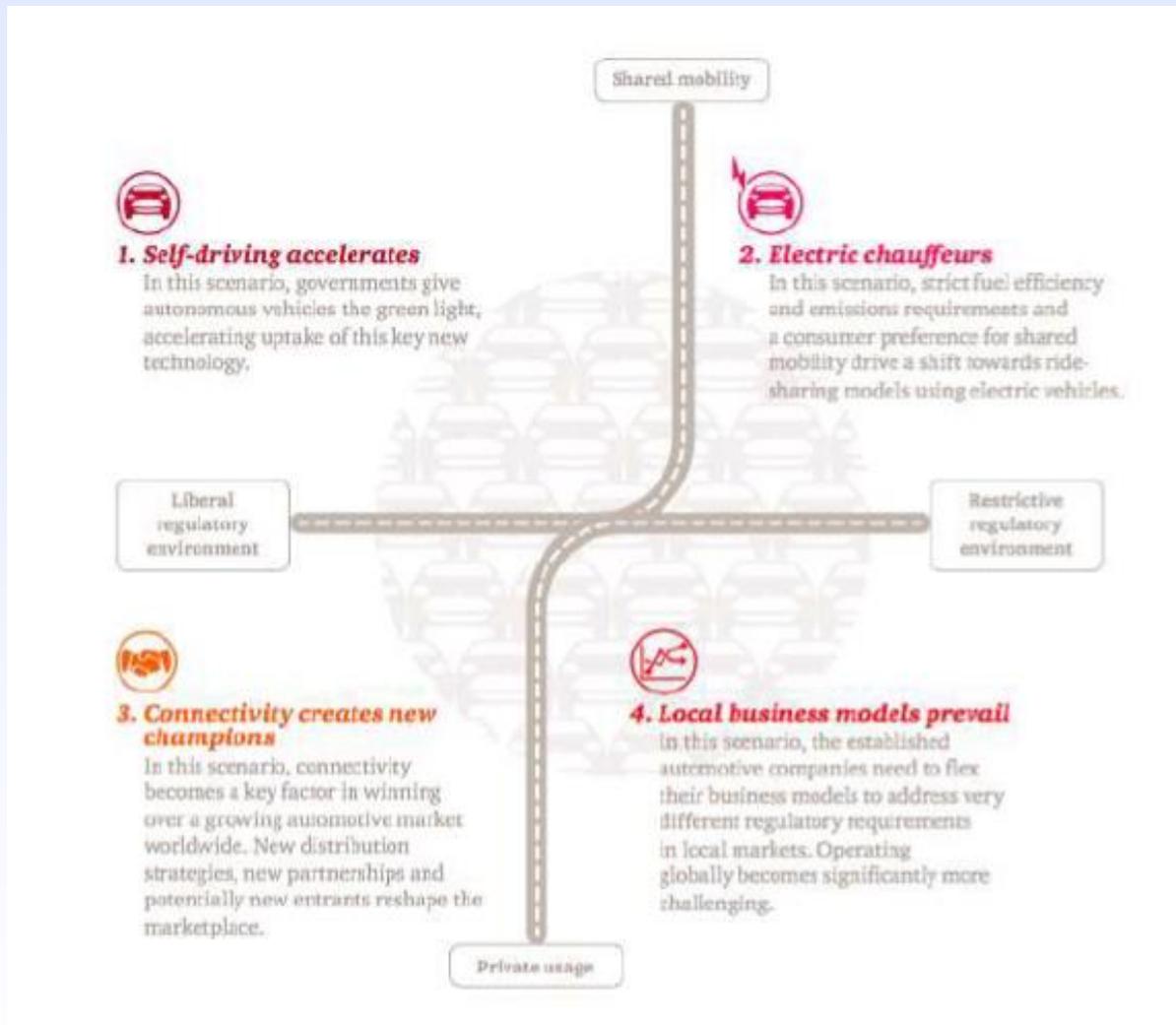
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# Agenda

- Concerns in the automotive industry
- Use economic geography theory and existing empirical data to isolate potential paths for the automotive industry in Ontario:  
*path modernization and path upgrading*
- Provide overview of public and private initiatives and investigate how they contribute to each path.



Source: PriceWaterhouseCoopers (2013).

