

Competitiveness: Clusters and Knowledge Creation

**Presentation by
Roger L. Martin, Chairman
at
Niagara BiNational Meeting
September 27, 2002**

- This is a copy of the presentation given by Roger Martin in Niagara-on-the-Lake on September 27, 2002. It was the Keynote Luncheon for a day long roundtable - Growing Knowledge Clusters in Niagara BiNational: Higher Ed and Industry in Partnership.
- This document provides an outline of the presentation and is incomplete without the accompanying oral commentary and discussion. It represents work in progress based on research conducted by the Institute for Competitiveness and Prosperity.
- Much of the material is from the Institute's first and second Working Papers which can be viewed at our Web site, www.competeprosper.ca
- The Web site also provides more information on the Institute and the Task Force on Competitiveness, Productivity, & Economic Progress.
- We ask that you acknowledge the Institute as the source if you use the material from this presentation.

Canada Among Leading Nations

GDP per Capita at Purchasing Power Parity (PPP) in \$US (2000)

Rank	Country	GDP per capita at PPP
1	United States	\$35,619
2	Norway	\$30,166
3	Switzerland	\$30,138
4	Ireland	\$29,174
5	Denmark	\$29,061
6	Canada	\$27,998
7	Netherlands	\$27,836
8	Austria	\$27,001

Note: Only countries with population over 3.8 million are included here. If all countries were included, Canada would rank 8th.
Source: OECD Main Accounts, National Data; CANSIM

Ontario Fares Well Among Leading Nations

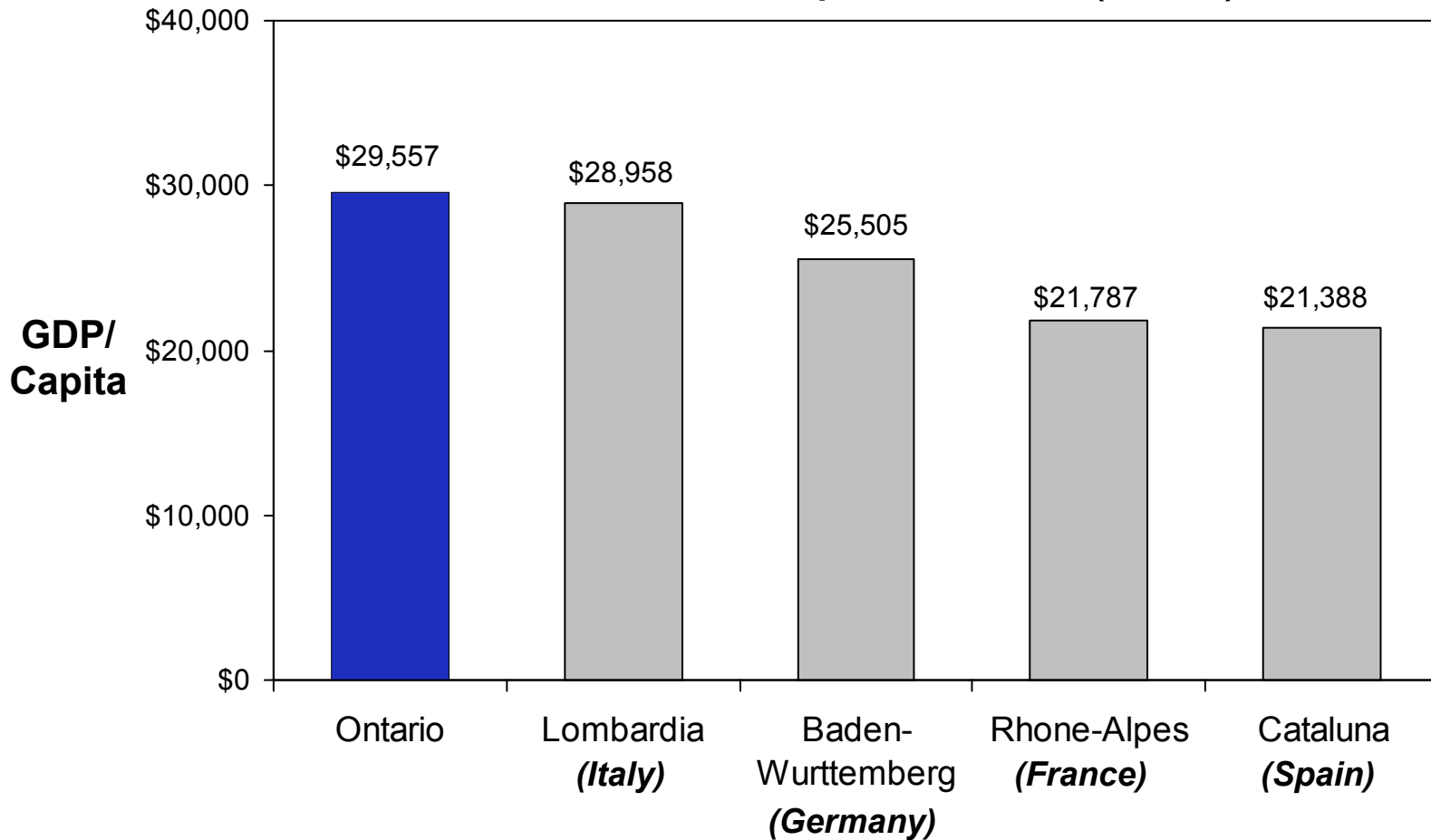
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Source: OECD Main Accounts, National Data; CANSIM; Institute for Competitiveness & Prosperity analysis

