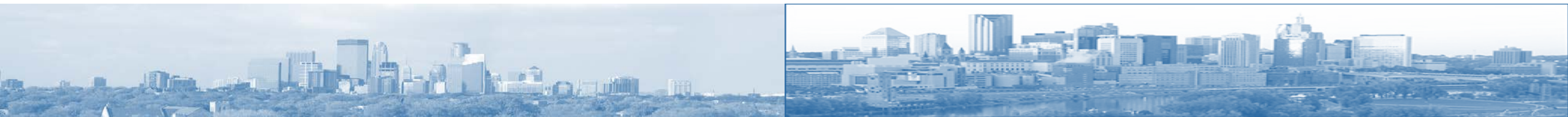


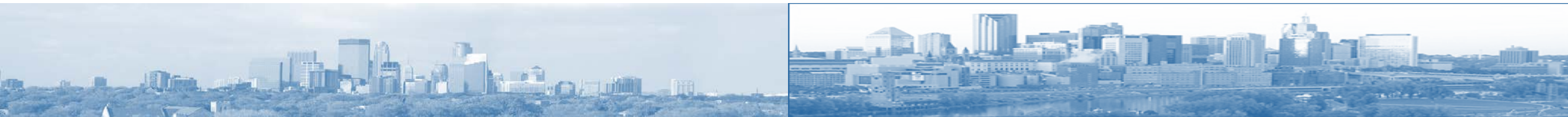
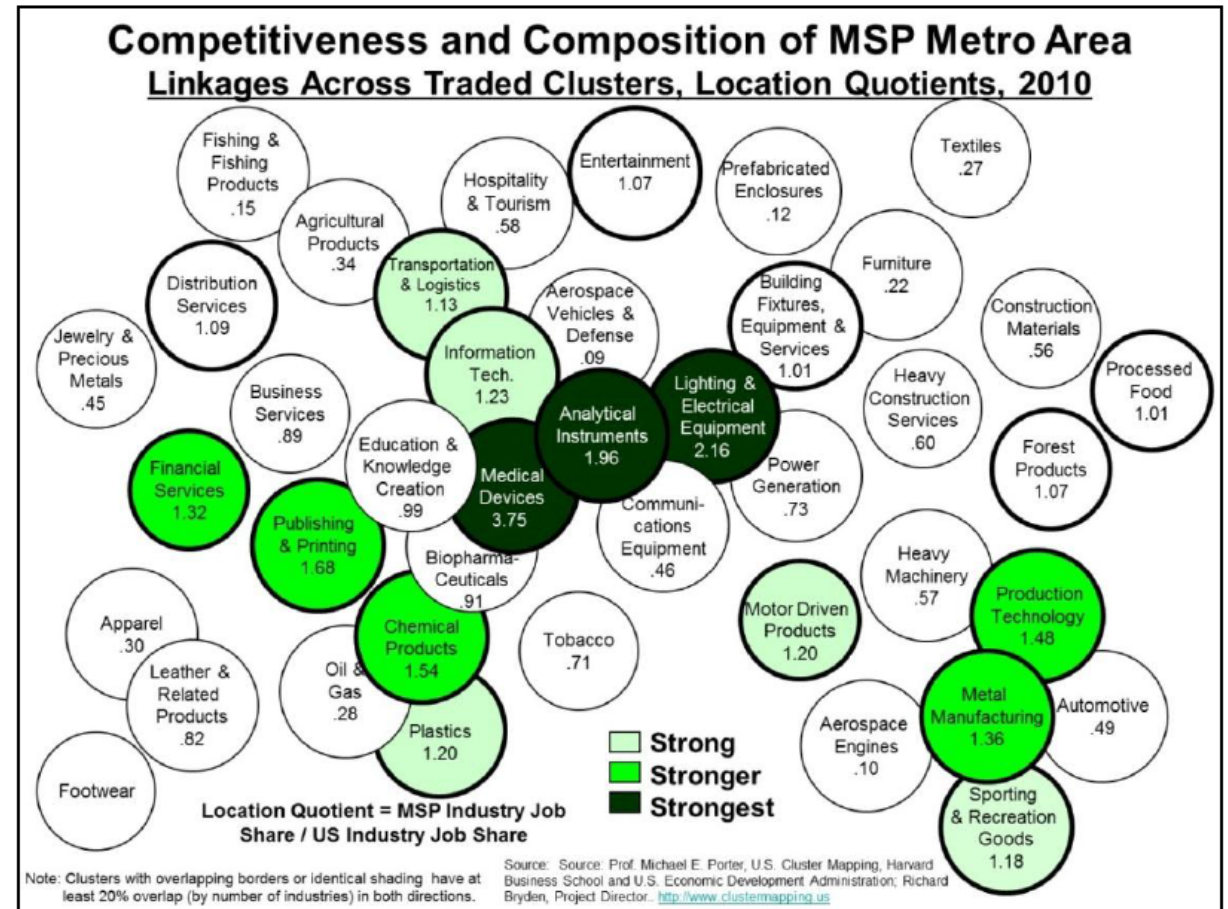
Minneapolis-St. Paul Regional Cluster Competitiveness Study

Lee Munnich, Matt Schmit
State and Local Policy Program (SLPP)
Humphrey School of Public Affairs
December 9, 2013

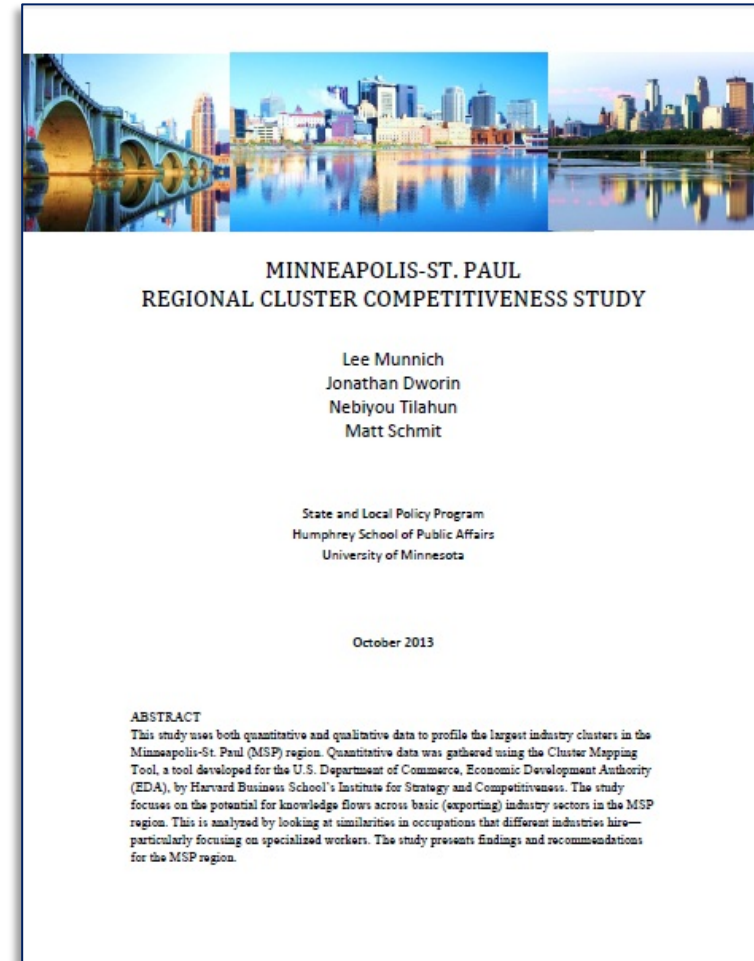
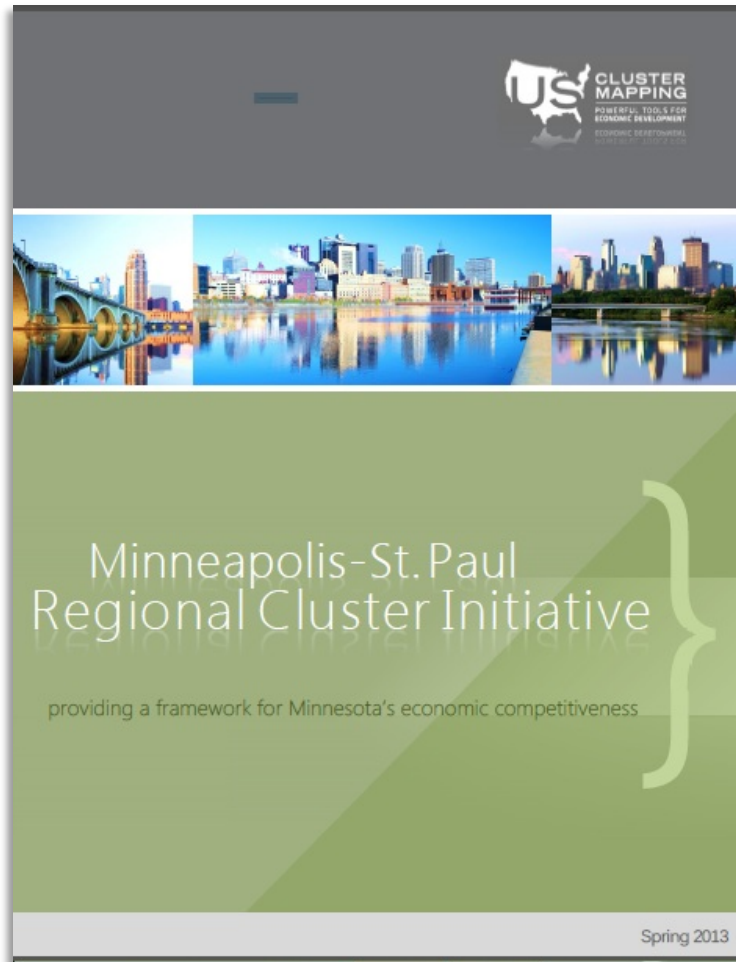


With support from U of MN Metro Consortium, SLPP set out to analyze Minneapolis-St. Paul's competitive traded clusters

