17th Annual Freight and Logistics Symposium

The Gravity of Logistics

A Summary Report | December 6, 2013 | Minneapolis, Minnesota

The seamless and uninhibited flow of goods from manufacturers and markets to those who want them—the "gravity" of logistics—depends on infrastructure that can support and sustain economic growth.

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Keynote

24th Annual State of Logistics Report—Is This the New Normal?

Rosalyn Wilson, Senior Business Analyst, Delcan Corporation

In her keynote presentation, Rosalyn Wilson gave highlights from the 24th annual *State of Logistics Report*® published by the Council of Supply Chain Management Professionals. The report is widely used by supply chain management professionals as the premier benchmark for logistics activity in the United States.

Ocean and air cargo have too much capacity.
— Rosalyn Wilson

Since 2010, there has been a lack of sustained growth in the U.S. economy—and, by extension, in the freight sector, began Wilson, the author of this year's report. The economy is still experiencing low to slow growth, unemployment levels remain high, and job creation in 2013 was weak. Freight volumes and rates have been inconsistent. "Looking out to at least 2017, I don't see a whole lot of change," she said. "I think it's time to ask ourselves if this is the new normal. If we don't set the expectation that we will have the growth rates we had before the recession…we [in the freight and logistics industry] will feel better about what we're doing, because we are doing a lot of really good things."

Normally, logistics costs grow faster than the U.S. Gross Domestic Product (GDP), Wilson continued, but for the last couple of years, the gap has narrowed. In fact, in 2013 logistics costs grew more slowly than GDP, a trend Wilson says she expects again in 2014. One thing boosting GDP growth is a high business inventory level. "Currently, business inventories in the United States are at the highest levels they have ever been," Wilson said. "I argue that this is not a good thing when we do not have a robust economy."

Among the many challenges facing the supply chain industry, capacity appears to be one of the main issues. Ocean and air cargo have too much capacity, Wilson said. Throughout the recent recession, ocean shippers have continued to order and float huge new megaships, creating problems with overcapacity and low pricing. On the air cargo side, even though air shippers have shed a lot of capacity during the recession, this sector continues to have overcapacity problems as well. This is due in part to airline passengers taking more carry-on bags rather than paying to check luggage. So, the cargo holds of passenger planes now have extra space—which means premium air cargo can be carried on passenger planes instead of on cargo planes. This belly cargo is estimated to have about a 65 percent profit margin for passenger airlines, she reported.

Opening Remarks

Symposium Moderator: **Gina Baas,** Associate Director, Center for Transportation Studies, University of Minnesota

MnDOT's Freight Planning

Bill Gardner, Director, Office of Freight and Commercial Vehicle Operations, Minnesota Department of Transportation

Bill Gardner provided the opening remarks and gave an update on MnDOT's freight planning activities. In 2013, the department completed some critical, milestone projects directly related to freight planning and economic development. Highlights include producing the state's first ports and waterways plan (dot.state.mn.us/ofrw/pwp.html), completing a freight rail economic development study (dot.state.mn.us/ofrw/fred/fred.html), and working with the University of Minnesota to learn more about the transportation needs of the manufacturing community in southwestern Minnesota (see page 5). "This upcoming year, we will develop a new statewide multimodal freight plan," Gardner said. "In the process, we will include opportunities for all of you to participate, because it is important that we capture the best thinking on how to improve the freight transportation system and how to keep it competitive today and in the future."

On the flip side, trucking, which is the largest component of the supply chain industry, has operated at 95 to 97 percent capacity for the past three years. Wilson believes this capacity crunch will create major problems for the industry by 2016 and 2017—and, she added, it does not appear that trucking companies are investing in additional capacity in anticipation of this potential crisis.

Trucking rates were flat for much of 2012 and for all of 2013, Wilson reported, and a lot of that had to do with aggressive pressure from third-party logistics (3PLs) companies to hold down rates. The 3PLs have been one of the strongest performers in the U.S. economy since the recession began and had the largest growth in the domestic transportation sector.

Some of the truck capacity issues stem from reduced driver productivity caused by changes in the federal hours-of-service rules, which limit the average work week for truck drivers to 70 hours. Wilson warned that a driver shortage could cause a serious capacity problem along major freight corridors.

If and when truck capacity reaches crisis levels, intermodal rail likely stands to benefit most, Wilson predicted. Throughout the recent recession, railroads continued to invest in their infrastructure and equipment and are now perfectly positioned to fill any gaps in trucking capacity. Intermodal has been the most successful freight sector throughout the recession and into recovery: railroad revenue increased by 4.3 percent in 2012, after a 16 percent increase in 2011.

