Upgrading Australia’s Competitiveness: The Role of Cluster-based Economic Development

Dr. Christian H. M. Ketels
Institute for Strategy and Competitiveness, Harvard Business School
President, The TCI Network

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The Lucky Country…

Australia outperforming its peers, fueled by:
- Past policy reforms
- China-driven natural resource-boom
- (Partial) isolation from US/European crises

Source: IMF, 2016
Prosperity Decomposition, Australia, 2000 - 2016

Source: The Conference Board, Total Economy Database, May 2016
...and Even Falling Behind?

GDP per Capita Growth

- Australia
- G7

Average Annual Growth Rate, %

Source: IMF, 2016
Drivers

External

• China’s growth and natural resource demand is **slowing**, probably structurally

• Advanced economies are (slowly) working their way towards recovery

Internal

• Australia has **few obvious new growth sectors**

• A combination of Dutch Disease and the effects of distance and modest absolute market size have **decimated traditional manufacturing**

• Australia has **solid but stagnant** competitiveness fundamentals
Australia’s Competitiveness Fundamentals over Time

Openness of Product Markets
- 2008: Rank 13
- 2013: Rank 8

Cost of Doing Business
- 2010: 81%
- 2016: 80%

Overall Competitiveness
- 2010: Rank 15
- 2015: Rank 22
A Closer Look at Australia’s Competitiveness

Micro (22)
- Business Environment Quality (22)
  - Demand Conditions (30)
  - Related and Supporting Industries (29)
  - Context for Strategy and Rivalry (23)
- Factor Input Conditions (20)
  - Capital (12)
  - Admin. (19)
  - Innovation (19)
  - ICT (20)
  - Logistics (31)

GDP pc (10) Index (19)
- Company Sophistication (23)
  - Strategy (25)
  - Internationalization (21)
  - Organization (15)

Macro (16)
- Social Infrastructure and Pol. Institutions (21)
- Political Institutions (31)
- Human Development (26)
- Rule of Law (20)

Macroeconomic Policy (25)

Source: World Economic Forum Global Executive Opinion Survey 2014, ISC analysis, 144 countries
...And How it Translates into Economic Composition

Economic Complexity Index, 2013

Australia

Source: Atlas of Economic Complexity, 2016
Australia’s Competitiveness Challenge 2016

• What will be Australia’s **positioning** in the Asian/Oceanic and global economy in the future?

• In what **sectors and markets** will companies from Australia be able to successfully compete?

• What policies can help Australia build **sustainable competitive advantages** in specific areas?

• What role can **cluster-based economic development approaches** play in addressing these questions?
Clusters: An Established Concept….
…with a Stable Set of Core Building Blocks …

- Related Variety
- Proximity

Critical Mass

Collaboration & Rivalry
Clusters are a critical facet of modern economies

Clusters are a key aspect of urbanization

Clusters are becoming more specialized

Clusters are becoming more connected
The Boston Biopharmaceuticals Cluster

- **Health & Beauty Products**
- **Surgical Instruments & Suppliers**
- **Medical Equipment**
- **Dental Instruments & Suppliers**
- **Ophthalmic Goods**
- **Diagnostic Substances**
- **Containers**

**Teaching & Specialized Hospitals**

**Biological Products**

**Biopharma Products**

**Research Organizations**

**Cluster Organizations**
- MassMedic, MassBio, others

**Specialized Business Services**
- Banking, Accounting, Legal

**Specialized Risk Capital**
- VC Firms, Angel Networks

**Specialized Research Service Providers**
- Laboratory, Clinical Testing

**Educational Institutions**
- Harvard, MIT, Tufts, Boston University, UMass

Information Technology & Analytical Instruments Cluster
# Types of Industries and the Nature of Competition

<table>
<thead>
<tr>
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<th>Traded Share</th>
<th>Local Share</th>
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<tbody>
<tr>
<td>Employment</td>
<td>36%</td>
<td>64%</td>
</tr>
<tr>
<td>Income</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>Patents</td>
<td>91%</td>
<td>9%</td>
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## Traded Industries
- ‘**Spiky**’ across space; 2/3s of all traded industry employment is in strong clusters
- Serve **national and global markets**
- Exposed to **competition** from other regions and nations
- Critical for **prosperity** through higher wages, productivity, and innovation; **growth potential** set by the global market

## Local Industries
- Present **everywhere** at similar levels
- Serve exclusively the **local** market
- Little exposure to cross-regional competition
- Important for **jobs**, but lower wages; **growth potential limited** by size of the local market
Traded Cluster Composition of the Massachusetts Economy

Overall change in the Massachusetts Share of US Traded Employment: -0.13%

Massachusetts Overall Share of US Traded Employment: 2.65%

Change in Massachusetts Share of National Employment 2003-2013

-1.5% -1.0% -0.5% 0.0% 0.5% 1.0% 1.5% 2.0% 2.5% 3.0% 3.5% 4.0% 4.5% 5.0%

Added Jobs

Lost Jobs

Note: Clusters with less than 1,000 employees not shown.

