

**Industries, Institutional features, path
dependency and constructing regional
advantages: a tale of two city-regions in
Canada**

Caroline Andrew
University of Ottawa

David Doloreux
University of Ottawa

Cooper Langford
University of Calgary

Research questions

- What makes city-regions important for innovation and competitiveness.
- Explain the similarities and differences of two (similar scale but contrasted) city-regions by describing particularities and specificities of the context where knowledge creation, innovation and technological development take place.
 1. Specific industrial knowledge bases
 2. Different bases for effective governance
 3. What might be the general lessons for theory and policy from the two cases ?

Dominant industries

- The dominant industries in both centres are the focus of local ‘buzz’
- “Silicon Valley North”: Ottawa
- “Canada’s Energy Capital”: Calgary
 - *“You can’t do anything in Calgary if it’s not connected to oil and gas.”*
- (a successful serial entrepreneur)
- Both industries are, like their cities, rich in creative occupations.
- In both cities these industries reflected a response to a ‘strategy of diversification’

Common features

- Both cities have major concentrations of creative employment.
 - Ottawa, 46.1% Calgary, 40.2%
- The two have led in attraction of S&T personnel in last decade and have high level of S&T employment.
 - Ottawa, 12.9% Calgary, 11.2 %
however,
- Calgary rated “diverse” (0.77) by Conference Board criteria. Ottawa less so (0.35).

Silicon Valley North

- Industrial “clusters” by labour LQ:
 - 1. ICT related: ICT mfg. 3.1, ICT services. 1.9*, Bus services. 1.6.
 - 2. Other: Creative/cultural 1.2, Higher Ed. 1.8.
- Employment specialization by LQ
 - Prof. Sci. tech services. 1.7, Public admin. 3.3

*Esp. 5415 “Computer systems design services” – employing 26,500 (2009)

Origins and Path of Industrial Development

■ Ottawa dominated by ICT industries

- Key events can be dated to 1969.
 - Spin off of technologies and key personnel from CRC (more than 100 companies).
 - Government influences (MIL, CDC)
 - Critical role of Northern Electric, importance of pioneering digital telephony, Mitel
-
- In 2008, Ottawa counts over 1,800 technology companies and 81,910 high-tech employees – figures that have been increasing since the 1990s (OCRI, 2009). The industrial structure of Ottawa shows a clear clustering of firms: the software industry, telecommunications, microelectronics, and photonic clusters (both with 7.0 per cent) leading to its reputation as “Silicon Valley North”. The high-tech sectors are mainly dominated by small firms, with 84.0 per cent of companies employing fewer than 50 employees, and about 50 firms employing more than 500 employees .

Canada's Energy Capital

- Industrial “clusters” by labour LQ:
 - 1. Oil/gas related: Oil/gas 5.0, Mining 1.8, Bus. Servs. 1.4, ICT servs. 1.2, Finance, 1.0
 - 2. Other: ICT mfg. 1.1, Logistics 1.2 Construction 1.6 (in part O/G linked)
- Employment specialization by LQ
 - O/G mining 4.5, Mgrs. of Companies 1.9, Prof, sci. tech. 1.7
- ICT telecommunications and GPS foci are “spin off”, to a significant degree, of O/G.

Origins and Path of Industrial Development

■ Calgary Oil/Gas

- Discoveries near Calgary, 1913
- International companies entered early, built refineries in Calgary in 1920s.
- 1947 – Leduc field (but headquarters remained in Calgary).
- 1950s era of pipeline mega projects.
- NEP
- Development of international reach for Calgary based companies
- Headquarters of 85% of energy companies.
- Oil Sands – long term technical achievement – Gov't help.

Table 1 – Overall Technology Ranking

Table 1: Overall Technology Ranking

	Overall Technology Ranking	North American Tech-Pole	Patent Count (2006)	Patents per 10,000	Patent Growth
1	San Jose, CA	6.32	5799	32.49	2.5%
2	Ottawa - Gatineau	1.08 (4th)	365 (4th)	3.23 (4th)	2.2% (3rd)
3	Austin-Round Rock, TX	1.14	1541	10.23	-0.8%
4	Raleigh, NC	0.59	662	6.65	-0.5%
5	Birmingham, AL	0.11	83	0.76	7.6%
6	Calgary, AB	1.08	129	1.20	-3.5%
7	Jacksonville, FL	0.15	105	0.82	-0.5%
8	Indianapolis, IN	0.38	352	2.11	-8.4%
9	Richmond, VA	0.10	102	0.85	-6.1%
10	Buffalo, NY	0.12	194	1.71	-9.5%
11	Memphis, TN	0.06	106	0.84	-6.8%

Note Calgary lags Ottawa in patents – an indicator of the different technology structures.

