

Regional Competitiveness: The Role of Clusters

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This presentation draws on ideas from Professor Porter's articles and books, in particular, *The Competitive Advantage of Nations* (The Free Press, 1990), "Building the Microeconomic Foundations of Competitiveness," in *The Global Competitiveness Report* (World Economic Forum), "Clusters and the New Competitive Agenda for Companies and Governments" in *On Competition* (Harvard Business School Press, 2008), and ongoing research on clusters and competitiveness. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means - electronic, mechanical, photocopying, recording, or otherwise - without the permission of Michael E. Porter. Further information on Professor Porter's work and the Institute for Strategy and Competitiveness is available at www.isc.hbs.edu

What is Competitiveness?

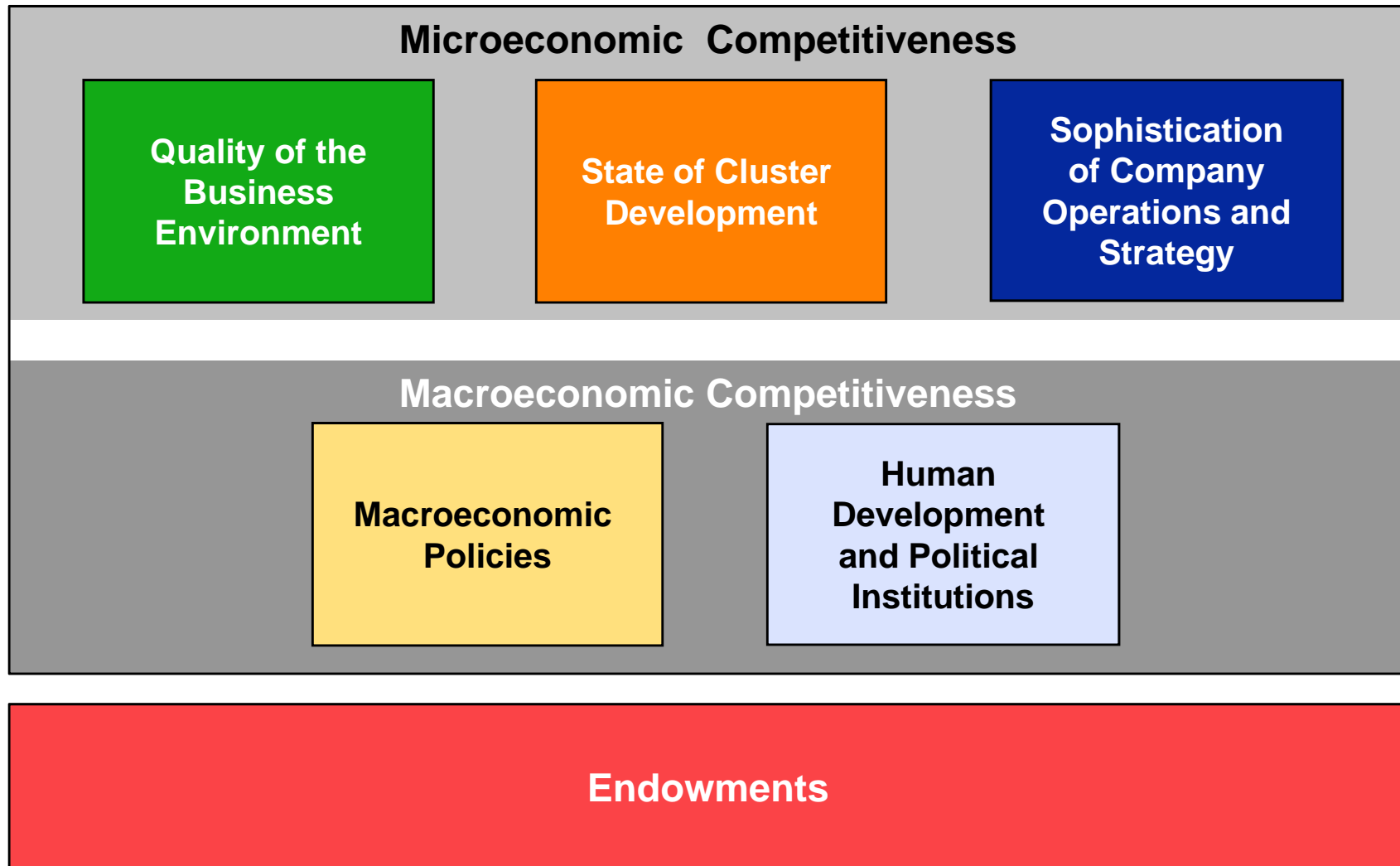
A nation or region is competitive to the extent that firms operating there are able to **compete successfully** in the global economy while supporting **high and rising wages and living standards** for the average citizen

- Competitiveness depends on the **long term productivity** with which a nation or region uses its human, capital, and natural resources
 - Productivity **sets sustainable wages, job growth, and standard of living**
 - It is not **what** industries a nation or region competes in that matters for prosperity, but **how productively** it competes in those industries
 - Productivity in a national or regional economy benefits from a **combination of domestic and foreign firms**



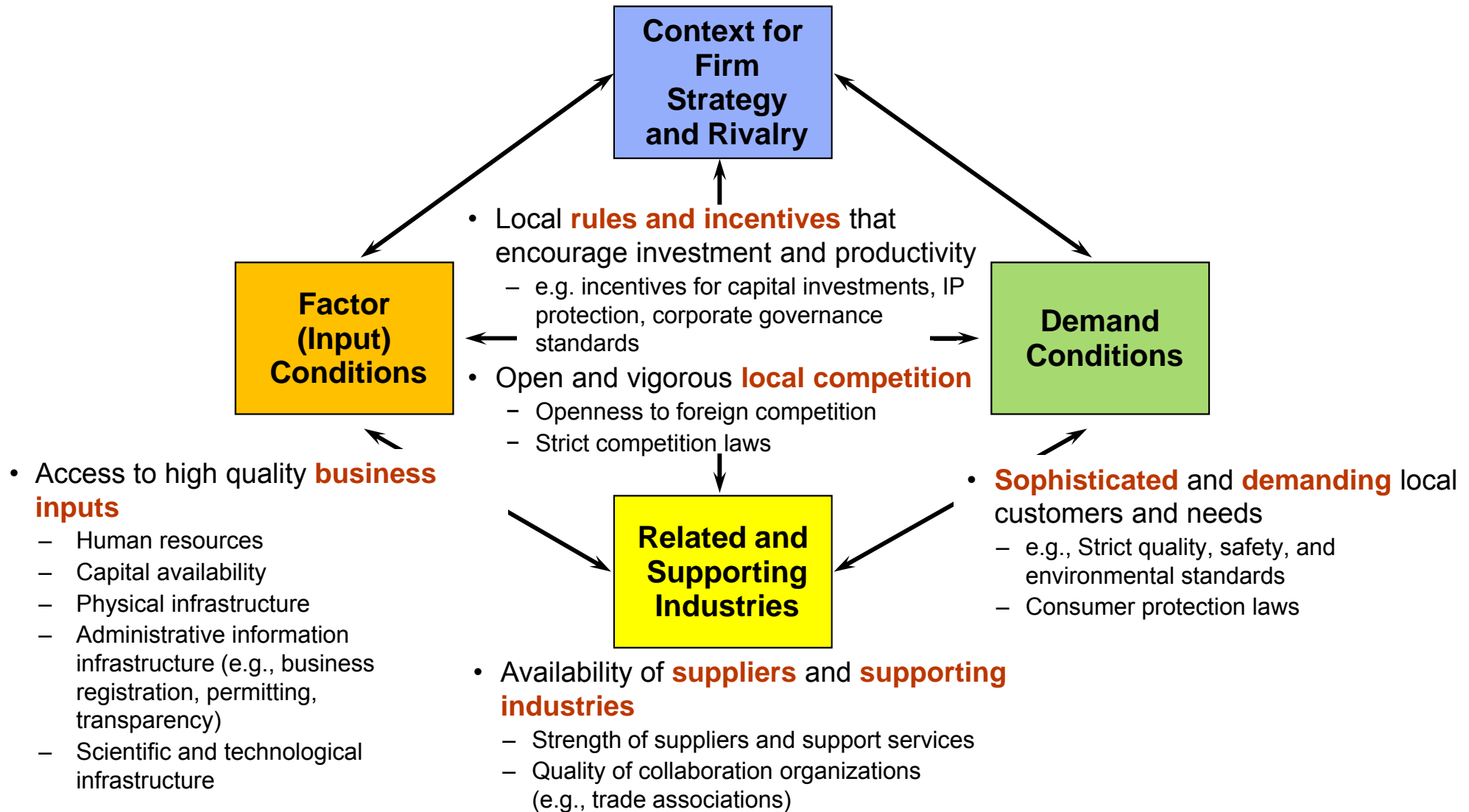
- Nations and regions compete to offer the **most productive environment for business**
- Competitiveness is **not a zero sum game**