- State and Local Policy Program (SLPP) has conducted regional industry cluster studies since 1995
- Started Regional Cluster Initiative with DEED and ULI/Regional Council of Mayors in 2009.
- Regional partner with Michael Porter's Institute for Strategy and Competitiveness at Harvard Business School in developing U.S. Cluster Mapping Tool for Economic Development Administration



Two MSP Studies on U.S. Cluster Mapping Site



<http://clustermapping.us/resources/regional-and-cluster-studies/u.s.-cluster-mapping-policy-and-impact-studies/>

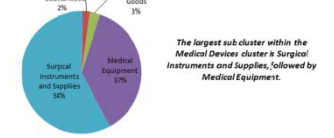
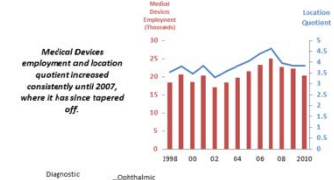


Cluster Dashboards

1998-2010

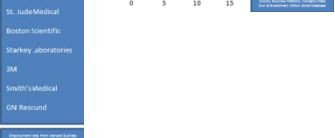
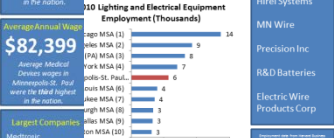
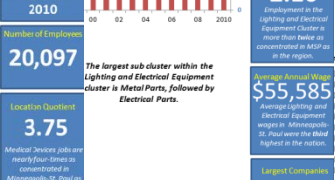
MEDICAL DEVICES

Key Performance Indicators



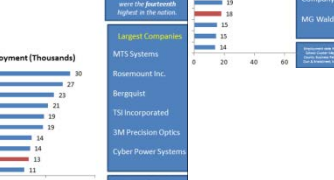
LIGHTING AND ELECTRICAL EQUIPMENT

Key Performance Indicators



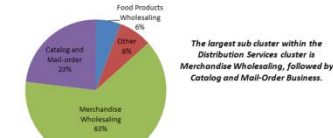
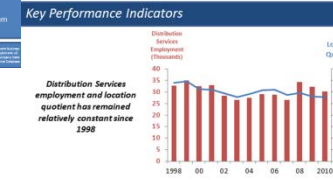
ANALYTICAL INSTRUMENTS

Key Performance Indicators



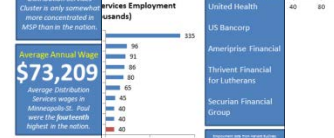
PROCESSED FOOD

Key Performance Indicators



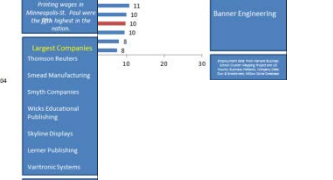
FINANCIAL SERVICES

Key Performance Indicators



PRODUCTION TECHNOLOGY

Key Performance Indicators



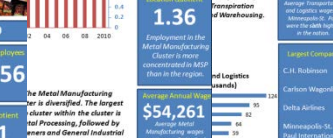
PUBLISHING AND PRINTING

Key Performance Indicators



TRANSPORTATION AND LOGISTICS

Key Performance Indicators



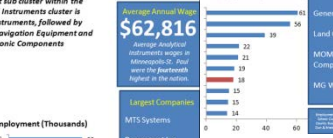
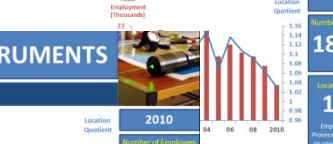
METAL MANUFACTURING

Key Performance Indicators



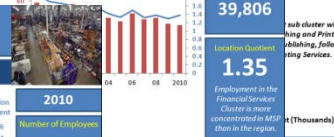
PROCESSED FOOD

Key Performance Indicators



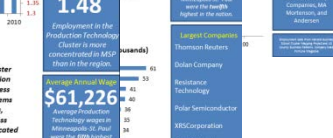
PUBLISHING AND PRINTING

Key Performance Indicators



MANAGEMENT OF COMPANIES

Key Performance Indicators



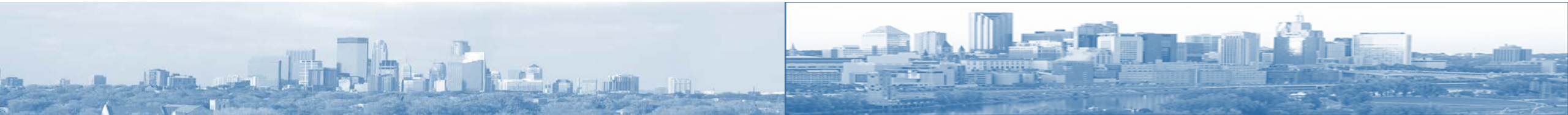
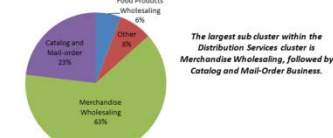
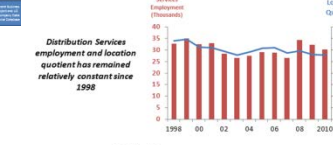
INFORMATION TECHNOLOGY

Key Performance Indicators



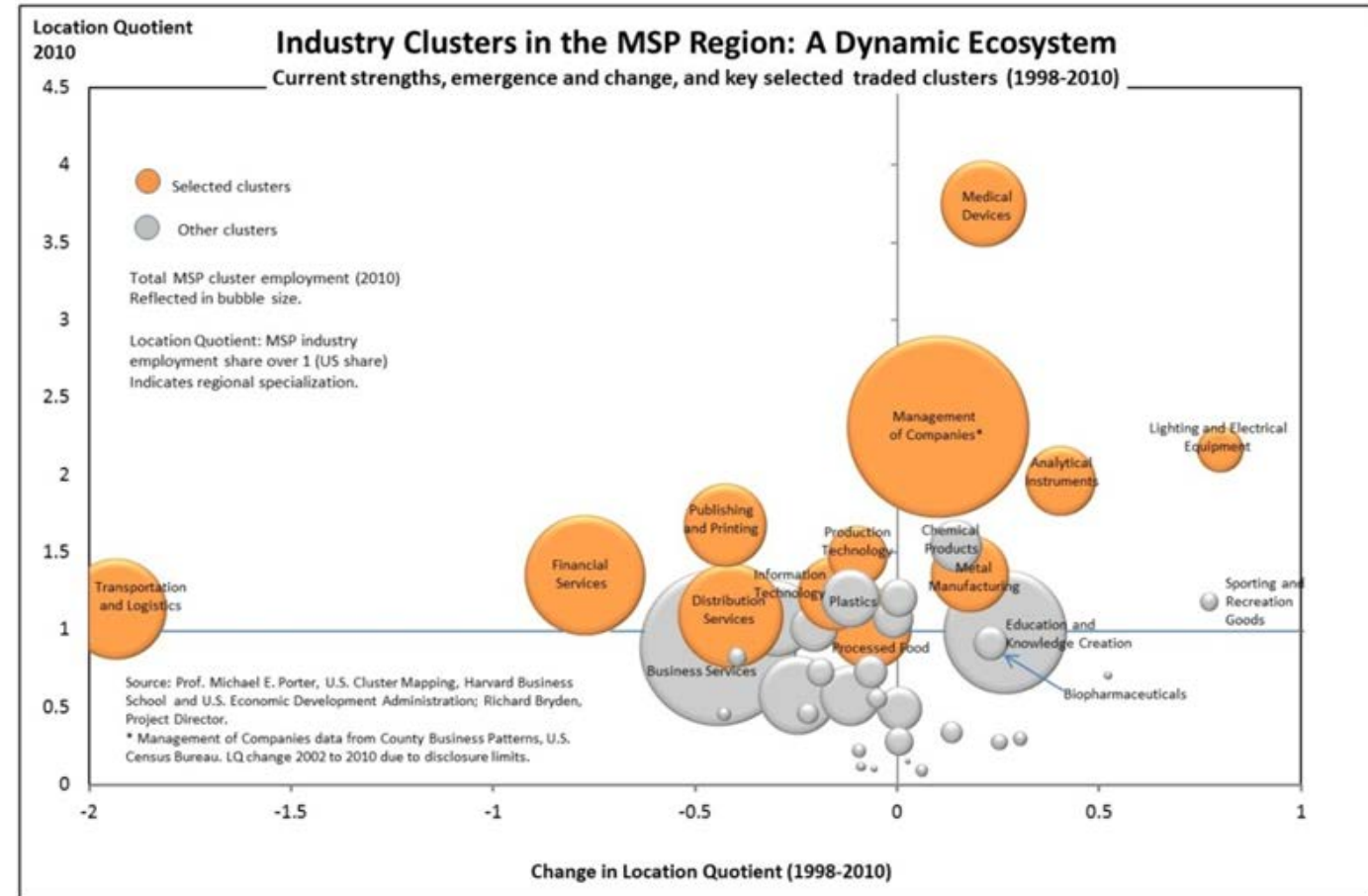
DISTRIBUTION SERVICES

Key Performance Indicators



12 regional clusters were studied

- Medical Devices
- Lighting and Electrical Equipment
- Analytical Instruments
- Processed Food
- Metal Manufacturing
- Distribution Services
- Transportation Logistics
- Financial Services, and
- Publishing and Printing,
- Production Technology
- Information Technology
- Management of Companies

