
Innovation and Creativity in City Regions

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Context

- Innovation Systems Research Network (ISRN)
- Established in 1998 to support interaction among researchers and their partners
 - SSHRC, NSERC, NRC funding
 - Diffuse research findings to public and private sector partners
- ISRN cluster initiative launched in 2001
 - Support from SSHRC and other federal and provincial partners
- To investigate the process of cluster development in:
 - knowledge-intensive and traditional sectors
 - metro and non-metro regions
- Structure mirrors regions being studied
 - Research methodologies tailored to regions being studied
- Builds upon the capabilities and partnerships of ISRN
 - Links with extensive network of government partners
 - Strong network of international collaborators – RAC

Primary Question

How do local social characteristics and processes in city-regions determine their economic vitality and dynamism as centres of innovation and creativity?

Key Dimensions

- Social learning dynamics and knowledge flows between economic actors in dynamic city-regions
- Social dimensions of quality of place (including diversity, openness, inclusion)
- Social nature of civic engagement and governance processes

Key Issues

- Knowledge dynamics: intra-*cluster* or within *city-region*?
- Prospects for mid-size and smaller city-regions?
- Global 'pipelines' and local 'buzz': further evidence?
- Can city-regions pursue *socially inclusive* talent-based ED strategies?
- Conditions that facilitate/inhibit effective collaborative leadership, civic engagement?

Case Study City Regions

1,000,000+	250,000-999,000	100,000-249,000
Montreal	Halifax	St. John's
Toronto	Quebec City	St. John
Vancouver	Hamilton	Chicoutimi
Ottawa-Gatineau	Kitchener-Waterloo	Kingston
Calgary	London	Saskatoon

New Global Competition for Research

- Intra-industry trade in research is becoming source of global competition
- Corporations shift from 'closed' innovation model to 'open' innovation model (Chesborough)
 - Traditional corporate laboratories closed or downsized as companies move to 'open' innovation model
 - Pharmaceutical firms outsource 50% of R&D
- Regional knowledge capabilities begin to determine industry location
 - GE in Bangalore, Microsoft in Beijing and Cambridge, UK
- Knowledge capable firms seek out regional knowledge domains
 - Novartis, Roche, Syngenta to San Diego, San Francisco and Boston
 - Nokia, Ericsson to San Diego

Knowledge Spillovers in Learning Regions

- Learning Regions act as anchors of talent in the global economy
 - Innovation: social, interactive; tacit knowledge
 - Strong local knowledge flows
 - Rates of new firm formation are higher in creative and talent rich regions
 - Regional innovation systems
- Distance Matters
 - Firms located close to research benefit disproportionately
 - Especially true for advanced research in fields such as biotechnology
- Untraded interdependencies - technological spillovers in clusters
 - Knowledge and practices transferred between firms
 - Draw upon specialized labour pool and training institutions
- Most effective knowledge transfer is 'person-embodied'
 - Role of students as transfer agents

Regional Advantage: Specialization or Diversity?

- Cluster literature: implies specialization
- 'Jane Jacobs' models: benefits of diversity
- Specialization is risky: few regions can make it work
- Many of most dynamic regions have BOTH
 - A diverse portfolio of specializations
 - 'Old' industries: basis for 'new' ones
- Can mid-size city-regions pursue such a strategy?
 - Waterloo region: high-tech darling or diverse specialization?
 - Two Ontarios: GTA + mid-size S Ont centres, and 'the rest'

Knowledge and Learning in City-regions

- International knowledge flows
 - Access to global networks
 - Global networks – suppliers and strategic partners
- Local learning dynamics
 - Knowledge spillovers, mentoring, demonstration effects
 - Labour mobility – recombine assets
- Challenge is to structure knowledge in social ways
 - Institutions engaged in critical/reflexive self-monitoring
 - ‘learning by learning’
 - Depends on discussion – ‘talk’
 - align interests and common understandings of problems and possibilities
 - Create/strengthen codes and conventions through shared understanding

