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On The Edge: Emerging Technologies in Vancouver

**Adam Holbrook and Brian Wixted
Centre for Policy Research on Science and Technology
Simon Fraser University**

MAR Vs JACOBS

- **Marshall Arrow Romer (Glaeser 1992) *Specialisation***
 - **This model claims that the concentration of an industry in a region promotes knowledge spillovers between firms and facilitates innovation in that particular industry within that region.**
- **Jacobs**
 - **Jacobs (1969), on the other hand, argues that the most important sources of knowledge spillovers are external to the industry within which the firm operates. Since the diversity of these knowledge sources is greatest in cities, she also claims that cities are the source of innovation.**

What's the evidence?

- **Beaudry argues that the MAR or Jacobs approach is industry-specific. Clusters that are highly IP-dependent are more likely to follow Jacob's model, while clusters that include manufacturing activities are more likely to follow the MAR model.**
- **The evidence presented in this paper is quite mixed and much more work is needed to go beyond the implicit interpretation of the underlying concept of specialization and diversification externalities in order to fully understand such an abstract phenomenon as knowledge spillovers. Beaudry 2009: 334.**

The big picture

- **Over the last 20 years economic geography has been relationally oriented:**
 - **Recent theoretical and empirical work in economic geography has experienced what might be termed a ‘relational turn’ that focuses primarily on the ways in which socio-spatial relations of economic actors are intertwined with processes of economic change at various geographical scales. (Yeung).**
- **Before this, the emphasis was on transport geography.**

Perceptions of city development

- *'The development of cities and regions has generally been associated with the development of transport. A good description of this association has been provided by Anderson's (1985) overview of European urban history where the fortunes of places have been shaped primarily by their position in a transport system' O'Connor and Scott 1992:240*

Transport to Vancouver

- It is essential with the case of Vancouver to marry these two views of economic geography (knowledge and transport).
- Before the jet age (i.e. the Boeing 707) BC was the end of the line (literally the end of the transcontinental railway).
 - Air travel was difficult because of the dangers of flying over the Rockies and the *Trans-Canada Highway* was not completed. But Vancouver was already an ocean port, and a modal transition point between ship and train.
- When travel time / space are considered, technology can have a large impact on the positionality of places.
- Perhaps no other Canadian city has changed its *position* as much as Vancouver.

The Evolving Macro-Geography of Vancouver

- In the last 50 years there has been:
 - Growth of the computer related economic sectors along the west coast stretching from Seattle to California. The rise of significant Biotech activities on the West Coast (San Diego). Continued significance of Hollywood.
 - The rise of the East Asia.
 - Together there has been a shift in the balance of economic gravity from the East Coast to the West Coast.
- Vancouver thus sits at a Pivot Point looking **east** within a *Canadian federal system*, looking **south** within *its time zone* and increasing looking **west** to the 'East' due to *migration* etc.