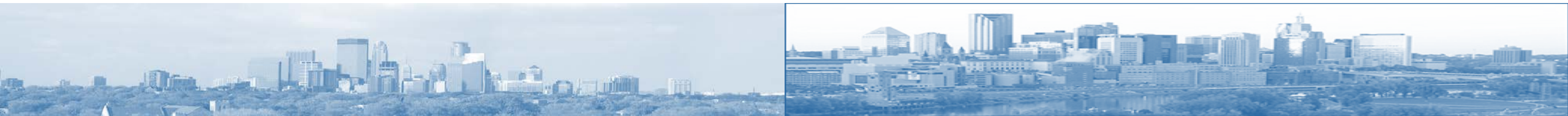
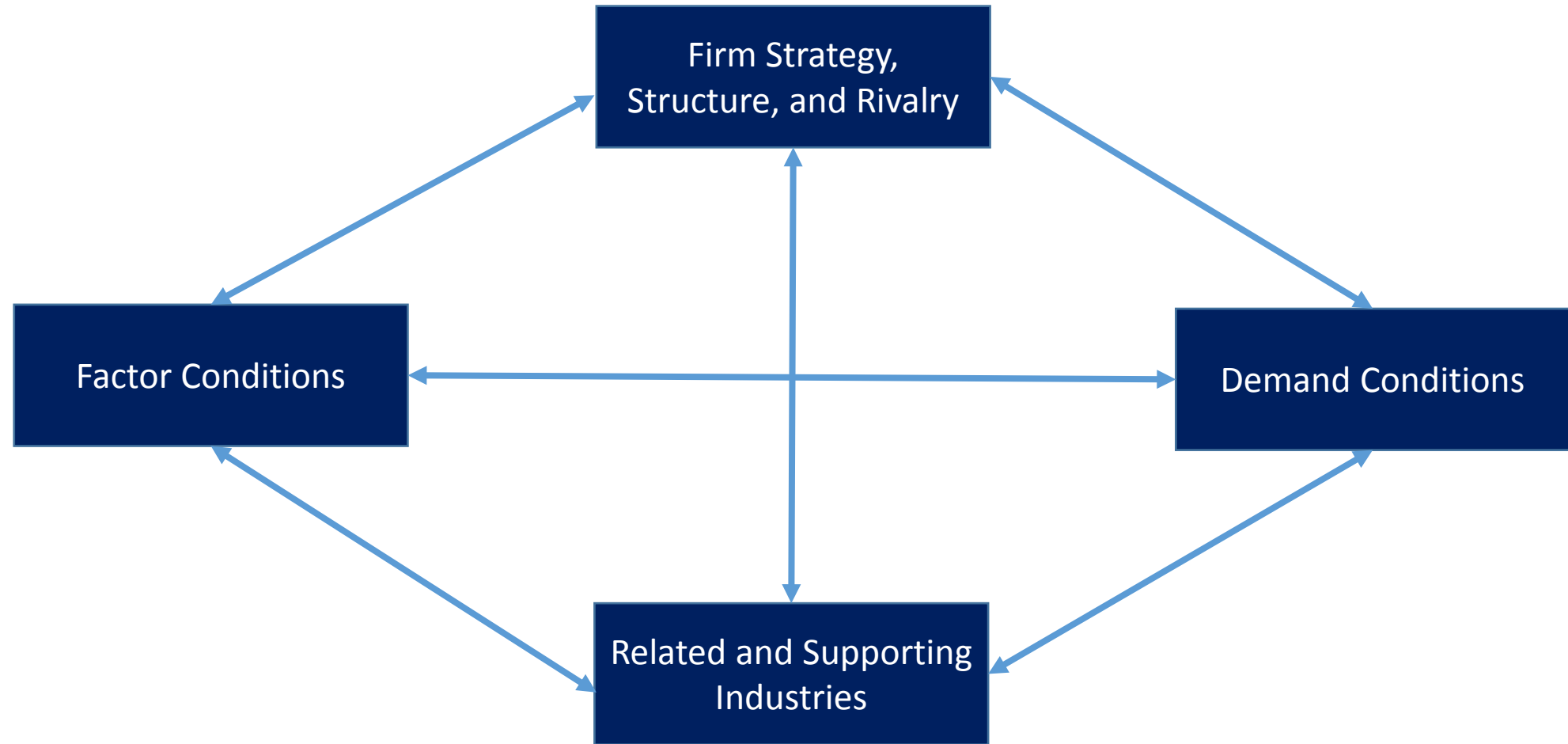


MSP Regional Employment Growth by Cluster, 2010-2012

Cluster	Employment Growth, 2010-2012
Lighting and Electrical Equipment	13.69%
Metal Manufacturing	10.21%
Management of companies	6.44%
Production Technology	5.86%
Processed Food	3.92%
Analytical Instruments	1.88%
Financial Services	-0.26%
Information Technology	-0.52%
Transportation and Logistics	-0.68%
Distribution Services	-1.10%
Medical Devices	-1.60%
Publishing and Printing	-1.76%
Source: Minnesota Department of Employment and Economic Development	



Porter's Diamond of Advantage provided framework for in-depth quantitative and qualitative cluster studies



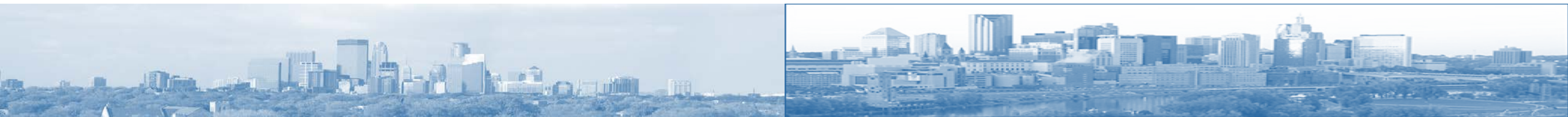
Factor Conditions

- MSP clusters depend on a skilled work force, particularly in engineering, medical, IT, design, production, logistics, and distribution fields.
- University of Minnesota plays a critical role in research and education of high-skilled workers.
- MSP's large number of corporate headquarters compete for the best talent within the region and attract highly productive workers to the region.
- MSP's clusters historically developed and still benefit from Minnesota's natural resources—food, lumber, minerals, water.
- Ninth Federal Reserve District home and corporate headquarters stimulate robust financial service and insurance industry.



Demand Conditions

- Past local demand from computer and telecommunications industries and now medical devices have contributed to development of MSP's electrical equipment, analytical instruments, and metal manufacturing clusters.
- Increased global demand for food, feed, and fiber due to economic growth and demographic shifts in key developing countries, such as China and India, are creating opportunities for MSP's globally competitive processed food companies.
- Sophisticated local demand for healthy food and green products has helped to influence the direction of MSP's legacy food companies and entrepreneurs.
- Corporate headquarters contribute to favorable regional demand conditions for the financial industry as well as other clusters such as publishing and printing, advertising, and legal and business services in MSP.
- Local demand from the region's competitive industries has contributed to the development of companies in production technologies and other clusters involved in improving productivity through technology and process improvements.



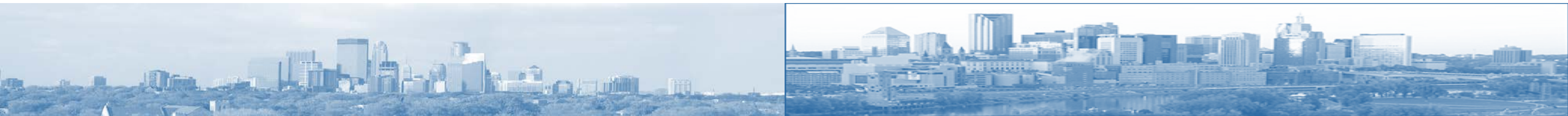
Related and Supporting Industries

- Due to the high concentration of corporate headquarters in Minnesota, there are many strong related and supported companies headquartered in MSP.
- MSP's analytic instruments cluster is tied closely to the region's past and current success in medical device and lighting and electrical equipment clusters.
- Transportation and logistics and distribution services clusters are related to many other clusters, as nearly all traded clusters require some form of transportation, distribution, and logistical services.
- MSP clusters benefit from the high-caliber professional services available, including accounting, advertising, legal, and marketing.
- Information technology products and services are utilized by a large and growing segment of the economy, and its employees are often recruited to fill in-house IT positions in competitive MSP clusters.