Ontario versus “The Four Motors”

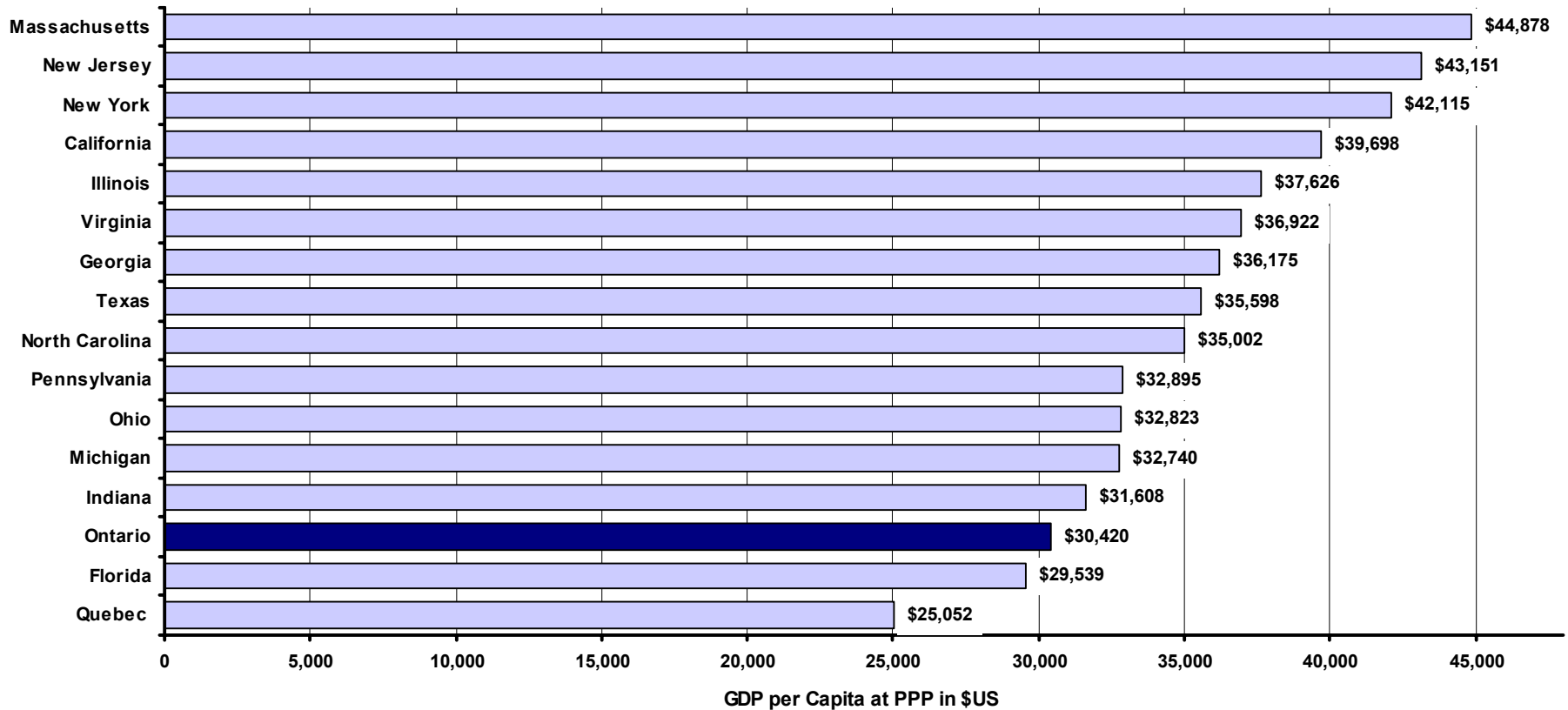
GDP Per Capita, 1999 (PPP)