Clusters Linkages and Regional Diversification

- Existing cluster portfolios have a significant impact on the evolutionary path of regional economies (Neffke et al., 2009; Boschma et al., 2011)

- Clusters provide a powerful analytical tool to understand diversification and the emergence of new economic activities

The San Diego Economy

- Climate and Geography
- Hospitality and Tourism
- Transportation and Logistics
- Power Generation
- Communications Equipment
- Information Technology
- Aerospace Vehicles and Defense
- Analytical Instruments
- Medical Devices
- Education and Knowledge Creation
- Medical Devices
- Biotech / Pharmaceuticals
- U.S. Military
- Bioscience Research Centers


Clusters and Economic Performance

Presence of Strong Clusters

Prosperity
- Wages
- Productivity
- Job growth
- Resilience
- Patenting

Entrepreneurship
- New business formation
- Survival of new firms
- Job growth in new firms

Structural Change
- Path of structural change (emergence of new clusters)
Putting Clusters into Context

- Framework Conditions
- Innovation Systems
- Entrepreneurial Ecosystems
- Complexity
- Urbanization
- Clusters
- Social Capital
- (Creative) Skills
A Comprehensive View at Competitiveness

Microeconomic Competitiveness
- Quality of the Business Environment
- State of Cluster Development
- Sophistication of Company Operations and Strategy

Macroeconomic Competitiveness
- Sound Monetary and Fiscal Policies
- Human Development and Effective Public Institutions

Endowments

Source: Delgado, Ketels, Porter, Stern (2012)
Microeconomic Drivers of Competitiveness

- **Business Environment**
  - Skills, knowledge
  - Infrastructure
  - Efficient public services
  - Access to capital
  - Competitive markets
  - Rules and regulations
  - Demand conditions

- **Cluster Presence**
  - Critical mass in specific groups of related and supporting industries
  - Strengths of linkages and cluster dynamics

- **Company Sophistication**
  - Quality of companies’ operational practices
  - Nature of companies’ competitive advantages
Upgrading Competitiveness: Principles

• There is no silver bullet

• Many things matter

• What matters most depends on what you already have

• Every location is different, but all adhere to the same economic principles and dynamics

• You can’t change everything at once, even if all has to change eventually

• Change requires action by many
Economic Development: Prevailing Approaches

Firm/Sector Focused
- Big Game Hunting
- The Next Big Thing
- Picking Winners
- Economic Gardening

Existing

New

Broad

Narrow

Business Environment Focused
- Build it and They Will Come
- Open for Business
- Place Making

Mixed
- Entrepr. Ecosystems
- Clusters

Focused
- Firm/Sector Focused
- Business Environment Focused

Focused
- New
- Narrow
Economic Development: Prevailing Approaches

- **Firm/Sector Focused**
  - New: High Risk
  - Limited potential
  - Existing: Lack of competitive advantages
  - Interest group capture

- **Business Environment Focused**
  - Narrow: High Risk
  - Limited potential
  - Broad: Often not creating specific competitive advantages

**How to get it right?**
Two Opposing Approaches to Cluster Policy

- BETTER (Competitiveness)
  - Long-term impact
  - New model of public-private collaboration

- MORE (Agglomeration)
  - High risk
  - Traditional ‘industrial policy’
Types of Government Interventions in Clusters

- **Direct intervention at the firm level**
  - Attraction of firms
  - Subsidies, directed credit

- **Intervention into the market**
  - Provision of monopoly rights; Entry/trade barriers
  - Demand subsidies

- **Investments in the cluster-specific business environment**
  - Specific to the cluster
  - Benefiting the cluster but part of a general upgrading strategy

- **Enable collaboration with and within the cluster**
  - Support for cluster initiatives
  - Active engagement with the cluster in setting and implementing policies
Clusters provide a framework for organizing the implementation of public policy and public investments towards economic development.
Cluster-Based Entrepreneurship Policy

• A growing number of regions **support entrepreneurship** through incubators, risk capital, and other mechanisms

• Start-ups **share many needs** that such efforts can help address

• Linking them to clusters and cluster organizations can significantly **enhance their economic impact**

• Entrepreneurship is much more likely to spurn the emergence of **high-growth companies** if it occurs in clusters

• Clusters reflect location-specific advantages that enhance new firms’ **likelihood of entry, survival, and growth** in related fields

• Cluster organization can enable **easier access** to the many types of industry-specific partners and assets that new companies need

Source:: Stern/Guzman (2016), Delgado et al. (2014)
What are Cluster Initiatives?

Cluster initiatives are **collaborative activities** by a **group** of companies, public sector entities, and other related institutions with the objective to improve the competitiveness of a group of **interlinked economic activities in a specific geographic region**.

