

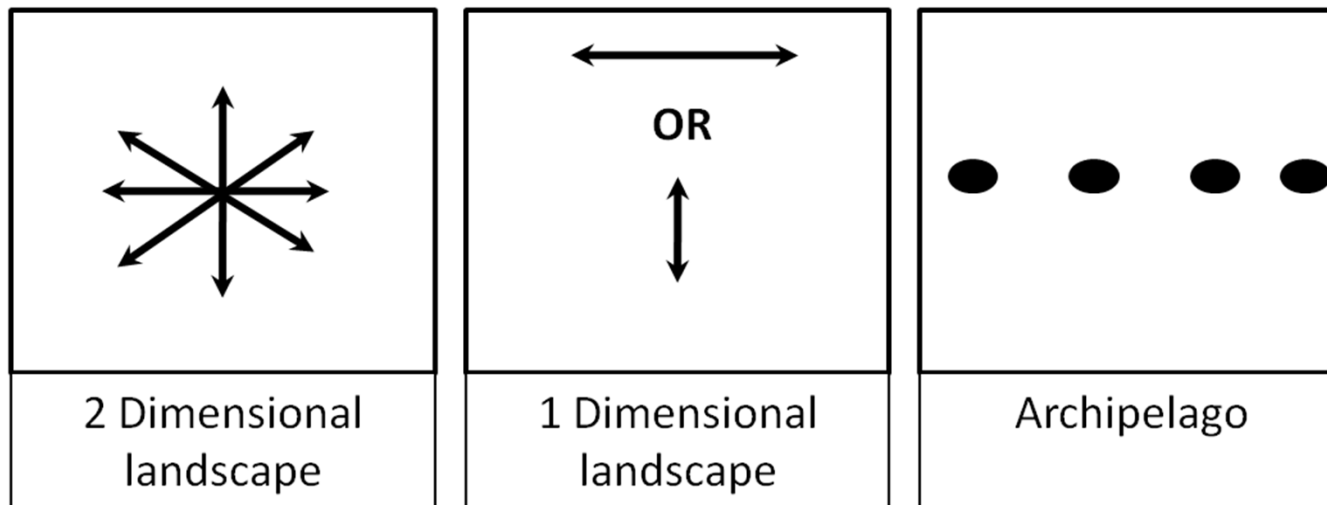
Living on the Edge: Local Systems of Innovation in a Pacific Rim City

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Systems of Innovation

- National systems of innovation describe the economy and social structure of nation states
- Regional systems of innovation are often a feature of geographically larger nations. Indeed, as we have found in the ISRN program, local systems of innovation are also a feature of the socio-economic landscape
- Innovation systems often follow power structures, so that comparing federally-governed nations such as Canada and Australia to centrally-governed nations (say France and the Netherlands) can be difficult
- There is another important differentiation: the “dimension” of the system of innovation: one-dimensional or two dimensional

Local Innovation Systems come in Various Configurations



Canada is not a single economy – more like an archipelago

- Canada is not a single economy. Southern Ontario and southern Quebec are manufacturing economies, based (mainly) on automobiles, ITC and aerospace
- The western provinces are resource-based: both renewable and non-renewable (grain, meat, forestry, oil, coal potash and hydro-electricity)
- The eastern provinces are not major exporters (except, recently, Newfoundland). They receive “equalization payments”
- The Canadian economy is regional, but there are also has distinctive regional social aspects: language, history and entrepreneurship

It is really an economy of “city-states”

- For the most part (except southern Ontario and Quebec), there are only one or two major cities per province. Like the regions they also have distinct “personalities”
- Often the capital city of a province is not the economic centre of the region
- Thus Vancouver is quite different from Toronto or Montreal, or for that matter Calgary or Halifax
- Canada, as a nation, is defined by its economic history. European colonization and wars defined eastern Canada; the railway defined the West

Innovation – social as much as economic

- ISRN evidence suggests that successful clusters are based as much on social factors as on economic (e.g. strong industrial associations)
- We need to understand the stickiness of some labour markets
- We need to identify specific local competitive advantages that are based on social structures: culture, history, and language

Human capital issues – the regional dimension in Canada

- Sticky labour markets
- Movement of highly-skilled personnel
- Local cultural biases (entrepreneurship, language, etc.)
- How to measure?
 - Differences in economies – e.g. resource-based versus manufacturing economies – BC versus Toronto
 - Definitions of occupational categories (artists, software engineers)

