Economic Development and The Role of Clusters: Implications for Policy

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Cluster Definitions

- Defined as:
  - “Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities. Clusters encompass an array of linked industries and other entities important to competition. . . . Including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations.” (Porter)
  - A cluster is a concentration of firms across several industries that create quality jobs, export, share common economic foundation needs, the public sectors of economic development, legislators, universities, community colleges, K-12 educational community, workforce development, support foundations and all community stakeholders.” (Breault)

Critical Factors for Cluster Emergence

- Strong, diverse and tech-savvy talent pool
  - Florida's three 'T's
- Established pillar companies with global reach
- Strong knowledge infrastructure
  - research university, government labs etc.
- Specialized support services such as
  - Tech-savy law and accounting firms
- Risk Tolerant Venture Capital and angel investors
- Entrepreneurial culture that nourishes innovation
- Governance regime
  - Civic leadership – 'civic entrepreneurs' (Henton)
- Institutions of Collaboration

Benefits of Clustering

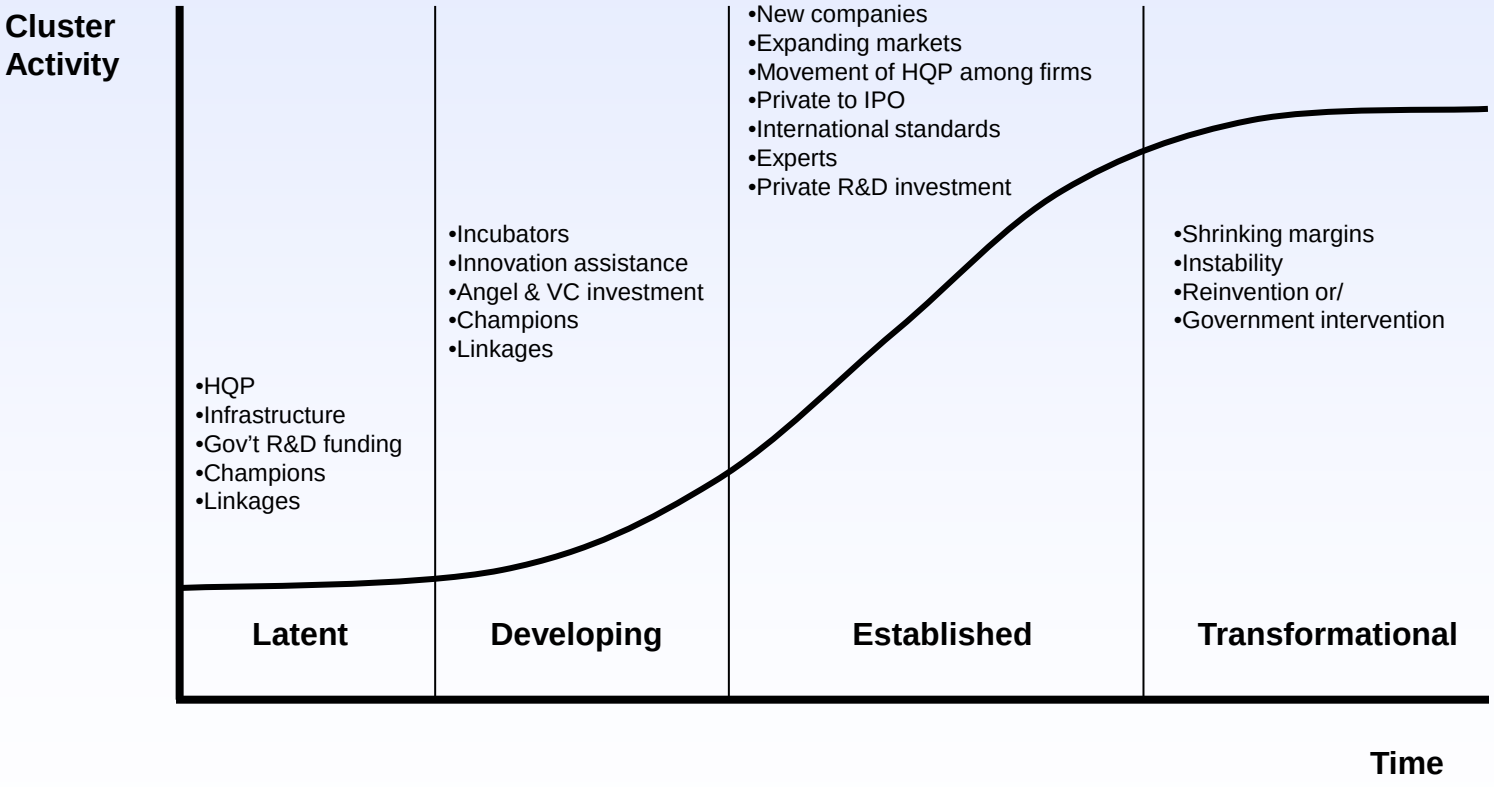
- Rationale is distinct advantages that clusters confer on firms and communities
  - Old dichotomies between competition and collaboration no longer apply
- Beneficial outcomes of cluster collaboration
  - Creates trust linkages among firms
  - Facilitates specialization
  - Builds critical mass
- Provides convenient means for streamlining delivery of policy support to local firms
  - Specialized financing, education, policy supports
  - Promote linkages between firms, universities & research institutes
  - Affords opportunity for SMEs to connect with larger partners
- Attracts customers, new investment, skilled talent

ISRN Project on Industrial Clusters Core Research Questions

- To what extent? — and in what ways? — do local, extra–firm relationships and interaction enable firms to become more innovative and successful?