- Upgrading of company operations and strategies across a group of companies
- Strengthening of networks to enhance spill-overs and other economic benefits of clusters
- Upgrading of cluster-specific business environment conditions
Clusters, Cluster Initiatives, and Performance

Clusters Presence + Cluster Effort = Economic Performance

- Green checkmark indicates presence or success.
- Red X indicates absence or failure.

Example cases:
1. Presence + Failure = Failure
2. Presence + Success = Success
3. Absence + Success = Success
4. Absence + Failure = Failure
Supporting Emerging Clusters: Identification

Business Environment Strengths

- Access to high quality business inputs
  - Human resources
  - Capital availability
  - Physical infrastructure
  - Administrative infrastructure (e.g., business registration, permitting, transparency)
  - Scientific and technological infrastructure

- Local rules and incentives that encourage investment and productivity
  - e.g., incentives for capital investments, protection, corporate governance standards

- Open and vigorous local competition

- Sophisticated and demanding local customers and needs
  - e.g., strict quality, safety, and environmental standards
  - Consumer protection laws

- Demand Conditions

- Availability and depth of suppliers and supporting industries

- Presence of Institutions for Collaboration (IFCs) that support productive coordination and collaboration among actors

- External intelligence (technology, market needs) is critical

- Choice under uncertainty

Assessment criteria

- Existing bridgeheads, market opportunity, leadership
Current Status of Cluster Policies and Programs

- Many countries and regions, especially within the OECD, have **cluster-related policy programs**

- Spending on cluster-related programs is **meaningful, but only a modest percentage of total spending** per policy area

- Funding is tilted towards **existing strengths**, but many efforts exist without established critical mass

- Cluster programs are often run by **a range of ministries or agencies**; there is limited coordination between programs

- Funding for **strengthening collaboration** is always a part; other elements differ significantly

- **Design principles differ widely** across many dimensions
Modes of Cluster Policy

Create/task backbone organizations to mobilize clusters

Deploy policy funds through cluster initiatives/networks

Use cluster initiatives/networks as organizational infrastructure for policy action

Policy for Clusters

Sporadic: Create stronger linkages

Tactical: Deliver programs more effectively

Strategic: Choose & design better policies

Cluster-based Policy

Sweden

Austria

US

Germany

France

Colombia

Mexico

Catalonia

Korea

Basque

Austria

Mexico

Colombia

Korea

Basque
What Drives the Success of Cluster Initiatives?

**Context**
- Cluster strength
- Business environment conditions
- Firm sophistication
- Collaboration culture, trust

**Activities**
- Activities aligned with the needs of firms
- Activities aligned with actions of partners
- Effectiveness of implementation

**Resources & Capabilities**
- Quality of staff
- Budget and tools
- Governance

**IMPACT**
- Activities aligned with the needs of firms
- Activities aligned with actions of partners
- Effectiveness of implementation

**Narrow model**
- Focus on networking
- Limited resources
- Limited impact

**Systemic model**
- Cluster initiatives as key channel for delivering policy action
- Moderate operational resources, strong influence on other investment streams
- High impact possible
The Role of Government at Different Levels

- National
- Regional
- Local

Setting the stage
Orchestrating a strategy
Making it happen

Success is the result of effective collaboration across different levels of government, building on their respective roles and capabilities.
Towards an Economic Strategy for a Location

Outcome Ambitions

- The specific value the location provides as a place to do business in the national and global economy

**Positioning**

- Activities focused on existing and emerging clusters that draw most benefits from and emphasize the location’s value proposition
- Activities to upgrade cross-cutting business environment conditions that are most critical for the location’s value proposition

**Implementation Architecture**
- Responsibilities, resources, capabilities, and coordination
Developing a Cluster-Based Economic Strategy

**Diagnostics**
- What is the profile of our performance?
- What business environment conditions do we offer?
- What clusters do we have? How are they positioned?

**Choice**
- What business environment conditions do we want to offer?
- Which type of companies and skills do we aim to attract with these qualities?

**Action Plan**
- What are the priorities for action?
- Who is going to do what?
- How do we deploy our resources?
- What channels and platforms can we use?
Making it Happen: The Need for New Partnerships

Old Model

- **Government** drives economic development through policy decisions and incentives

New Model

- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and private sector organizations

- **Cluster organizations are effective tools to organize public-private dialogue**
Implications for Australia

• Australia has a **strong economy**, rooted in **robust underlying competitiveness**

• The combination of strong demand for Australian natural resources and a policy focus on cross-cutting framework conditions, especially the openness of markets, has left the country **with few competitive advantages and clusters** outside a narrow range of areas

• The country would benefit from shifting towards the exploration and systematic development of **positions in a broader range of fields**

• A **cluster-based approach** is a powerful way for Australia to identify and implement such a strategy, based on a new model of public-private collaboration