Getty Images

# SILICON VALLEY IS BECOMING THE NEW DETROIT



## ARE WATERLOO/MARKHAM BECOMING THE NEW OSHAWA/OAKVILLE?

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# Regional Resilience

*“New paths do not emerge in a vacuum, but always in the contexts of existing structures and paths of technology, industry and institutional arrangements”*  
(Martin and Simmie 2008, 186).

**Table 1: Trajectories of Path Development for Ontario's RIS**

Governance of Regional Innovation Systems/ Knowledge linkages	Globalized	Interactive	Localized
Territorially embedded	Ontario automotive supply chain (before 2000) → Low value added → Little to no OEM research		
Regionally networked		Ontario automotive supply chain in transition? → supply chain in higher valued added segments → OEM research → new firm entrants	
Regional Nationalized			

- Path upgrading
- Path modernization.

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*“The key to the company’s strategy is to disrupt itself before it is disrupted by a wide range of new startup companies. The company’s vision for its future rests on four pillars: it is one that is electric, connected, autonomous and part of the sharing economy.”*

*Steve Carlisle (GM President)*

## Instrument target    Description

Knowledge (Creation and Transfer)	New technology generation and acquisition by domestic firms
Labor (Human Capital Formation)	Increase labor capability
Research and Development (Firms)	Increase firm capacity to perform own R&D or contract it out
Entrepreneurship	Culture of entrepreneurship
Innovation System	Strengthen knowledge infrastructure
New Sector Development	Novel industrial sectors support
Trade Promotion	Raise levels of trade

## Instrument means    Descriptions

<b>Grants</b>	Direct financial contributions (repayable or non-repayable; can be allocated by universities, intermediaries or government)
<b>Credit financing</b>	Provision of credit
<b>Investment</b>	Direct investment in shares, VC
<b>Information</b>	Provision of information
<b>Networking</b>	Draw together firms, organizations, agencies

Source: Breznitz and Samford (2016)

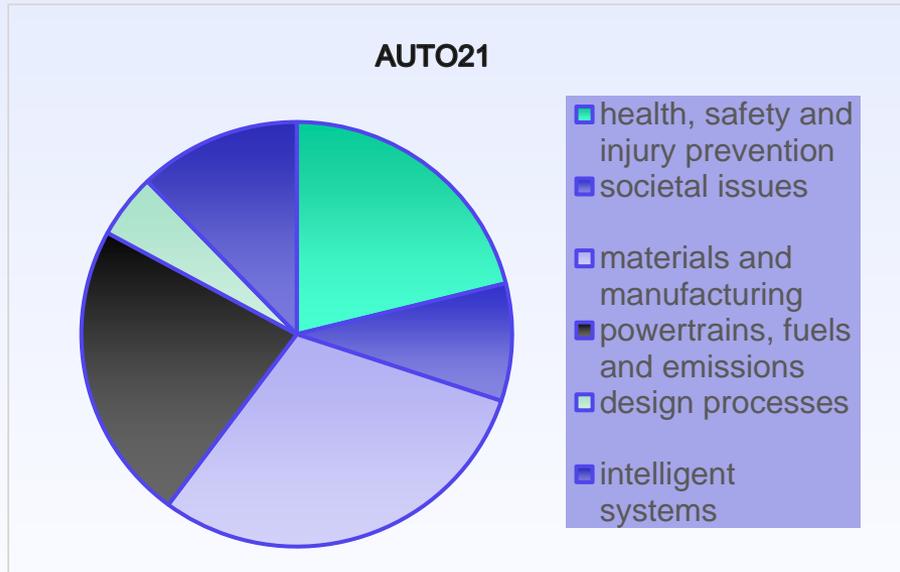
# Companies are starting to lead the way in automotive R&D?

## *Funds allocated by government, projects designed by OEMs*

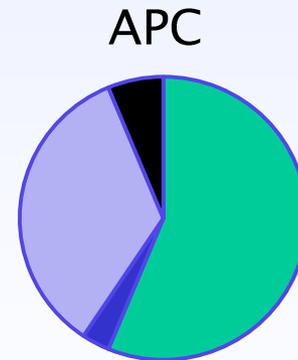
- UNIFOR negotiations (focus on R&D)  
1.5 billion investments from OEMs
  - New GM Automotive Software Development Center
  - Ford expanding Powertrain Engineering Research and Development Centre.
- Direct grants to companies
- Competition bids