What Determines Competitiveness?



- Productivity ultimately depends on improving the **microeconomic capability** of the economy and the **sophistication of local competition**
- Macroeconomic competitiveness sets the **potential** for high productivity, but is **not sufficient**
- Endowments create a **foundation** for prosperity, but true prosperity is created by **productivity in the use of endowments**

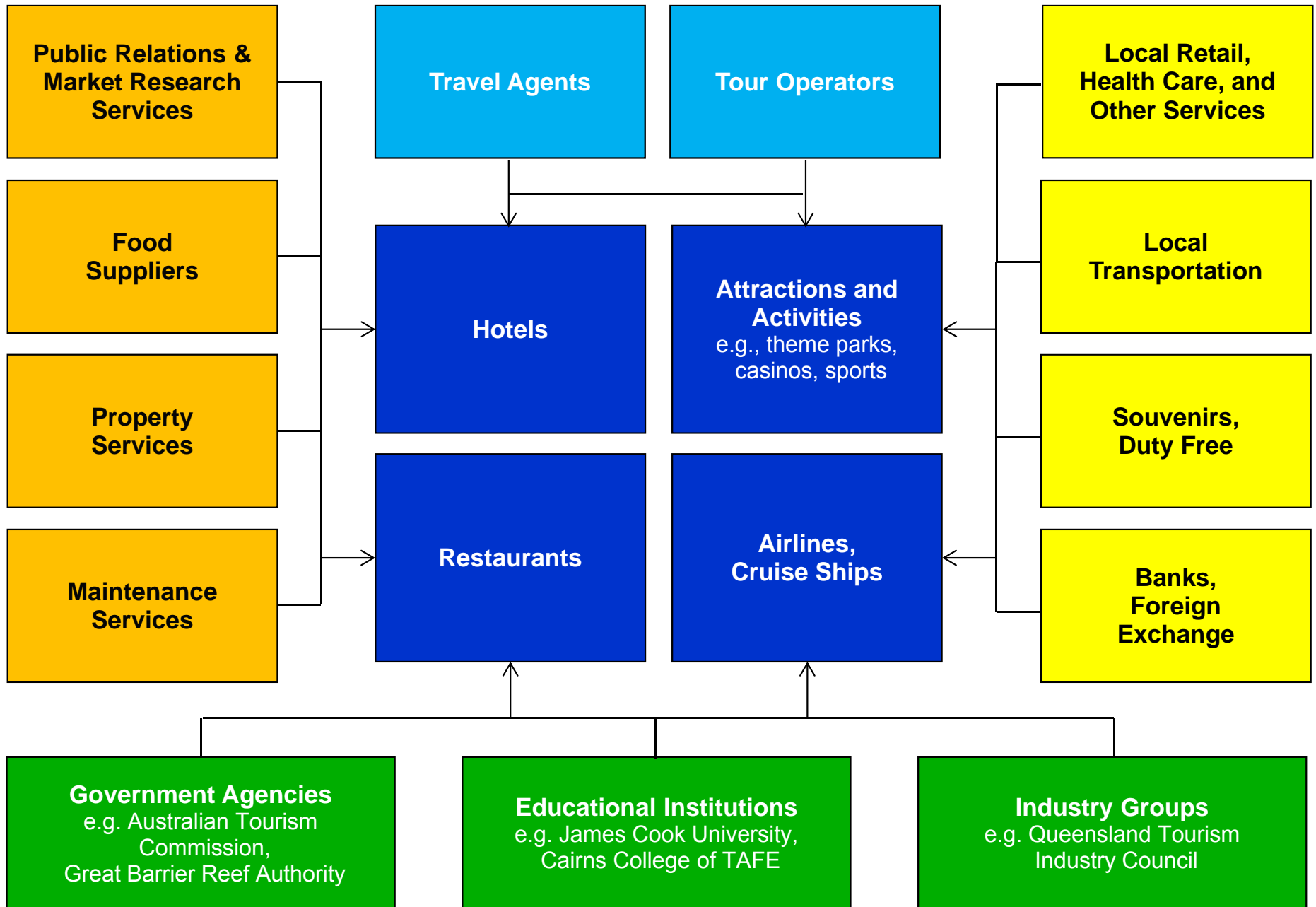
Quality of the Business Environment



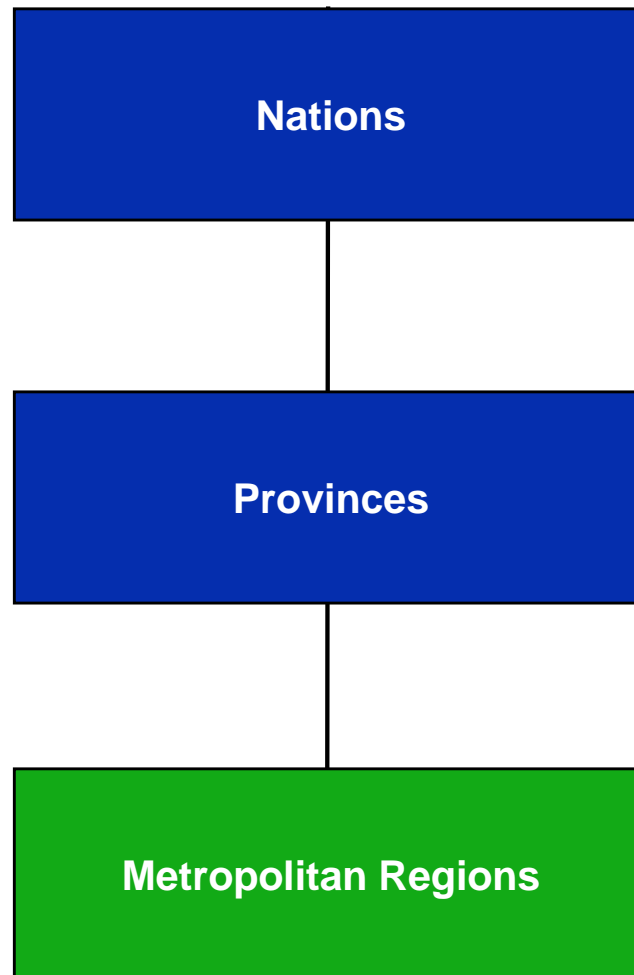
- **Many things matter** for competitiveness
- Successful economic development is a process of **successive upgrading**, in which the business environment improves to enable increasingly sophisticated ways of competing

