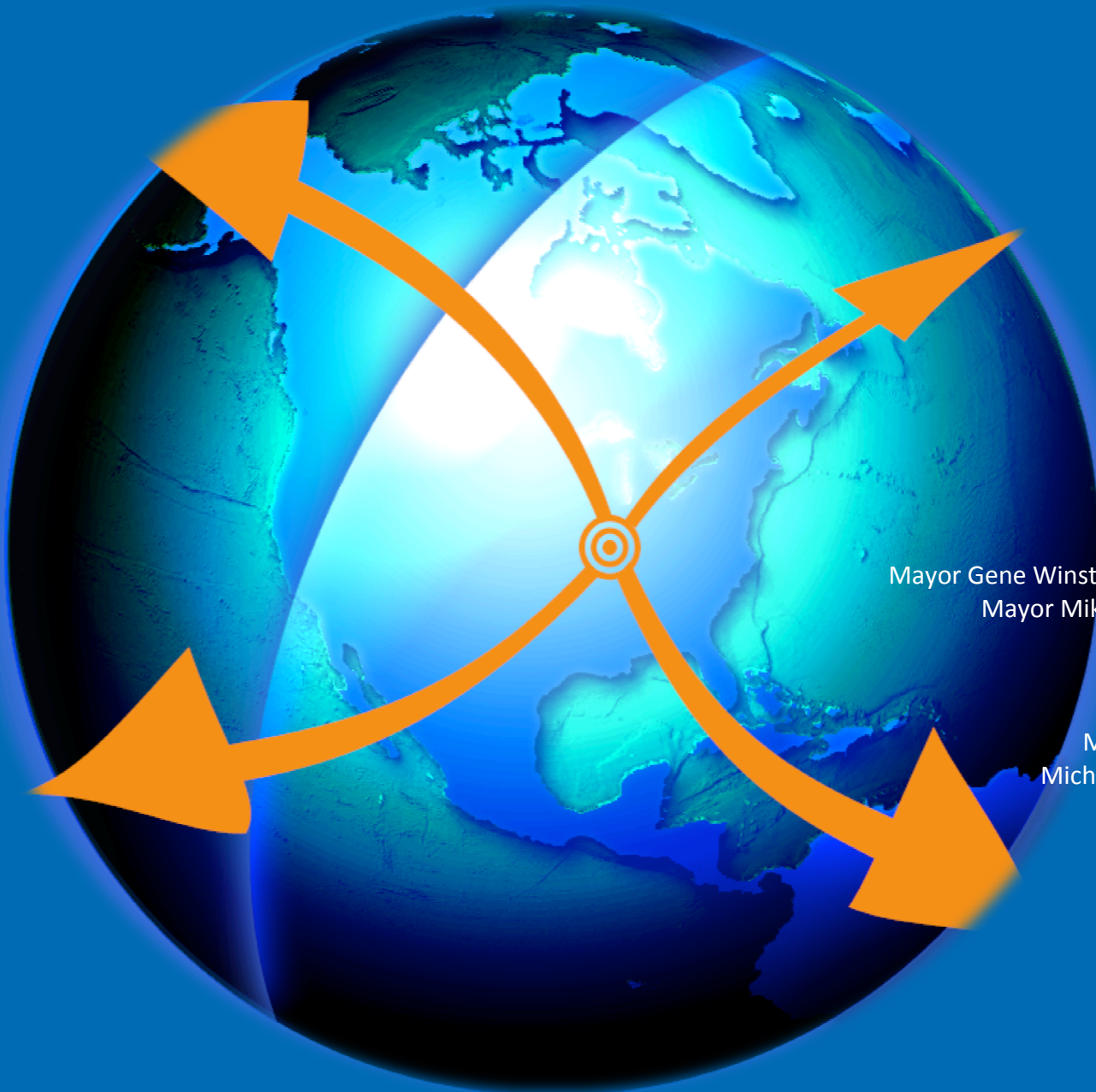


# MINNEAPOLIS – ST. PAUL METROPOLITAN REGION DISTRIBUTION SERVICES CLUSTER REPORT



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## I. Executive summary

The distribution services traded cluster is unique in that the value it generates is not in *creating*, but in *moving* product. The functioning of the cluster depends on a complex interplay between small and large companies that need to ship goods, freight forwarders, third party logistics carriers, integrators, and various consultants.

The *Minneapolis – St. Paul Metropolitan Region Distribution Services Cluster Report* is the first of its kind in analyzing the regional competitiveness of the industry cluster. A quantitative analysis of economic indicators reveals that the region's distribution services industry cluster has a competitive advantage over that of the national industry, yet the advantage has been declining over the past decade.

Interviews conducted with business leaders of distribution services reveal that it is, and will continue to be, difficult for the Minneapolis-St. Paul metropolitan region to compete with Chicago as the primary distribution hub of the Midwest. Logically, it does not make sense for the Minneapolis – St. Paul metropolitan region to pirate freight from Chicago in order to be shipped from the metro. It does make sense, however, for the region to capitalize on its strengths to create a niche distribution market. That is, capitalize on the emerging consumer market for not only green products, but also a green supply chain for products. Additionally, there may be an opportunity for creating an international medical device distribution hub in the region. More research is required, however, to evaluate if there is a strong market opportunity for MSP to be a major air distributor of medical devices.

In pursuit of the niche distribution market, the report lays out three steps for achieving the vision of creating a globally competitive intermodal hub. Ultimately, the success of achieving this vision hinges on collaboration. Interviews with business leaders indicate that the distribution services industry culture embraces a cross-pollenization of boards; thus, the environment is conducive to embracing collaboration towards achieving mutually beneficial goals.



## II. The context

### Introduction

The economic base of the U.S. is changing. The catch phrase, “new economy,” describes new jobs and skill requirements, amongst other things, that will be demanded of the U.S. economy in order to stay competitive. The change from a labor to a knowledge-based economy is forcing economic developers to initiate innovative solutions to maintain or gain economic competitiveness in their regions.

One economic development strategy emerging within regions of the U.S., as well as the world, is the development of traded industry clusters. President Obama declares in his 2011 budget proposal, “We need to recognize that competitive, high-performing regional economies are essential to a strong national economy.” As such, his budget includes several proposals for supporting regional cluster strategies through multiple federal agencies.<sup>1</sup>

Regions, such as the Twin Cities, are embracing cluster strategies for regional economic development because they are an avenue for spurring the highly desirable innovation-based economy. Innovation and competition create faster and more efficient ways to deliver services and goods, attract a large labor pool of educated and qualified workers, and ultimately bring more wealth to a region.

Clusters also serve as a framework for developing and implementing public policy. This framework opens avenues for dialogue between private and public partners to identify problems and action recommendations. With resources aligned and an avenue opened for dialogue, the cluster strategy has the potential to create a synergy of various economic players in a region.

One cluster with a competitive advantage in the Minneapolis – St. Paul metropolitan region is distribution services. This report describes how the distribution services cluster operates in the region, why it has a competitive advantage, the factors that will influence its competitiveness in the future, a vision for the future of the cluster, and an action plan for achieving the vision.

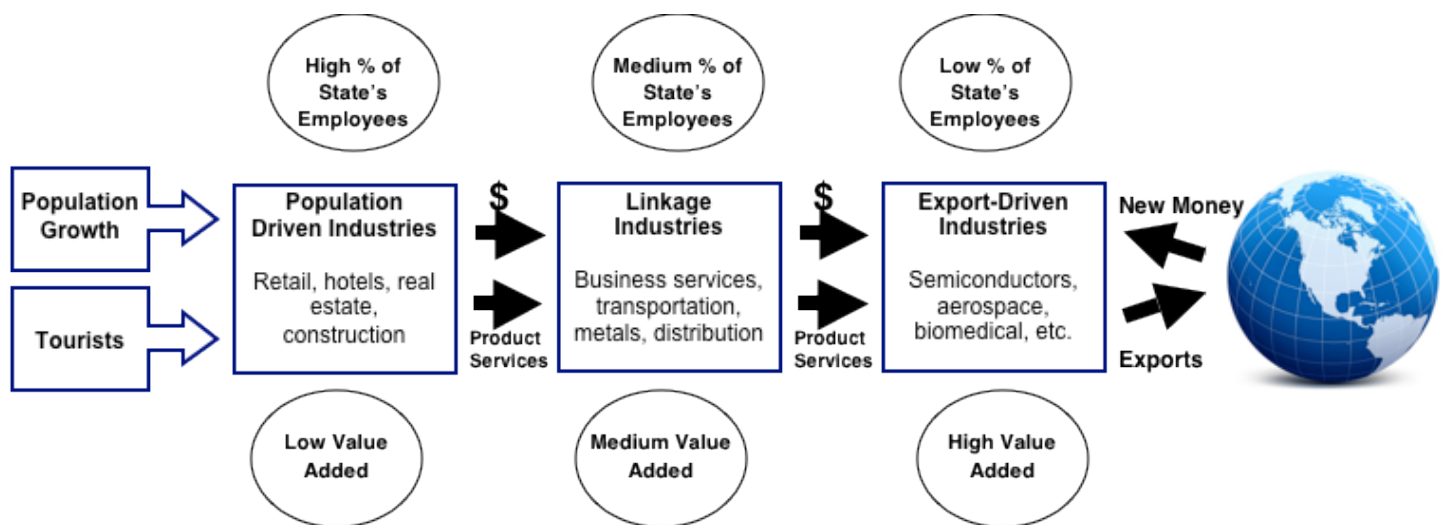
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<sup>1</sup> Muro, Mark and Sarah Rahman. “Budget 2011: Industry Clusters as a Paradigm for Job Growth.” The Brookings Institution

## Methodology

Distribution services is a unique cluster in that the value created by the industry is in *moving* rather than *creating* product. The graphic below illustrates that distribution services is a medium value added industry that depends on its interactions with the export-driven industries interfacing with the global economy, as well as the locally driven industries. With that said, the economic competitiveness of the Minneapolis – St. Paul metropolitan region depends on the distribution services industry to quickly and efficiently move product from the shipper to its destination.

Figure 2.1: Wealth creation in a global economy<sup>2</sup>



The distribution services cluster is defined by the companies, suppliers, service providers and associated institutions involved in the system of distributing goods. This includes, but is not limited to:

- Logistics;
- Information technology systems;
- Rental, leasing and arrangement of transportation, warehousing, and shipping; and
- Other associated professional/technical services.

<sup>2</sup> Waits, Mary Jo. 2000. "The Added Value of the Industry Cluster Approach to Economic Analysis, Strategy Development, and Service Delivery." *Economic Development Quarterly*. 14(1): 35.

The primary subclusters under the distribution services cluster are:

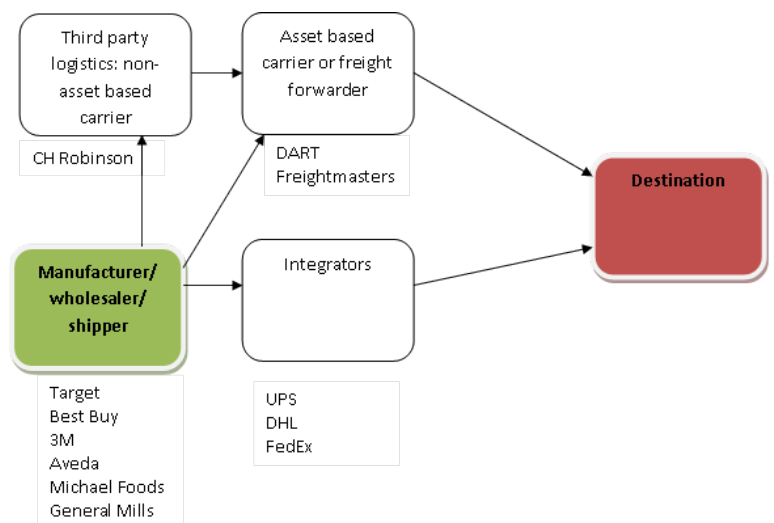
Subcluster	Company examples
Merchandise wholesaling	Best Buy, Nash Finch, API Group, Cargill, Mudd Co., Target Interior Design, Medtronic, Ovations
Apparel and accessories wholesaling	Apparel Associates
Catalogue and mail-order	Target (electronic shopping)
Food products wholesaling	SuperValu, Michael Foods, Land O'Lakes
Farm material and supplies wholesaling	United Hardware Distributing Co.
Transportation vehicle and equipment and distribution	C.H. Robinson, Freightmasters, Metropolitan Airports Commission
Special warehousing and storage	CHS Inc, Archer Daniels, Cargill, General Mills

The cluster includes firms that manage their own product supply chain from raw materials to final distribution. This includes packaging, labeling, warehousing, inventory control, returns management, and information management. It also includes third party logistics providers (3PLs), freight forwarders, and integrators. There are two types of 3PLs: asset-based and non-asset based providers (or carriers). Asset-based providers own their equipment, such as trucks and warehouses. Non-asset based providers do not own their equipment, but serve as third party brokers to help companies arrange for the transportation of their freight.

Whether they are a manufacturer, wholesaler, or shipper, companies that need to move product have several options:

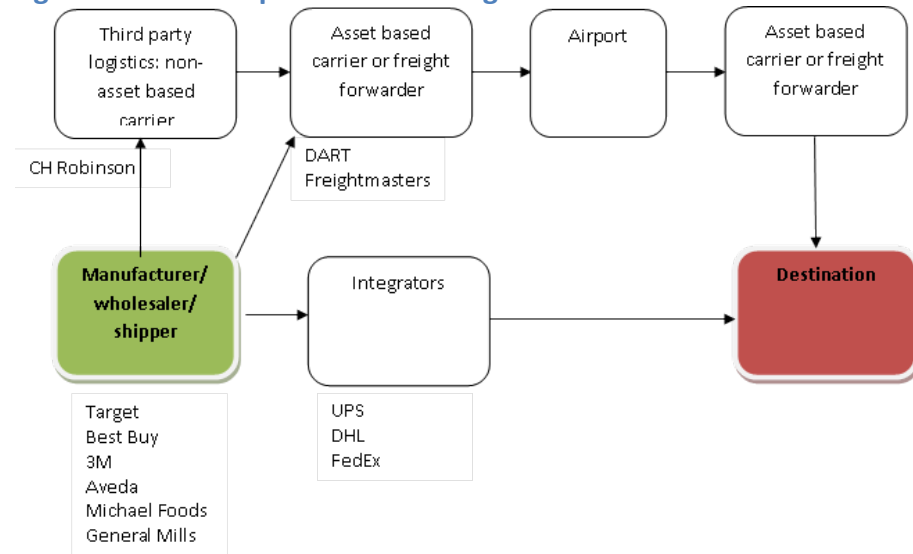
1. Use a third party logistics, non-asset based carrier, which acts as a freight broker between the client company and the freight forwarder;
2. Contract directly with an asset-based carrier, which owns trucks for transporting goods to the destination; or
3. Use an integrator, which provides door-to-door service for moving product without the use of a "middle man."

Figure 2.2: Three options for ground freight



If the goods are being transported via air freight, then the model is slightly different.

**Figure 2.3: Three options for air freight**



## Background

The background and history of distribution services businesses in the Minneapolis – St. Paul metropolitan region centers on the advent of technological advances, increased accessibility, and mobility of transportation technology and investments. Many of these businesses, such as General Mills and Cargill, began as agricultural industries. Despite the changing market demands and the resulting changes in business, many large distribution services companies have maintained their headquarters in the Twin Cities.

The history of the Minneapolis – St. Paul metropolitan region’s prosperity is largely due to its proximity to the Mississippi River and railroad expansion. Pioneer businesses located along the Mississippi River to take advantage of the region’s ability to distribute heavy goods and hydropower. In 1848, the first lumber mills began to develop nearby Saint Anthony Falls<sup>3</sup> to collect and process timber traveling south from the northern Minnesota forests. By 1900, Minneapolis was the sawmill capital of the world, cutting enough lumber to fill 65,000 freight cars a year.<sup>4</sup> In 1880, Minneapolis was also known as the nation’s Flour Milling Capital.<sup>5</sup>

<sup>3</sup> Minnesota Historical Society

<sup>4</sup> Minnesota Historical Society - Interactive timeline: [www.mnhs.org](http://www.mnhs.org)

<sup>5</sup> Minnesota Historical Society – Interactive timeline: [www.mnhs.org](http://www.mnhs.org)

Businesses that began as food distributors such as General Mills, Cargill, Land O'Lakes and Supervalu depended on advances in transportation and technological innovation to develop into international corporations. Land O'Lakes, a worldwide distributor of dairy and animal food products, formed in 1921 out of an association of 320 dairy farmers in Minnesota called the Minnesota Cooperative Creameries. Dairy products were seen as a local commodity due to the need to be refrigerated, however, the company was able to expand as transportation and distribution technologies improved.<sup>6</sup>

Distribution technology improvement also benefited the growth of Cargill, founded in 1865 when William Cargill bought his first grain elevator in Conover, Iowa. He and his brother Sam bought grain elevators all along the Southern Minnesota Railroad in 1870, just as Minnesota was becoming an important shipping route. William worked with the railroads to monopolize transport of grain to markets and coal to farmers.<sup>7</sup>

Milling product distribution became a foundation for the Minneapolis – St. Paul metropolitan region when Cadwallader Washburn built his first flourmill in 1866 in Minneapolis, which eventually became the Washburn Crosby Company. The company was later consolidated with other U.S. mills in 1928 to form General Mills, the world's largest miller.<sup>8</sup>

The choice to locate in the Twin Cities was based on the agricultural productivity of the region and the transportation advances in railroad and river navigation that allowed the distribution of agricultural products to move from Minnesota to across the county. The rich history of distributing vast quantities of heavy and bulk goods has built a foundation for the region.

