

Evolving Knowledge Networks in the Hamilton Regional Economy

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Hamilton Knowledge Networks: Background Assumptions

- Historical Economy: Steel Industry
- New Economy:
 - Advanced Materials & Manufacturing
 - Health Sciences & Biotech
- Learning Communities
 - Communities of Practice: Engineers
 - Epistemic Communities: Scientists, Labs
- Arts & Cultural Institutions

Hamilton Knowledge Networks



Formal & Informal Networks

- Internal, International Networks
- External, International Networks
- Local Informal Networks
- Other: Not on Questionnaire
 - The Internet
 - Peer-to-Peer:
 - Trade Shows
 - Academic Conferences
 - Art Shows

Internal, International Networks (Large Organizations)

In large MNCs, individuals with a problem to deal with, or a new idea to develop, will typically turn to others in their own organization, often sourcing talent from the corporate head office and other locations around the world. In some cases, there are regular visits and meetings used to exchange ideas, see what others are doing and offer advice.

External, International Networks

Individuals who are not part of a large organization may also consult an international network of contacts. These are often co-workers from past jobs, friends from school or colleagues met at a trade show, conference or professional organization. Often a quick phone call or email are enough to get a solution to an issue. The Internet is a vital tool in this.

Local Informal Networks

Several questions in the interview guide prompt the interviewee for information on local, informal connections, with the idea that an organization benefits from cross pollination of ideas from many different sources. We found however, that there was much less of this sort of interaction than one might expect.

Internet Usage

- Finding tools, gadgets and machines. Or, companies with particular skill sets
- Answering Questions. Chat groups, knowledge data bases, listserves
- Expanding Ideas. Playing on the Internet to expand creative thinking of employees.

Knowledge Networks Evolve: Steel

- Steel Industry: Communities of Practice
 - 1900-1970 National Open Hearth Conference
- 1970s Steel R&D Labs: Materials Science
 - Stelco Engineering
- 1990s Steel & Technology Transfer: Synthetic Knowledge (Dofasco, Hatch Engineering)
- 2010 Arcelor, McMaster, CanMet Materials Science

Advanced Materials User Network

- Materials: Advanced steel, plastics, polymers.
- Outside steel companies Little evidence of cluster/knowledge network
 - Ad hoc company connections
 - Supplier Relations
- Materials still consumed as commodity: price not function
- Reality Check: Machining: 5-axis, heat treated

Innovation: Health Science

- Did not find Biotech (IP Commercialization spinoffs)
- Innovative firms emerging in Health Services (testing and treatment)
- Special Assets:
 - Hamilton has a nuclear reactor.
 - Union members have generous medical benefits. Specialized medical services – designer orthotics – are often paid for.

Why No Biotech ?

- McMaster Teaching Model is Foundation of Network (Evidence-Based Medicine)
 - Practice, Not Labs: Service Innovation
 - Testing, Medical Devices
- Gap in Early Stage Venture Investors
 - Most early stage supports Gen I, big wins come in Gen II
 - Using service model to fund Gen I developments

Jane Jacobs vs Flamborough

The Jane Jacobs model of urban knowledge networks is that individuals in a vibrant and diverse urban environment interact with each other on a regular basis and help different types of companies improve the quality of their products and business processes. In the interviews Those geographically local were often less relevant than many others.

Urban/Suburban Split

- Urban:
 - They typically worked and lived downtown felt strong passion for the city of Hamilton Examples from Arts community, as well as health-science field located close to McMaster.
- Suburban:
 - The majority of successful businesses, were located in suburban areas such as Ancaster, Burlington and Flamborough.

Ironic Connections

- Suburbanites tended to have stronger international networks, and little connection to the immediate area around their business.
- Urbanites by contrast seemed more embedded in their local community and more likely to cross-pollinate with other locals, including those from outside their industry.

Inversion of Growth Poles ?

The success of the suburban areas may point to a trend in which economic growth in the city of Hamilton will go from the outside-in, with success in the suburban regions generating greater investment in the urban core - as opposed to the older model of major industries and population in the core radiating outwards.

Network Surprises

- The cluster for whom the local context was most important was the artistic community.
- In other clusters, where local knowledge was shared it was typically regarding how to better run the business: recruitment, finding land, and for small businesses, sales and marketing skills.

Loosely Coupled Connections: Shows, Conferences

- Health Science: academic conferences, peer reviewed research was discussed and papers presented.
- Manufacturers: trade shows - Hanover Industrial Fair - new products, re-connect distant contacts, find potential collaborators
- Artists: galleries or theatre events, socializing and inspiring new ideas.

Tim Horton's Effect

- Tim's is a Labour Exchange:
 - The local Tim Horton's had been a fruitful recruiting ground.
 - While standing in line waiting for a coffee, people converse with others, mention a particular need, and learn about prospects.
- Bar, church, sports events, art gallery

Conclusions

- Advanced Materials
 - Networks Evolve: Not fixed topologies
- Health Sciences
 - Service-based models not just Lab IP
- Suburban, loosely coupled factors
 - Informal, not institutional factors important
 - Tim's, Trade Shows
- Inverse Growth Poles
 - Burbs to Core