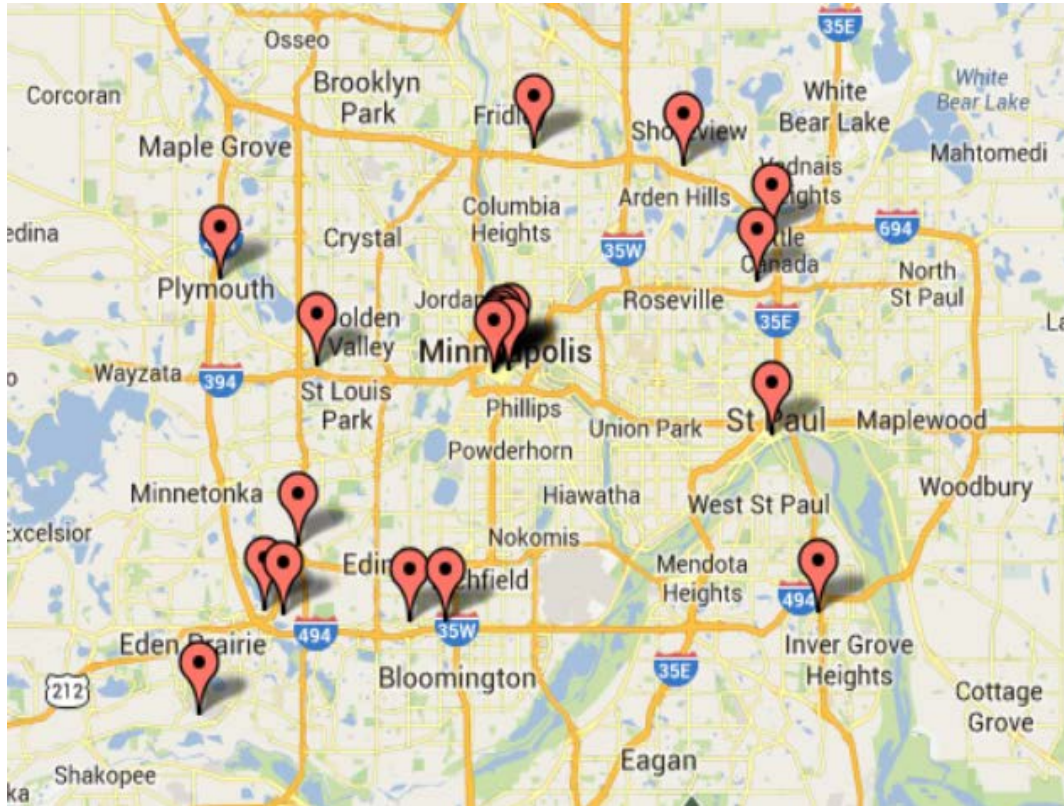


Firm Strategy, Structure and Rivalry

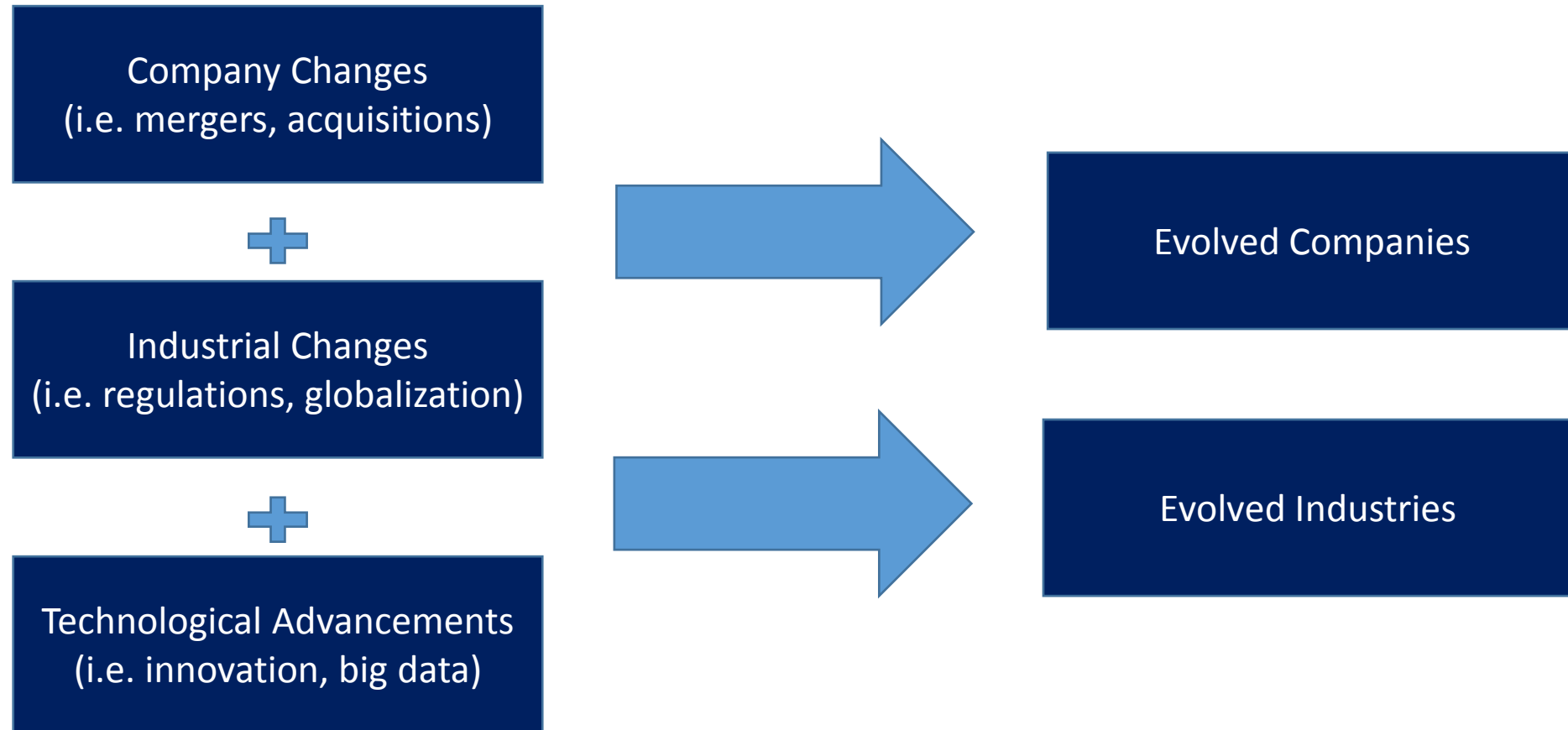
- MSP's strengths in multiple clusters combined with its concentration of major corporate headquarters create an ecosystem that is ripe for innovation and entrepreneurship across clusters.
- MSP's corporate headquarters and major employers have competed historically for talented workers, occasionally recruiting from one another's ranks.
- MSP's corporate headquarters tend to focus their attention to global and national competitors, often sharing supportive rather than rivalry-based relationships with one another.



Corporate Headquarters play a pivotal role in shaping Minneapolis-St. Paul's regional economy



As industries evolve, older companies are forced to change while new companies can emerge



The region is poised to become a leader in several emerging industries



Robotics

Minnesota is a global leader in ground and industrial robotics, including basic and applied research institutions, established firms, and young companies. The robotics field in Minnesota stems from the region's strength in bioscience, agriculture, mining, retail, and industrial manufacturing.



Biorenewables

Biorenewables are used in a variety of commercialized products including pressure-sensitive adhesives for tape or post-it notes, foams for seat cushions, bedding or insulation, and hard plastics for items, such as cell phone cases. Expansion of the advanced biofuels and biobased chemicals sector has a high potential for strong employment growth throughout Minnesota.



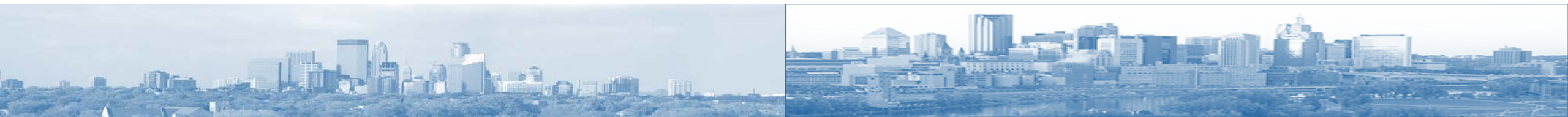
Water Tech

MSP is at the forefront of water and wastewater treatment technologies. Home of industry leaders Pentair, Donaldson, and Osmonics (now owned by GE), the region is able to use its abundant water sources as a proving ground of sorts.



3D Printing

MSP is home to Stratasys, the world's largest manufacturer of 3D printers and 3D production systems. The Digital Fabrication Lab at the University of Minnesota has strategically positioned Minnesota students around the emerging industry.



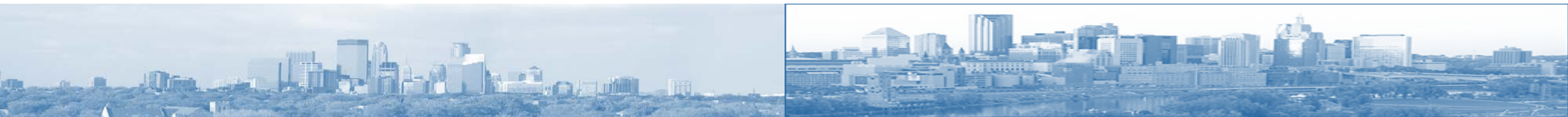
Innovation and Entrepreneurship must continue to be drivers of economic growth

There is a strong perception -- internally and externally-- that the region is a difficult place to do business

- Ranked #47 in Tax Foundation's 2014 State Business Tax Climate Index
- Lagging in entrepreneurship and venture capital funding indicators

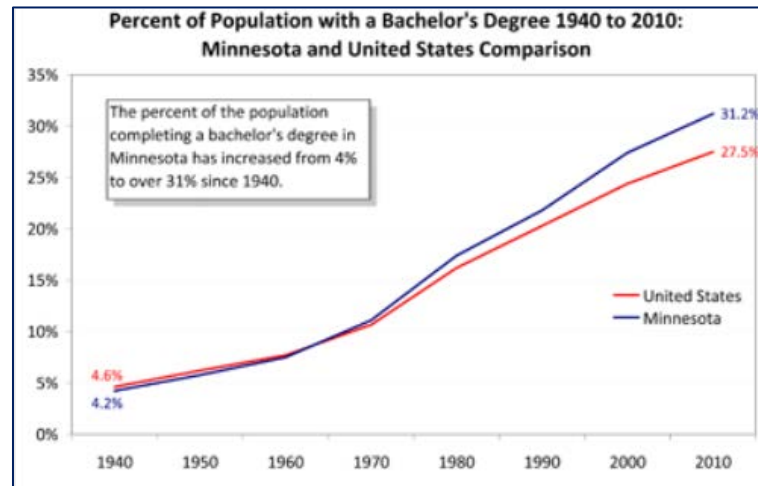
Still, the success stories are there and entrepreneurial culture is evident

- Emergence of United Health, Stratasys, BioAmber
- COCO, additional support programs
- Region continues to innovate in established industries, in addition to innovating around complementary and emerging industries as well.



Human Capital is a main reason why companies choose to stay and continue to thrive in the region

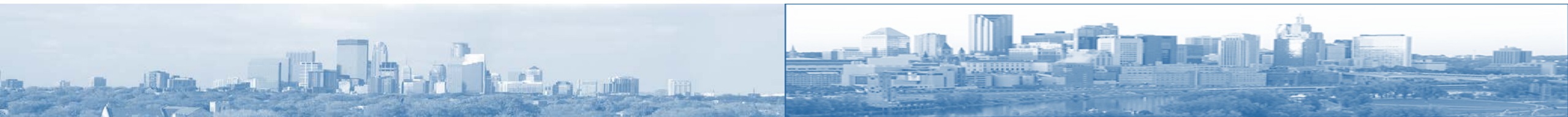
- **All** interviews cited a talented workforce as a reason for their ability to thrive and a strength in the region
- Schools, Universities, trade-schools, community colleges, and companies all train the region's workers



Competitiveness, Innovation and Knowledge Sharing

“... The mysteries of the trade become no mysteries; but are as it were in the air [...] Good work is rightly appreciated, inventions and improvements [...] have their merits promptly discussed: ... [an idea] is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas.”