Cluster Strength

Tourism Cluster in Cairns, Australia



Geographic Levels and Competitiveness

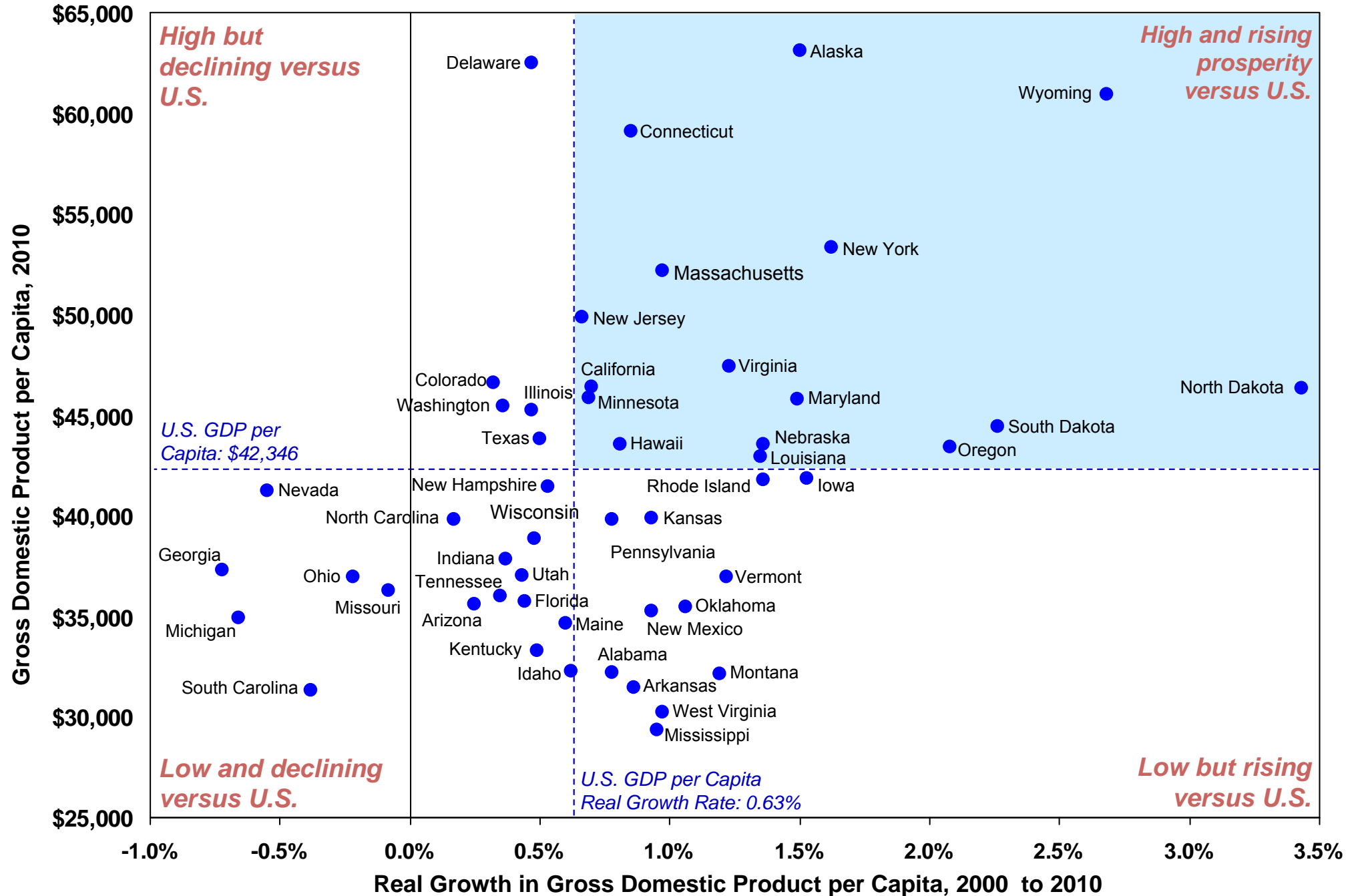


Regions and Competitiveness

- Economic performance **varies significantly** across sub-national regions (e.g., provinces, states, metropolitan areas)

Comparative Prosperity Performance of U.S. States

2000 - 2010

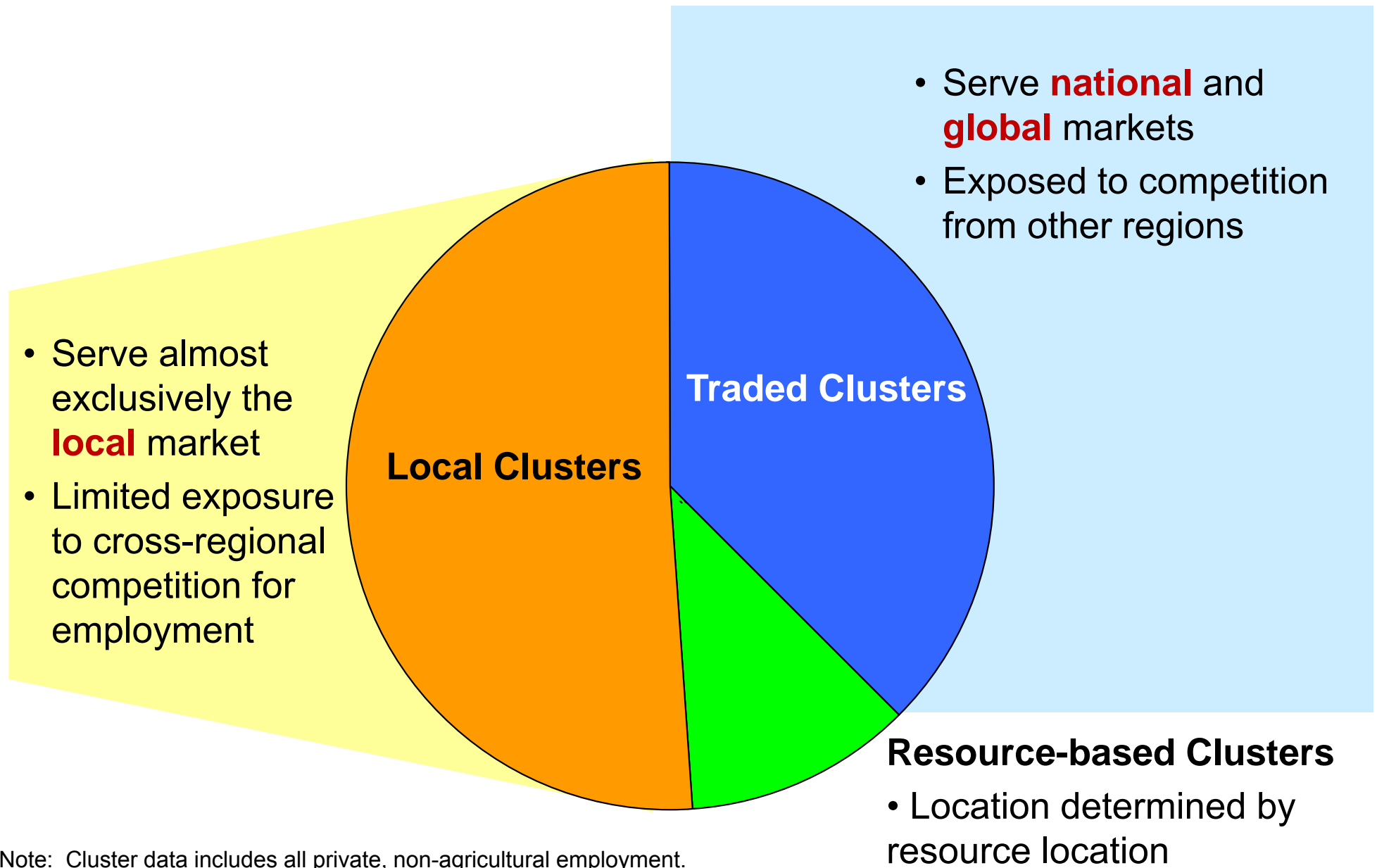


Source: BEA. Notes: GDP in real 2005 dollars. Growth rate is calculated as compound annual growth rate.