Beyond the legacy of agriculture and food product businesses, a majority of the companies interviewed for this report indicated that the reason for locating here was serendipitous, that is, most were founded in the Minneapolis – St. Paul metropolitan region because the founder lived here. Now, the region is home to Fortune 500 companies, such as Best Buy and Target, which manage their global distribution networks for electronics and consumer goods. There are many other companies, such as Mudd Co., an importer and distributor of resale and non-resale supply chain products, that located or began here because of the presence of the major retail headquarters. This explains why the region is home to more than 5,000 small and large wholesale traders that sell their goods to these large retailers.

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<sup>6</sup> Hoover's Company Records, February 26<sup>th</sup>, 2010. *Land O'Lakes Inc., In-depth Records*

<sup>7</sup> Hoover's Company Records, February 26<sup>th</sup>, 2010. *Cargill Incorporated., In-depth Records*

<sup>8</sup> Hoover's Company Records, February 26<sup>th</sup>, 2010. *General Mills., In-depth Records*

## Overview of Minneapolis – St. Paul metropolitan region and economy

In order to understand how the distribution services cluster functions, it is important to first understand the environment in which it operates. The Minneapolis – St. Paul metropolitan region was ranked as the 8<sup>th</sup> most competitive region overall in the *Metropolitan Area Competitiveness Report 2007* by the Beacon Hill Institute. The region leads San Jose, CA and Providence, RI, yet falls behind Seattle, WA and Virginia Beach, VA. Using Michael Porter's model of competitiveness, the Institute calculated regions overall competitiveness based on their policies and conditions that "ensure and sustain a high level of per capita income and continued growth."<sup>9</sup> The report ranks the fifty largest metropolitan statistical areas in eight categories with 38 variables. These elements are combined to create a single "competitiveness index." (see Figure 2.4).

The region ranks among the top ten in all areas aside from Business Incubation, Government and Fiscal Policy, and Security. Despite these shortcomings, the metro area has a strong private sector and, until the recent economic downturn, has experienced steady employment growth. By having the 3<sup>rd</sup> most Fortune 500 companies per capita and ranking 6<sup>th</sup> for the most Fortune 400 private companies, including Cargill and Carlson, the strength of the private sector is evident.<sup>10</sup> The low score in Business Incubation (49<sup>th</sup> out of 50) is of particular concern because new business growth is a critical factor in increasing competition and innovation within a regional economy. This subindex measures the ability for a new business to mobilize financing for investment. The ranking rises with the number of business births in the metropolitan area.<sup>11</sup> The Minneapolis – St. Paul region may foster Fortune 500 Companies, but the report indicates that it is difficult to start a business in the Twin Cities. Without new businesses entering the market and enhancing competition, the region could lose its competitive advantage over time.

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<sup>9</sup> *The Beacon Hill Institute at Suffolk University. Metropolitan Area Competitiveness Report 2007.*

<sup>10</sup> McKinsey Consulting. "Job Growth Task Force Kick-off." Itasca Project. 9 Oct 2009.

<sup>11</sup> *The Beacon Hill Institute at Suffolk University. Metropolitan Area Competitiveness Report 2007.*

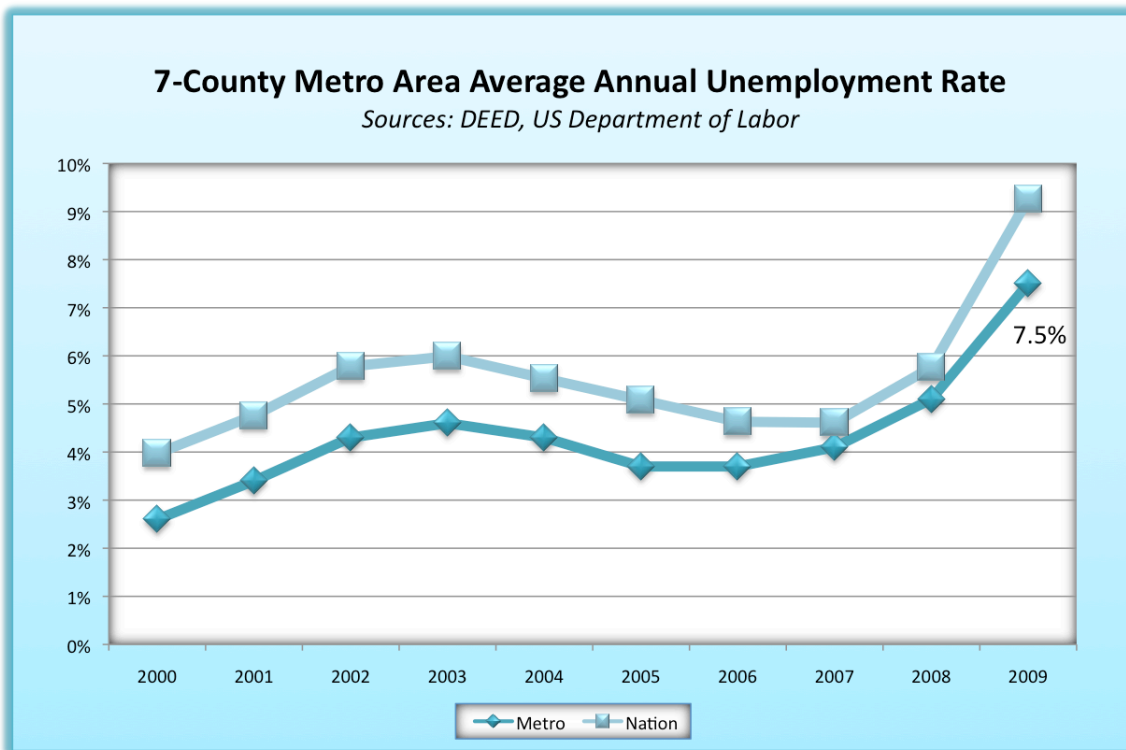
**Figure 2.4: Minneapolis-St Paul Competitiveness Ranking out of 50 Largest US Metro Areas**

Competitive Advantages		Competitive Disadvantages	
<i>Government and Fiscal Policy</i>		<i>Overall Rank: 27</i>	
• Bond Rating: S&P/Moody's composite	3	• State and Local Taxes per capita/income per capita	41
• State Bond Rating	13	• Average benefit per 1 <sup>st</sup> payment for unempl.	48
<i>Security</i>		<i>Overall Rank: 13</i>	
• Violent crimes per 100,000 inhabitants	3	• Crime index change (%)	46
• Thefts per 100,000 inhabitants	20		
<i>Infrastructure</i>		<i>Overall Rank: 7</i>	
• Travel time to work	15	• High-speed lines per 1000	31
• Air passengers per capita	8		
• Electricity prices	15		
<i>Human Resources</i>		<i>Overall Rank: 1</i>	
• % of population w/o health insurance	2		
• % of population graduating from high school	1		
• % of student enrolled in degree-granting institutions per 1000	4		
• % of adults in labor force	1		
• Infant Mortality Rate	6		
• Non-federal physicians per 100,000 inhabitants	14		
<i>Technology</i>		<i>Overall Rank: 7</i>	
• NIH support to institutions per capita	19	• Academic R&D per \$1,000	44
• New patents issued per 100,000 inhabitants	9		
• Number of S&E graduate students per 100,000 inhabitants	3		
• % of Computer & Engineering Jobs	9		
<i>Business Incubation</i>		<i>Overall Rank: 49</i>	
		• Venture capital investment per capita	32
		• Employer firm births per 100,000 inhabitants	35
		• Entrepreneurial Activity index	40
		• Forbes Cost of Doing Business index	40
		• % of labor force represented by unions	37
		• New publicly traded companies (IPO by metro)	33
<i>Environmental Policy</i>		<i>Overall Rank: 7</i>	
• Toxic release, pounds per sq mile	11		
• Air Quality Index	20		
• High Ozone Days	4		



This strong private sector has not protected the Twin Cities from the recent recession. The region has experienced a sharp rise in unemployment, reaching an average annual unemployment rate of 7.5 percent in 2009 (see Figure 2.5). This rate still falls below the nation, however, where the unemployment rate was 10 percent (DEED, 2010). Major employment sectors in the Twin Cities region include health care and social assistance, manufacturing, and retail trade (see Figure 2.6). The distribution services industry is closely tied with manufacturing and retail trade, both of which experienced a decline in employment from first quarter 2008 to first quarter 2009 (see Figure 2.7).

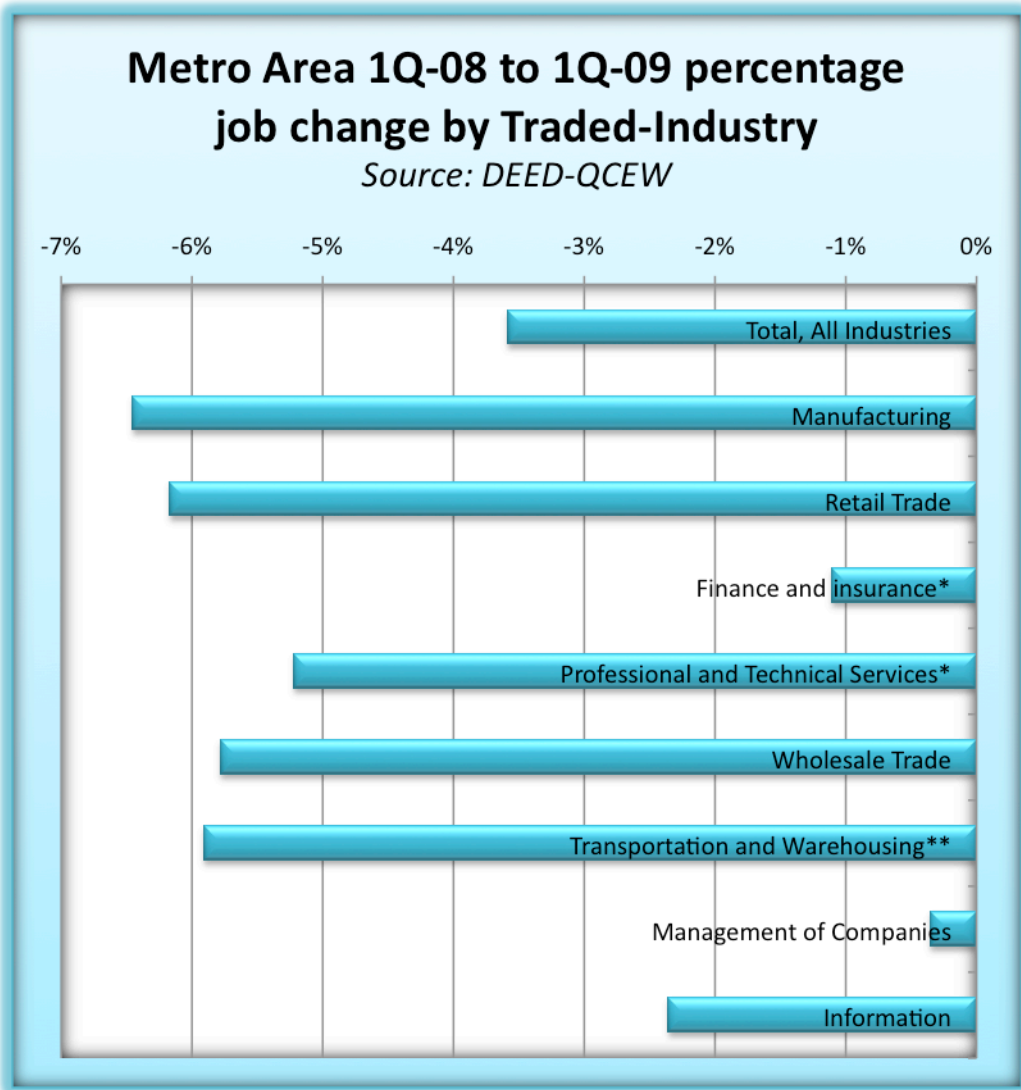
**Figure 2.5: Minneapolis – St. Paul Metropolitan Region Unemployment Rate**



**Figure 2.6: Minneapolis – St. Paul Metropolitan Region Employment by Traded Industry**

Average Annual Employment by Industry, 2008 <i>Source: DEED-QCEW</i>	Total Employment	Percentage of Jobs
Total, All Industries	1,612,277	100%
Manufacturing	178,172	11%
Retail Trade	164,331	10%
Finance and Insurance	104,805	7%
Professional and Technical Services	103,577	6%
Wholesale Trade	82,991	5%
Transportation and Warehousing	66,144	4%
Management of Companies and Enterprises	63,187	4%
Information	43,672	3%

Figure 2.7: Minneapolis – St. Paul Metropolitan Region Job Change by Traded Industry  
1Q 2008 to 1Q 2009



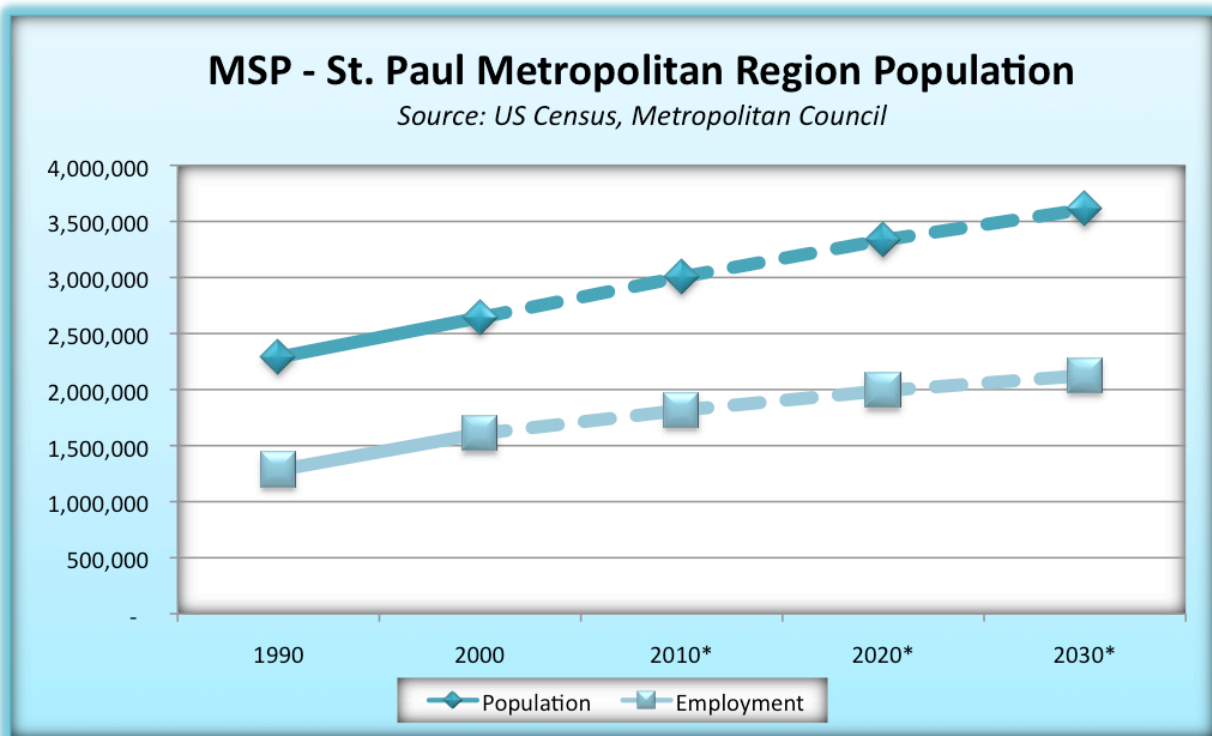
\* Private industry only

\*\* Private and federal government only

## Demographics

The seven county Minneapolis – St. Paul metropolitan region has experienced steady population and employment growth in recent decades following the construction of the International Highway System, enabling residents to live farther from their jobs in Minneapolis and St. Paul. The outward expansion of the population has also led to employment opportunities spreading throughout the entire metropolitan region (see Figure 2.8). The Metropolitan Council projects the population growth to continue into the next two decades, while employment will level off as Baby Boomers exit the workforce.<sup>12</sup> With the metropolitan region growing faster than other regions, there is an increased demand for products, which positively influences employment in the distribution services cluster.