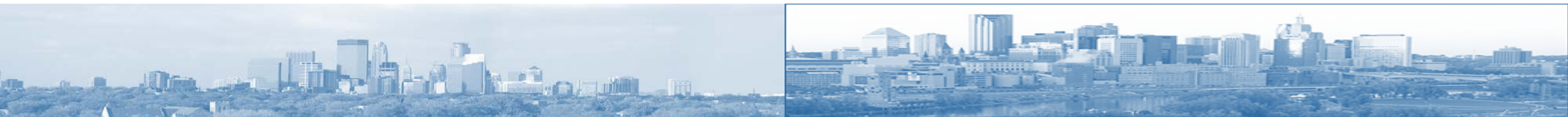
Principles of Economics
Alfred Marshall (1890)





Knowledge Sharing Clusters

- Shared knowledge and skills as one of the driving forces behind cluster formation and growth
 - Informal and formal channels for knowledge transfers
 - Can happen within sector (e.g. firms in the medical manufacturing cluster) or between sectors (e.g. between medical manufacturing and finance or insurance)



Thinking about Clusters

Semiconductor manufacturing ●

Electro-medical
manufacturing ●

Insurance carriers ●

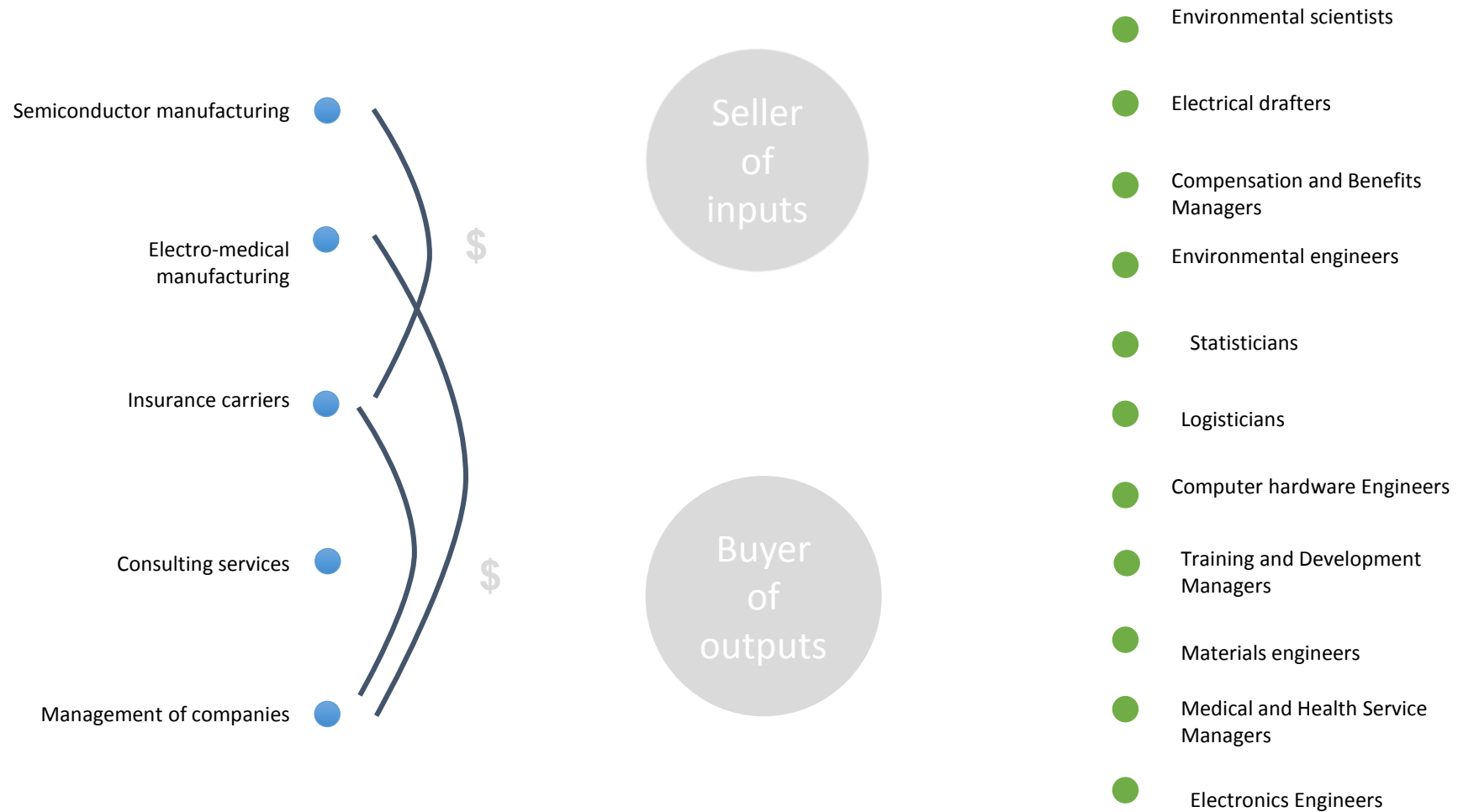
Consulting services ●

Management of companies ●

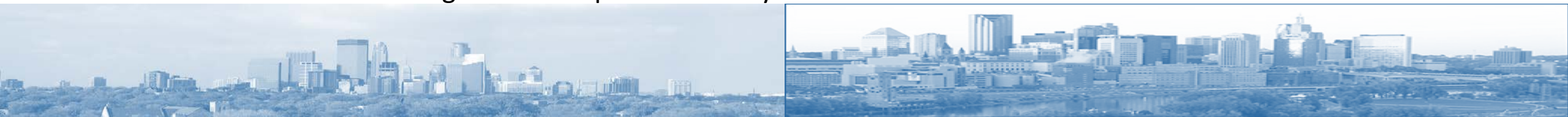
- Environmental scientists
- Electrical drafters
- Compensation and Benefits Managers
- Environmental engineers
- Statisticians
- Logisticians
- Computer hardware Engineers
- Training and Development Managers
- Materials engineers
- Medical and Health Service Managers
- Electronics Engineers



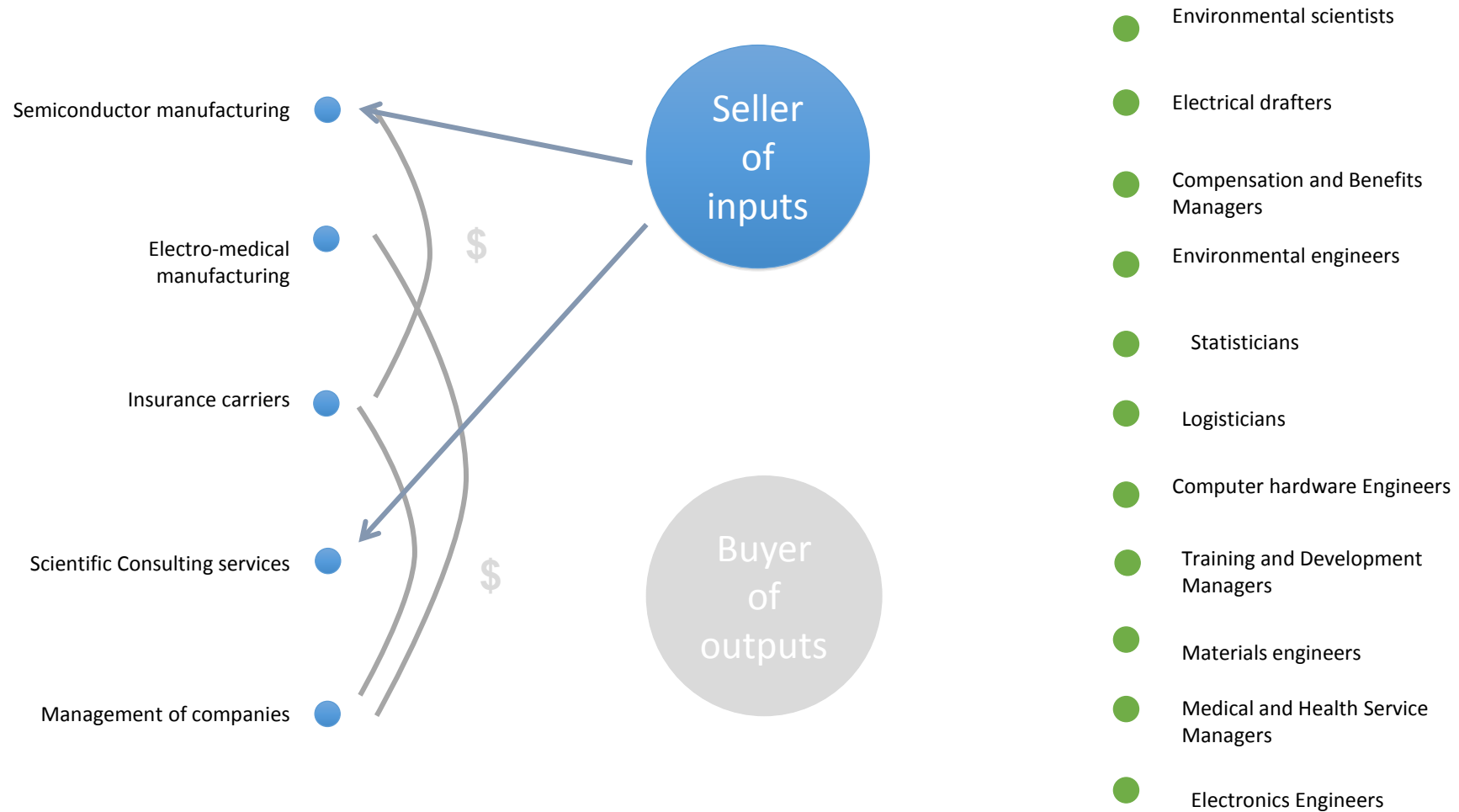
Thinking about Clusters



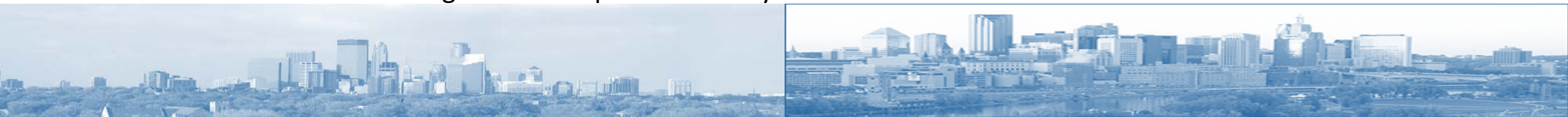
Trading Relationships are one way to think about about clusters.