Trucking has operated at **95 to 97%** capacity for the past three years.

Presentations

Supply Chain Successes in the Public and Private Sectors

Moderator: **Jon Huseby**, District Engineer, Minnesota Department of Transportation

Third-Party Logistics and Speed of Change

Meg Duncan, Senior Manager of Carrier Relations, Koch Logistics

Third-party logistics firms, or 3PLs, are growing at a rate double that of the U.S. Gross Domestic Product (GDP), Meg Duncan said. The Fortune 500 global 3PL market revenue is $250.2 billion—a 67 percent increase since 2005. Of domestic Fortune 500 companies, 86 percent use 3PLs to improve or perform functions in their supply chains.

One reason for this growth is that shippers using 3PLs typically realize big savings, Duncan said. According to the 18th annual *Third-Party Logistics Study*, on average, logistics costs fall 11 percent, inventory costs fall 6 percent, and fixed logistics costs, 23 percent.

Shippers are also moving to 3PL providers in response to the rapid changes in logistics and related technology that make it difficult for them to keep up, Duncan explained. Shipping firms turn to 3PLs to manage new technology and help bridge the gaps in their internal technology platforms, which frees them up to focus on their core competencies.

Something else now occurring is the shifting of product manufacturing closer to North America after decades of sending this work around the world. Companies are rethinking their offshoring strategies and switching to nearshoring initiatives, in part because labor wages in China are projected to increase from $4.50 to $6 an hour by 2015, Duncan said. Moreover, rising fuel and transportation costs are starting to offset any gains realized by offshoring. Manufacturers are looking to 3PLs to provide them with the international expertise they need to enter nearshore markets successfully.

86% of domestic Fortune 500 companies use **3PLs** to improve or perform functions in their supply chains.

Companies are also moving to a concept called vested outsourcing, or Vested®, which was pioneered by Kate Vitasek at the University of Tennessee, Duncan said. Vested is a hybrid business model in which both parties in an outsourcing or business relationship focus on shared values and goals to create an arrangement that is mutually beneficial. The Vested model argues that traditional outsourcing and business relationships are focused on win-lose arrangements in which one party benefits at the other's expense. In contrast, Vested creates a win-win relationship in which both parties are equally invested in each other's success. "It is a collaborative agreement," Duncan noted. "Such relationships ignite innovation, lower costs, and increase profits for both organizations."

Capacity, Efficiency, and Public-Private Partnerships

Tim Thoma, International Logistics and Compliance Manager, Northern Tool + Equipment

Northern Tool + Equipment is a multichannel retailer headquartered in Burnsville, Minnesota. The company is no stranger to supply chain challenges in its operation of a retail catalog, online catalog, and more than 80 retail stores across the United States, Tim Thoma explained. Northern Tool manufactures products in Minnesota and China and runs distribution centers in Minnesota, Texas, and South Carolina.

The company ships its manufactured products and components from China via ocean carriers. One of Northern Tool's main issues with these carriers, Thoma said, revolves around solvency concerns. For the last five years ocean carriers lost money yet continued to add capacity, driving rates down. Demand for ocean container capacity went up only 2 percent in 2013, but carriers quadrupled their new ship building orders. "Ocean carriers are bleeding red ink and have been for a long time. They have been increasing vessel size faster than ports can adapt…and are tripping over each other to build bigger and bigger ships. They've been undone by their own expansion as they cannot manage their capacity well."

"Service providers—like our forwarders, customs brokers, and 3PLs—are getting a lot more automated and therefore more efficient…"

— Tim Thoma

Ocean shipping in the U.S. also is plagued by its reliance on publicly owned infrastructure that is slow to change. One example is the ongoing Panama Canal expansion project. The canal currently can handle a 5,000 TEU (20-foot equivalent unit) ship; the expansion will enable the canal to handle a 13,000 TEU ship. "This project was scheduled for completion at the end of 2014, but now it looks like it will be closer to the beginning of 2015," Thoma explained. "But even at 13,000 TEUs, it will be 5,000 TEUs less than the ships currently being built. Will it be obsolete even before it's finished?"

On a positive note, Thoma says most private-sector freight providers—including airlines, ocean carriers, and trucking companies—have become more efficient by using technology and software to improve access to supply chain information. "Service providers—like our forwarders, customs brokers, and 3PLs—are getting a lot more automated and therefore more efficient…The software available for purchase order and warehouse management, for example, is incredible. With our system, we can see the container number associated with the booking before it's at the factory for loading."