Ottawa - Governance

Governance of Economic Development - OCRI

1983 – creation of OCRI – high tech and post-secondary

- 1997 – Ottawa Carleton Learning Foundation – add education K to 12
- 2001 – merged with Ottawa Economic Development Corporation – add larger economic development role

Early broad mandate

- shaped by high tech boom –multinationals
- huge need for training workers –K to 12
- business pressure to reduce number of ‘tables’ - so strengthened OCRI
- strong positive reputation established early on – ‘fundamental role that OCRI has played...in the rise and growth of the Ottawa high-tech sector’ (Wolfe,2009,159)

Metagovernance in the Economic Development field

- TOP – the Ottawa Partnership –co-chaired post-secondary and high-tech
- TOP as metagovernance – OCRI, tourism, life sciences
- Strong support from the City
- With high-tech bust in 2001-2002 and City cuts, TOP dissolved

Present situation -

How to define the present position

- OCRI in decline
 - OCRI re-focusing (Darch presentation)
 - Ottawa in period of uncertainty and gloom?
-
- ‘ the Ottawa case provides a striking illustration of the difficulties encountered by a region in overcoming the legacy of an excessive reliance on a relatively small number of industrial sectors, despite the strong support of its governance institutions ’ (Wolfe,2009,162)
 - ‘to date it (the region) has not succeeded in fully deploying these assets’ (Ibid)
 - Fragmented economic development leadership and deep disappointment with lack of a federal government role in the region (interviews)

Governance – Social Development

- Networks – less institutionalized, less long-lasting, less resourced, not as broad ranging
- City-United Way partnership- on many projects – Hire-Immigrants Ottawa, Community Development Framework
- LASI - Local Agencies serving immigrants – including employment related spin-off LASI World Skills
- Coalition of Community Health and Resource Centres

Governance – Calgary

- Two distinct conversations arise in Calgary concerning governance that coalesce around two goals.
- Private sector oriented organizations e.g. CED, CTI, Chamber of Commerce: Economic Growth goal.
- Social sector organizations: e.g. Calgary Foundation, Imagine Calgary, United Way organizations: Sustainability goal.
- Consensus elements: importance of **talent, healthy economy. diversification.**
- City of Calgary functions as meeting ground for the two conversations: e.g “Plan-it Calgary” study (land use, transport).
- Wild card: population growth, urban sprawl and developers.

Governance Calgary

- Private sector speaks frequently about “giving back” (both “economy of love” (Boulding) and concern for a city that attracts talent.
- Private sector extensively engaged in social/cultural organizations of a wide variety of types (opera to motorcycle clubs) as volunteers and directors.
- Corporate philanthropy follows employee interests.
- “200 people who make a difference”

Challenges and Opportunities - 1

- In **Calgary** the traditional goal of diversification still prevails:
 - for sustainability and growth (and insulation from decline of the dominant industry).
- The **broad knowledge platform** offers opportunity for ‘spin-off’ that has already been seen in the cases of wireless telecommunications, GPS, temporary buildings and imaging.
- Creative risk management arrangements have been a characteristic that can assist entrepreneurship.
- Main challenges: 1) for diversification to re-direct entrepreneurship from ‘rent seeking’ to productive entrepreneurship, 2) for sustainability to control urban sprawl.

Challenges and Opportunities 2

- Legacy: **Ottawa** as Canada's capital has government sector, most of the growth in this sector (esp. after '60s,'70s). 2006 Census shows 30.9% (119,316) of all federal employees nationally were in Ottawa (18.0% regional employment).
- Industrial diversification still a goal. The narrower focus of the knowledge base of the dominant industry offers less promise of highly diverse 'spin-off'.
- As in the case of ICT, the high level of creative talent in government, education and health offers the best prospect of new directions. Signs of this can be seen in, e.g., biotechnology and alternative energy. See also the emerging sectors in the Darch presentation

Governance and its challenges in Ottawa : Connecting the Economic and the Social ?

- The Local Immigration Partnership represents a possible alliance of the social sector and the economic development sector.
 - Improved economic integration of immigrants in Ottawa is beginning to be on the radar for the economic development actors
 - Improved employment opportunities for immigrants is a priority for the social sector

But this only means the possibility of an alliance

Metagovernance – incorporating Economic and Social sectors

Challenges?

- ❑ Ottawa: Social sector traditionally distrustful of business sector and business sector traditionally little aware of social sector. Some signs that this is changing. Calgary: major role of business sector in social sector, conditionally accepted.
- ❑ Most interesting recent examples : Local Immigration Partnership (Ottawa) – Homelessness campaign (Calgary)
- ❑ - Ottawa: social sector more interested in linking to business sector – business sector connecting to social issues – Chamber of Commerce hiring staff to work on employment for foreign trained professionals
- ❑ - Calgary: can existing consensus deal with population growth and urban sprawl?

Concluding remarks

- Where a dominant industry fuels major growth, the characteristic danger is a narrow knowledge base for further development and growth – this seems to characterize resource based cities. As Ottawa shows, it is not limited to ‘resources’. However, Ottawa has the contrasting advantage of the pool of creative talent in government to fuel entrepreneurship.
- With respect to governance, the community’s capacity to create and maintain a united position on its priorities is one of the crucial bases for a strong governance system. Calgary would appear to be more homogenous and more united than Ottawa but OCRI’s reputation still counts.