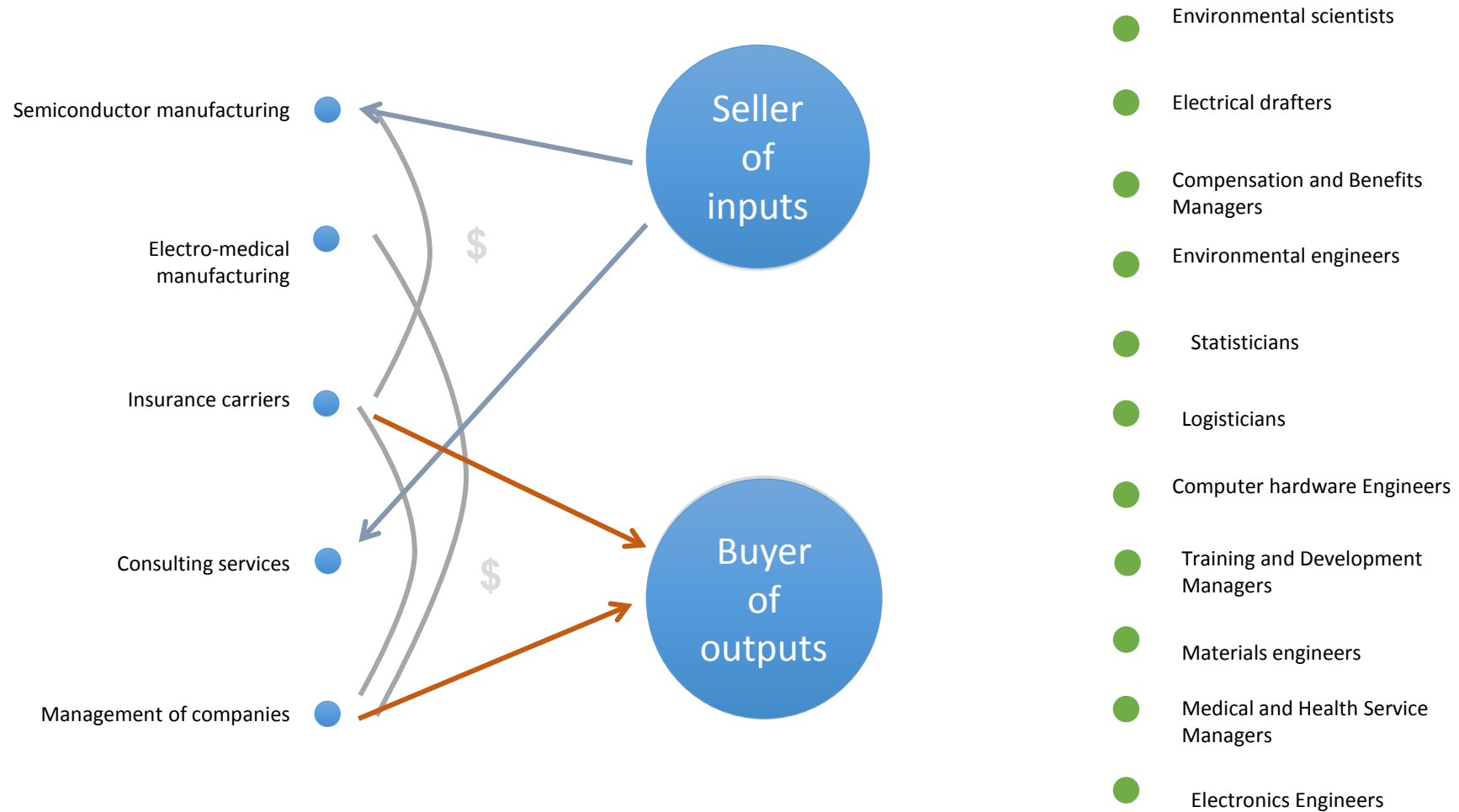
Thinking about Clusters



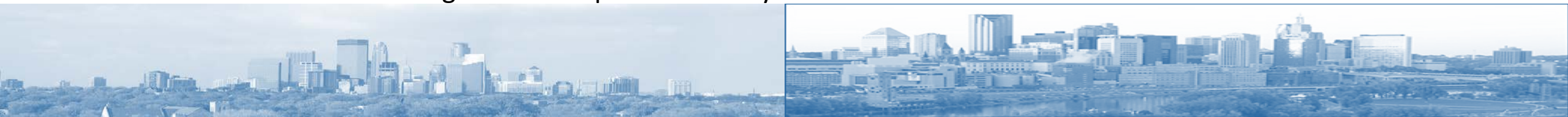
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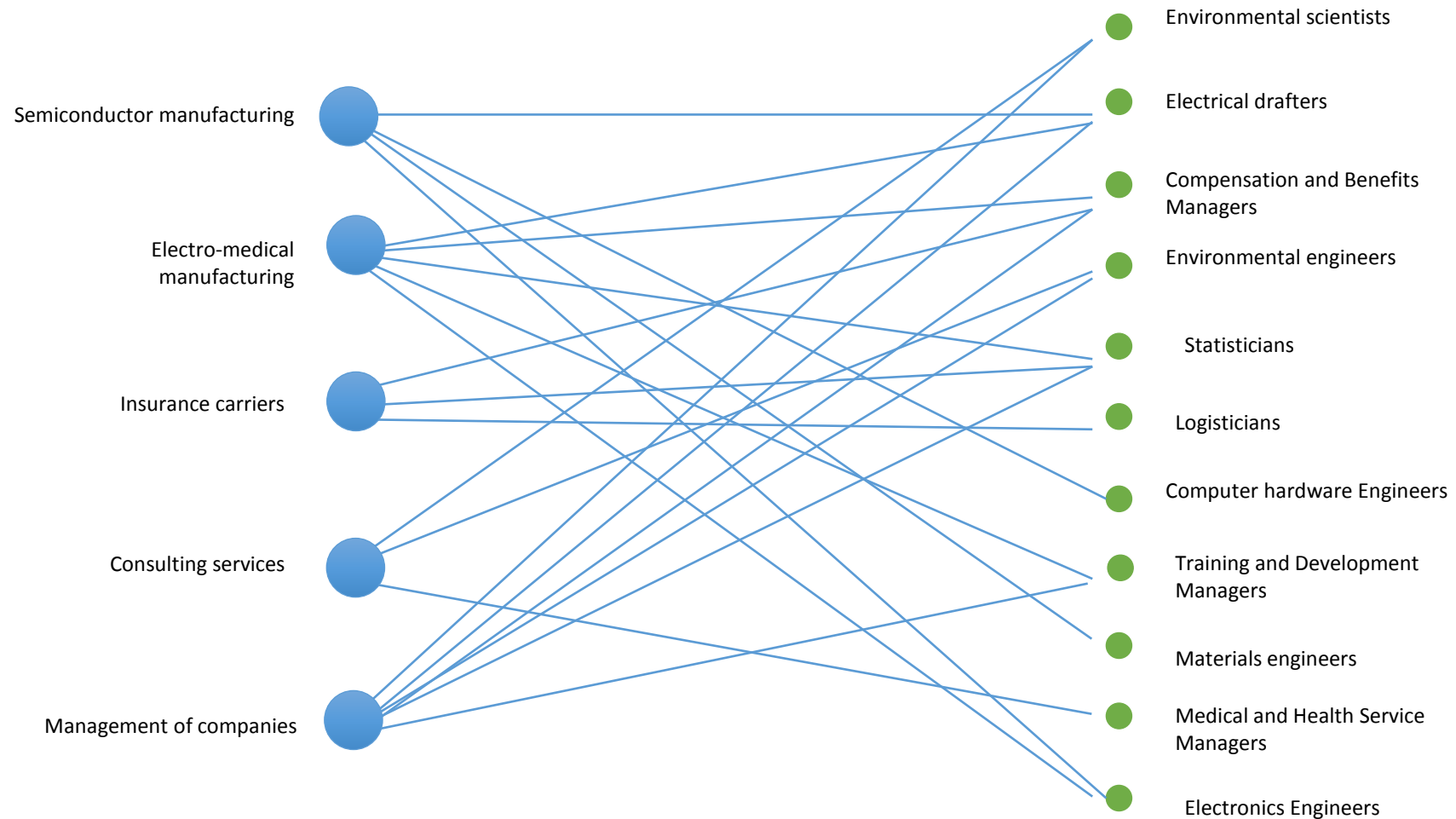
Thinking about Clusters