Regions and Competitiveness

- Economic performance **varies significantly** across sub-national regions (e.g., provinces, states, metropolitan areas)
- Many essential levers of competitiveness reside at the **regional level**
- Regions **specialize** in different sets of clusters

Composition of Regional Economies



Note: Cluster data includes all private, non-agricultural employment.

Source: Michael E. Porter, Economic Performance of Regions, Regional Studies (2003); Updated via Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School (2008)

Specialization of Regional Economies

Leading Clusters by U.S. Economic Area, 2008

Denver, CO
 Business Services
 Medical Devices
 Entertainment
 Oil and Gas Products and Services

Chicago, IL-IN-WI
 Metal Manufacturing
 Lighting and Electrical Equipment
 Production Technology
 Plastics

Pittsburgh, PA
 Education and Knowledge Creation
 Metal Manufacturing
 Chemical Products
 Power Generation and Transmission

Boston, MA-NH
 Analytical Instruments
 Education and Knowledge Creation
 Medical Devices
 Financial Services

Seattle, WA
 Aerospace Vehicles and Defense
 Information Technology
 Entertainment
 Fishing and Fishing Products

San Jose-San Francisco, CA
 Business Services
 Information Technology
 Agricultural Products
 Communications Equipment
 Biopharmaceuticals

New York, NY-NJ-CT-PA
 Financial Services
 Biopharmaceuticals
 Jewelry and Precious Metals
 Publishing and Printing

Los Angeles, CA
 Entertainment
 Apparel
 Distribution Services
 Hospitality and Tourism

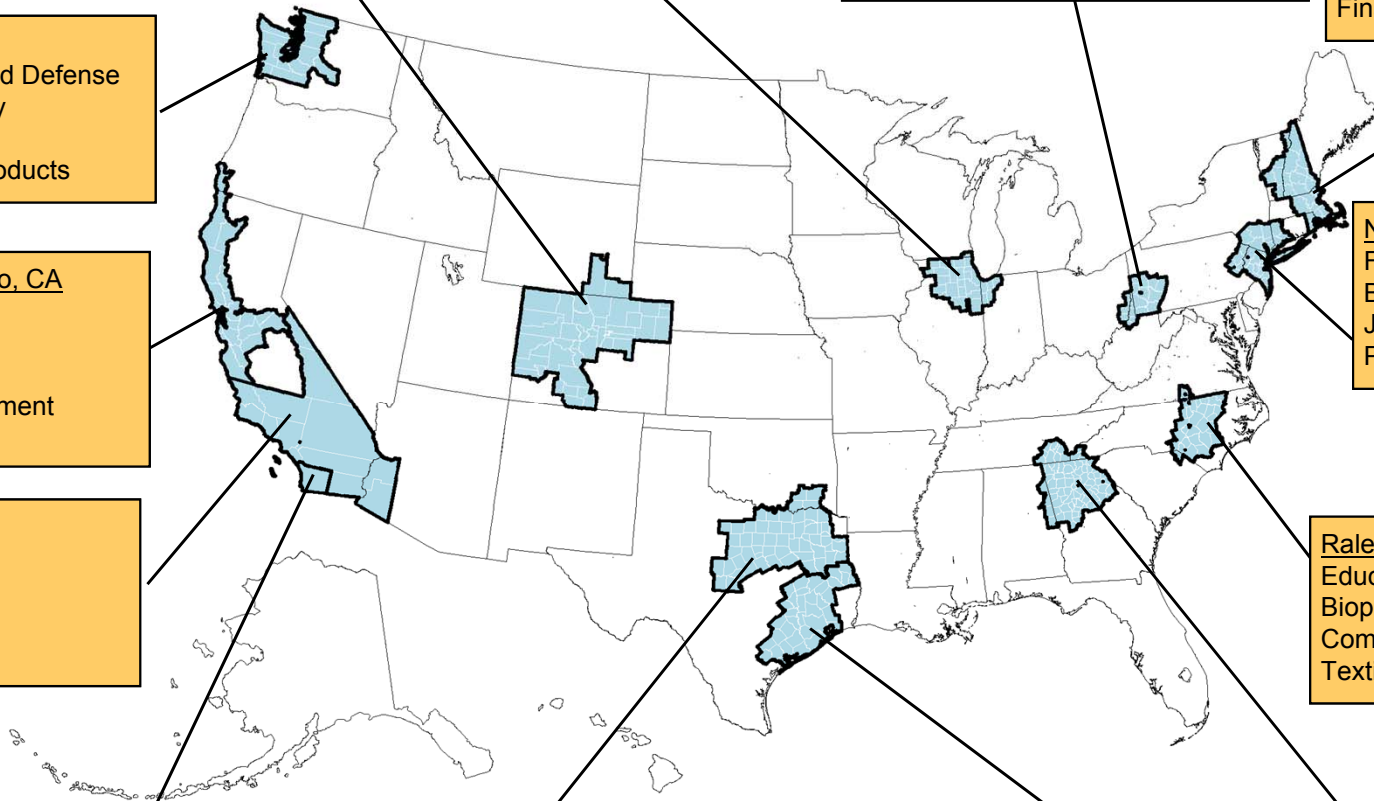
Raleigh-Durham, NC
 Education and Knowledge Creation
 Biopharmaceuticals
 Communications Equipment
 Textiles

San Diego, CA
 Medical Devices
 Analytical Instruments
 Hospitality and Tourism
 Education and Knowledge Creation

Dallas
 Aerospace Vehicles and Defense
 Oil and Gas Products and Services
 Information Technology
 Transportation and Logistics

Houston, TX
 Oil and Gas Products and Services
 Chemical Products
 Heavy Construction Services
 Transportation and Logistics

Atlanta, GA
 Transportation and Logistics
 Textiles
 Motor Driven Products
 Construction Materials