Source: Statistics Canada; Eurostat

Ontario in a North American Context

GDP per Capita for Select States and Provinces (2000) (Provinces at Purchasing Power Parity in \$US)



Source: OECD Main Accounts, National Data; CANSIM II; US Department of Commerce, BEA (June 2002); Institute for Competitiveness & Prosperity analysis

Mix of Clusters: Results from US Cluster Mapping

Identifying 41 Clusters of Traded Industries

Upstream Materials and Products

- Metals and Materials**
 - Construction Materials
 - Metal Manufacturing
- Forest Products**
 - Forest Products
- Petroleum/Chemicals**
 - Oil and Gas
 - Chemical Products
 - Plastics
- Semiconductors/Computer**
 - Information Technology

Industrial and Supporting Functions

- Multiple Business**
 - Education and Knowledge Creation
 - Business Services
 - Heavy Machinery
 - Financial Services
 - Motor Driven Products
 - Prefabricated Enclosures
 - Production Technology
 - Analytical Instruments
 - Heavy Construction Services
- Transportation and Logistics**
 - Automotive
 - Distribution Services
 - Transportation and Logistics
- Power**
 - Power Generation
 - Power Transmission and Distribution
- Office**
 - Publishing and Printing
- Telecommunications**
 - Communications Equipment
- Defense**
 - Aerospace Engines
 - Aerospace Vehicles and Defense

Final Consumption Goods and Services

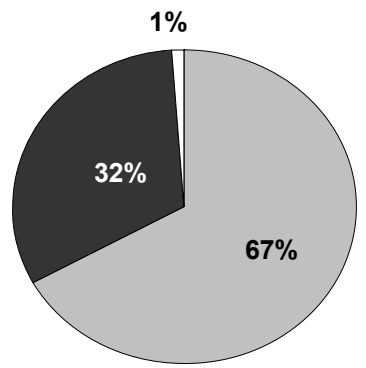
- Food/Beverages**
 - Agricultural Products
 - Processed Foods
 - Fishing and Fishing Products
- Housing/Household**
 - Building Fixtures, Equipment & Services
 - Lighting and Electrical Equipment
 - Furniture
- Textiles/Apparel**
 - Textiles
 - Apparel
 - Footwear
- Health Care**
 - Medical Devices
 - Pharmaceuticals and Biotechnology
- Personal**
 - Leather and Sporting Goods
 - Jewelry and Precious Metals
 - Tobacco
- Entertainment/Leisure**
 - Entertainment
 - Hospitality and Tourism