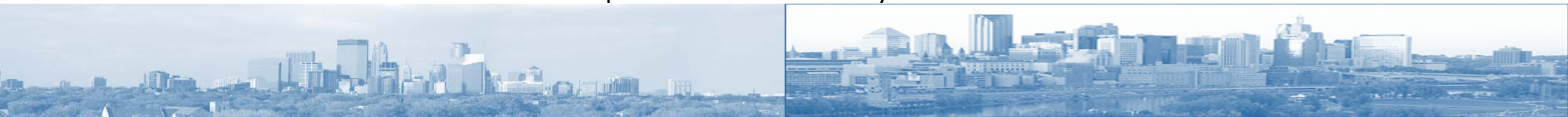
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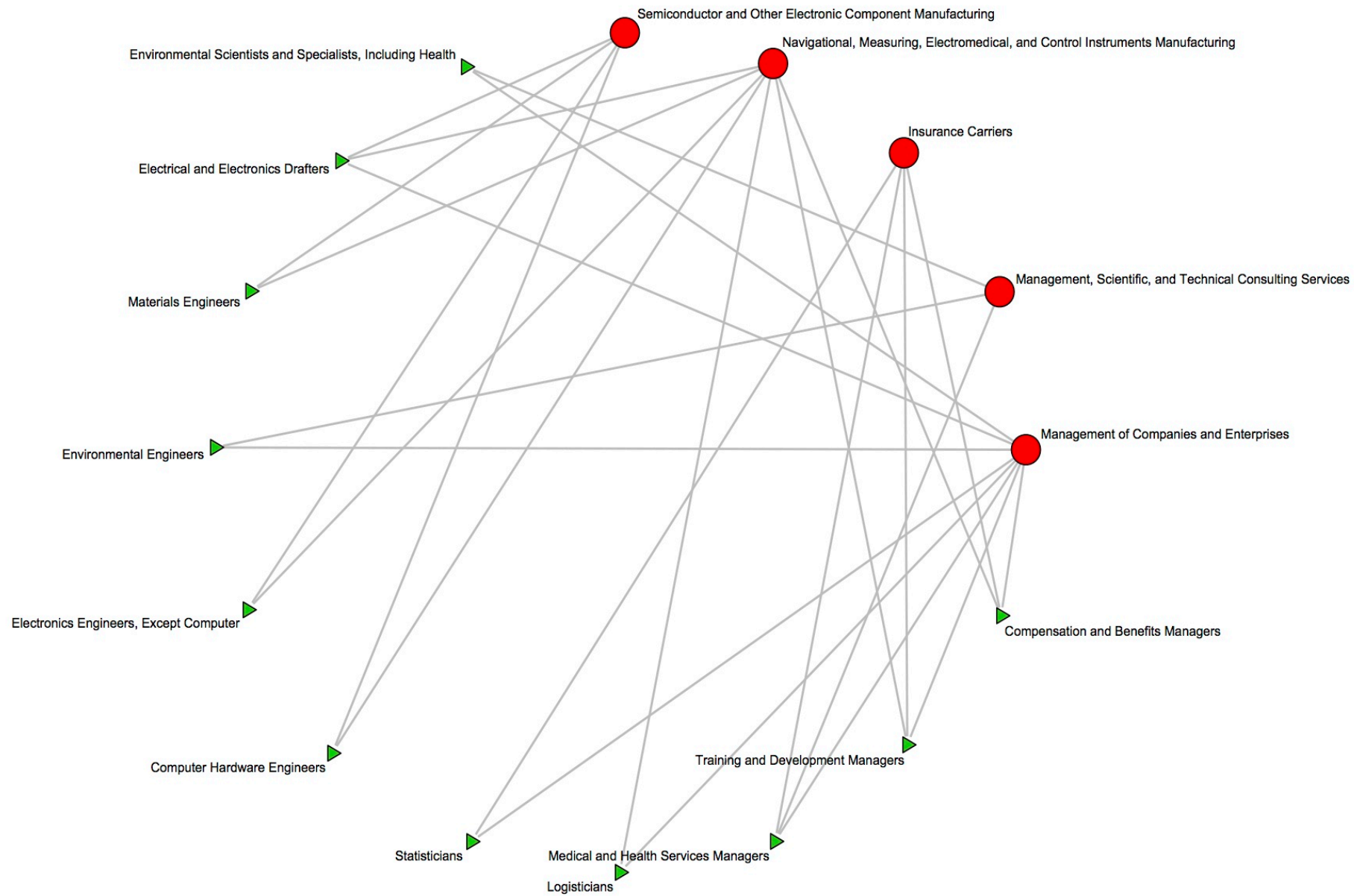