The Role of Talent in Innovation

- Labour is the single most important input for innovation
 - Labour flows to those places that have a 'buzz' about them
 - Track this through star scientists (Darby and Zucker)
 - 'postdoc indicator'
- Universities are key creators and attractors of talent
 - "universities are a crucial piece of the infrastructure of the knowledge economy, providing mechanisms for generating and harnessing talent" (Florida)
- Universities reinforce quality of place by fostering tolerance and diversity and creating 'humane' capital
- Many places can produce talent – but far fewer succeed in retaining it and attracting it from elsewhere
 - Why? Is the key question

New Global Competition for Talent

- Economic success depends on new terms of competition
 - A nation's ability to mobilize, attract and retain creative human talent (Richard Florida, *Flight of the Creative Class*)
- Wide range of countries are increasing their ability to compete for talent
 - Industrial economies are investing in education
 - Ireland, Canada, Finland, Sweden, Australia, New Zealand
 - Emerging economies are rapidly catching up to the leaders
 - India, China, Korea, Taiwan, Singapore, Brazil
- But! REGIONS compete for talent, not nations
 - Creative people don't choose countries, they think of cities or regions
 - Silicon Valley, Cambridge, Stockholm, Vancouver, Sydney

Universities and Communities: A Wider View

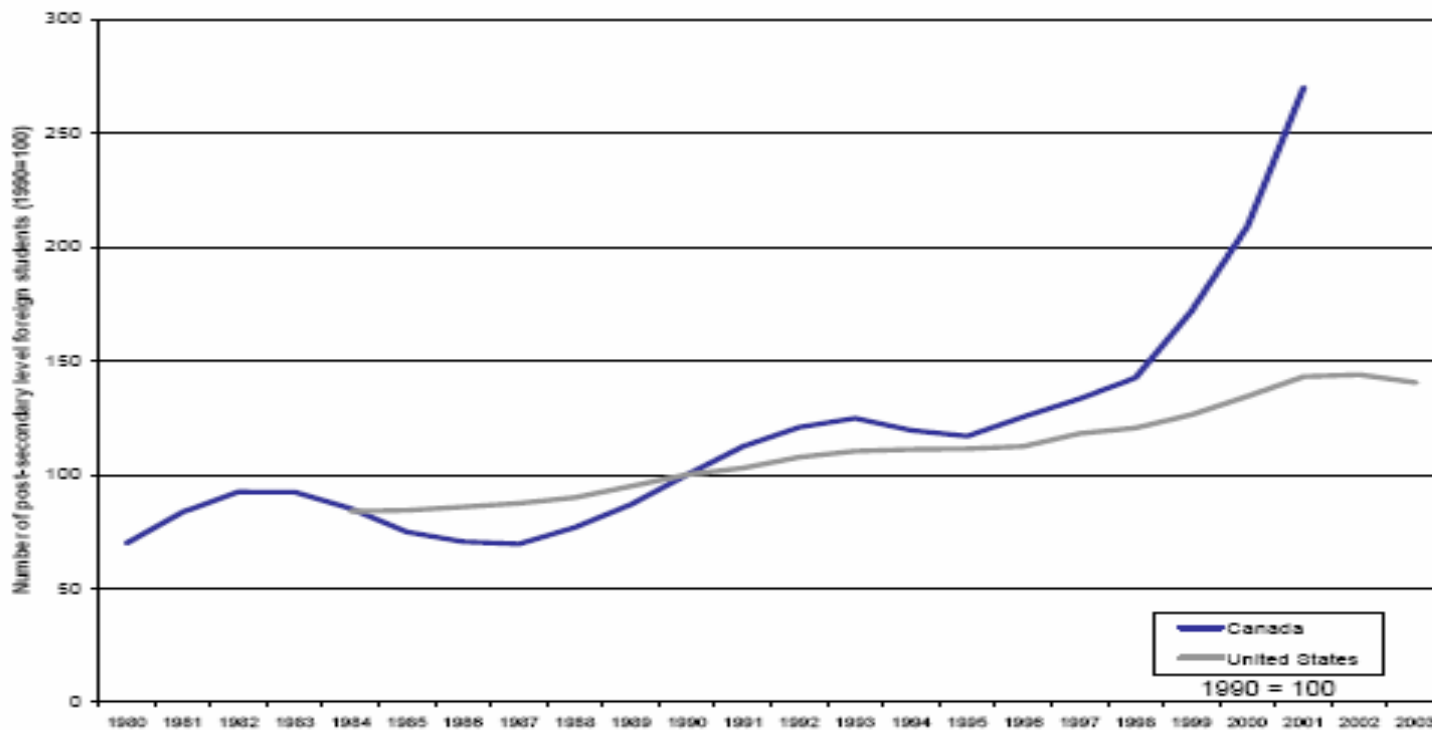
- Universities are key institutions in building 'quality of place'
 - Attract talent to local regions by
 - Fostering diversity through accessibility
 - Creating 'humane' capital
- Diverse, open, tolerant city-regions enhance universities' ability to attract, retain top graduate students and researchers from elsewhere
- Diversity, openness, tolerance also improve the ability of city-regions to retain their talented graduates locally
- City-regions are engaged in a continental (and global?) competition for talent
 - Pittsburgh vs Boston, Waterloo vs Redmond