Source: Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

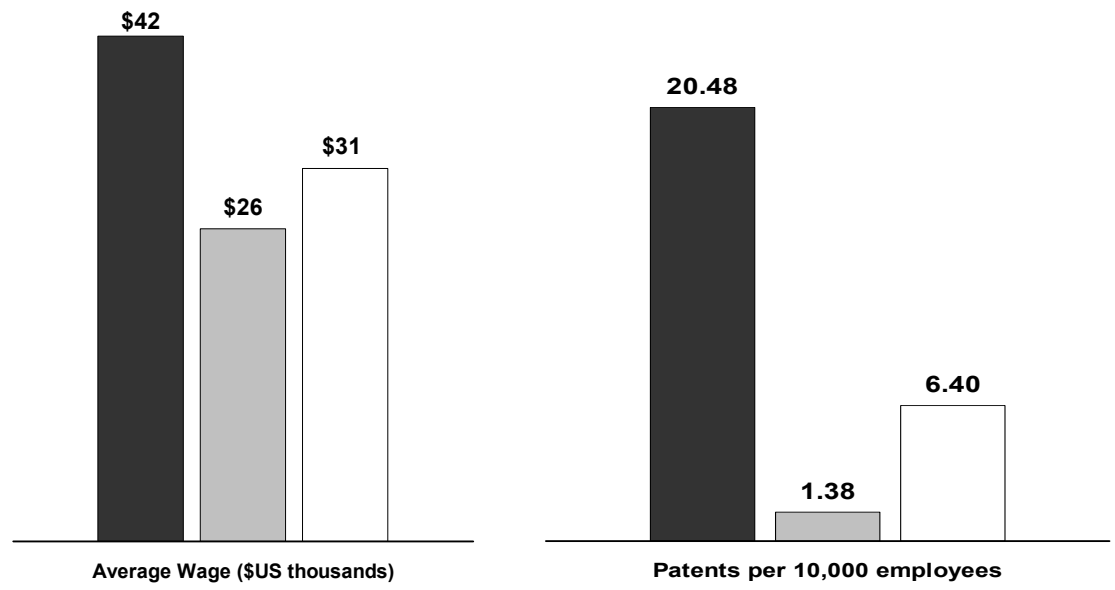
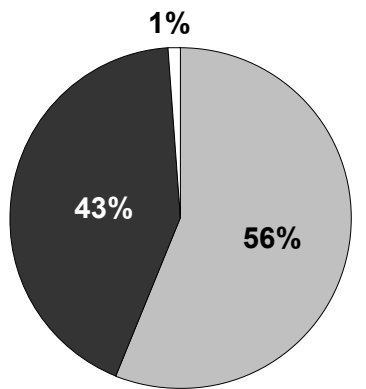
Results from the US Cluster Mapping Project