**Figure 2.8: Minneapolis – St. Paul Metropolitan Region Population and Employment**



The metropolitan region mirrors national trends in age distribution, median age, and male/female ratio.<sup>13</sup> Well above the national average of 27.7 percent, in 2008, the American Community Survey estimated that 39.5 percent of Metropolitan Region residents 25 years or older had a bachelor's degree or higher.<sup>14</sup> This number includes the City of Minneapolis, which

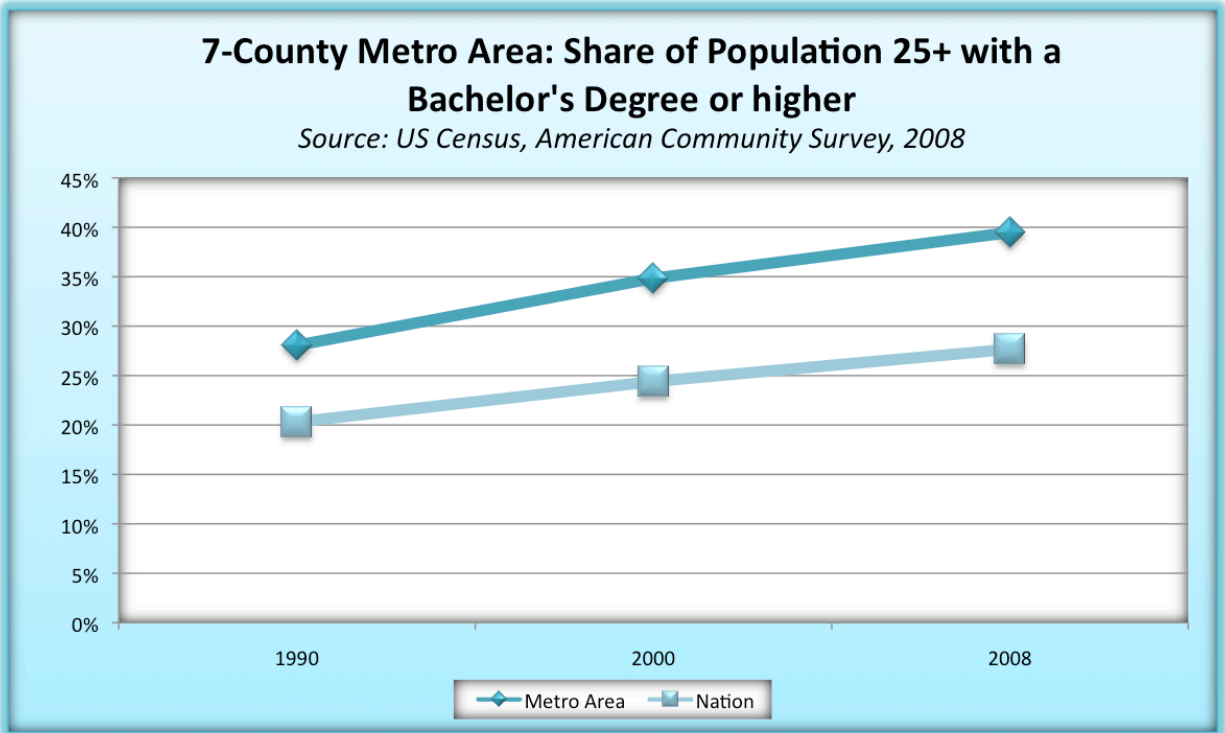
<sup>12</sup> Metropolitan Council. "Population, Household & employment Forecasts – Community Level." Available online: <http://metrocouncil.org/reports/index.htm>.

<sup>13</sup> US Census Bureau. 2008 American Community Survey-Year Estimates. Available online: <http://factfinder.census.gov>.

<sup>14</sup> US Census Bureau. 2008 American Community Survey 1-Year Estimates. Available online: <http://factfinder.census.gov>.

has 42 percent of its population with a bachelor's degree or higher, making it the 11th most educated city in the U.S.<sup>15</sup> (see Figure 2.9).

**Figure 2.9: 7-County Metropolitan Region Share of Population 25+ with Bachelor's Degree or Higher**



<sup>15</sup> Brookings Institute Living Cities. Available online: <http://www.brookings.edu/metro/Living-Cities/userguide.aspx>.

### III. Distribution Services cluster analysis

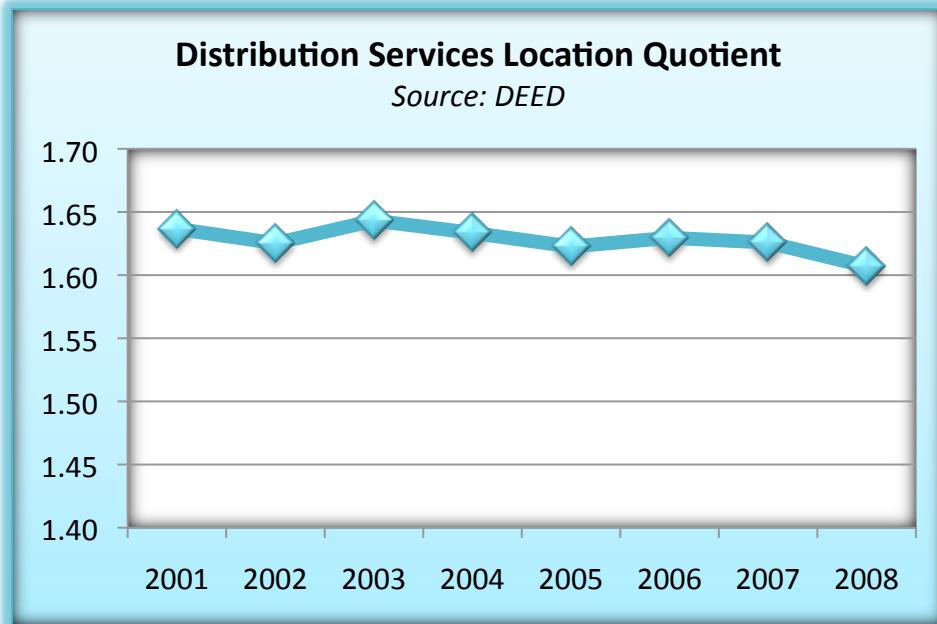
The process of identifying and analyzing a cluster involves a quantitative and qualitative examination of economic information. Specifically, distribution services has been identified as a cluster through analysis of the concentration of employees in the specified industries (see [cluster definition](#)) in the seven-county Minneapolis – St. Paul metropolitan region relative to the national average employment concentration. Qualitatively, the interdependencies and relationships that form the cluster have been identified through interviewing distribution services firms in the metropolitan region.

#### Quantitative measures

The location quotient method is used to measure the specialization of Distribution Services relative to the nation. A location quotient greater than one indicates the region is specialized in a particular industry, at a certain time, relative to the nation.

The location quotient method is useful for government entities planning in targeting economic development efforts. Many regions fall victim to pushing funds into an industry that is no longer regionally competitive or productive. According to Michael Porter’s research on the microeconomics of competitiveness, Distribution Services had a LQ of 1.37 in the 13-county Metropolitan Area. The Minnesota Department of Employment and Economic Development, however, calculated the LQ to remain steady at 1.6 in the 7-county Metropolitan Area (see Figure 3.1).

Figure 3.1: 7-County Metropolitan Region Distribution Services Location Quotient



The purpose of shift-share analysis is to analyze the growth of distribution services in the Minneapolis – St. Paul metropolitan region to determine if the job growth (or decline) is attributed to national, industry-specific, or a competitive advantage in the region. These three elements add up to the total employment change and allow us to determine the scope of the underlying cause for changes in employment.

- *National share*: job growth (or decline) due to the overall national growth rate of employment.
- *Industrial mix*: job growth (or decline) due to the national Distribution Services industry growing faster (or slower) than the nation.
- *Competitive shift*: job growth (or decline) of the regional industry. A negative number here reveals that the regional industry grew slower than the national industry, indicating a lack of competitive advantage.

The distribution services cluster has fluctuated in its annual employment percentage change both regionally and nationally (see Figure 3.2). Overall, however, the metropolitan region has fared worse than the nation in terms of employment change in distribution services since its peak employment in 2001.

**Figure 3.2: Distribution Services Annual Percentage Employment Change**  
*From base year 2001*

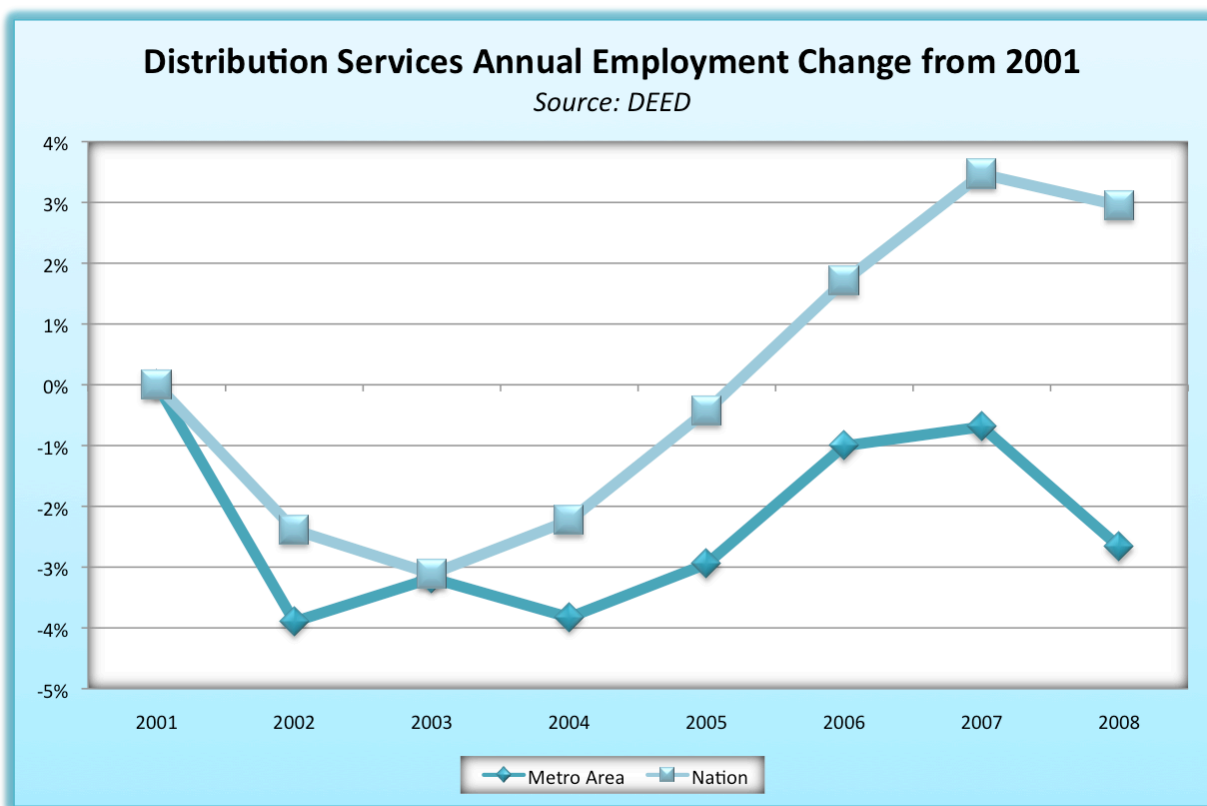


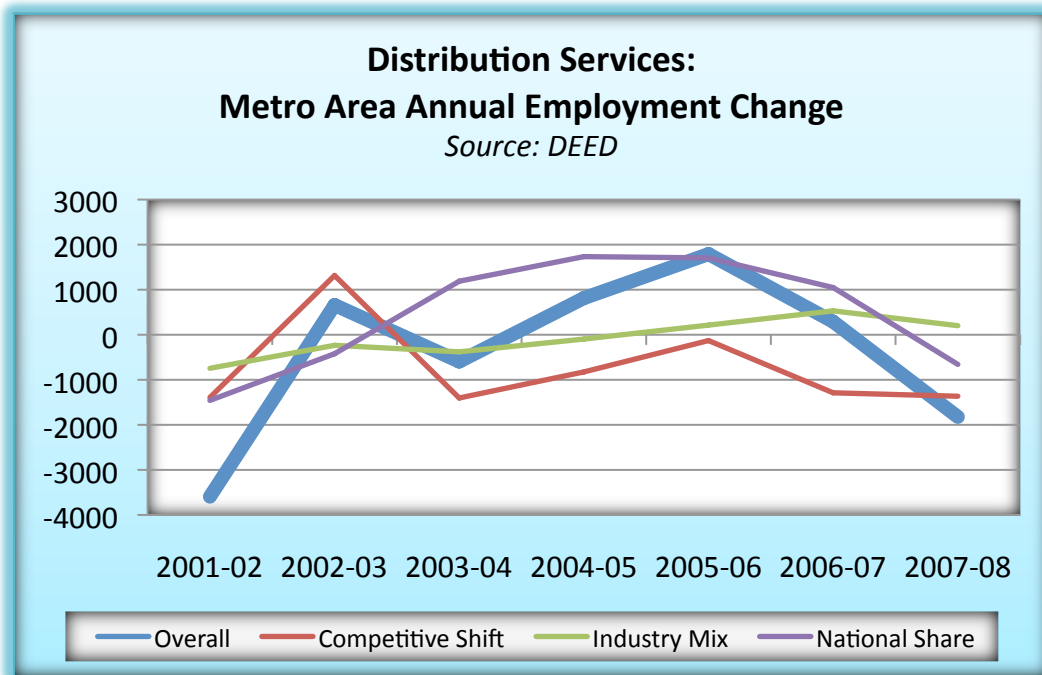
Figure 3.3 indicates that in 2001-2004, the distribution services industry saw a decline nationally and regionally, as did the overall national economy, with an overall loss of 3,530 jobs. From 2004-2007, however, the metro saw an increase of 2,892 jobs in distribution services. The source of those jobs comes from the growth in the national economy and national Distribution Services industry. This (2,278) competitive shift for 2004-2007 with national and industry growth indicates that the Metropolitan Region may be at risk of losing its competitive advantage in the Distribution Services industry.

**Figure 3.3: Distribution Services Employment Change in the Metropolitan Region**

2001 - 2004				2004-2007			
Employment Change (3,530)	National Share (687)	Industrial Mix (1,372)	Competitive Shift (1,470)	Employment Change 2,892	National Share 4,515	Industrial Mix 655	Competitive Shift (2,278)

Figure 3.4 shows the same data as Figure 3.3, only broken down annually, as opposed to four-year increments. The blue line shows the overall annual employment change in the metropolitan region. The red line indicates how much of that shift was due to regional factors. While specific causes are not specified in the data, overall employment saw a recent decline appears to be largely due to regional factors. National and industry trends in distribution services have not seen the same job loss as the region, indicating a declining trend in regional competitiveness.