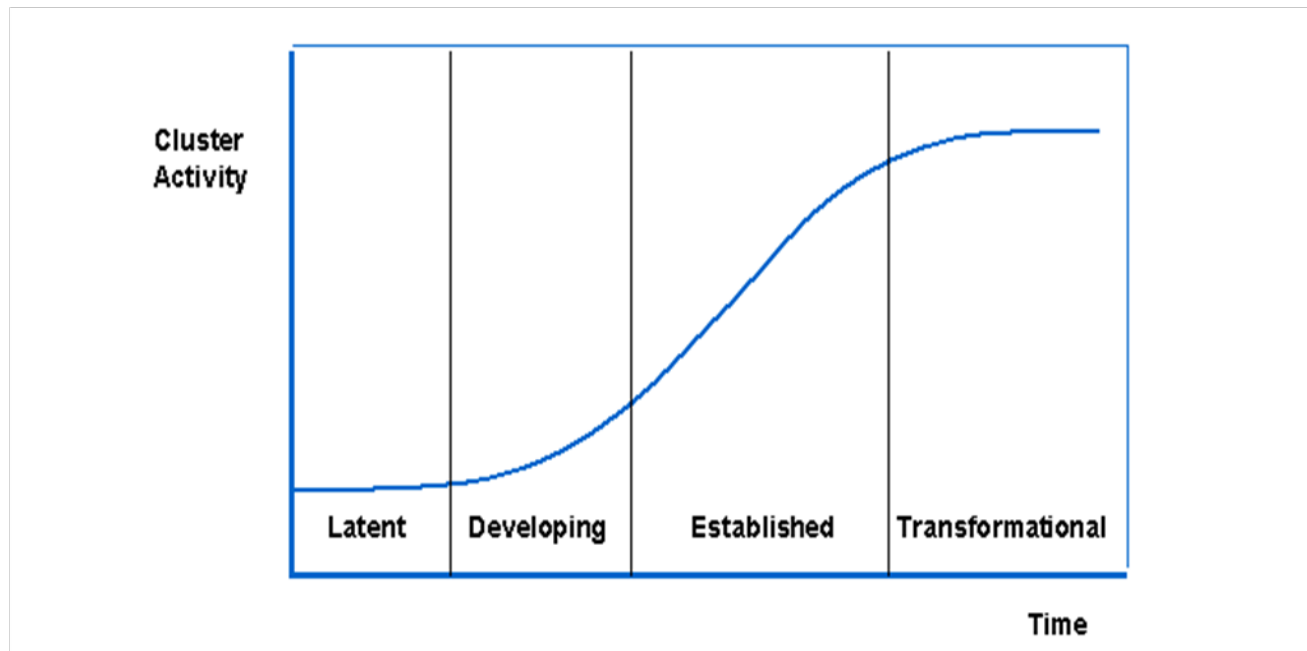
Other National Gateway Pivot Points

- ***The ocean rim character of the [Pacific] region's settlement provides another reason for the growth in air travel. In effect, the region is a series of nodes around the Pacific Ocean, with strong, outward looking commercial activities, and in many cases, very limited local hinterlands. Vancouver, Los Angeles, Sydney, Singapore, all share an unusual characteristic in that they have large concentrations of population, but with limited development of an inland hinterland. OConnor and Scott 1992: 244.***

Cluster Evolution

	<i>Low economic potential</i>	<i>High economic potential</i>
<i>Have critical mass</i>	Transformational	Established
<i>Do not have critical mass</i>	Latent	Developing

Cluster Life Cycle



The Vancouver Theme 1 Study

- **Clusters reviewed in our study**
 - **Bio / Pharma (developing)**
 - **Electronic Games and New Media (established)**
 - **Fuel Cells (latent)**

Bio/ Pharma

- **Creatives**
 - Access to a pool of quality people
- **Externalities**
 - Purchase from places with critical mass
- **Other**
 - ‘Some knowledge licenced from UBC ... We’re here because some groundbreaking science was done here, and the scientists who created those innovations decided it was worthwhile trying to commercialize them, hence we’re here. We get enormous benefit from continuing to work with them’.

Fuel Cells

- **Creatives**

- Yes. I think because we are close to each other, we talk, we share information, and ideas, you know, it makes it easier to work together, so yeah, with some companies here we are doing some joint research and development, and collaborating on that, and so, yeah, just being in the same city makes that easier.

- **Externalities**

- “Vancouver for fuel cells business is good, because we have a cluster of fuel cell companies, so it gives us access to people who have fuel cell experience, and we are close to some of our customers in the fuel cell industry, and also suppliers. [...]”

- **Other** (UVic not mentioned)

Electronic Games

- **Creatives**

- Vancouver is a beautiful city—a draw for recruits. Sea to sky. Has a lot of amenities.

- **Externalities**

- Great place to make video games because there are lots of companies that make video games. Very incestuous here and can help. Hollywood north. Strong film and television. Cross fertilization... we use those professionals. Great educational institutions that produce high calibre potential hires. **[BCIT mentioned]**

- **Other**

- 'On Pacific rim - gateway to the east'

Summary

Regional Structure

Value Structure

	MAR Externalities (Specialisation)	Jacobs Externalities (Diversity)	Multi-spatial Dimensions (Diversity across space)
Transformational			
Established		Electronic Games	
Developing			Bio/Pharma
Latent (seed) cluster	Fuel Cells		

Conclusions

- **The significance of the physical position of Vancouver has changed over the last 50 years as technology (aircraft) and technology based activities have evolved both along the west coast and in East Asia.**
- **Vancouver has a surprising variety of knowledge intensive businesses.**
- **The innovation business model of each cluster is dependent both on its lifecycle stage and the type of activity.**
- **For example electronic games do not need intermediate goods, and while bio/pharma does not require intermediate *goods* the strategy in Vancouver is to buy in external expertise and sell IP.**