- What is the relative importance of local, national and global relationships and knowledge flows in spurring the development of regional clusters over time?

ISRN's Cluster Life Cycle



Knowledge and Learning in Clusters

- International knowledge flows
  - Access to global networks
  - Niche clusters – ‘clustering of clusters’
  - Global networks – suppliers and strategic partners
- Local learning dynamics
  - Knowledge spillovers, mentoring, demonstration effects
  - Labour mobility – recombine assets

Local Dynamics

- Local knowledge circulation
  - Intra-cluster knowledge flows
  - Linkages between research infrastructure and cluster firms
  - Learning at three levels
    - Within firm
    - Within cluster
    - At level of broader community
- Strong social networks at community level
  - New institutions of civic governance
  - Value of inclusive civic engagement

Clusters &Research Infrastructure

- In contrast to most celebrated international case studies
  - Research institutions play supporting, not causal role
    - Clusters are not spun-off from research institutions
    - Waterloo and Ottawa ICT are clearest exceptions
- Research (especially PSE) institutions are excellent ‘market readers’
  - Expand research and teaching activities to meet needs and demands of local clusters
  - Contribute to development of a thick labour market

Clusters and Industrial Structure

- ISRN contribution to cluster literature
  - Tendency to generalize from one industrial sector across all others
    - i.e. Silicon Valley and ICT sector
- Tendency to apply one analytic model across wide variety of different geographic settings
  - Clusters are industrially specific
  - Key characteristics determined by
    - Age of cluster
    - Maturity of underlying technology
    - Supply chain linkages and/or disaggregation
    - Production model
    - Links to local labour markets

The Local and the Global

- Key elements of the literature maintain the importance of the local supply network and demand conditions for cluster development
- ISRN findings contradict this
  - Both key suppliers and customers are often non-local
  - Cluster firms are well integrated into global supply chains and knowledge networks
    - Especially true for ICT, bio-life sciences and mechanical engineering (including aerospace)
    - In multimedia, food and wine clusters, local demand conditions and supply base are more critical
- Clusters are anchored to their locality by agglomeration economies,
  - especially the labour market

Cluster Strategies in Canada

- Clusters provide an effective means for policy support at the local and regional level
  - Need for ‘policy alignment’
  - Clusters as ‘focusing device’
- Problem of ‘missed opportunities’ (OECD)
  - Federal/provincial investments in research centres and programs
    - Lack of direct linkages to cluster strategies and policies
  - Lack of integration of science and industrial parks with cluster strategies
  - Lack of coordination of regional with national innovation systems
- Clusters can identify gaps in innovation system
  - Align federal/provincial policy with needs of local industry

Policy Support for Clusters

- Federal Government
  - Invest in foundations of science & technology
  - Improve innovation policy context
    - IP protection
    - Tax incentives to foster R&D and university-industry collaboration
  - Align federal resources with cluster development
    - Current U.S. initiatives
  - Encourage regional economic development strategies
    - EU RIS/RITTS programs
    - Provide federal matching funds for innovation focused provincial & local strategies

Policy Support for Clusters

- Provincial/State Government
  - Invest in foundations of science and technology
  - Sponsor provincial programs to encourage sectoral/cluster development
  - Focus business recruitment around strong clusters
  - Create regional dimension to economic development strategies

Policy Support for Clusters

- Regional and Local Government
  - Strong support for education system
  - Upgrade business infrastructure
    - Transportation infrastructure
    - Communications infrastructure
  - Develop regional strategy that involves all stakeholders
    - Encourage common vision and collaboration among firms, universities and training centres (colleges)
  - Foster cluster development
    - Montreal/Toronto's cluster/sectoral strategy

Policy Implications

- National policies impact at the local level
- Need for multilevel governance
  - Clusters impact at local level but require support from senior levels of government
- Linkages between elements of the system
  - Especially research infrastructure and clusters
- Growing role of networks and clusters
  - Talent as a key attractor
  - Combination of educational resources and quality of life factors
- Need for strategic planning at the local level
  - Coordinate federal & provincial programs at local level

Magic Bullets ?

- Business-led
  - sustain leadership
  - Identify champions
- Clustering is a process not a goal
- Promote networking and interaction
  - Build common vision
- Focus on achievable steps
  - Revise, refocus
- Align institutions and resources
  - Across all three levels of government
  - Clusters focus federal/provincial initiatives
  - Clusters lead workforce development
  - Educational institutions target critical areas