The Economics of Traded Clusters and Local Industries

Share of Employment



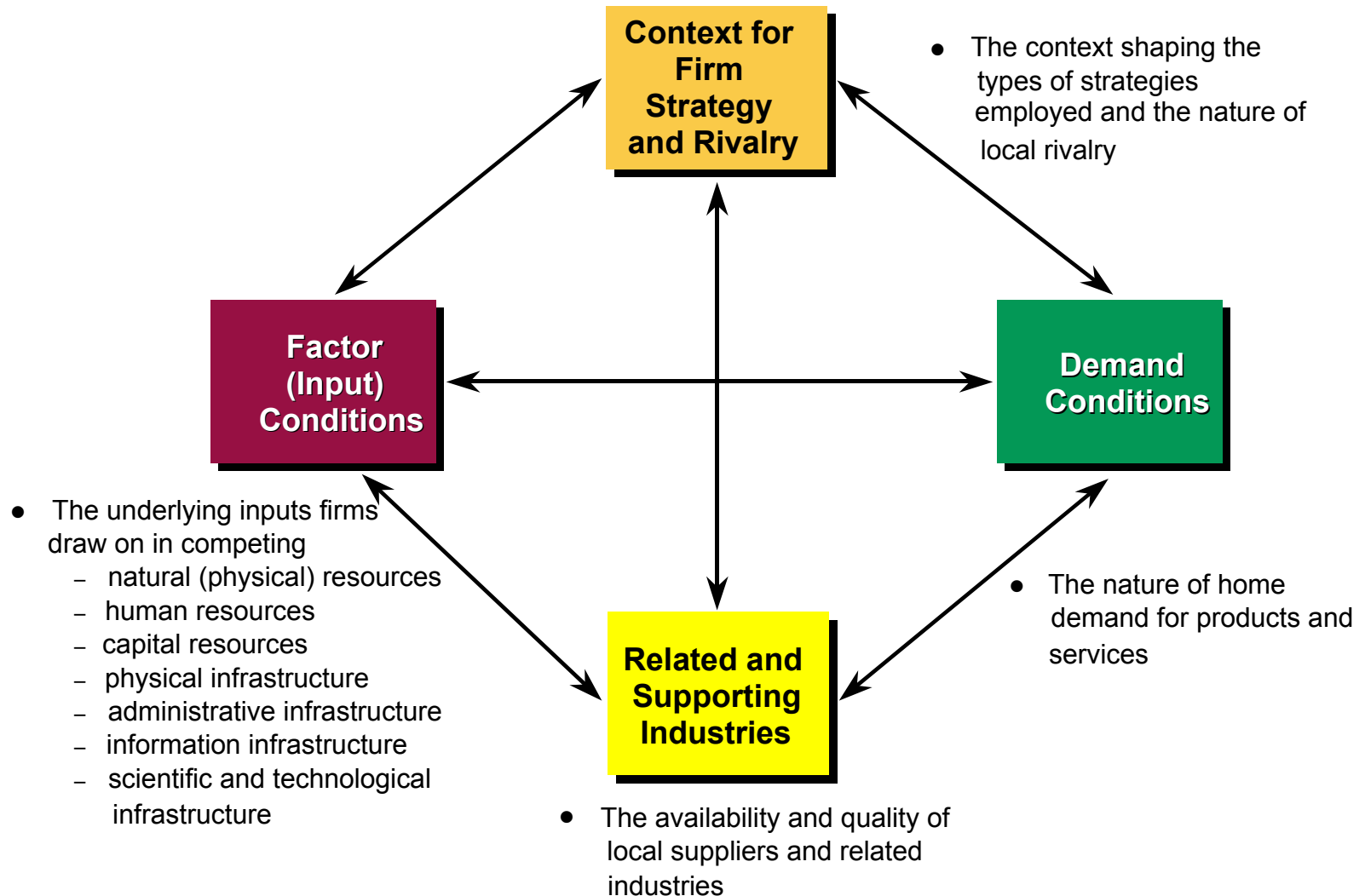
Share of Income



■ Traded Clusters ■ Local Industries □ Natural Resources

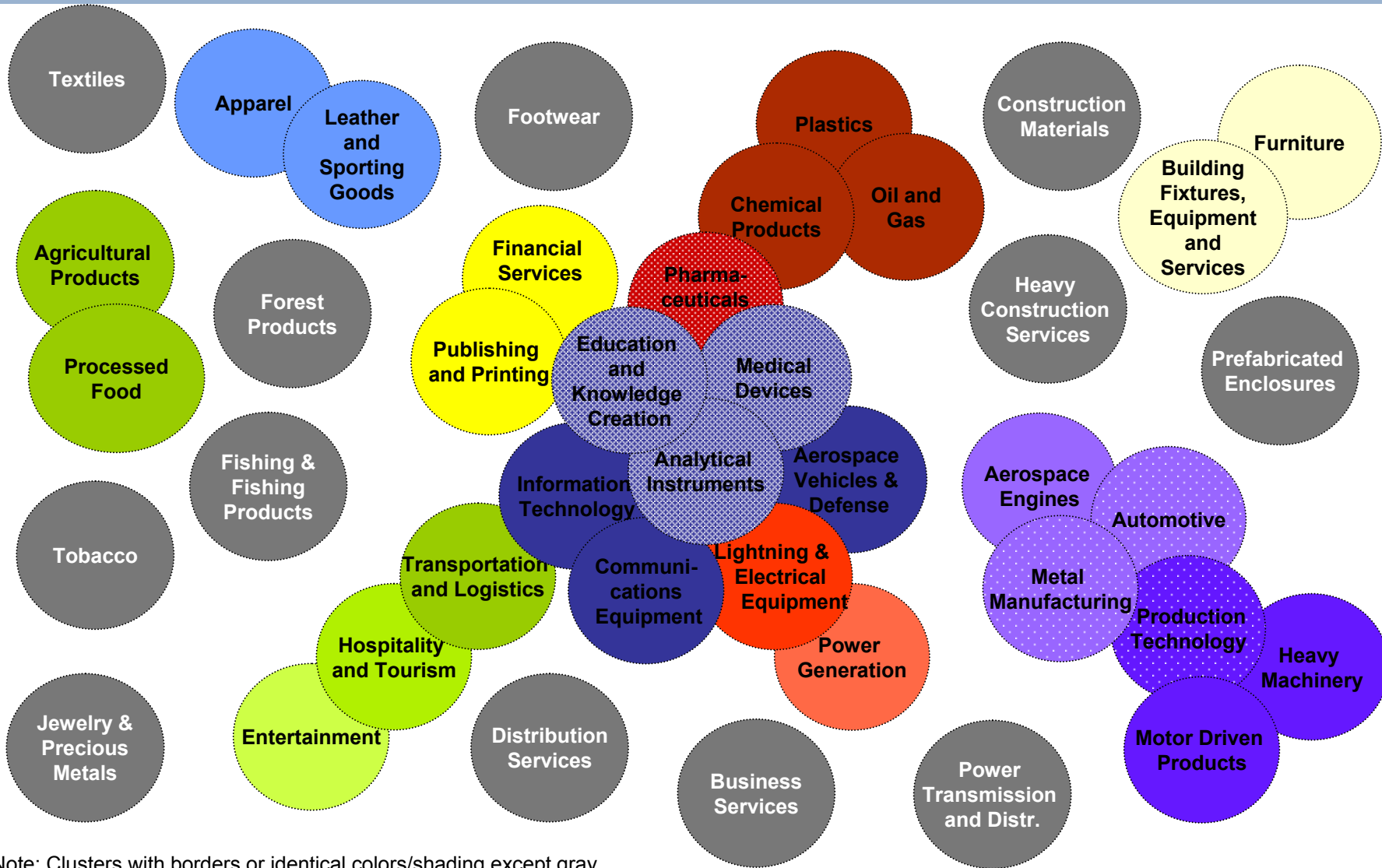
Source: Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Dynamics of a Cluster: Pressure and Support



Source: Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Cluster Overlap in the US Economy



Note: Clusters with borders or identical colors/shading except gray have at least 20% overlap of industries by number in both directions

Source: Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Cluster Overlap in the United States Economy

High Overlap

- Education and Knowledge Creation (8)
- Analytical Instruments (7)
- Aerospace Vehicles and Defense (6)
- Communications Equipment (6)
- Information Technology (6)
- Medical Devices (6)
- Lighting and Electrical Equipment (4)
- Pharmaceuticals and Biotechnology (4)
- Production Technology (4)
- Chemical Products (3)
- Automotive (3)
- Metal Manufacturing (3)