Success in the Global Talent Competition

- Some place are better at generating, attracting and holding on to talent
 - Answer lies in their openness, diversity and tolerance
 - Quality of Place' attracts talent to city regions:
 - Critical mass of creative people/activities
 - Successful places provide 'thick' labour market that matches people to jobs and provides conducive social life
 - 'Buzz' in both cultural and career sense
 - Quality of place, diversity, creativity
 - Tolerance is critical factor in attracting and harnessing creative talent
 - Creates 'low barriers to entry' (Florida)
 - Provides a more welcoming environment for talented newcomers
- Students are 'canaries of the talent mine' (Florida)
 - Students are the leading indicator of global talent flows
 - Countries and regions that attract students have an advantage in retaining them and attracting other pools of domestic and foreign talent

Attracting Global Talent: Foreign Students in Canada and the US

ATTRACTING GLOBAL TALENT:
FOREIGN STUDENTS IN CANADA and the UNITED STATES



Source: Citizenship and Immigration Canada, 2004; Institute for International Education, 2004.

Canadian Policies to Promote Talent

- Since 1997, Government of Canada has introduced wide range of programs to support post-secondary education and research - \$13 billion in new funding
 - Canada Foundation for Innovation
 - Canadian Millennium Scholarship Fund
 - Canada Research Chairs Program
 - Creation of Canadian Institutes for Health Research
 - Creation of Genome Canada
 - Expanded support for Federal Granting Councils
 - CIHR, NSERC, SSHRC
 - Federal support for research overhead costs
- Provincial Governments have followed suit
 - Ontario Research and Development Challenge Fund
 - Ontario Innovation Trust
 - Ontario Research Fund
 - Biotechnology Cluster Innovation Program

New Role of Governance

- Multilevel governance draws on programs and resources of all three levels of government
- Recognizes the importance of community actors as important sources of local knowledge
- Helps overcome policy silos and improve coordination among policies at different levels of government
- Allows for economic development to be addressed holistically
 - community level issues that are key to economic development (e.g. transportation) can be addressed in decision-making.