**Figure 3.4: Minneapolis – St. Paul Metropolitan Region Annual Employment Change in Distribution Services**





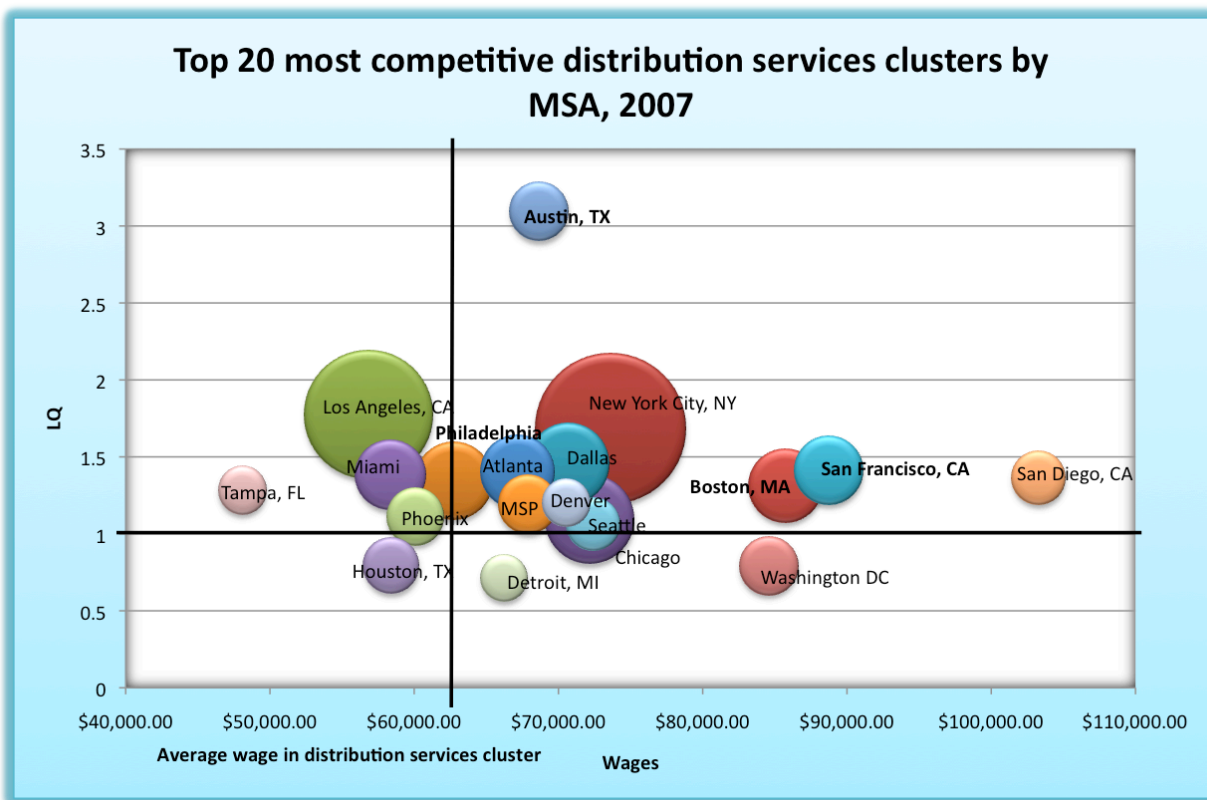
## National profile

Clearly, the strength of the distribution services cluster in the Twin Cities is greater than in other regions of the U.S., but how does it rank against other major distribution hubs?

According to Michael Porter's Cluster Mapping Project data, the Minneapolis-St. Paul-Bloomington MSA ranks 11<sup>th</sup> in the nation for distribution services. The region lags behind Miami and San Francisco, yet leads Austin, Texas and Washington D.C. The total employment, location quotient, average wage, and the compound annual growth rate for both employment and wages from 1998 to 2007 determine the rank.

It is important to note that the data presented below is based on the 13-county metropolitan region. For this reason, the LQ is slightly lower than the LQ previously mentioned, which was calculated for the 7-county metropolitan region.

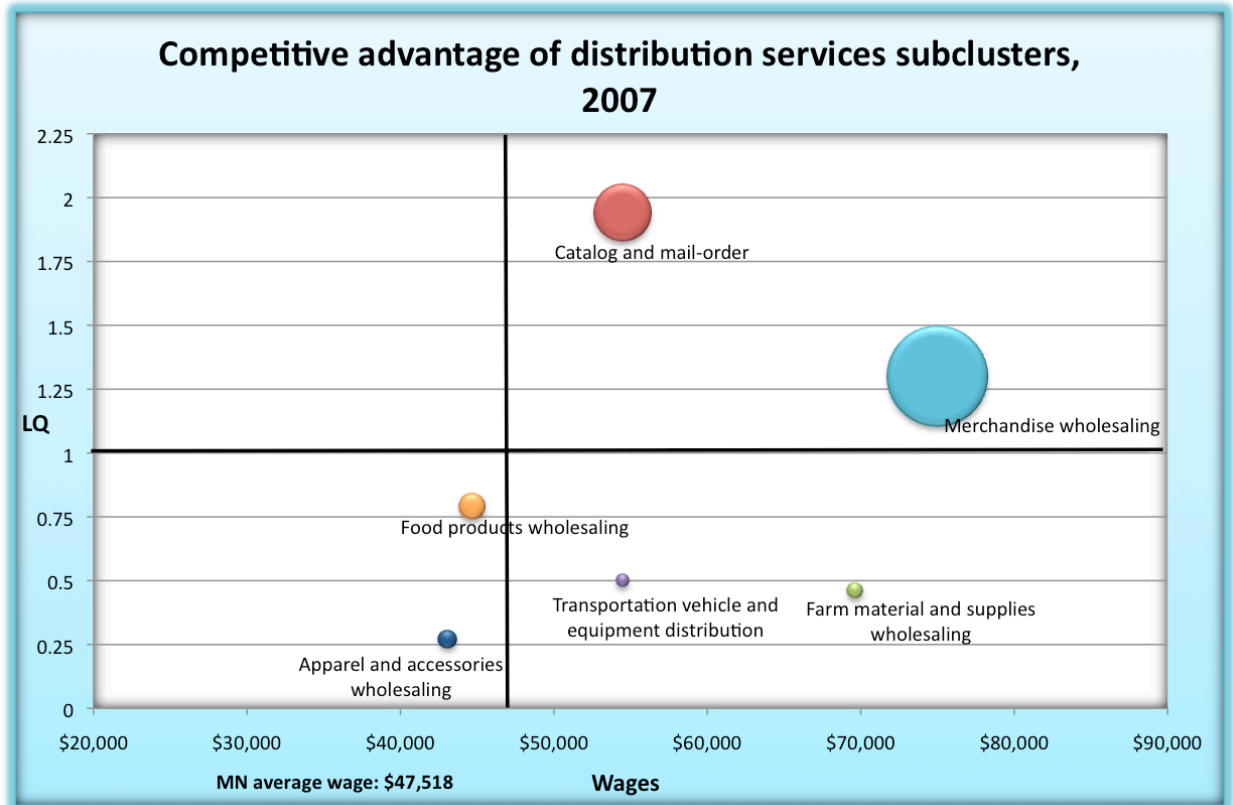
Figure 3.5: Top 20 most competitive distribution services clusters by MSA, 2007



## Subcluster strength

Driving the competitive advantage of the distribution services cluster is the merchandise wholesaling and the catalog and mail order subclusters. Figure 3.6 illustrates that these two subclusters are the driving forces behind the cluster as they both have a location quotient that is greater than one. While all but the food products subcluster and apparel and accessories wholesaling subcluster have an average wage above the average wage for Minnesota (\$47,518), merchandise wholesaling is the highest with an average wage of \$75,019. Finally, the size of the bubble correlates with the number of employees. Therefore, it is clear that merchandise wholesaling and catalog and mail order employ the most people in the Twin Cities with 22,438 and 7,308 employees, respectively.

Figure 3.6: Competitive Advantage of Distribution Services Subclusters, 2007



## Distribution services companies

The distribution services cluster is unique in that it includes companies that are wholesalers, manufacturers, retailers, and third party logistics firms. Whether they have their own in-house distribution services unit or they contract with a third party, the common thread is that they

are all involved in moving product from point A to point B. Figure 3.7 includes a list of the top distribution services companies in the Twin Cities based on employment and sales.

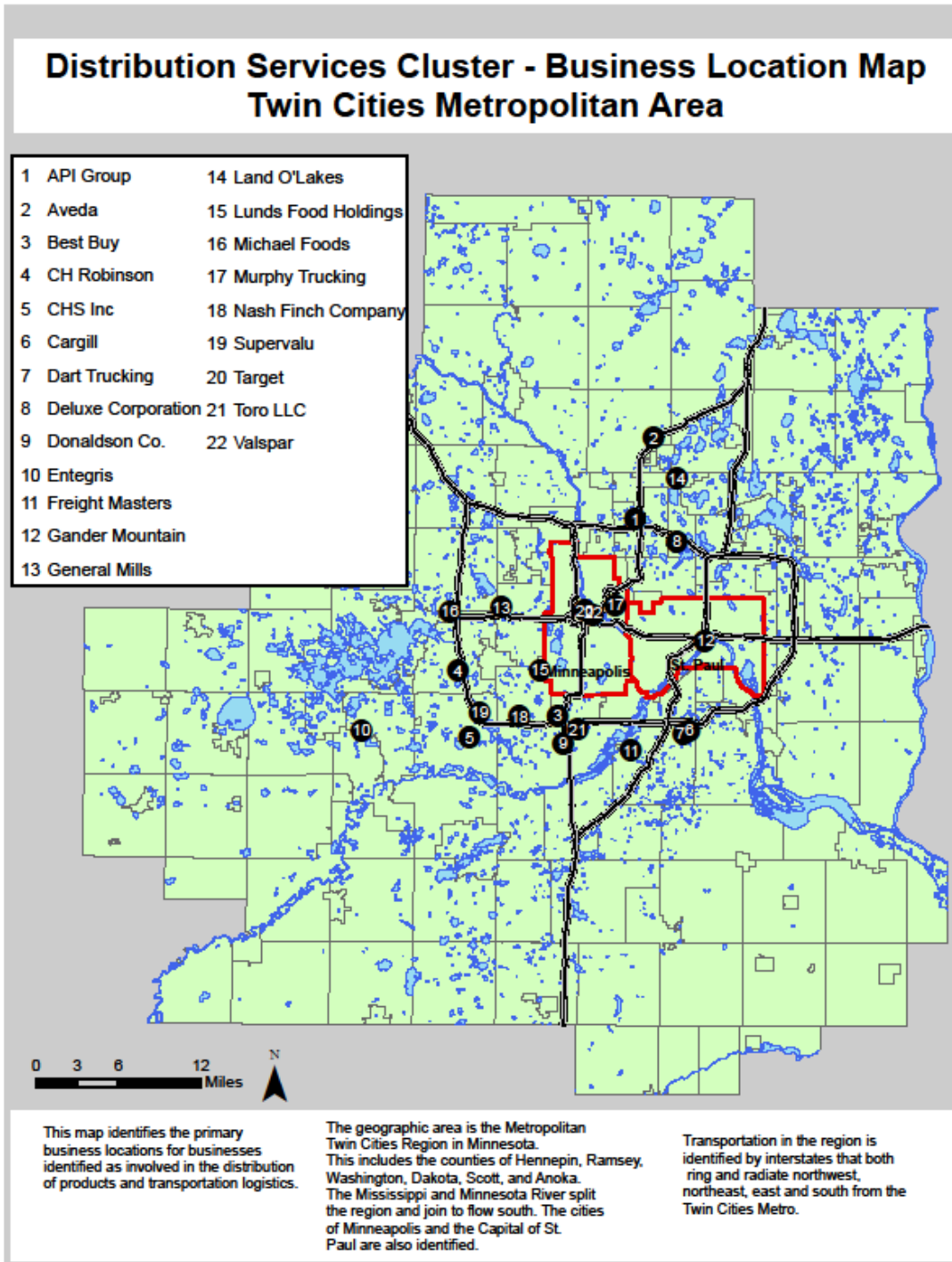
**Figure 3.7: Top Distribution Services Companies in Metropolitan Region**

	Company Name	Location	Sales (\$ mil)	Employees	Ranking
1	<b>Target Corporation</b>	Minneapolis	64,948.00	351,000	# 30 Fortune 500
2	<b>SUPERVALU INC.</b>	Eden Prairie	44,564.00	178,000	# 47 Fortune 500
					# 2 privately held company
3	Cargill, Incorporated	Wayzata	116,579.00	159,000	
4	<b>Best Buy Co., Inc.</b>	Richfield	45,015.00	155,000	# 45 Fortune 500
5	General Mills, Inc.	Golden Valley	14,691.30	30,000	# 155 Fortune 500
6	The Valspar Corporation	Minneapolis	3,482.40	9,400	Fortune 1000
7	Land O'Lakes, Inc.	Arden Hills	12,039.30	9,100	# 226 Fortune 500
8	<b>APi Group, Inc.</b>	New Brighton	1,000.00	9,000	
9	G&K Services, Inc.	Minnetonka	936	8,500	
	Christopher & Banks Corporation	Plymouth	530.7	8,300	
		Inver Grove Heights			
11	CHS Inc.	Heights	32,167.50	8,113	# 91 Fortune 500
	<b>C.H. Robinson Worldwide, Inc.</b>	Eden Prairie	8,578.60	7,961	# 301 Fortune 500
12					
13	Nash- Finch Company	Edina	4,703.70	7,410	# 400 Fortune 500
14	Deluxe Corporation	Shoreview	1,468.70	7,172	Fortune 1000
	Gander Mountain Company	St. Paul	1,064.60	5,605	
15					
16	<b>Toro Llc</b>	Bloomington	--	5,000	Fortune 1000
17	Lund Food Holdings, Inc.	Minneapolis	--	4,500	
18	M- Foods Holdings, Inc.	Minnetonka	--	3,800	
19	<b>Michael Foods, Inc.</b>	Minnetonka	1,467.80	3,759	Fortune 1000
20	Ovations, Inc.	Minnetonka	--	3,500	
	<b>(Bold indicates company interviewed)</b>				
	<b>Other companies interviewed</b>				
	Aveda Corporation	Blaine	--	--	
	DART TRANSIT CO INC	Eagan	504.5	340	
	Donaldson Company	Bloomington	1,868.600	10,600	Fortune 1000
	FREIGHTMASTERS INC	Eagan	57.6	638	
	Mudd Co.	Crystal	--	--	

The employment and sales data for some companies, such as Target, Best Buy, and Toro, reflect the data for the entire company, not for the business functions that are involved in distributing product.

Figure 3.8 illustrates the dispersion of business location choice. Businesses are not concentrated in the downtown areas or in one sector of the region. The map indicates that the headquarters and distribution sites are located at the intersection of or nearby a major Interstate transportation corridor. These locations are advantageous for the accessibility of workers and the ability to distribute goods.

Figure 3.8: Business location map



## Qualitative Analysis

In addition to the quantitative measures, a qualitative analysis was conducted to better understand what drives the competitive advantage of the distribution services industry cluster and what barriers exist to strengthening this advantage. After interviewing 11 companies, an air cargo manager at the MSP airport, and a commercial real estate broker, the following themes and responses emerged. The responses are the drivers for the [action plan](#).

**Figure 3.9: Summary of interview responses**

Common themes	Response from companies	Company	Addressed in action plan
<b>Green</b>	Customer demand for green products and/or process	Aveda, CH Robinson, Mudd Co.	Step 3
	Need for consolidating cargo loads	Michael Foods, Target, CH Robinson, Freightmasters, DART	Step 3
	Concerned with emission mandate by 2025	DART, Freightmasters	Step 1
	Don't force mandate for biodiesel and ethanol due to maintenance	DART	Step 1
	Concerned with how to stay green as the company grows	Aveda	
	Clear, pothole free roads	All	Step 2
	Reduce congestion on the roads	All	Step 2
	Need more rail because it is cheaper and greener	Michael Foods	Step 2: 1
<b>Infrastructure</b>	Improve "last mile connector" between different modes	Fortune 500 company headquarters here	Step 2
	Explore possibility of port expansion for short sea shipping through northern inland waterways	Fortune 500 company headquarters here	Step 2

Common themes	Response from companies	Company	Addressed in action plan
<b>Growth Strategy</b>	Expanding globally	Donaldson, CH Robinson, Target, Aveda, Best Buy	Step 1
	Healthy business climate in the region	All, but APi Group (due to slow construction market)	
<b>Business Climate</b>	Losing money trying to ship out of region; it is easier to bring freight in	Freightmasters	
	This region is the "Edge of the frontier," not a major population center like the coasts	DART, Freightmasters	
<b>Innovation/ Technology/ Productivity</b>	Always looking for technology innovations to improve productivity	Aveda, CH Robinson, Freightmasters, DART, SuperValu	Step 1
	Buying from local wholesalers is cost effective	Michael Foods	
	Just-in-time delivery is a critical strategy for efficiency	Freightmasters	
	Lighter trucks are more efficient	DART, Freightmasters	Step 3
	Automation decreases cost and increases efficiency	All	

Common themes	Response from companies	Company	Addressed in action plan
<b>Regulatory Environment</b>	No expressed concerns with state regulatory environment, but concerned with the lack of alignment with federal regulations	CH Robinson, Freightmasters, Best Buy	Step 1
	Safety concern for (high value) products need to be communicated with Federal government (i.e. shipping lithium batteries by air is a fire hazard)	Best Buy	Step 1
<b>Workforce</b>	Need to make MN more truck driver friendly. Truck drivers cannot stay longer than 4 hours at a wayside rest, but are required by law to rest for 10 hours.	Freightmasters	Step 1
	Trucker-trailer liability legislation	Fortune 500 company headquarter here	Step 1: 6
	Regulations limiting drive and load time hurts productivity	Freightmasters, Fortune 500 company headquartered here	Step 1
	Shortage of trucker drivers	Freightmasters, CH Robinson	Step 1: 5
	Satisfied with the labor pool in the region.	All	
<b>Taxes</b>	Cross-pollination of training programs of the major headquarters creates a pool of supply chain and sourcing staff that are in high demand by other companies.	Best Buy, Mudd Co., Fortune 500 company headquartered here	Step 1
	Taxes and labor costs are too high	All	Step 1



Common themes	Response from companies	Company	Addressed in action plan
<b>Dependence on Headquarters/ Fortune 500 companies</b>	High real estate costs	CH Robinson, Fortune 500 company headquartered here	
	Company started here because of Target headquarters		Mudd Co.
<b>Competition with Chicago</b>	Chicago is the only place with intermodal refrigerated rail.	Michael Foods.	Step 2: 1
<b>Location - Quality of Life</b>	Almost all air cargo consolidated in Chicago.	Minneapolis Airport Commission	Step 1
	Satisfied with the quality of life in the region (i.e. arts, culture, and education system).	All	
	Reason for locating here was serendipitous.	All but Mudd Co.	

