

PRIME

PROGRAM OF RESEARCH IN INNOVATION, MANAGEMENT AND ECONOMY

**ISRN Annual Meeting
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“Ottawa’s Telecommunications Cluster: Some Initial Findings”

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Université d'Ottawa · University of Ottawa

- **PRIME's Research into the Ottawa Region**
 - Cluster study of the Ottawa Telecommunications sector
 - Cluster study of the Ottawa Photonics sector
 - CATA TechAction meetings (Ottawa, 03.22.02)
 - Nascent 'Working Group' on cluster research
 - The Joint PRIME-CRIC Telecommunications Research Project
 - Innovation in the Hemisphere
 - International comparison work (Scotland, Spain...)
 - National comparisons



Ottawa as a “Cluster-Studied Region”

- Previous and on-going work by others on Ottawa
 - Carleton University
 - A number of consultants (PcW, DoyleTech, etc.)
 - A number of government departments and agencies (Municipal, Provincial and Federal)
 - Informed and active participants from the community
- Result
 - No shortage of information or perspectives on the future of Ottawa clusters by the ‘clusters’ research community’



- Two themes to restate from *Local and Regional Systems of Innovation*
 1. Idiosyncratic nature of innovation and clusters
 2. The emergent properties of clusters
- Some themes and ideas that we are interested in and are now or planning on pursuing
 - Knowledge creation → Innovation
 - Learning at the organizational and regional levels
 - Evolution and bridging of technologies and markets
 - The non-cloistered nature of technology and industry
 - The value-added linkages between players in the region
 - The role of policy in stimulating and enhancing results

Some Characteristics of Ottawa's ICT Clusters

- A large and mature cluster
 - Roots to research into Radar technologies for military applications (NRC, CRC)
 - Nortel's lab presence since early 1960's
 - Other important early entrants
 - Result:
 - 1200 High-tech firms
 - 70,000 employees (down from over 80,000, 2000)



Industrial Structure

● Traditionally:

- Infrastructure manufacturers or Specialty Equipment Manufacturers (Fransman)

● Now:

- Photonics (from telecommunications and in aerospace, but going into Bio-medical, Bio-technology)
- Fabless semiconductors
- Software
- 90% are export oriented

Industrial Structure

- Research-based activities
 - Nortel's \$5.9 billion in R&D (2000)
 - Magnet effects here (Post-Doc's etc.)
 - Fabless Semi-conductor Firms
- Value-chain analysis helpful

Technological Context

- Switching Technologies
 - Electro-mechanical
 - Digital
 - Optical
- Content
 - Pure voice
 - Data



Institutional Context

- Federal Government and Federal Labs
 - NRC
 - IRAP
 - Institute for Microstructural Sciences (IMS)
 - CRC
 - Canadian Photonics Fabrication Centre (CPFC)
investment of \$45 million



Institutional Context (Cont.)

- Provincial Government

- Ontario Centres of Excellence in:

- Telecommunications

- Photonics

- Regional Government

- Entrepreneurship Centre

- Ottawa Economic Development Corporation (OED)

—————> OCRI (merger)



Institutional Context (Cont.)

- Universities
 - Graduates
 - MBA's (High-Tech Case Competitions)
 - Research
 - School of Information Technology and Engineering (SITE), University of Ottawa
- Community Colleges (Algonquin College)
 - Photonics Engineering Technology Diploma (Fall 2002)



Institutional Context (Cont.)

- Ottawa Centre for Research and Innovation (OCRI)
 - Various forums for groups to get together and communicate (formal and informal)
 - Oversupply?
- Ottawa Partnership
- Many others...



Venture Capital

- Historical character of Ottawa—Paper
 - Noranda first VC investor
- Building mass?
 - Denzil Doyle (formerly of Digital Canada)
 - Terry Matthews (Welsh) and Newbridge's Affiliates program
 - Locally based venture capitalists as Magnet



Venture Capital (Cont.)

● Recently:

- 2000: \$1.3 billion (estimates, CVCA)
- 2001: \$1.1 billion (estimates, CVCA)
 - Decline of 15.5% is less than national average of 27%
- Too much money?
- Changes in what is being funded
 - i.e. second generation V.C.

CATA's TechAction Town Hall Meeting

- Some interesting results from two different surveys
 - Telephone interviews with approximately 100 President's, CEO's of firms (results here)
 - Live generated results from the event itself

Implications to be Investigated

- A Strategy that we could expect but should avoid –
Resting on our past successes
 - Examples: Sheffield, England; The Rustbelt, USA
- Strategy for growth is one that continues to create knowledge, innovate and evolve through markets
- Therefore we may wish to avoid convergence or the “picking of winners” and support divergence and entrepreneurship

Implications to be Investigated (Cont.)

- Do we have enough large firms?
 - Both an Ottawa and Canadian issue
- In large, supported clusters, do firms (especially SME's) need cluster specific strategies for communication, information sharing and knowledge generation?

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Thank You, Merci!

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