Role of Collaborative Institutions

- Formal and information organizations that:
 - Facilitate exchange of information and technology
 - Foster cooperation and coordination
- Social capital - shared norms and trust (Morgan)
 - Trust is a unique asset – it has value, but no price
 - Earned by discharging obligations to your partners
 - Facilitates cooperation among firms and sectors
 - Expedites learning and speeds the flow of knowledge
- Enhance social capital and improve competitiveness by:
 - Creating relationships and establishing trust
 - Creating collective institutions
 - Identifying common strengths and developing common agenda
- Strategic planning exercises draw upon social capital created by these institutions
 - Generate trust by engaging key social partners in 'talk' – builds set of shared understandings and expectations

Strategic Planning at the Community Level

- Innovation-based strategic planning
 - Promotes innovative ideas in all aspects of regional economy
 - Facilitate relationship-building
- Strategic assessment of local/regional assets
 - Workforce skills
 - Knowledge assets and R&D
 - Creative elements
 - Infrastructure
 - Quality of place
 - Collaborative institutions
 - Entrepreneurial networks and clusters
- Key Role of Community Leadership
 - Civic entrepreneurs
 - bring civic interests together to collaborate
 - Create broad buy-in across all sectors of community

Best Practices

- Made in Ontario examples
 - Sector strategies, 1992-1996
 - Office of Urban Economic Development
 - Toronto, Ottawa cluster studies
 - Ontario Competitive City Regions initiative
 - Biotechnology Cluster Innovation Program (BCIP)
 - Regional Innovation Networks
- Lessons for Policy
 - Adopts principle of 'joined-up' governance
 - Focuses on alignment of strategic assets and resources
 - Leverages local talent base by linking federal and provincial programs to local needs
 - Associative and reflexive
 - Brings the community back-in

Toronto Regional Initiatives

- Toronto Competes
 - Cluster studies with support of Ontario Government Office of Urban Economic Development
- Toronto, Mississauga, York Region Biotechnology Cluster Strategies
 - Align research and teaching capabilities with industry and institutional capacities
- MaRS Discovery District
 - Federal and Provincial support aligned with existing research capacity
- City of Toronto ICT Strategy
 - Leverage both public and private ICT assets to gain increased recognition for local strengths
- Toronto City Summit Alliance – coalition of 50 civic leaders
 - Emerged from Mayor's summit on the future of the city
 - Toronto Regional Research Alliance
 - Pressure for expansion of federal research presence in Toronto
 - Toronto Region Immigrant Employment Council

Waterloo Regional Initiatives

- University of Waterloo key institutional player
 - University of Waterloo Research and Technology Park
 - Designed to house high tech industries in the region and promote partnership between university and local industry
- Local business leaders fund major research institutes
 - Perimeter Institute for Theoretical Physics
 - Institute for Quantum Computing
 - Centre for International Governance Innovation
- Local Civic Associations build 'civic' capital
 - Canada's Technology Triangle (1987)
 - Communitech Technology Association(1997)
 - The Prosperity Council (2003)

Local Benefits

- Nurture and develop new firms, technologies, industries
- Identify workforce assets and needs
 - Attract, train & retain skilled, talented people locally
- Leverage existing assets – research infrastructure, skill base, etc.
- Build receptor capacity - drive innovation culture locally
- Build-on and strengthen local institutional capacity – at all three levels
- Attract international investment to regions based on technological strength and social interaction

Ottawa Regional Initiatives

- Collaborative institutions anchor local knowledge base
 - Ottawa Centre for Research and Innovation
 - formed by leading universities, community colleges and government laboratories with strong municipal support
 - 700 members, \$4.5 million budget
 - Sponsors 120 events annually
 - Ottawa Life Sciences Council
 - Ottawa Region Biotechnology Strategy and Initiatives
- Strong research infrastructure
 - National Research Council institutes concentrated in capital
 - Two universities with strong engineering faculties
 - Expand research in fields relevant to local industry, i.e. photonics
 - Strong private sector labs – Bell Northern Research, Nortel
- The Ottawa Partnership Economic Generators Initiative
 - Initiative of municipal government, OCRI and local business to chart economic development strategy
 - O Vitesse – local skills training initiative
 - NRC – Canadian Photonics Fabrication Centre
- NRC Regional Innovation Forums
 - Federal agency collaborates with local organizations