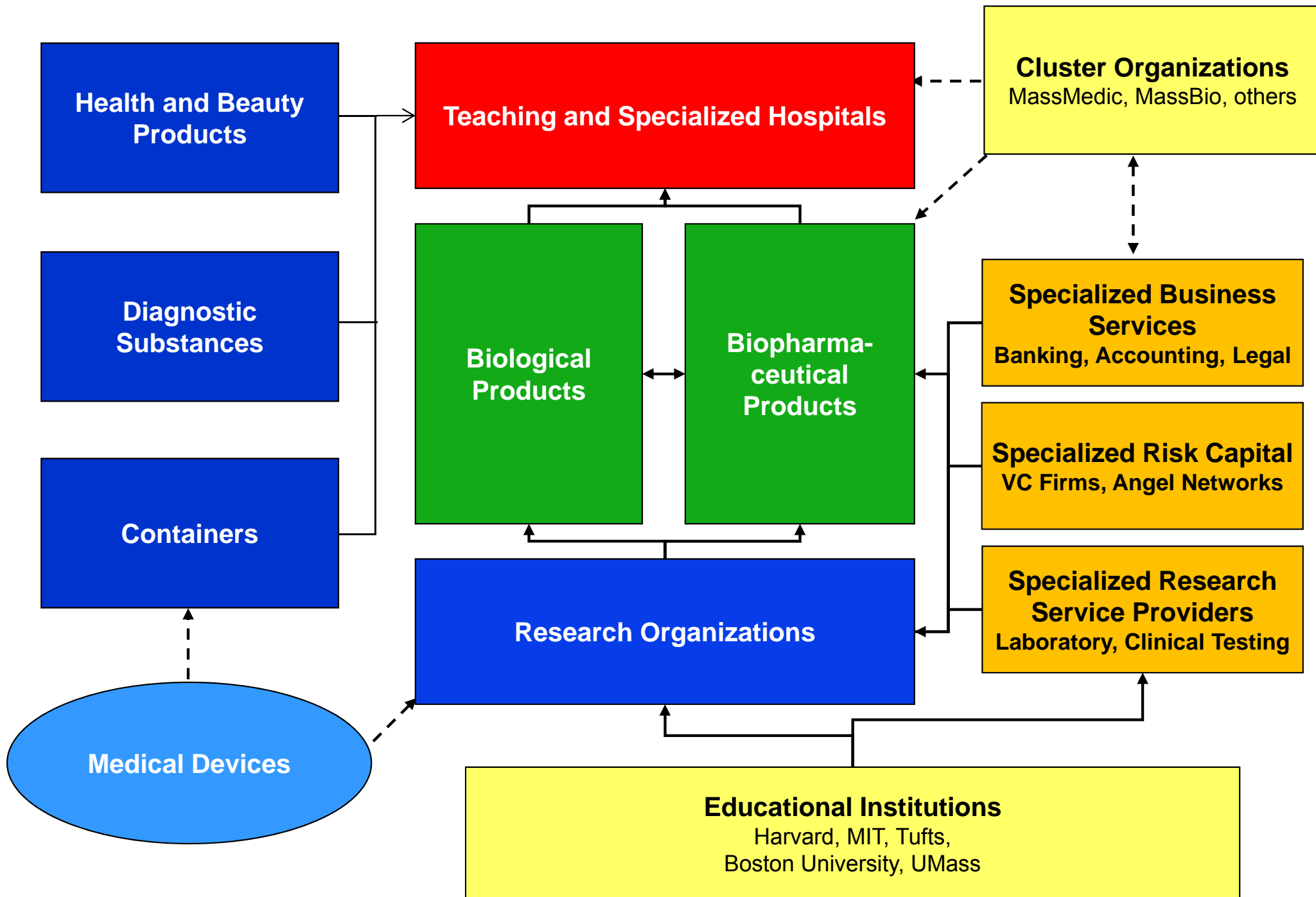


Regions and Competitiveness

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- **Cluster strength** directly impacts regional performance
- Each region needs its own distinctive **competitiveness strategy and action agenda**
- Improving competitiveness requires **effective policy collaboration** between regions and the national government

Cluster Strength: Massachusetts Biopharmaceuticals



Institutions for Collaboration

Selected Massachusetts Organizations, Life Sciences

Life Sciences Industry Associations

- Massachusetts Biotechnology Council
- Massachusetts Medical Device Industry Council
- Massachusetts Hospital Association

University Initiatives

- Harvard Biomedical Community
- MIT Enterprise Forum
- Biotech Club at Harvard Medical School
- Technology Transfer offices

General Industry Associations

- Associated Industries of Massachusetts
- Greater Boston Chamber of Commerce
- High Tech Council of Massachusetts

Informal networks

- Company alumni groups
- Venture capital community
- University alumni groups

Economic Development Initiatives

- Massachusetts Technology Collaborative
- Mass Biomedical Initiatives
- Mass Development
- Massachusetts Alliance for Economic Development

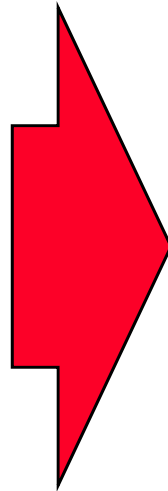
Joint Research Initiatives

- New England Healthcare Institute
- Whitehead Institute For Biomedical Research
- Center for Integration of Medicine and Innovative Technology (CIMIT)

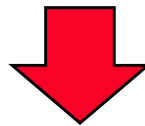
Strong Clusters Drive Regional Performance

Research Findings

- Presence of **strong clusters**
- **Breadth** of industries within each cluster
- Strength in **related clusters**
- Presence of a region's clusters in **neighboring regions**



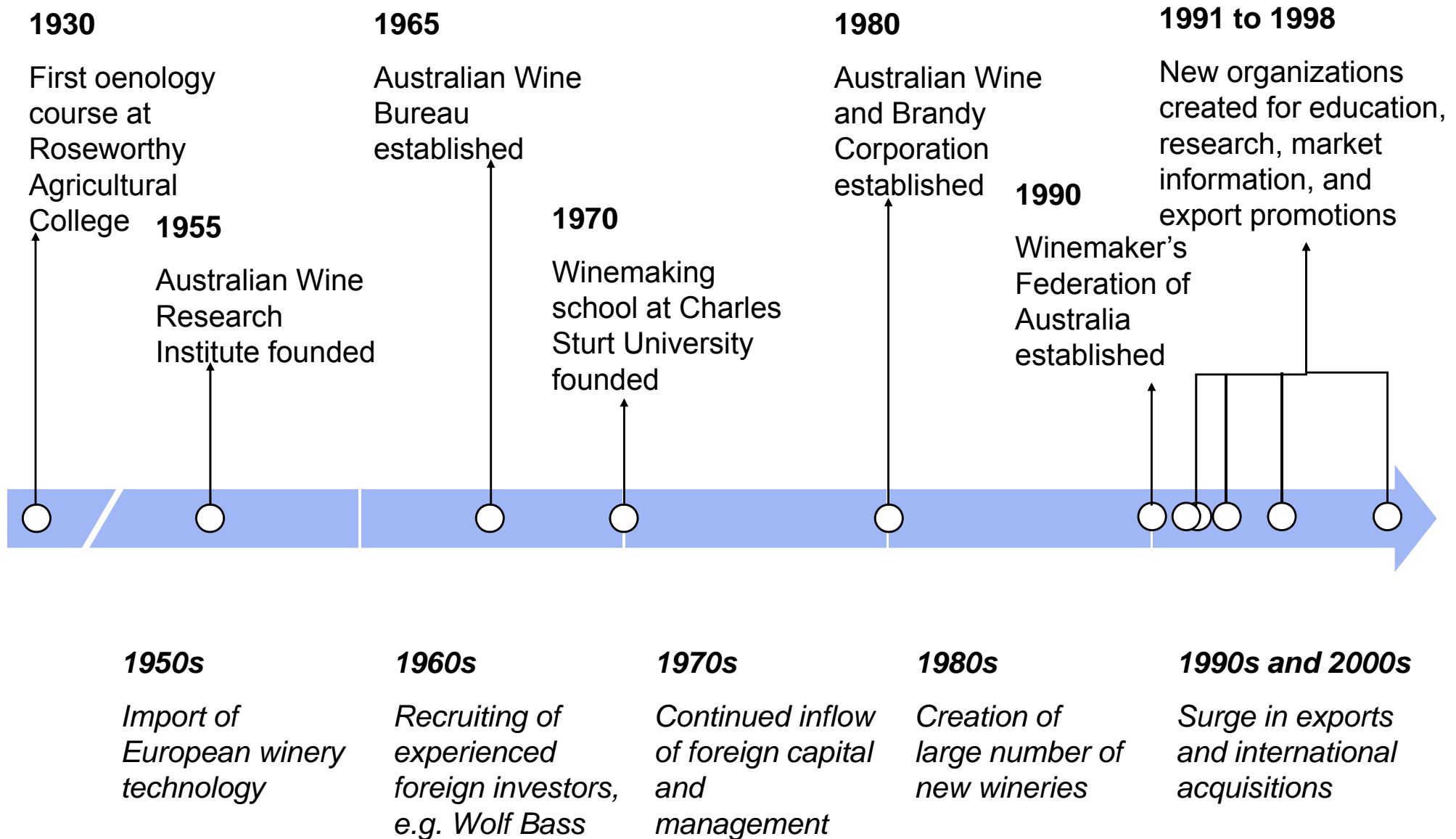
- **Job** growth
- Higher **wages**
- Higher **patenting** rates
- Greater **new business** formation, growth and survival