Talent, tolerance, technology

- Richard Florida (*"Rise of the Creative Class"*, 2002) has argued that highly skilled professionals determine first where they want to live and then seek employment in that area
- In Canada Florida and Gertler (2002) have followed up on this in a series of reports *"Competing on Creativity"*
- They proposed four measures for Canada: %of population with post-secondary education (*talent*), % of population employed in the arts (*tolerance*), % of population who are immigrants (*diversity*) and an index of the degree to which the economy is dependent on high-tech industry (*technology*)

"Competing on Creativity": city rankings

Rank	Talent	Tolerance	Diversity	Technology
1	Ottawa	<u>Vancouver</u>	<u>Toronto</u>	Montreal
2	<u>Toronto</u>	Victoria	<u>Vancouver</u>	<u>Toronto</u>
3	<u>Calgary</u>	<u>Toronto</u>	Hamilton	Ottawa
4	Halifax	Montreal	Windsor	<u>Vancouver</u>
5	<u>Vancouver</u>	<u>Calgary</u>	Kitchener	<u>Calgary</u>
6	Victoria	Ottawa	<u>Calgary</u>	Edmonton

Vancouver's clusters

Competitive	Diffusive	Leading Edge	Productive
New Media	Culture	Biotech	Transportation
ICTs	Hollywood North	Environmental technologies	Wood products
	Tourism	Fuel cells	
	Financial services		

Canada is a Pacific Nation

- While most Canadian exports go to the US (over 80%), the next largest market is Asia (China and Japan). Exports to the US are mainly manufactures: autos and parts, and resources: wood and energy. Exports to Asia are almost all resource-based, both renewable and non-renewable
- There has been major immigration to Canada from China, Japan, Korea and India
- Our best future trading prospects are in the Pacific region due to closed markets in the EU and the decline in the US economy

Vancouver – the end of the line

- The Canadian economy is an archipelago of cities stretched linearly across the US border region
- Vancouver was founded in 1884 as the western terminus of the transcontinental railway (and telegraph)
- Public sector investments in infrastructure have played a key role in its development (the port, the railway, and more recently, the airport)
- The port has been, until recently, the only Canadian access to the Pacific Rim, and the only access by the Asia-Pacific region to Canada
- Less than half of the population is of European descent

Vancouver economics

- The original economic strength was the export of wood and gold. With the rise of industrialization in Asia, coal, potash and food have also become important
- Imports are predominantly manufactured goods
- But the exports are all commodities and subject to world-wide swings in commodity prices
- There has been active development on service industries, based in part on its location, English legal system, and mild climate. Hence the film industry (“Hollywood North”), financial services and education services

Cluster complexes

- We have tended to think of cluster / economic success as exports which in turn we think simply of as making and sending something 'over there'
- We must now not simply think of "gateway" or "pivot point" cities as somewhere as things pass through or emerge from
- Instead, future research of clustering requires much more focus on interdependencies and inter-activity. Few places make whole goods or services anymore and they are thus dependent on other places

The challenge to Vancouver

- How to build its service industries and reduce its dependency on resources (and the US market)
- How to capitalize on its “sticky” labour market
- How to focus on knowledge-based industries
- Hence the development of intellectual property industries (biotech, fuel cells, new media) without the expectation of manufacturing or marketing the products: in other words specializing on the creation of intellectual property

Trading in Services - Vancouver

- The innovation systems may represent an archipelago – but that doesn't mean there aren't major flows through the system.
- Much of our high value, knowledge-based exports are services. These are often difficult to capture statistically
- Classical models of industrial clusters focus on the concentration of inputs: labour, resources and capital
- But services do not require much in the way of natural resources: human capital is the key input
- Thus Vancouver (and other west coast centres) focus on concentrating human capital

What we are studying and what do we need to study next?

- These centres are concentrations of human capital and intellectual property. The centres in western North America are “pivot points” where ideas and people come together, without large inputs of physical resources, or for that matter capital
- We need to know more about the concept of an innovation “pivot point”. For Canada, Vancouver, is a “pivot point” in the Canadian NSI
- Does Vancouver share this “pivot point” or “gateway” feature with other Pacific port cities: for example : San Diego, Busan? What is different about these cities from the mega-cities such as Tokyo, Hong Kong, Shanghai and Singapore?

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