## Minneapolis – St. Paul Metropolitan Region Diamond of Advantage: Distribution services

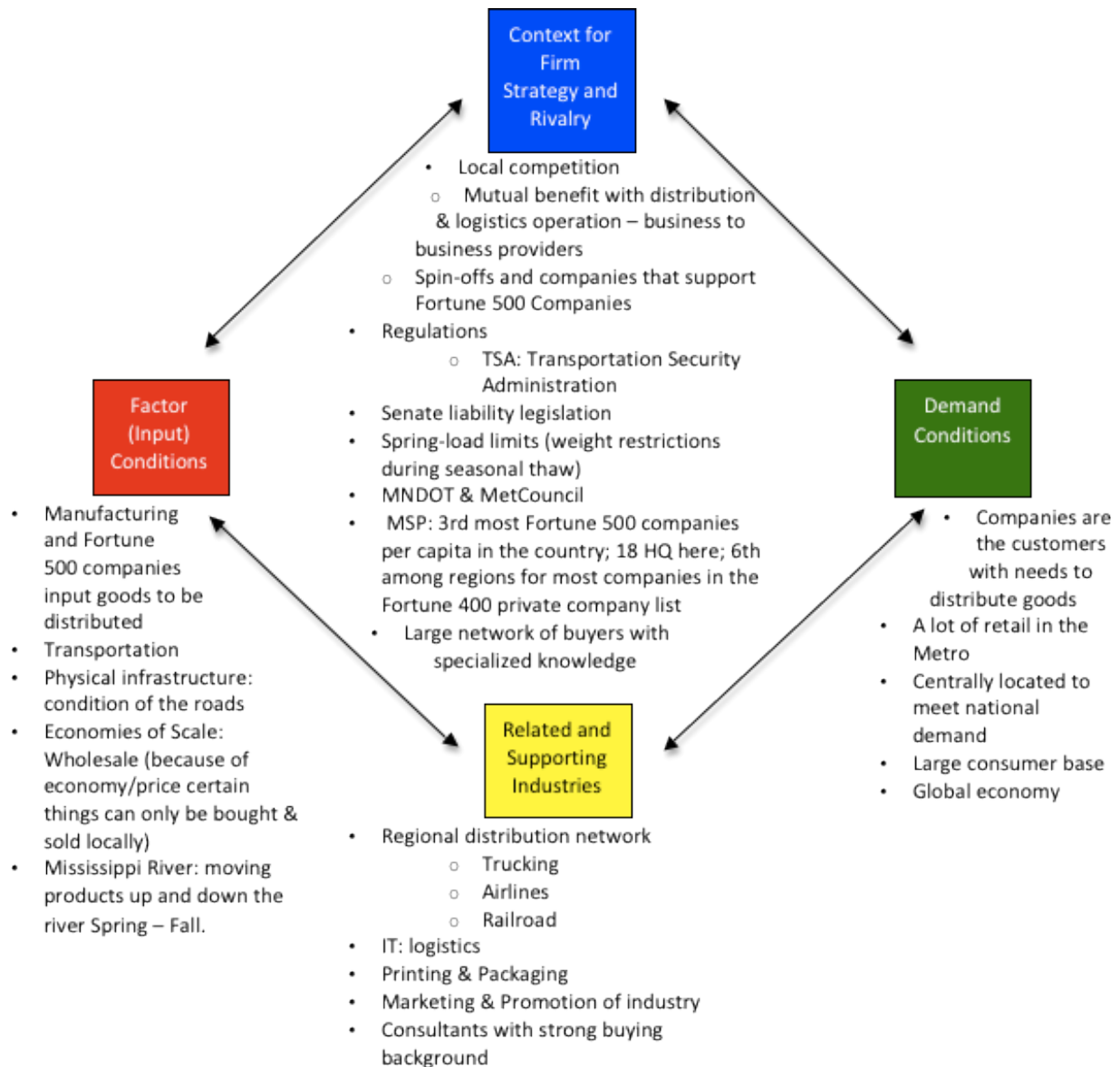
The following Porter Diamond of Advantage provides a graphic analysis of the quality of the business environment for the distribution services cluster.

First, for the distribution services cluster the factor conditions consist of the inputs, such as the presence of the headquarters of 18 companies and Fortune 500 companies, transportation, and infrastructure. These inputs also include the educated labor pool of people that come from the headquarters and have a specialized knowledge of buying and supply chains. This specialized knowledge also affects the context in which firms operate. In the Minneapolis – St. Paul metropolitan region, the local competition is strong because of the abundance of spin-offs and business-to-business providers that support and mutually benefit from the Fortune 500 companies (see Figure 3.10). The large corporations can serve as training grounds for ambitious employees to learn, and then start their own companies.

Like the context component, the demand conditions for the distribution services cluster is also driven by the prevalence of the companies headquartered in the metropolitan region. Taken a step further, the demand for distributing goods is also driven by the consumer base regionally, nationally, and globally. Moreover, manufacturing and retail companies are also the customers in the cluster. Their demand is for product to get distributed in a cost effective and timely way.

Finally, there are several related and supporting industries that provide secondary services that are vital to the efficiency and productivity of the distribution services cluster. The local distribution network, printing, information technology, manufacturing, and marketing are supporting industries that are located near the cluster and take advantage of the knowledge, skills, and economies of scale. Taken together, these points of the diamond help to define the specific micro-economic environment for competition within the distribution services cluster.

Figure 3.10: Diamond of Advantage, Distribution Services Cluster



## Metropolitan region SWOT analysis: Distribution services

### Strengths

- The Twin Cities have the third most Fortune 500 companies per capita in the country with 18 headquartered in the region. Additionally, the region has the sixth highest concentration of Fortune 400 private companies. With these firms as training grounds, the entrepreneurs who leave their corporate position carry with them the tools and knowledge from their previous career. Capitalizing on a missed opportunity or a complementary function their previous employer was not fulfilling.
- The presence of C.H. Robinson is beneficial to the region's distribution cluster. As the largest third-party logistics provider in the nation, C.H. Robinson's flexible transportation options ranging from full truckload to less-than truckload, give Twin Cities business a regional advantage.
- Workforce in the Twin Cities is resistant to moving out of the area.
- Food wholesale has remained strong through the recession.
- Consultants – connect buyers to sellers (middle-man) buyers rely on network of consultants to pre-filter.
- Cross-pollenization of boards and associations.

### Opportunities

- Provide environment for collaboration among business would open up the competitive landscape.
- Strategies for trucking industry to use less fuel (i.e. intermodal transportation and increasing efficiency by putting full loads on trucks).
- Transportation options with the lowest carbon footprint.
- Capitalize on growing associated industries, such as green technologies and medical devices.
- Expanding global markets.

### Weaknesses

- Mass transit does not allow for transportation out to the suburbs outside of rush hours. This adversely affects the applicant pool without reliable transportation for positions outside the city limits of Minneapolis and Saint Paul.
- Minnesota has the third highest corporate income tax rate of 9.8% just behind Pennsylvania and District of Columbia with 9.99% and 9.975% respectively<sup>16</sup>.
- The spring load weight restriction during the spring thaw season reduces the efficiency of transportation by reducing the amount of product that can be shipped on a single truckload in the region.
- Energy costs. Price of fuel will increase in the future.
- Region cannot compete with the distribution hub of Chicago because it has intermodal rail transportation and because of Minnesota's location, "at the edge of the frontier."

### Threats

- Companies not being able to source reasonably priced, good quality carriers. Three mid-sized carriers went out of business in 2009.
- The retail market has been declining due to the recession.
- Risk-averse Minnesota culture.
- Not close to the coastal population
- Population migration is moving south and west.
- Truck driver shortage.

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<sup>16</sup> [http://www.taxadmin.org/fta/rate/ind\\_inc.html](http://www.taxadmin.org/fta/rate/ind_inc.html)

## Value Chain

The value chain is broken into two distinct parts: primary activities, which are required to provide or create the product, and supportive activities, which provide input needed to allow the primary activities to function. A company's value chain is the system of interdependent activities, which are connected by linkages. These linkages are integral to the operation of the cluster. Understanding the value chain of distribution services businesses is critical to understanding the firms that bind the cluster together.

The value chains are the product of interviews with executives working in companies within the Minneapolis – St. Paul metropolitan region Distribution Services cluster. The four value streams (one is presented below and the other three are located in [Appendix E](#)) illustrate the distribution process for companies that manufacture product and distribute it, distribute the product from the wholesaler, or are. An interview with a 3PL is required to fully understand how the value system works, where the weaknesses are, and how they can be strengthened.

Figure 3.11: C.H. Robinson Value Chain

# C.H. Robinson Distinctive Activities



## IV. Vision statement

***The Minneapolis-St. Paul metropolitan region will be a globally competitive, intermodal hub for distributing goods through innovation and advances in productivity.***

## V. Action plan

In order for the Minneapolis-St. Paul metropolitan region to achieve the vision of becoming a globally competitive intermodal hub for distributing goods through innovation and advances in productivity, the distribution services industry must offer better overall service at a competitive price. To achieve this vision, we recommend the following four items, which are subsequently discussed in more detail:

1. Create opportunities for collaboration within the cluster.
2. Build a fast and efficient distribution network.
3. Explore innovations in environmentally friendly, “green” distribution techniques.
4. Leverage the strength and growth of the medical device cluster to develop a specialized distribution services hub.

\* See [Appendix D](#) for a summary of the short-, mid-, and long-term steps of the action plan.

**1. Distribution services cluster board:** Create a cluster board of leadership from distribution services companies and associated institutions to foster collaboration.

Ultimately, elevating the Minneapolis-St. Paul region to be a global competitive hub for distribution services hinges on collaboration. Collaboration is critical to the distribution cluster because in order to operate as a hub, companies and institutions associated with distribution services must align to leverage shared resources, share best practices, and have constructive dialogue on how to adequately respond to customers' changing demands. That is, the cluster framework embraces the various institutions for collaboration as important intermediaries for spurring global competition.

### **Specific steps**

1. The intent of the board is to provide a collective industry presence and advocacy efforts.
2. Seek the support of the Governor’s office. Requests for the participation of key distribution services leaders are sent from the Governor’s office.



3. Board shall consist of representatives from the following:
  - Logistics, distribution, supply chain, and/or strategic planning staff from several major local manufacturers and retailers (i.e. Target, Best Buy, SuperValu, Toro, etc.);
  - Other shippers, such as wholesaler;
  - Third party logistics provider;
  - Freight forwarder trade association;
  - Trucking company or truckers' association;
  - Integrator;
  - Airport (i.e. air cargo shipping expert);
  - Metropolitan region WIB member/DEED BSS
  - University of Minnesota's Center for Transportation Studies;
  - Mayor (s); and
  - Representative from the Governor's office.

The intent of the board is to serve as a conduit for collaboration on:

- Collective advocacy;
  - Green practices;
  - Efficiency innovations;
  - Best practices;
  - Business needs;
  - Alignment of federal and state regulations;
  - Workforce development needs;
  - Making Minnesota a more enticing place for truck stops;
  - Technologies advancements; and
  - Infrastructure development.
4. Board shall be led by business leaders and a chair and co-chair shall be chosen to lead the board. A flat governance structure is recommended.
  5. Immediately address shortage of truck drivers by aligning a workforce development/training program with the truckers' association.
  6. Immediately advocate against SF 2846 that is in the Minnesota Senate.<sup>17</sup>

**Rationale:** Providing better service at a competitive price involves leveraging the various players that support the distribution network.

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<sup>17</sup> This legislation would make both a trucking company and the owner of a trailer liable, instead of just the trucking company, if the truck is involved in an accident. For instance, several major retailers and wholesalers in the metro contract with trucking companies to haul their trailers full of goods. If the legislation is passed, the retailers/wholesalers will be at a significant disadvantage and may not choose to hire Minnesota trucking companies to haul their trailers.

The interconnectedness of the players in the distribution services cluster leads to mutual challenges, as well as mutual opportunities. A “siloesd” approach to business development will only exasperate the frustrations. Yet, a collaborative approach can lead to shared knowledge, alignment of shared resources, and a collective direction towards enhancing the competitiveness of the industry. Ultimately, for businesses, this means increases in productivity and lower costs.

With the over 900 companies headquartered in the Minneapolis – St. Paul metropolitan region, many of which move product, there is a pool of highly trained staff with specialized supply chain knowledge. Yet, having the most talented staff becomes irrelevant when the companies cannot efficiently, quickly, and cost effectively move product. Therefore, there must be a forum for these businesses, as well as representatives from the distribution network that supports them, to convene and strategize on how to advance the distribution network.

The cluster board must be led by business. Benchmarking research on cluster strategies reveals that the most successful strategies involve cluster boards commissioned by the Governor and led by business. While it may be difficult to get the Governor behind such an initiative, it is an important step to consider pursuing because of the successful results Governor-commissioned cluster boards have achieved in other states.

Moreover, interviews with business leaders have revealed that businesses are skeptical of participating in collaborative efforts led by government. Thus, key distribution services business leaders must lead the cluster board.

A flat governance structure for the board is recommended over a hierarchal structure because the collaborators have a vested interest in the cluster development; thus, they are more apt to participate if they are involved in decision-making. A flat structure is also more appropriate for the distribution services cluster because no single company has the breadth of perspective or capability to influence significant changes in the industry. For these reasons, we believe a hierarchal structure would stifle conversation and innovation.<sup>18</sup>

Previous research conducted by TranSystems Manalytics International for the proposed Rosemount Regional Distribution Center indicates one item hindering the feasibility of the DC was the lack of communication and collaboration between freight forwarders, shippers, and the airlines. Our proposed board would establish a venue for these players to come together.

The Metropolitan region’s shortage of truck drivers is an immediate need that must be addressed. Drivers are getting older, the work is grueling, and drivers cannot be insured

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<sup>18</sup> Pisano, Gary P., and Roberto Verganti. "Which Kind of Collaboration Is Right for You?" Harvard Business Review 86.12 (2008): 78-86. Business Source Premier. EBSCO. Web. 4 Apr 2010.

until they are in their mid-20s. These are a few of the reasons that C.H. Robinson attributes to the shortage in truck drivers.

**2. Infrastructure:** Invest in infrastructure to build a fast and efficient distribution network.

The Minneapolis-St. Paul metropolitan region is home to 18 Fortune 500 companies and over 900 other companies are headquartered here. While the Fortune 500 companies distribute most of their product elsewhere, their distribution model is operated and managed from this region. On the other hand, with merchandise wholesaling as the driving subcluster of the distribution services cluster, the bottom line of the companies that distribute product here depends on finding the most efficient and cost effective path for moving freight.

In order for metropolitan companies to serve their national and international customers, metropolitan distributors must be able to provide low cost, energy efficient, fast, and high-quality services to its customers. Achieving this level of service directly depends on the distribution models used by companies, regional infrastructure, the regulatory environment, suppliers, freight forwarders, third party logistics providers, and others players in the region.

**Specific steps**

1. Support and align with the movement policies and strategies found in the Metropolitan Council 2030 Transportation Policy Plan – Chapter 8.

**Metropolitan Council 2030 Transportation Policy Plan  
Freight and Goods Movement Policies and Strategies**

According to the Metropolitan Council’s 2030 Transportation Policy Plan, the goal of the freight and goods movement policies and strategies is to improve coordination between the resources of public and private entities such that the region will maintain an effective and efficient regional freight transportation system to support the regional economy. The desired outcome is to reduce delays and improve freight mobility and capacity. [Appendix F](#) provides a map of average daily truck traffic, which illustrates the need for these policies. The following policies and strategies involve State agencies, local governments, and private partners and provide direction for how the Metropolitan Council will address policy priorities to improve the freight system in the Minneapolis – St. Paul metropolitan region.