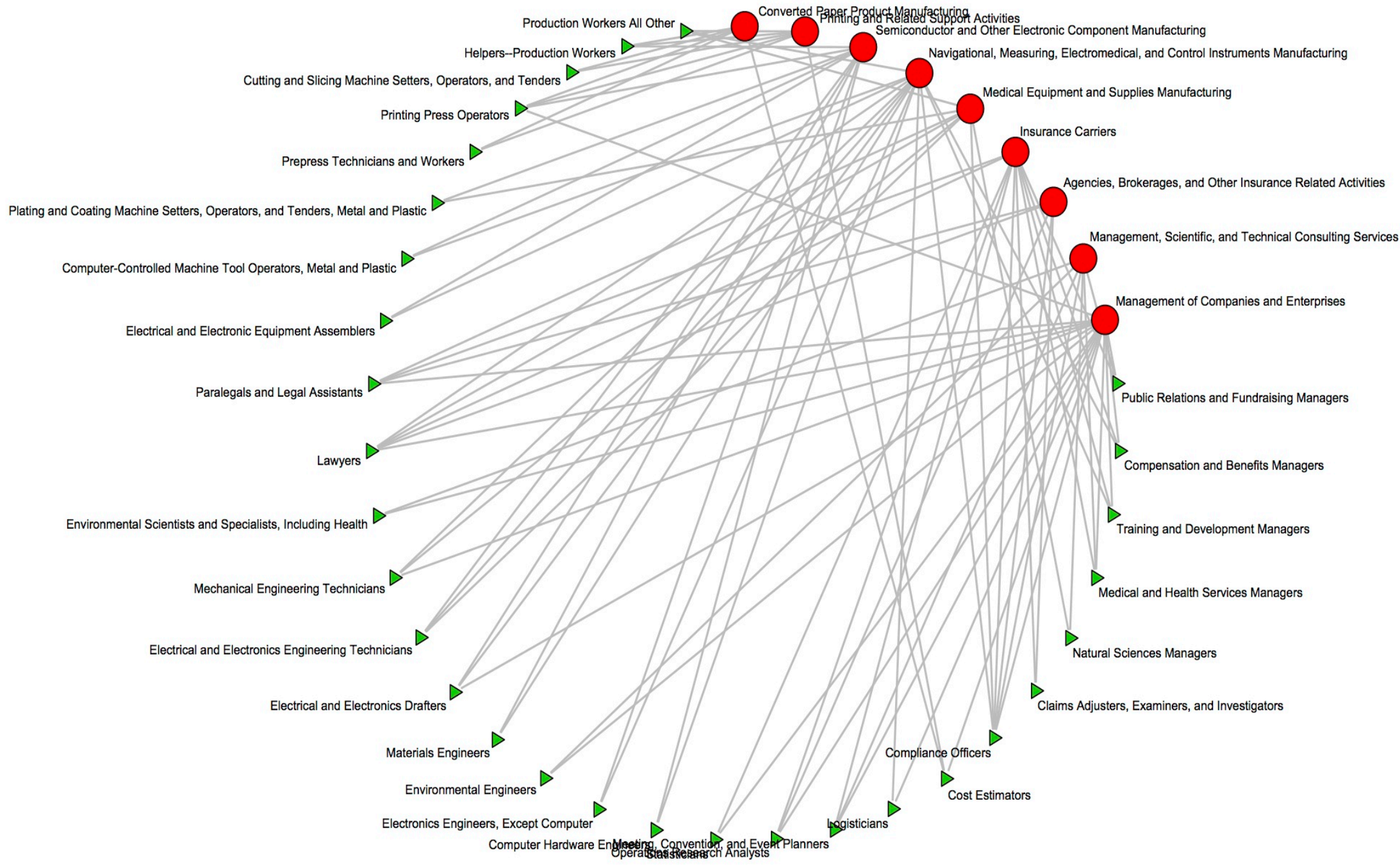
Thinking about Clusters

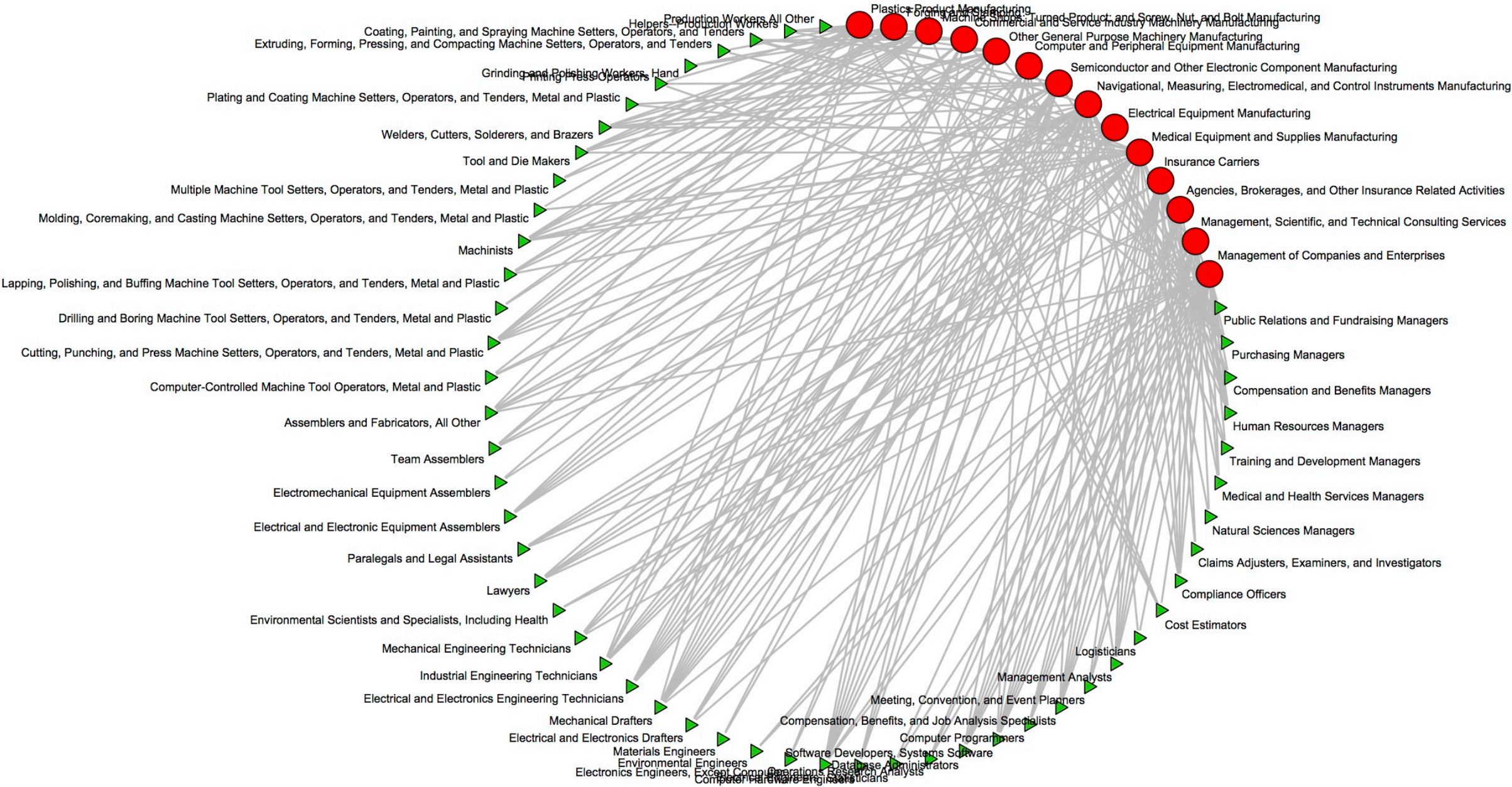


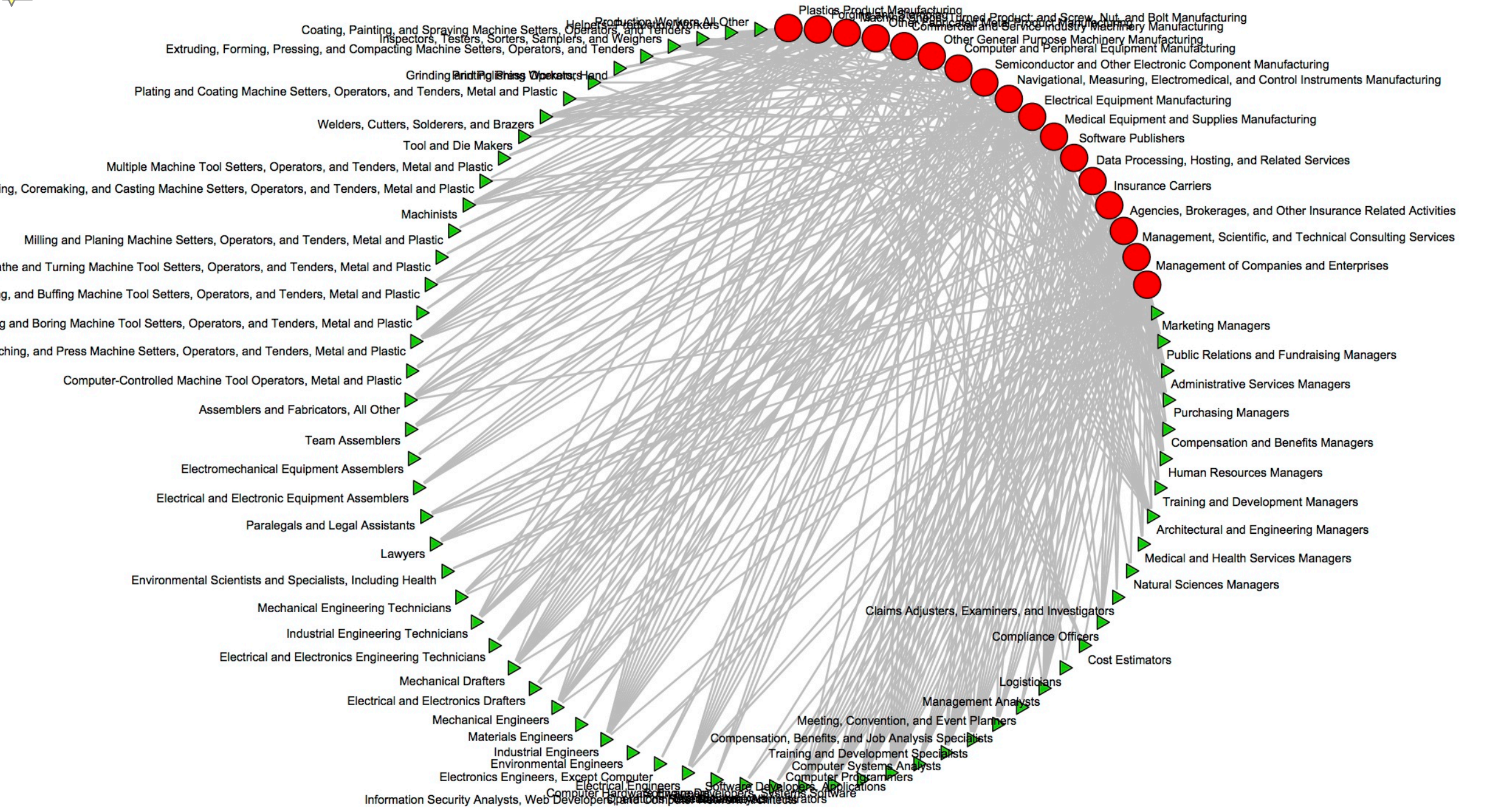
Shared skills and expertise are another way to think about clusters







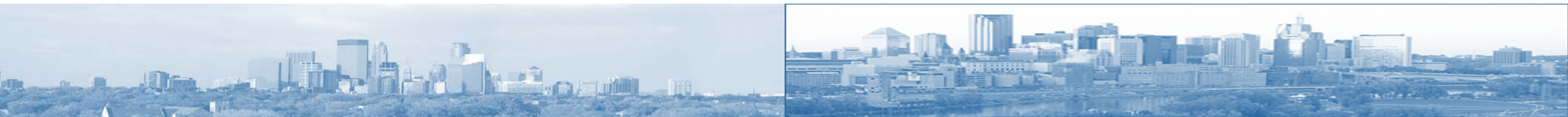




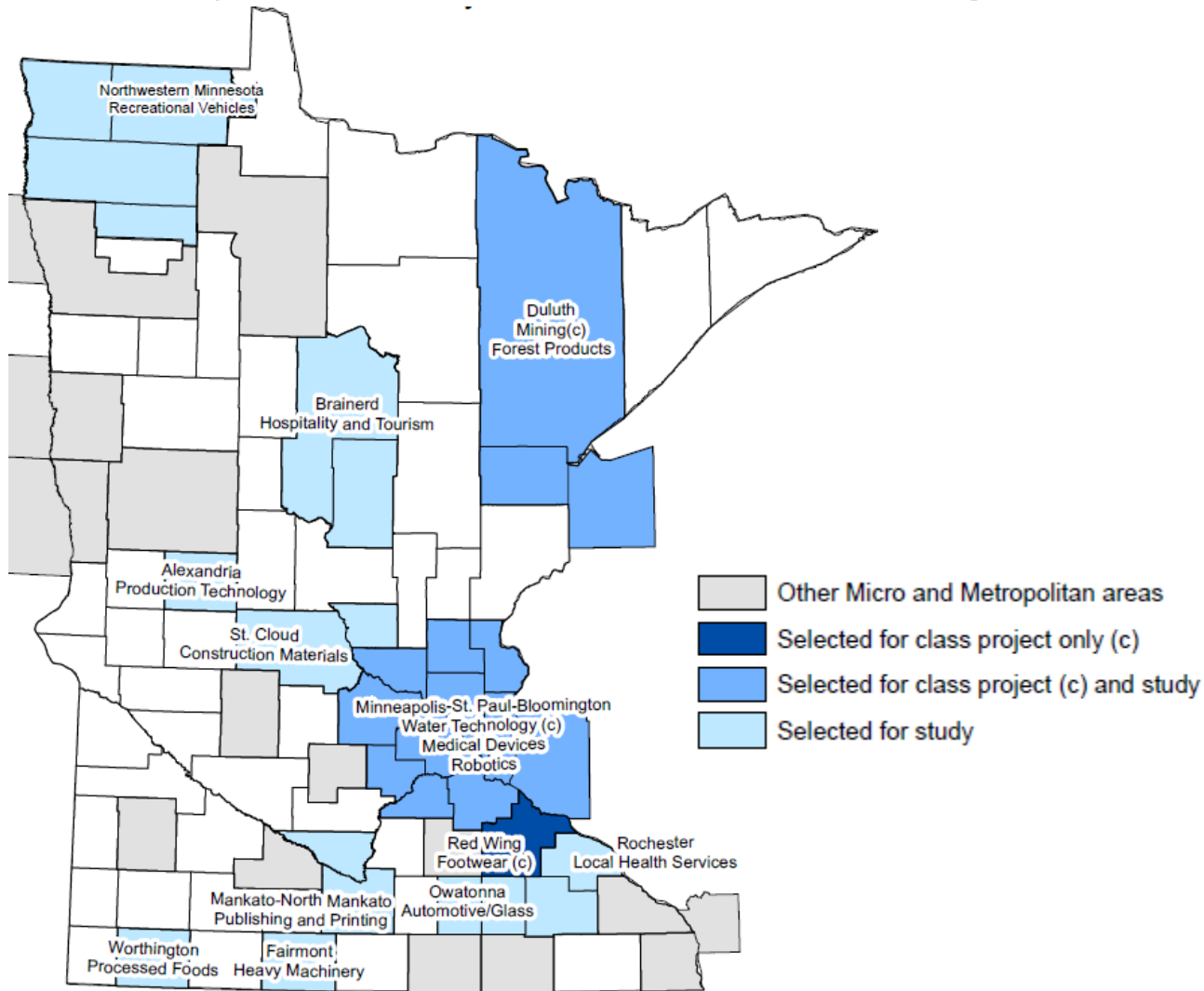


Findings

- Regional data demonstrates a strong potential for knowledge flow between the region's basic sectors
 - Skilled workforce concentration and diversity make the region attractive for diverse sectors that can tap into this knowledge base
 - Shared similarities in occupational needs make it likely that each of these sectors are enriched by the others' presence as workforce flows transfer knowledge from one sector to another
- Study also highlights the types of specialized occupations that are broadly shared by the sectors that give the region its competitive edge.
 - Implications for workforce development in the region – to ensure these shared skill needs are met.



Transportation Planning for Economic Development



- Minneapolis-St. Paul – Medical Devices
- Minneapolis-St. Paul – Robotics
- Rochester – Local Health Services
- Owatonna – Automotive (Glass)
- Mankato – Publishing and Printing
- Fairmont – Heavy Machinery
- Worthington – Processed Food
- St. Cloud – Construction Materials (Granite)
- Alexandria – Production Technology
- Brainerd – Hospitality and Tourism
- Duluth – Mining Products
- NW Minnesota – Recreational Vehicles