Modest Overlap

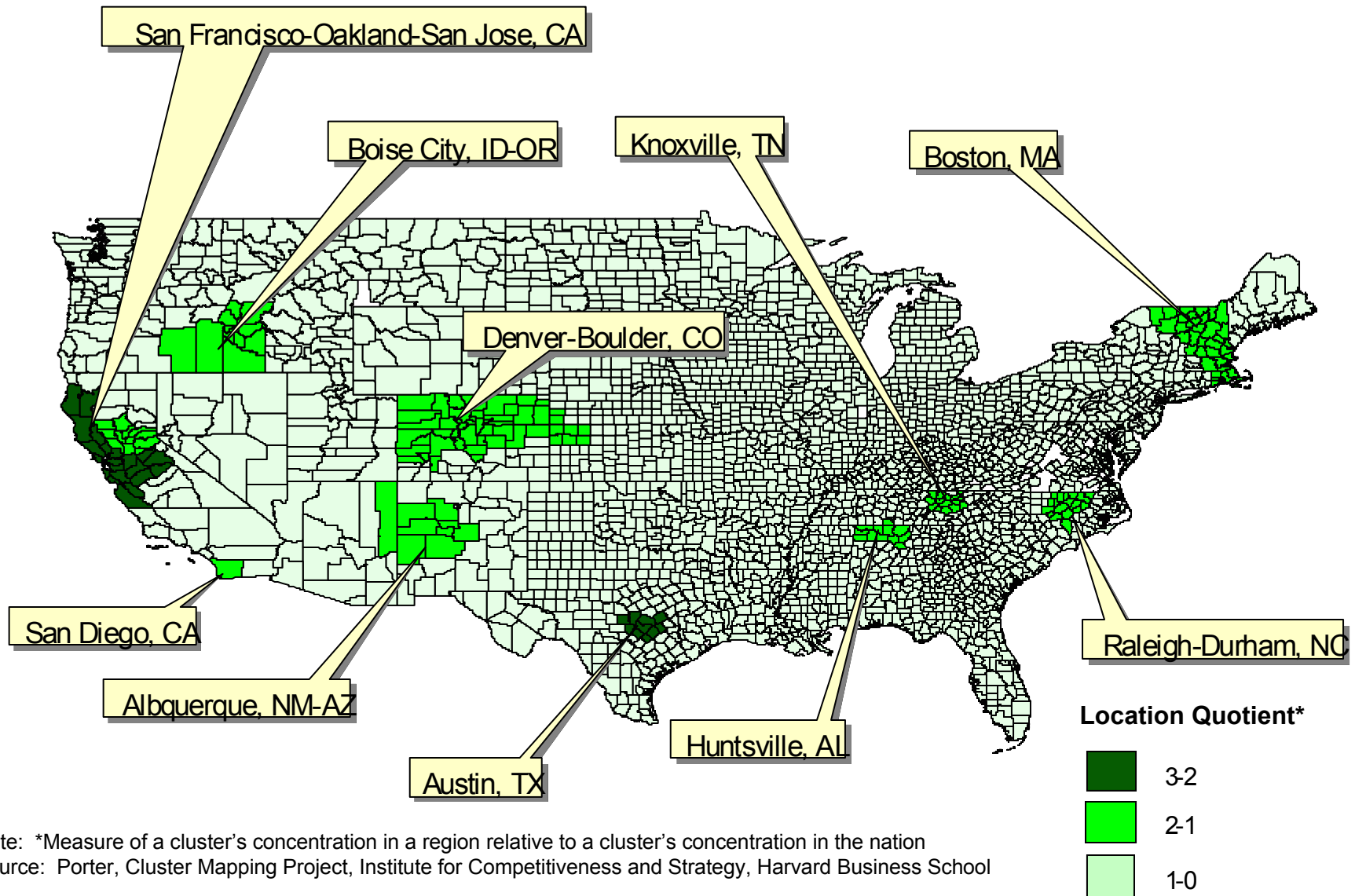
- Plastics (2)
- Oil and Gas (2)
- Heavy Machinery (2)
- Motor Driven Products (2)
- Aerospace Engines (2)
- Hospitality and Tourism (2)
- Transportation & Logistics (2)
- Financial Services (2)
- Publishing and Printing (2)
- Power Generation (1)
- Entertainment (1)
- Processed Food (1)
- Agricultural Products (1)
- Apparel (1)
- Leather & Sporting Goods (1)
- Building Fixtures, Equipment and Services (1)
- Furniture (1)

No Overlap

- Business Services
- Distribution Services
- Fishing and Fishing Products
- Footwear
- Forest Products
- Heavy Construction Services
- Jewelry and Precious Metals
- Construction Materials
- Power Transmission and Distribution
- Prefabricated Enclosures
- Textiles
- Tobacco

Note: Two clusters are defined to overlap if they share at least 20% of their industries by number in both directions. Numbers in brackets indicate the number of clusters overlap exists with.

The Information Technology Cluster



Note: *Measure of a cluster's concentration in a region relative to a cluster's concentration in the nation

Source: Porter, Cluster Mapping Project, Institute for Competitiveness and Strategy, Harvard Business School

Knowledge Creation Imperatives

- **Aspirations**

- **Aim for global standards and set goals accordingly**
- **Compete globally for faculty and students**
- **Seek unique and differentiated positioning**

- **Connectedness**

- **Seek to collaborate with proximate businesses**
- **Be guided in part by their needs**
- **And seek to guide them with your research-based insights**