<b>Policy 17: Providing for Regional Freight Transportation</b>	<b>Strategy 17a. Freight Terminal Access:</b> The Council will work with its partners to analyze needs for freight terminal access
	<b>Strategy 17b. Congestion Impacts on Freight Movement:</b> The Council will work to reduce the impacts of highway congestion on freight movement
<b>Policy 2: Prioritizing Regional Transportation Investments</b>	Strategy 2a. System Preservation
	Strategy 2e. Multimodal Investments
<b>Policy 4: Coordination of Transportation Investments and Land Use</b>	Strategy 4f. Local Transportation Planning
<b>Policy 6: Public Participation in Transportation Planning and Investment Decisions</b>	Strategy 6b. Interjurisdictional Coordination and Participation
	Strategy 6d. Public Awareness of Transportation Issues
<b>Policy 7: Investments in Preserving of Right-of-Way</b>	Strategy 7a: Preservation of Railroad Rights-of-Way
<b>Policy 8: Energy and Environmental Considerations in Transportation Investments</b>	Strategy 8a. Reduction of Transportation Emissions
	Strategy 8e. Reduction of Greenhouse Gas Emission
<b>Policy 9: Highway Planning</b>	Strategy 9b. Multimodal System
	Strategy 9f. Interconnected Roadway Network

2. Collaborate with the Canadian ports to increase container traffic through the metropolitan region and Midwest to increase the number of products brought into the area through ship and rail. This is more of an environmentally friendly transportation option than air and truck freight.
3. Invest in intermodal transit. The metropolitan region cannot be globally competitive without infrastructure to efficiently move product. Increase rail infrastructure to distribution centers and warehouses will decrease the amount of truck freight on the roads, which will reduce pollution.

**Rationale:** All of our interviewees echoed the concern regarding insufficient infrastructure in the metropolitan region for moving goods efficiently and quickly. Freight will find the most efficient path and, presently, the most efficient path involves going to Chicago.

If the Minneapolis – St. Paul metropolitan region invests in infrastructure, then businesses will come. The freight transportation system improves the economic wellbeing of the metropolitan region and the state. Improvements towards improving the ease of moving goods are essential to the region’s future prosperity.

According to the Metropolitan Council 2030 Transportation Policy Plan, the millions of tons of goods that are transported through the Minneapolis – St. Paul metropolitan region depend on investments in transportation infrastructure. The plan addresses seven policies for preserving and improving the freight transportation network. Improvements in the movement of freight help to benefit businesses and reduce transportation costs. The policy plan was created with the collaboration of MnDOT, the Minnesota Freight Advisory Committee, the Met Council, and other regional stakeholders. The extensive research and public involvement used in the plan provides legitimate recommendations on investment for regional governments.

[Appendix G](#) provides more information on congestion in the Minneapolis – St. Paul metropolitan region.

### **3. Green transportation and logistics:** Foster innovation through “green” technologies.

“Greening” distribution services is a significant opportunity for innovation, increases in productivity, and cost savings. The greening movement has spread beyond environmentally conscious companies, such as Aveda, to major retailers like Wal-Mart. Following customer demands and the market, retailers are pushing to “green” the supply chain from production to consumption. With this desire for green products, a competitive advantage can be gained if government can assist in ensuring that it is cost effective. The Minneapolis – St. Paul metropolitan region has the potential to create a niche, value-added market in ‘green distribution,’ capturing business from companies looking to change their distribution networks to a green distribution process.

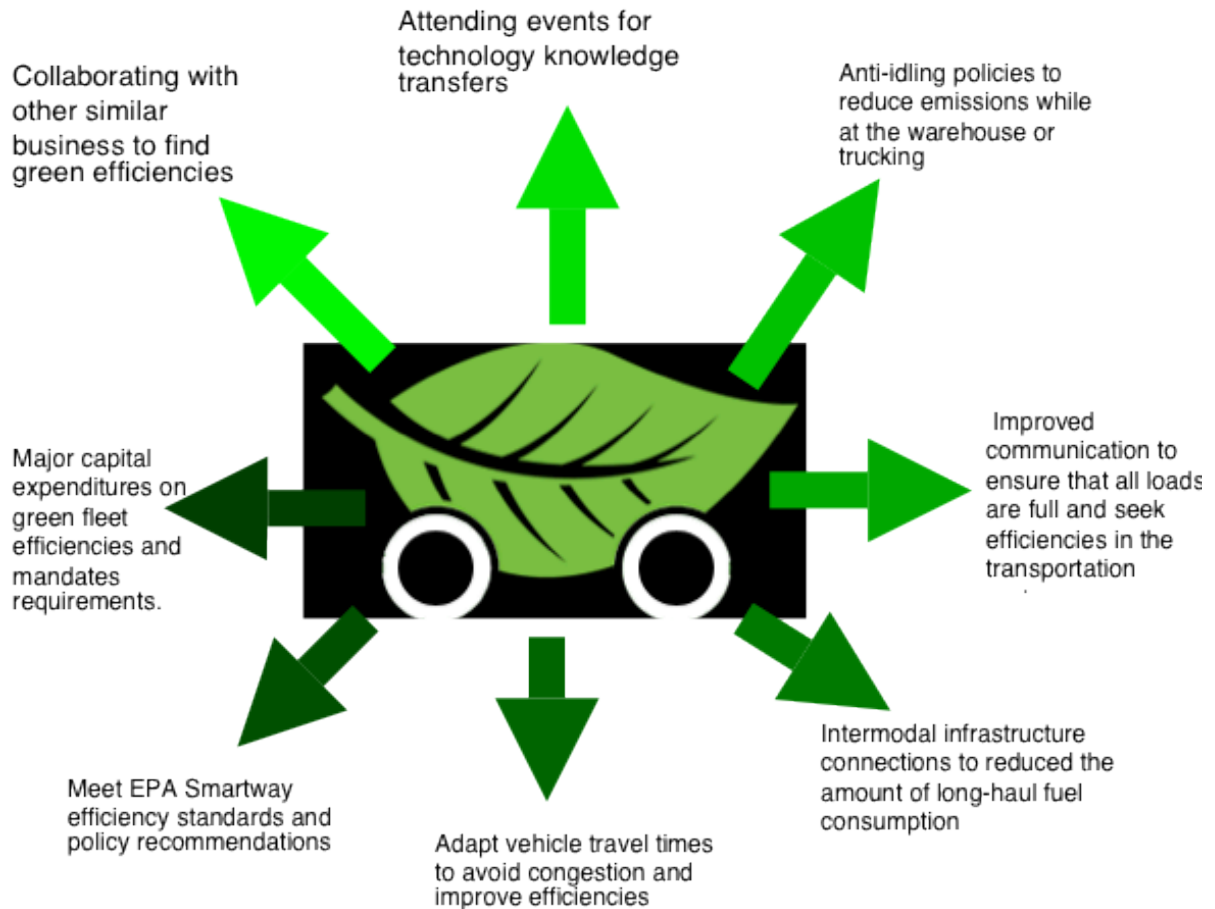
For example, non-asset based, third party logistics companies, such as C.H. Robinson, do not have their own equipment to make more energy efficient; however, their customers are concerned about green supply chains. Thus, they can work with asset-based carriers that are environmentally conscious to transport product. There is an emerging trend for shippers and asset-based carriers to respond to the demands of their customers by using more energy efficient equipment, finding new ways to consolidate loads if there are a lot of customers concentrated in one area, and using more rail where possible. Figure 5.1 illustrates the spectrum of green practices that distribution services companies may choose to pursue.

As the U.S. market consumes a majority of goods produced worldwide, there is potential for distribution services companies to influence the supply chain internationally. Earlier adopters of environmentally friendly processes will be one step ahead of the rest by promoting the corporate brand as environmental responsible, thereby gaining a competitive advantage.

Figure 5.1: Green spectrum for distribution services

## DISTRIBUTION SERVICES GREEN SPECTRUM

The spectrum identifies actions taken by companies to reduce their impact on the environment or improve “green” technologies. The following were compiled from interviews and other sources.



## Transportation

### Specific steps:

1. Develop statewide anti-idling incentives for transportation fleets. If incentives prove insufficient overtime, statewide anti-idling legislation can be considered. For example, the City of Minneapolis has restricted the idling of buses, trucks, and other diesel engine-powered vehicles to no more than five minutes in a one-hour period.
2. Increase the number of SmartWay Transport Partnerships for shippers, truck and rail carriers, logistics, and truck stops in the metropolitan region. Because there is no cost to be a SmartWay Transport Partner, the largest gap to overcome is the information gap surrounding the program. Additionally, work with all partners to reach the top score available by SmartWay. This can be accomplished by working with the Minnesota Trucking Association, the Midwest Shippers' Association, Minnesota Retailers Association, and private companies.<sup>19</sup> Shippers have the most leverage in building a more competitive hub because they have the ultimate decision as to who transports their products; it is critical to increase the number of shippers that are SmartWay Transport Partners.  
See [Appendix C](#) for more information on SmartWay Transport Partnerships.
3. Advocate for additional incentives for shippers in the metropolitan region to use local freight forwarders instead of Chicago-based companies.
4. Increase private sector participation in Minnesota's Project Green Fleet, which helps heavy-duty fleets and other diesel fleet owners reduce emission through retrofits, repowers, and idle-reduction technologies.
5. Legislation to stimulate capital investment in and promote utilization of renewable energy and clean diesel technologies:
  - Support matching capital investments made by private companies for fleet modernization through emission-reducing technology. Recipients selected on the basis of cost versus emissions benefit, cost-share contribution, reduction of non-regulated emissions, project feasibility/likelihood of success, public awareness/education, impact, diversity of project. For example, a closed crankcase vent filter (CCVF) and a diesel oxidation catalyst (DOC) muffler costs about \$1,700 to \$2,000 total per vehicle and can reduce particulate matter emissions by 50%. These DOCs are made by Donaldson, a local company. Upgrading to 2010 diesel engines reduce particulate matter and nitrogen oxide emissions by 95%.

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<sup>19</sup> US Environmental Protection Agency, <http://www.epa.gov/smartway/transport/become-partner/>

- Advocate for providing rebates to companies for capital investments in fleet modernization on a dollar per ton of nitrogen oxide reduction basis for the incremental cost for purchase of original equipment.
  - Promote expanding the Minnesota Small Business Assistance Program to increase the number of auxiliary power units installed on long-haul trucks and other green technologies.
6. Collectively seek research grants for innovations in transportation and logistics.
  7. Invest in workforce training or require companies to educate drivers on the best practices to reduce emissions while driving.

**Rationale:** Diesel engines account for more than 50 percent of the harmful particulate matter emissions from vehicles and these engines stay on the road for over twenty years. Steps to green this process will increase the metropolitan region's competitiveness by increasing the efficiency of truck fleets. It will also improve the overall air quality and quality of life in the region.

Retrofits, repowers, and idle-reduction technology greatly improve truck efficiency. There are incentives to green truck fleets at the federal level through tax credits based on fuel economy gains for companies purchasing hybrid truck fleets. There are also many other state and local programs throughout the US to accelerate the introduction of alternative fuels and renewable fuels in fleets. Minnesota's efforts, however, have been targeted on public fleets such as school buses. Bringing private fleets to the forefront of this change is possible through legislation and educating metropolitan region companies of the opportunities to lower operating costs with increased fuel efficiency.



Figure 5.2: Technology enhancements for greening freight trucks

## TECHNOLOGY ENHANCEMENTS Greening Freight Trucks

**FREIGHT TRUCK:** Incremental improvements in the way freight trucks are designed and operated can reduce the overall weight of the truck and therefore improving the amount of freight that can be transported.

**EMISSIONS STANDARDS**  
Based on a California Air Resources Board ruling that all vehicles by 2010 must meet a 2010 model year engine or equivalent



**TRAILER WALLS**  
Reducing the thickness and weight of the trailer walls by using a different geometric structure can reduce the weight while maintaining strength.

**WHEEL RIM**  
Increased size of wheel rim in order to decrease the number of tires used.

The tracking technology for freight is competing between the Radio Frequency Identification (RFID) and an advanced form of Bar Code that can store more information within the code. The advantage of RFID is that the containers do not need to be handled individually but can be scanned in large quantities via a frequency reader. The advanced “slug” barcode can contain more information per square inch than any previous barcode. When scanned in it can provide more detail when scanned. Improvements in tracking identification can reduce the amount of waiting time and overall efficiency in the freight system.

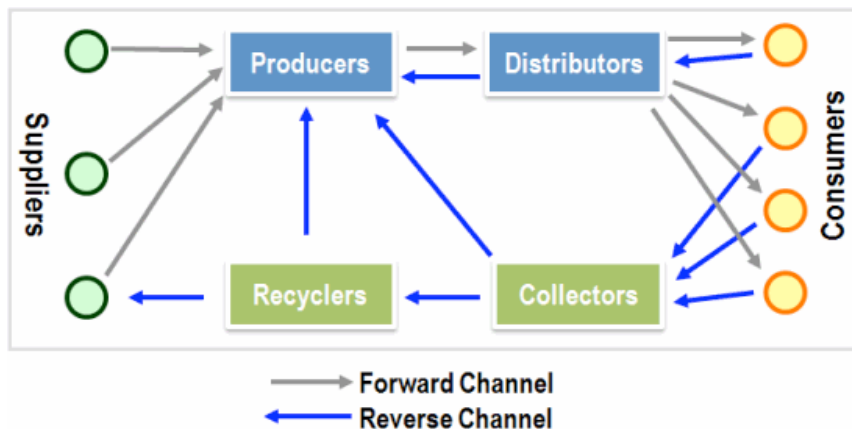
### Freight Tracking Devices

VS

## Logistics

### Specific steps:

8. Create regional incentives for green warehouses and distribution centers. For example, extended tax abatements if, in addition to local hiring standards, the building meets certain LEED standards.
9. Legislation can play a role in the incentivizing of the whole life-cycle for a product. That is, providing incentives to businesses to take responsibility for the delivery and the take-back of products. The company is concerned with the entire life-cycle process involved with producing, distributing, selling, consuming, and disposing of a product.
10. Pass legislation to create a PACE district for the entire state or region. The PACE (Property Assessed Clean Energy) program enables local government to finance renewable energy and energy efficiency projects on private property, including residential, commercial, and industrial properties. The program is 100% voluntary by the property owner and helps shoulder the large upfront cost of energy improvements through bonding. PACE bonds are debt instruments issued by a municipality and backed by property-tax liens on buildings whose owners take PACE loans from the bond pool.<sup>20</sup>
11. Legislation to reduce packaging waste.
12. Work with customers (consumers), retailers, and transportation companies to increase reverse distribution, the transport of waste and used materials, in the metropolitan region.



metropolitan region.

**Figure 5.3: Forward and Reverse Distribution<sup>21</sup>**

*In addition to creating for a product for consumers, the reverse channel accounts for the life-cycle of a product and collects the product for disposal and recycling.*

<sup>20</sup> Amabile, Teresa M., et al. "Breakthrough Ideas for 2010." *Harvard Business Review* 88.1/2 (2010): 41-57. *Business Source Premier*. EBSCO. Web. 4 Apr. 2010.

<http://www.renewfund.com/pace/pace-overview>

<sup>21</sup> Rodrigue, Dr. Jean-Paul, Dr. Brian Slack, and Dr. Claude. Comtois. *Green Logistics*.

<http://people.hofstra.edu/geotrans/eng/ch8en/appl8en/ch8a4en.html>

**Rationale:** Products have a life-cycle; raw materials → production → assembly & packaging → purchase by the consumer → end of life, with a lot of transportation throughout the process. As retailers are increasingly being held accountable for the end-of-life of a product (recycling), pressure is put on the entire system to make products greener through an environmentally friendly and efficient transport and distribution system. Retailers have a large amount of influence in requiring accountability throughout the life-cycle of a product. For example, making producers more conscientious about where their raw materials originate.

Retailers can influence accountability for the life-cycle of a product, but do not have much influence in pushing transportation companies to be more efficient/eco-friendly because of the impact that would have on prices set for retailers. This is why the Regional Council of Mayors must take action on the steps outlined above so that green changes in transportation occur without drastically increasing the cost of operations, which will be passed onto the consumer.

Environmental considerations have opened up markets for recycling and disposal, and led to an entire new sub-sector: reverse logistics. There is a market incentive for reverse logistics and the Regional Council of Mayors can collaborate with companies to increase this process. However, issues such as pollution, congestion, and resource depletion, are overlooked by current “green” logistics and should be addressed by the Regional Council of Mayors.