- Build on the region's **existing** and **emerging** clusters rather than chase hot fields
- Economic diversification usually occurs **within clusters** and **across related clusters**

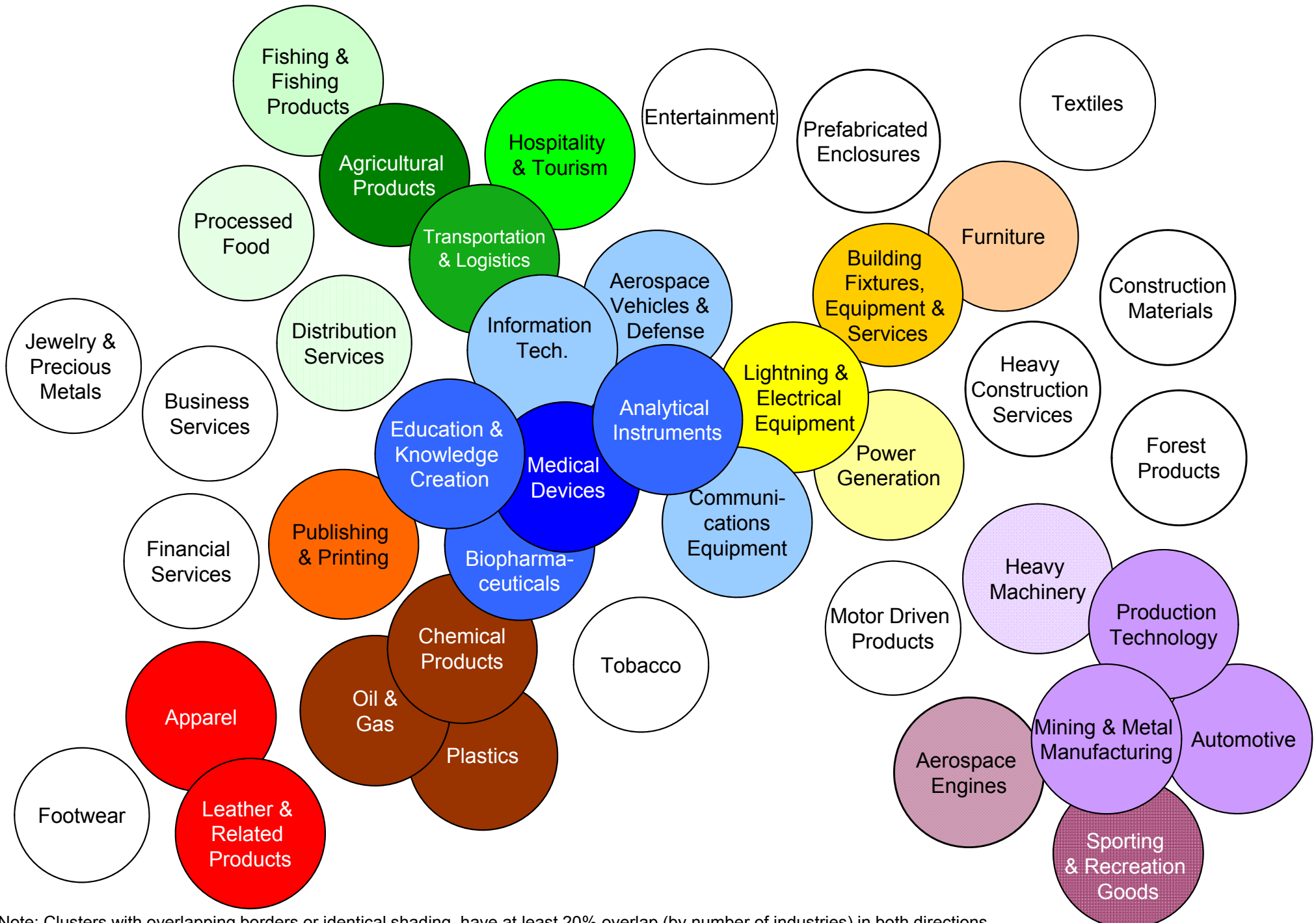
How Clusters Emerge and Develop

The Australian Wine Cluster



Source: Michael E. Porter and Örjan Sölvell, The Australian Wine Cluster – Supplement, Harvard Business School Case Study, 2002