# From university-led to industry led R&D

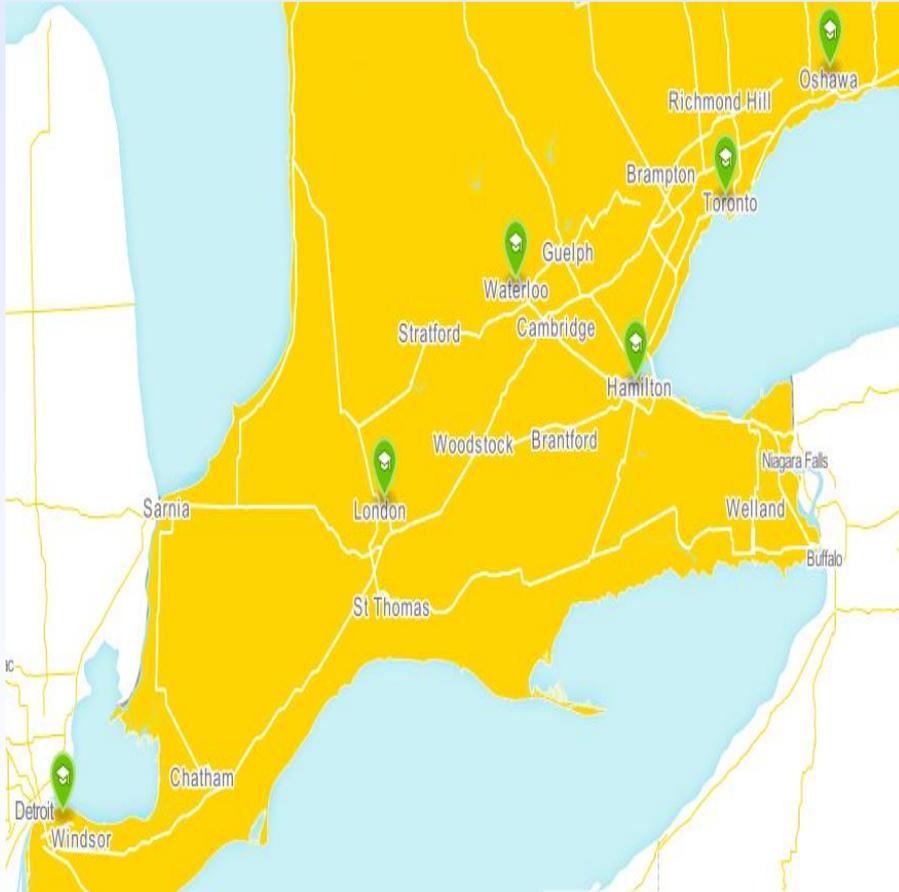


- materials and manufacturing
- powertrains, fuels and emissions
- production capacity

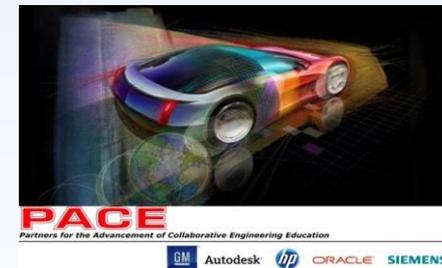


- environmental performance
- cognitive car
- manufacturing
- social sciences and humanities

## Research Centers



## Partners





**Carleton**  
UNIVERSITY

**COMMUNITECH**



UNIVERSITY OF  
**WATERLOO**



UNIVERSITY OF  
**TORONTO**

**McMaster**  
University



**RYERSON**  
UNIVERSITY



**UNIVERSITY**  
**OF ONTARIO**  
INSTITUTE OF TECHNOLOGY



**Western**



**SIMON FRASER UNIVERSITY**  
ENGAGING THE WORLD

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# Challenges for SMEs

- 1) marketing
- 2) resources to innovate
- 3) the business environment
- 4) difficulties gaining access to OEMs such as Ford and GM

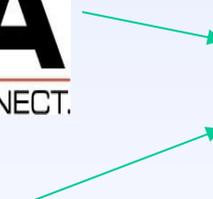
# Government (provincial and federal)



## Automotive Supplier Innovation Fund



## Connected Car Program



Innovation &  
Commercialization  
Vouchers

CVAV

ASCIP

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# Ontario's future trajectories

## Path modernization

- Will OEMs continue their commitment to performing R&D in Canada?
- Will there be a critical mass of new entrants to the automotive industry?

## Path upgrading

- How will SMEs in the existing supply chain utilize new technologies?