**4. Medical device distribution and logistics center:** Providing transportation accessibility that meets specific shipment demands of medical devices.

**Specific steps:**

1. Conduct market research on the opportunities for creating a medical device distribution hub. The research should evaluate the feasibility of conducting the following activities:
  - a. Leverage the growth of the medical device and health care product markets;
  - b. Establish international partnerships with countries experiencing increasing need for medical devices;
  - c. Market Minneapolis – St. Paul metropolitan region as a medical device distribution and logistics hub; and
  - d. Provide incentives for companies to ship from MSP.

**Rationale:** Medtronic, the nation’s largest medical device company, is headquartered in Minneapolis, yet its primary distribution facility was opened in 2009 in Memphis. The company attributes the location choice to Memphis’s increasing investment in a

biologistics network,<sup>22</sup> its FedEx air hub, and a significant distribution talent pool in the area.<sup>23</sup>

The Minneapolis – St. Paul metropolitan region has the largest medical device cluster in the nation and one of the nation’s leading health care systems. Moreover, the medical device and health care products industries are growing and the Brookings project team, along with the RCM, is poised to support a regional business plan to spur innovation and development of the industry.

Likewise, the Memphis Bioworks Foundation predicts that “the growth in air shipping and delivery is expected to grow at approximately twice the rate of the overall market. This higher rate of growth will be due to the growth of higher value biotech products along with growing trends in personalized medicine and products with special handling requirement which more frequently require expedited delivery.”<sup>24</sup>

Given the expected growth of the industry and the support of business and government leaders, there may be significant opportunity to create a synergy between the medical device industry and distribution services. This potential opportunity warrants more research to gauge the feasibility of the Minneapolis – St. Paul metropolitan region becoming a global competitor in the distribution of medical devices.

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<sup>22</sup> Wilbur Smith Associates, Short Elliott Hendrickson Inc., & Kramer Aerotek. 2006. “Minnesota aviation system plan.”

<sup>23</sup> Andy Ashby. “Medtronic to open new \$65 million Memphis distribution center.” *Memphis Business Journal*. November 16, 2009.

<sup>24</sup> Memphis Bioworks Foundation, et al. “Memphis Biologistics Study: Executive Report.” 2005. Pp. 8.

## Conclusion

“Clusters of world-class firms in related industries are the most important economic development customers in the global economy. These clusters, rather than individual companies or simple industries, are the source of jobs, income, and export growth.”<sup>25</sup>

There is no doubt that the world-class firms of Target, Best Buy, SuperValu, and CH Robinson are important economic development customers in the global economy. More importantly, they are all headquartered in the Twin Cities and members of the distribution services cluster. This report provides the quantitative and qualitative support for the assertion that these companies are the driving force behind the competitive advantage of the distribution services cluster in the metropolitan region.

However, the quantitative data, namely the location quotient and shift share figures, reveal that distribution services is gradually losing its competitive advantage in the region. In order for the Twin Cities distribution services cluster to remain competitive in the region, change is required. Looking to the SWOT analysis, change means leveraging the cluster’s strengths, recognizing weaknesses, and taking advantage of the opportunities to use the cluster linkages as a catalyst for economic growth.

The goal of creating a globally competitive, intermodal hub for distributing goods through innovation and advances in productivity is the vision for change that is needed to maintain competitiveness. Specifically, creating opportunities for collaboration within the cluster, building a fast and efficient distribution network, embracing green techniques, and researching the market opportunity for creating a medical device distribution hub are steps towards achieving the vision.

With a diagnosis of the cluster’s strengths and weaknesses, a vision for the future of the cluster, and a plan for achieving it, the next step is leadership. The Regional Council of Mayors has a significant opportunity to be a catalyst for growth in the Minneapolis – St. Paul metropolitan regional economy by using the action plan as an initial step in the regional economic development strategy.

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<sup>25</sup> Waits, Mary Jo. 2000. “The Added value of the Industry Cluster Approach to Economic Analysis, Strategy Development, and Service Delivery.” *Economic Development Quarterly*.

## Appendix A: Literature review

While industry clusters are increasingly being recognized as a viable strategy for economic growth, their development remains in the nascent stages. Moreover, much of the published research concerns large, distinctive clusters, such as medical devices, high technology, and advanced manufacturing. The distribution services cluster, by definition, is more of a support industry for more distinctive industries. Therefore, it may not be seen as driving force behind economic competitiveness by regions initiating cluster development strategies. For this reason, literature on Distribution Services clusters in other states or countries is almost nonexistent; the exception being a report written by National Grid Economic Development on Upstate New York's Distribution Services Cluster.

The brief literature review below is a summary of information that has informed and shaped our analysis of distribution services, the cluster framework, and the potential for successful implementation of a cluster development plan.

**National Grid Economic Development. "Distribution." Publication date unknown. ShovelReady.com**

This report summarizes the various industries and business that are involved in moving goods between a manufacturer and retail establishments in Upstate New York. One important point raised in the report is the assertion that based on the number of employees working with information, distribution services remains a low "knowledge intensity" cluster. This stands in stark contrast to statements made by business leaders at Supervalu, Target, Aveda, and Mudd Co. who stated that distribution services companies are located here because of the unique knowledge base from staff at Best Buy, Target, and General Mills.

**National Governors Association, Council on Competitiveness. "Innovation America: Cluster-Based Strategies for Growing State Economies." July 2007.**  
<http://www.nga.org/Files/pdf/0702INNOVATIONCLUSTERS.PDF>

This report makes the case for states to implement cluster-based economic development strategies to foster the growth of a high-skilled labor force, increase the productivity of industries, build private-public partnerships, align investments, accelerate entrepreneurship, and ultimately open up more global economic opportunities. The report is also useful because it highlights several case studies and lessons learned from them. We found the report particularly useful in preparing for interviews because it not only helped us make the case to our interviewees that clusters can be a powerful force in economic development, but it also helped us think critically about potential initiatives that could be part of our action plan for the distribution services cluster.

**The Itasca Project. McKinsey & Company.**

Overall, the Itasca Project's jobs growth priority has been the most useful for this report because it attempts to address growing unemployment, the declining business climate in the Twin Cities, and the fact that local headquarters investing outside the state. The research conducted by McKinsey & Company for the Itasca Project has been illustrative for the distribution services cluster analysis because it gave us an overview of the Twin Cities economy, including where it remains strong and where it is losing ground. Additionally, McKinsey's use of process and environmental levers to attract, create, and retain jobs that is helpful for framing a discussion on the future of the distribution services cluster.

## Appendix B: Glossary

**Freight forwarder** – Organizes shipments for companies and/or serves as the carrier.

**Integrator** - provides door-to-door service for moving product without the use of a "middle man."

**Intermodal freight transport** – Moving freight via multiple modes of transportation, such as rail, air, and truck.

**Just – in – time delivery** – An inventory and transportation strategy that reduces inventory by delivering product just as it is needed.

**“Last mile connector”** – Refers to connections between modes of transportation. Often the last mile is on city roads, which are not conducive for ground freight transportation.

**Third party logistics provider (3PL)** – Using an external company to coordinate logistics. There are two types of 3PLs: Asset-based and non-asset based providers (or carriers). Asset-based providers own their equipment, such as trucks and warehouses. Non-asset based providers do not own their equipment, but serve as third party brokers to help companies arrange for the transportation of their freight.

**Wholesale** – The sale of a large quantity of goods to be resold by a retailer.



## Appendix C: SmartWay Transport Partnership

The EPA developed SmartWay Transport, an innovative collaboration between the freight industry and government to reduce air pollution and greenhouse gas emissions, improve fuel efficiency, and strengthen the freight sector. By defining clear and achievable goals and committing to ambitious strategies, SmartWay Partners tackle concerns about greenhouse gas reductions and air quality while saving money and improving their businesses. SmartWay gives scores to each partner based on their environmental performance, helps set improvement goals, and calculates cost savings.

### Direct economic benefits:

- Reduced cost of fuel use.
- Payback on investment within just 1 to 3 years on most technologies.
- Up to \$9,000 in cost savings per truck per year after payback period, assuming \$4/gallon diesel
- Reduced maintenance costs.
- Improved driver retention due to incentive and training programs.
- Business-to-business advantages.

### Lasting non-economic benefits:

- Improved reputation with the public for environmental stewardship.
- Meeting corporate environmental sustainability goals.
- Demonstrating corporate values that matter to employees.
- Recognition among your peers as an industry leader.

### For freight and rail carriers

Carriers can save, on average, up to \$4000 per truck per year by implementing the following carrier strategies:

- Idling Reduction
- Improved Aerodynamics
- Improved Freight Logistics
- Automatic Tire Inflation Systems
- Driver Training
- Advanced Lubricants
- Advanced Powertrain Technologies
- Intermodal (truck and rail) Transport
- Hybrid Powertrain Technology

### For Shippers

Companies distributing and shipping products can reduce their environmental footprint with the following carrier strategies:

- Intermodal Shipping
- Pickup and Delivery Scheduling
- Full Truckloads
- Preferential Docking
- Warehouse Improvements
- Electric Forklifts
- Driver Comfort Stations
- Idling Reduction at Docks
- Anti-Idling Policies
- Light Fleet Improvements

#### About the SmartWay scoring:

**1.25:** A score of 1.25 represents outstanding environmental performance. These Partners already are utilizing most of the commercially available fuel saving strategies and are actively evaluating the latest emerging technologies. Partners with scores of 1.25 are awarded the honor of displaying the SmartWay Transport Partner logo, EPA's symbol for superior fuel efficiency and environmental performance.

**1.00:** A score of 1.00 represents very good environmental performance and is above the industry standard. By utilizing additional technologies and fuel saving practices, these Partners hope to raise their scores to 1.25 to join the industry benchmark leaders.

**0.75:** A score of 0.75 represents good environmental performance. This is the most common Partner score. Since all SmartWay Partners are committed to improving their environmental performance, all Partners, regardless of their score, are going above and beyond freight companies not participating in SmartWay.

SmartWay Transport Partners, Minneapolis-St. Paul Metropolitan Statistical Area<sup>26</sup>

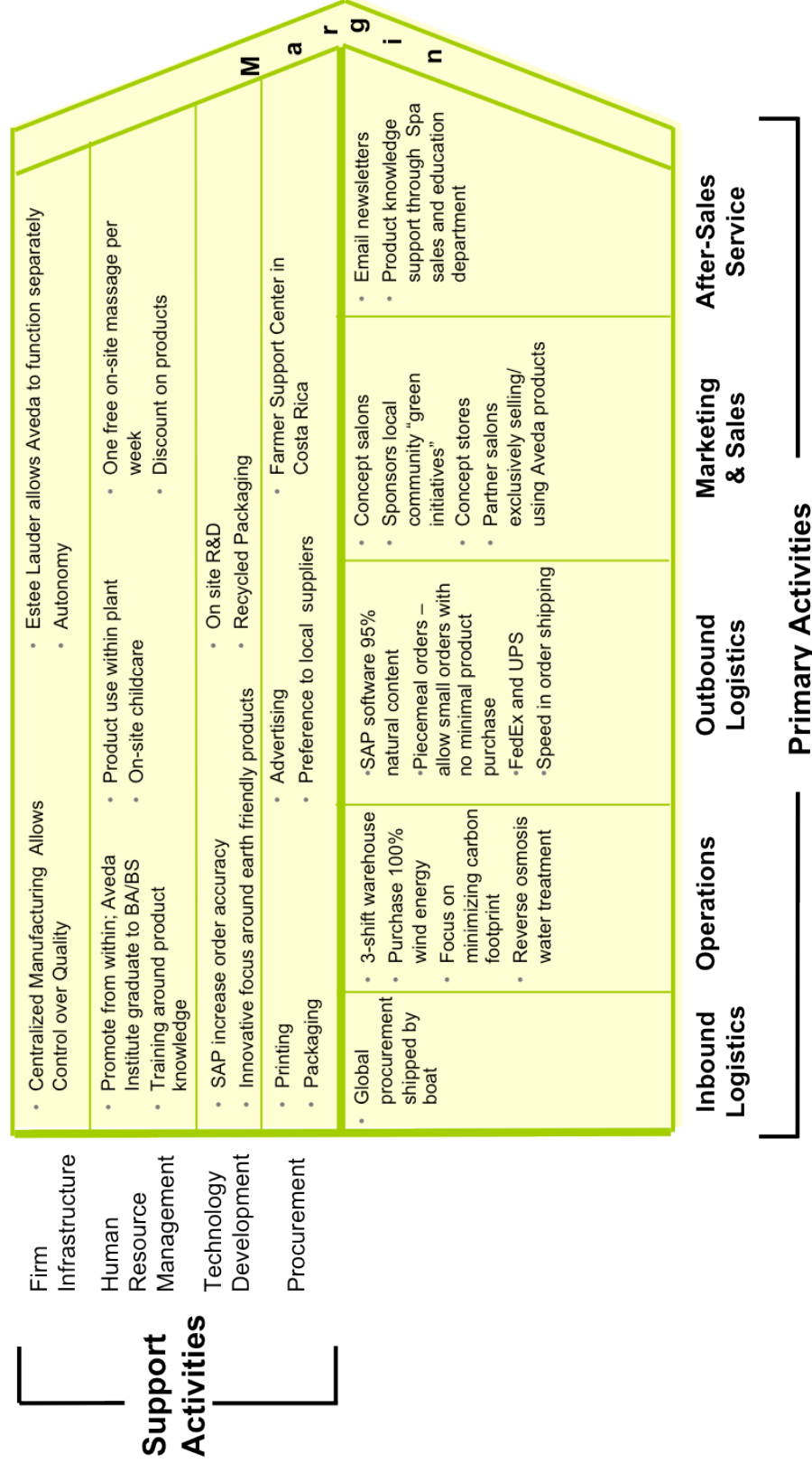
Partners	Location	Type of Partner	SmartWay Score
 Allstate Sales and Leasing	South Saint Paul	Dealer/Service Center	
Andersen Windows, Inc.	Bayport	Shipper/Carrier	0.75
 Arfsten Transfer, Inc.	Clearwater	Truck Carrier	1.25
Aveda Corporation	Blaine	Shipper	
 Bay and Bay Transfer	Rosemont	Truck Carrier	1.25
Berger Transportation Solutions	Minneapolis	Truck Carrier	0.75
Best Buy Co., Inc.	Richfield	Shipper	
C. H. Robinson Worldwide, Inc.	Eden Prairie	Logistics	0.75
Clean Air Minnesota	Minneapolis	Affiliate	
Copeland Trucking	Fridley	Truck Carrier	0.75
D & T Trucking Co	Lake Elmo	Truck Carrier	0.75
D&E Transport, Inc.	Clearwater	Truck Carrier	0.75
Dart Advantage Logistics	Eagan	Logistics	0.75
Dart Transit Co.	Eagan	Truck Carrier	1.00
Deflektor.com	St. Paul	Affiliate	
Edina Couriers, LLC	Bloomington	Truck Carrier	1.00
 Freedom Lines	Eagan	Logistics	1.25
General Mills	Minneapolis	Shipper	
 King Solutions, Inc.	Rogers	Logistics	1.00
Lakeville Motor Express, Inc.	St. Paul	Truck Carrier	1.00
 Lessors, Inc.	Eagan	Truck Carrier	1.25
Logistics International, LLC	Shakopee	Truck Carrier	1.25
 Logistics Planning Services	Mendota Heights	Logistics	1.25
Long Haul Trucking	Albertville	Truck Carrier	0.75
 Malark Logistics	Maple Grove	Logistics	1.25
 Manna Freight Systems, Inc.	Mendota Heights	Logistics	1.25
 Midwest Shippers' Association	Minneapolis	Affiliate	
Minnesota Agri-Growth Council	St. Paul	Affiliate	
Minnesota Trucking Association	Roseville	Affiliate	
 Overbye Transport, Inc.	Lakeville	Truck Carrier	1.00
Pat Fruth Trucking, Inc.	Belle Plaine	Truck Carrier	0.75
 SAV Express, Inc.	Coon Rapids	Truck Carrier	0.75
Seminole Logistics, LLC	Roseville	Logistics	0.75
 Stan Koch & Sons Trucking	Minneapolis	Truck Carrier	1.25
 Styer Transportation Co.	Lakeville	Truck Carrier	1.25
Target	Minneapolis	Shipper/Carrier	0.75
 Thermo-King	Minneapolis	Affiliate	
Trailwood Transportation, Inc.	St. Paul	Truck Carrier	1.00
Transport Designs, Inc.	Burnsville	Truck Carrier	1.00
 Transport Corp. of America	Eagan	Truck Carrier	1.25
TRX Inc.	Minneapolis	Non Asset Based Carrier	0.75
Twin Cities Logistics	Newport	Logistics	0.75
 Twin City Transportation, Inc.	Minneapolis	Truck Carrier	1.25
Twin Modal, Inc.	Roseville	Logistics	0.75
United Transportation Services, Inc.	Lakeville	Truck Carrier	0.75
Walbon & Co., Inc.	Rosemont	Truck Carrier	0.75