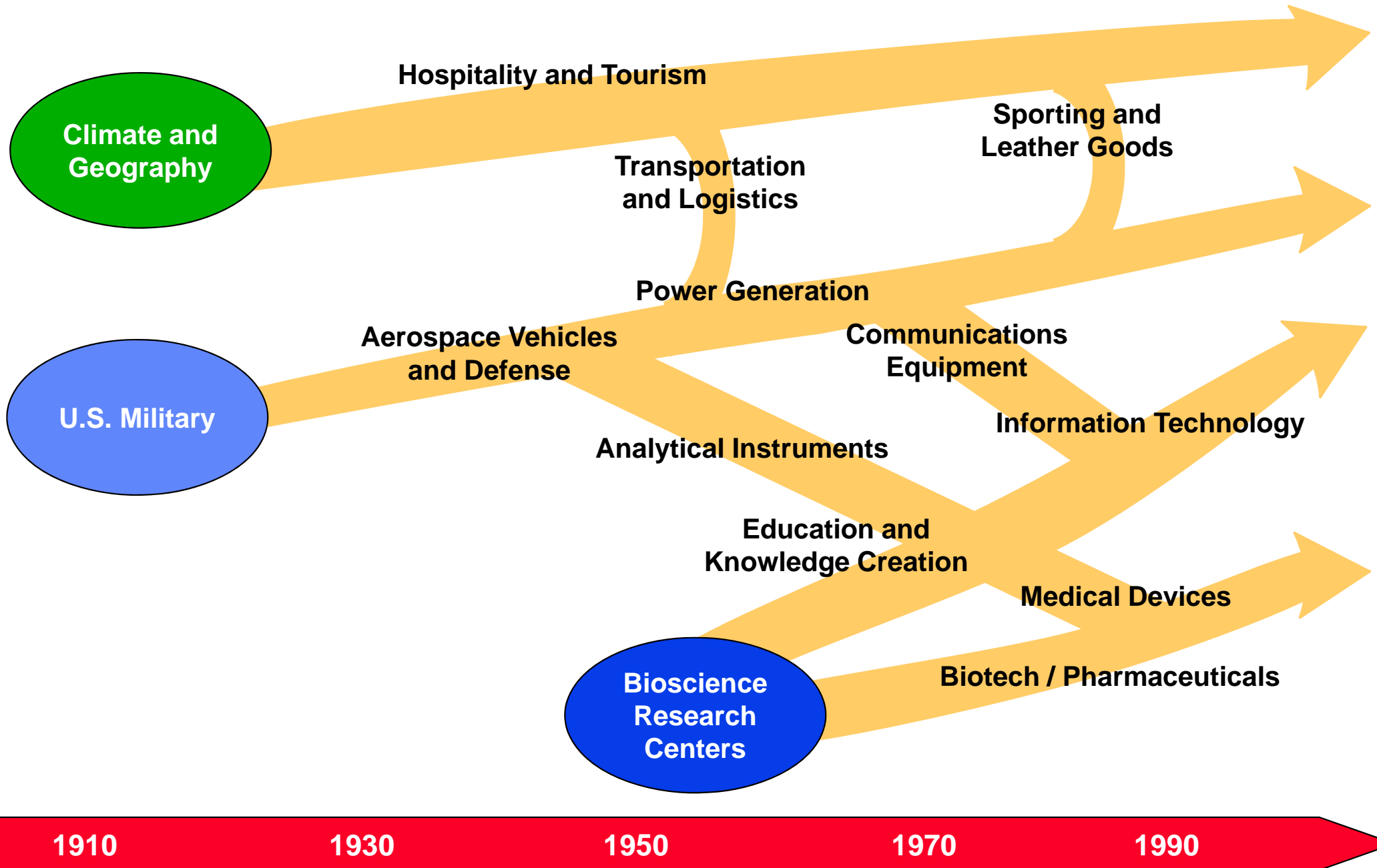
Related Clusters and Competitiveness



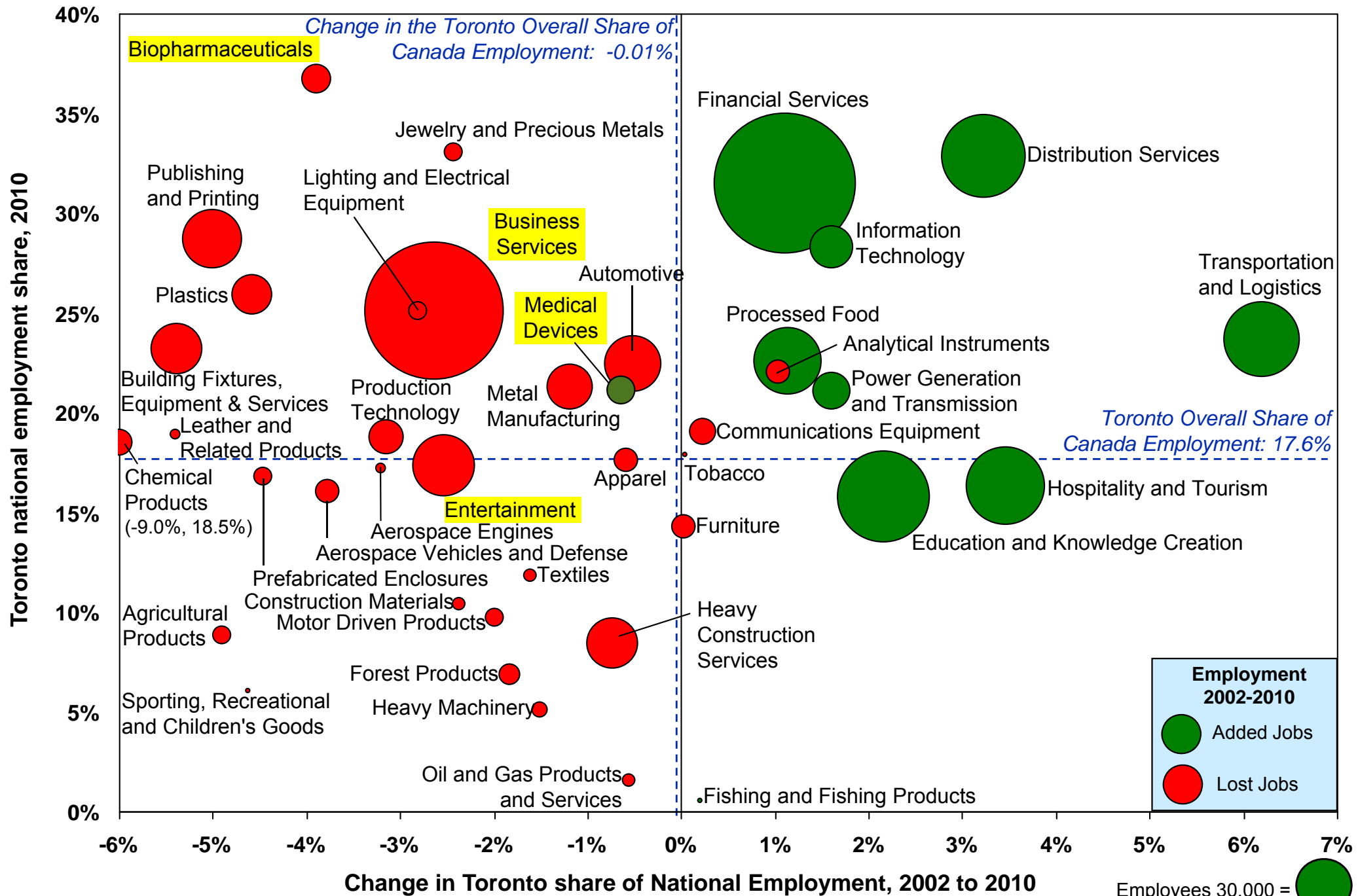
Note: Clusters with overlapping borders or identical shading have at least 20% overlap (by number of industries) in both directions.

The Evolution of Regional Economies

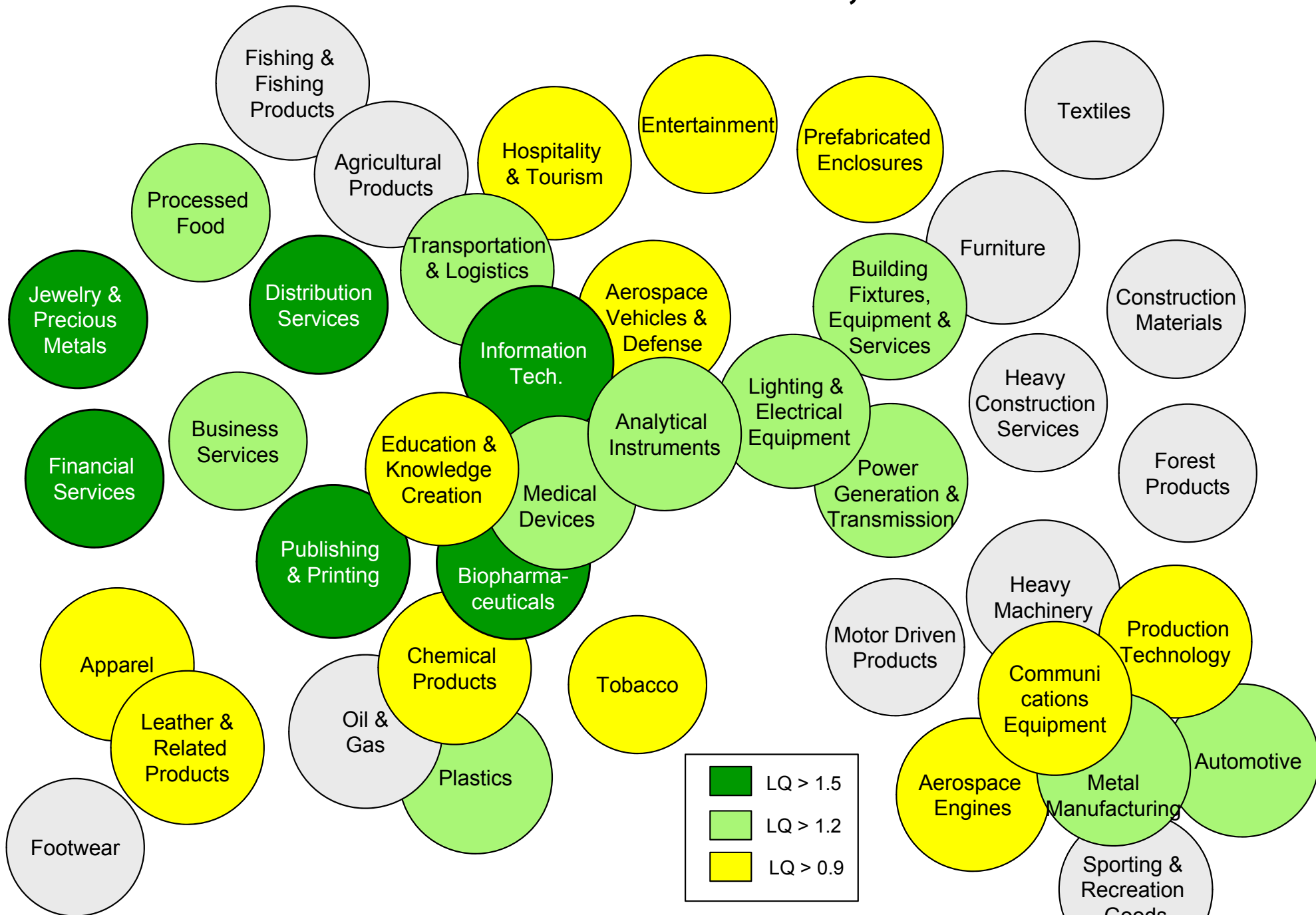
San Diego



Cluster Composition of the Toronto Economy



Toronto Cluster Portfolio, 2010



LQ, or Location Quotient, measures the state's share in cluster employment relative to its overall share of U.S. employment.