<sup>26</sup> U.S. Environmental Protection Agency. *SmartWay Transport*. April 2010. Available online [www.epa.gov/smartway](http://www.epa.gov/smartway)

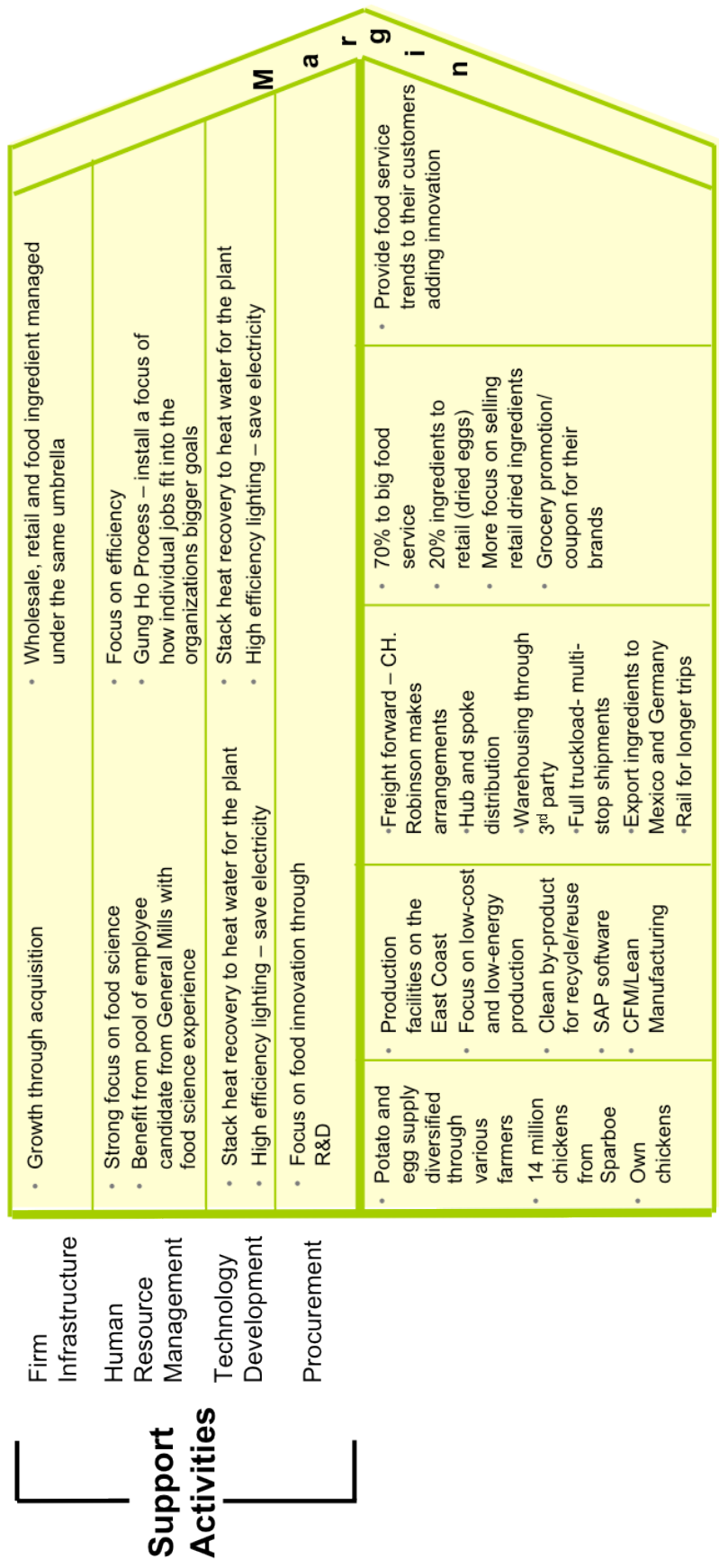
## Appendix D: Action plan summary

Category	Short-term Action Item	Mid-term Action Item	Long-term Action Item	Relates to Vision
Create opportunities for collaboration within the cluster.	1. Convene cluster board consisting of various stakeholders in the industry for collective advocacy. 2. Address truck driver shortage. 3. Address truck driver and trailer legislation in MN Senate.			Collaboration creates a synergy of players in the industry, which leads to increased innovation, productivity, and cost effectiveness.
			4. Address time restrictions for truck drivers at rest stops.	
Build a fast and efficient distribution network.	1. Support recommendations in Metropolitan Council 2030 Transportation Policy Plan.			Infrastructure enhances the intermodal competitive advantage of the region.
		2. Collaborate with Canadian ports for increased trade.	3. Invest in intermodal transit.	
Explore innovations in environmentally friendly, "green" distribution techniques.		1. Advocate for anti-idling incentives.		Green technology has the potential to spur innovation and enhance productivity, while creating a niche market in the metro.
		2. Increase the number of SmartWay Transport Partnerships.		
		3. Support incentives for shippers in the metro area to use local freight forwarders.		
		4. Increase private sector participation in Minnesota's Project Green Fleet.		
		5. Propose legislation to stimulate capital investment in renewable energy and clean diesel technologies.		
		6. Fund research grants for innovations in transportation and logistics.		
		7. Educate trucker drivers on emission reductions.		
		8. Support regional incentives for green warehouses and distribution centers.		
			9. Incentivize company participation in the whole life-cycle of a product.	
			10. Create PACE district for the region.	
			11. Reduce product packaging waste.	
			12. Increase reverse distribution.	
Leverage the strength and growth of the medical device cluster to develop a specialized niche distribution/logistics hub.			1. Conduct market research on the opportunities for creating a medical device distribution hub in the region.	Increase the global competitiveness of the cluster.

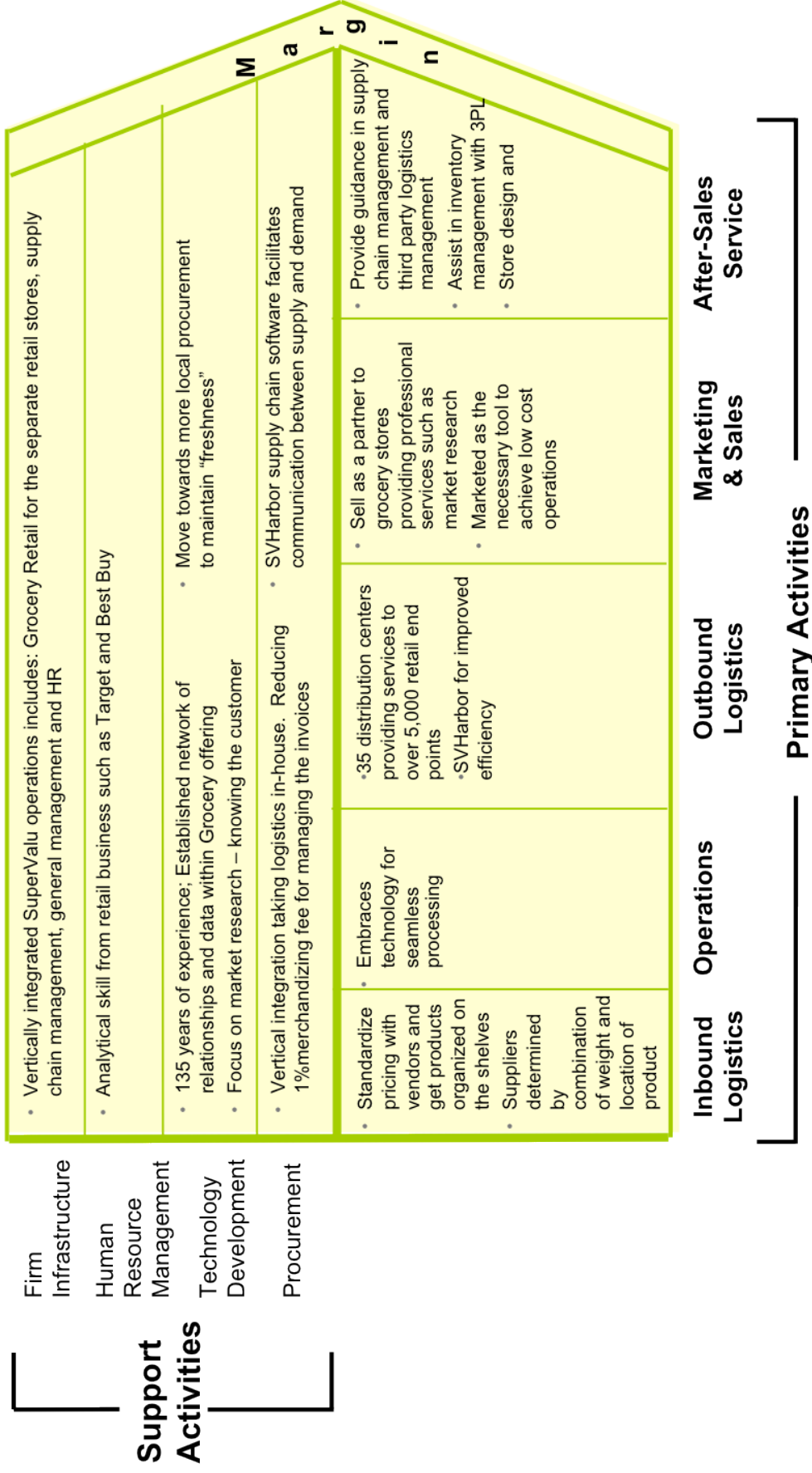
# Aveda Distinctive Activities



# Michael Food's Distinctive Activities

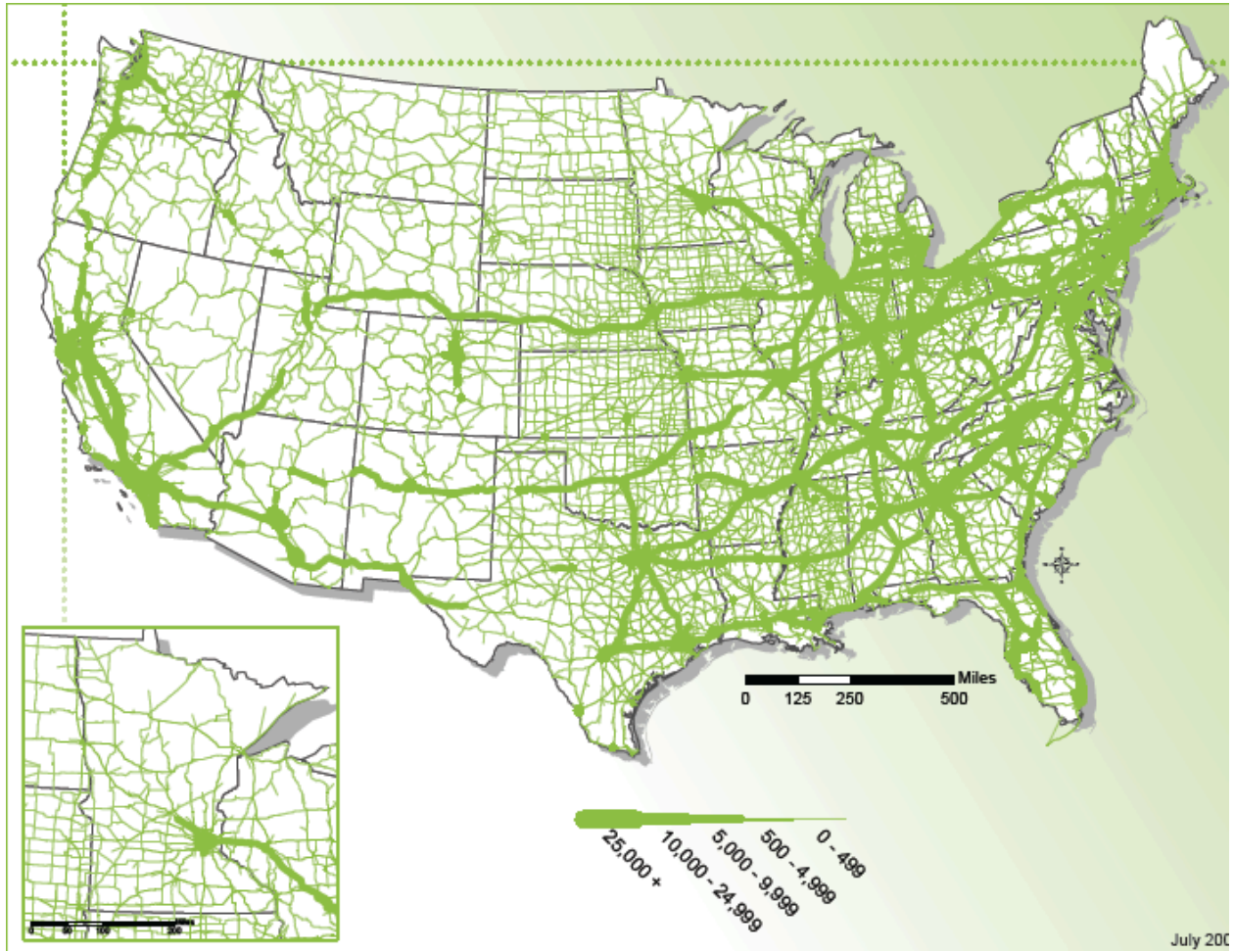


# SuperValu Distinctive Activities





## Appendix F: Average Daily Truck Traffic



Source: MetCouncil 2030 Plan

## Appendix G: Congestion in the Minneapolis – St. Paul metropolitan region

In 2008, the Minneapolis-St. Paul metropolitan region was ranked 10<sup>th</sup> for the worst congestion in metro areas, according to Inrix National Traffic Scorecard.<sup>27</sup> Congestion is the result of an over-demand and under-supply of roads and highways at peak periods. Congestion can be caused by physical or technological “bottle necks” in the system, which cause delays. Minneapolis-St. Paul delays, according to the Texas Transportation Institute’s Urban Mobility Study<sup>28</sup>, have increased from 1982 to 2007 at a rate faster than other large metropolitan areas. The amount of time spent in traffic during rush hours, known as the delay per peak traveler, has reached 38 hours annually. In 2007, the total annual million hours of delay is estimated at about 55 million and is far higher than other average large areas. The trend of increasing traffic congestion changed in 2008 and is now, actually, declining.<sup>29</sup> However, this maybe due to decreases in employment levels and the economic recession, which would reduce the supply of commuters.

The impact of congestion on the distribution services cluster was recognized by interviews with various freight companies. A common theme is that congestion impacts their bottom line. Delays due to congestion increase operating costs as fuel is burned while idling in traffic, drivers being paid to wait, and revenue is lost if a delivery is missed. There is not one solution to the congestion problem, but a number of approaches can improve efficiency.

The Metropolitan Council recognizes congestion and managing existing capacity as a top regional priority. According to Arlene McCarthy, Director of Transportation Services at the Metropolitan Council, “The era of expanding highways to address additional capacity needs is over.” Limited financial resources require more innovation for managing traffic. According to Council Chair Peter Bell, Minnesota Department of Transportation (MnDOT) and the Met Council are pursuing “low-cost, high-benefit” solutions. Improvements include:

- More aggressive traffic management techniques, such as the message boards throughout the highway system that indicate incidents and travel times.
- Strategic capacity and safety improvements, such as extending auxiliary traffic lanes, as was done on I-94 in Maplewood between McKnight Road and Century Avenue, as well as on Highway 100 between 36th Street and Cedar Lake Road.
- New managed lanes, like the MnPass lanes on I-394 and I-35W, which allow a more reliable trip for high-occupancy vehicles (such as buses and carpools) and individuals willing to pay.
- Supporting strategies such as land use changes and additional transit investments.<sup>30</sup>

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<sup>27</sup> Harlow, Tim. “Traffic congestion: Twin Cities 10<sup>th</sup> worst in the nation.” *Star Tribune*. 25 Feb 2009

<sup>28</sup> Texas Transportation Institute (TTI) and the Texas A&M University System. *Urban Mobility Report*. July 2009  
<http://mobility.tamu.edu/ums/report/>

<sup>29</sup> TTI

<sup>30</sup> Metropolitan Council. “Metro Area Highway Investment: Technology-based and multi-modal.” *Transit News Letter*. February 2010.



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