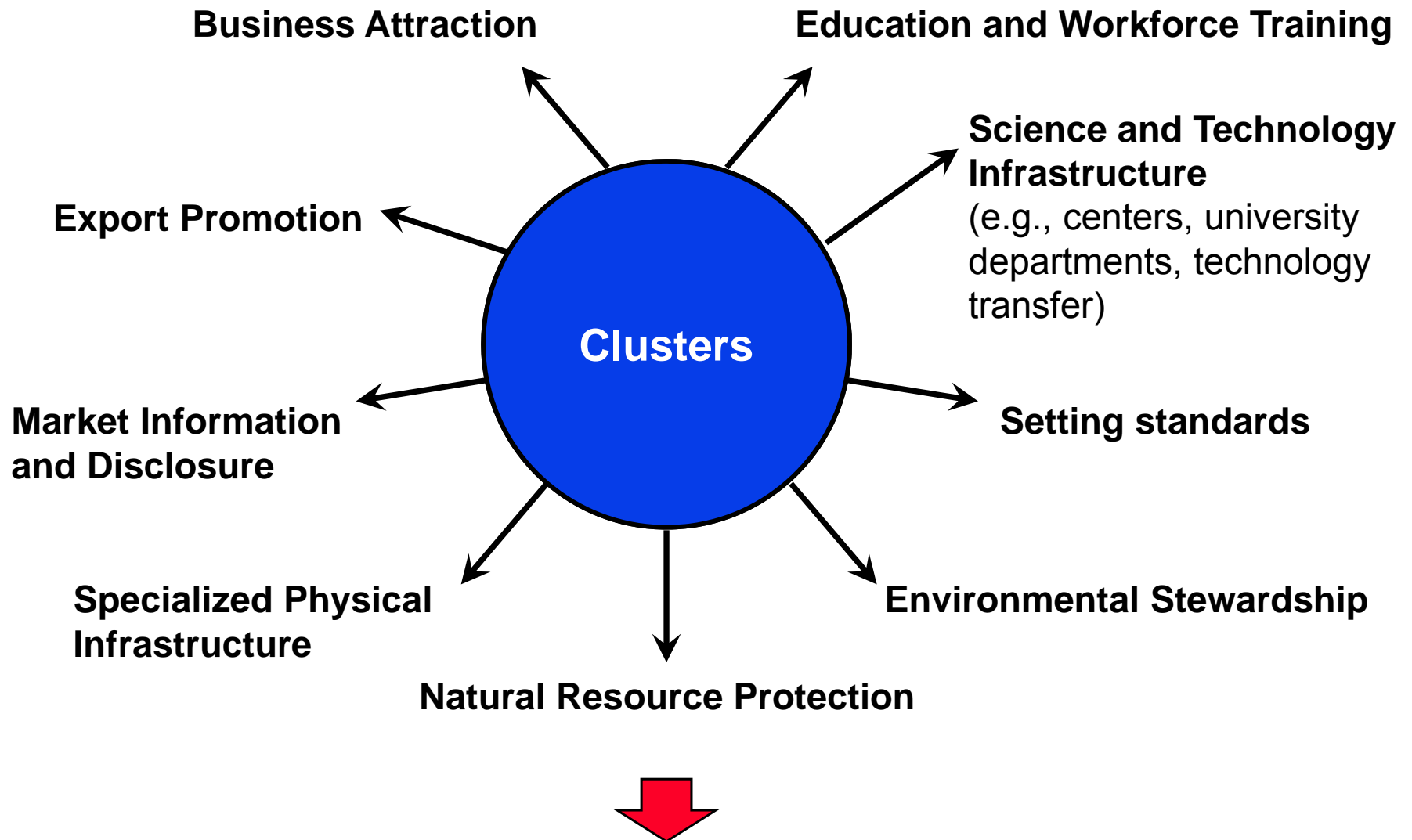
An LQ > 1 indicates an above average employment share in a cluster.

Source: Institute for Competitiveness & Prosperity, Toronto. Based on the research of Prof. Michael E. Porter and the Cluster Mapping Project, Harvard Business School. © Professor Michael E. Porter

Clusters as a Tool For Competitiveness Policy

- A forum for **collaboration** between the private sector, trade associations, government, educational, and research institutions
- Brings together **firms of all sizes**, including SME's
- Creates a **mechanism** for **constructive** business-government dialog
- A tool to identify **problems** and **action recommendations**
- A vehicle for investments that strengthen **multiple firms/institutions** simultaneously
- Fosters **greater competition** rather than distorting the market
- Enhances the efficiency and effectiveness of **traditional economic policy** areas, such as training, R&D, export promotion, FDI attraction, etc.

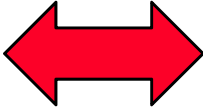
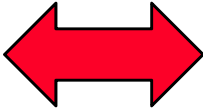
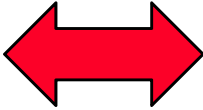
Organize Public Policy around Clusters




- Clusters provide a framework for **organizing the implementation** of many public policies and public investments directed at economic development

The Role of Business in Cluster Development

Company Attitudes Towards Clusters

- Create more competition 
- Lose employees to spin-offs 
- Bid up costs 
- Create more opportunities
- Expand the supply of skilled people and technology
- Expand the local supplier base

AND

- Increase efficiency, flexibility, and productivity
 - Foster innovation
- 
- Most cluster participants are **not** direct competitors

The Role of Business in Competitiveness

Action Agenda

Improving Skills

- Create or expand an **apprentice program** to train workers to be employable by company and others
- Create or expand a **training program** to upgrade the skills and productivity of current or prospective employees
- Partner with a **community college, technical school, or university** to align its curriculum with the needs of business, and commit to hire a number of its graduates

Upgrading Supporting Industries

- Identify and increase sourcing from capable **local suppliers**
- **Mentor local suppliers** to upgrade their capabilities and make them more attractive partners
- Join consortia that help **small companies access** procurement contracts

The Role of Business in Competitiveness

Action Agenda

Supporting Innovation and Entrepreneurship

- Participate in **research collaboratives** in company's field that build businesses of the future
- **Invest in or incubate promising startups** related to company's business
- Support **social entrepreneurship efforts** that improve the local business environment

Shifting the Business-Government Relationship

- Advocate **business-wide improvements** rather than lobby for special interests

Increasing Cluster Strength

- Participate in a **cluster competitiveness** initiative in your field

Creating a Regional Economic Strategy

Regional Value Proposition

- What is the **distinctive competitive position** of a geographic area given its location, legacy, existing strengths, and potential strengths?
 - What unique advantage as a business location?
 - For what types of activities and clusters?
 - And what roles with the surrounding regions, nation, and the broader world?



Developing Unique Strengths

- What **elements of the business environment** can be unique strengths relative to peers/neighbors?
- What **existing** and **emerging clusters** can be built upon?



Achieving and Maintaining Parity with Peers

- What **weaknesses** must be addressed to remove key constraints and achieve parity with peer locations?

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- **Priorities** and **sequencing** are necessity in economic development