In the public sector, however, there is still plenty of room for improvement, he said. "We all want good roads, but everyone has heartburn when it's time to pay for it. No matter how a product is initially brought into the country, that final mile of delivery is almost always by truck…and we need public-sector support to maintain a good highway infrastructure. Great trucking companies are only as good as the roads under their tires."

There are several examples across the country of public-private supply chain successes, Thoma continued. Improvements along the Alameda Corridor, a 20-mile freight rail expressway in southern California, included the elimination of more than 200 at-grade crossings where rail and street traffic conflicted. This sped up the flow of cargo to and from the nation's two busiest ports, in Los Angeles and Long Beach. The project was funded through a unique blend of public and private sources; Northern Tool's contribution was only $10 to $20 per container, he noted.

In another example, the South Carolina Ports Authority, together with the Norfolk Southern Corporation, recently opened an inland port in Greer, South Carolina, to improve the efficiency of international container movements between the Port of Charleston and the upstate region and neighboring states. The Greer container terminal, which will act as a distribution point to trucking and air freight companies, is linked to the Port of Charleston by the Norfolk Southern main rail line that provides overnight service between Charleston and upstate South Carolina.

Manufacturers' Perspectives on the Transportation System: A Pilot Study

Frank Douma, Research Fellow and Associate Director, State and Local Policy Program, Humphrey School of Public Affairs, University of Minnesota

Manufacturing is a critical driver of economic growth, and transportation is necessary for the manufacturing sector to flourish. These relationships have been the subject of much study, but what has been missing is any sort of meaningful dialogue between transportation organizations and the manufacturers themselves.

In a recently completed pilot study conducted jointly by the Minnesota Department of Transportation (MnDOT), the University of Minnesota Humphrey School of Public Affairs, and University of Minnesota Extension, researchers began to address this communication gap. According to Frank Douma, the main purpose of this project was to meet face-to-face with manufacturers in MnDOT District 8 to discuss their transport challenges and needs and help MnDOT better understand last-mile issues on the public-sector side. Specifically, the researchers hoped to find high-value, low-cost improvements that would not require years of planning or huge investments of new revenue. "Our focus was on the transportation infrastructure, operations, maintenance, communication, and policy that MnDOT can address in one to four years," Douma explained.

The scoreboard at TCF Bank Stadium was shipped from manufacturer Daktronics in MnDOT District 8.

The project centered on 12 counties in southwest Minnesota that make up MnDOT District 8. The team began by identifying key industry clusters within the region; industry clusters have been shown to be driving economic forces because they bring money from outside the local area, supply jobs, and give that area a competitive advantage. Ultimately, 75 in-person interviews were completed with manufacturers, shippers, and carriers that receive supplies or ship products in MnDOT District 8.

The interview process revealed that these manufacturers had a variety of road-related issues. Certain road sections in this district, for example, are not smooth, which makes it challenging to transport delicate, high-tech equipment without breakage. And roundabouts in the district are often problematic for oversized loads because the turning radii are considered too tight. In addition, researchers heard that when roads are closed—due to bad weather or construction, for example—time-sensitive deliveries may end up being worthless. "All of these companies understand the necessity of construction," Douma said, "but knowing how to get around it or better plan for it would be helpful in alleviating some of the costs associated with increased transit times."

Some of the other major concerns these manufacturers voiced include size and weight restrictions, the new federal driver hours-of-service law, and the shortage of truck drivers. "These issues are directly affecting the businesses in southwestern Minnesota [along with the rest of the country]," Douma said.

The research team will compile the findings from this pilot project into a final report due out in early 2014. Meanwhile, MnDOT is already working to address a number of the challenges and suggestions uncovered through the interview process. Agency officials also will explore using the best practices developed in the pilot study to carry the program to other MnDOT districts and support economic vitality throughout the state.

Panel

Supply Chain Challenges—Implications for the Transportation System

Moderator: **Jason Craig**, Government Affairs Manager, C.H. Robinson

"What factors can we as shippers control and what factors are out of our control?"
—Jason Craig

C.H. Robinson: Data Management, Market Uncertainty

Jason Craig, Government Affairs Manager, C.H. Robinson

C.H. Robinson is among the nation's largest third-party logistics providers, focusing on truckload, intermodal, air freight, and ocean freight. One particular challenge the firm faces, Jason Craig said, is what to do with the massive amount of data available in the supply chain—and then get more out of it. But by far the biggest challenge for C.H. Robinson is market uncertainty. "Costs are increasing but rates are flat," he said. "What factors can we as shippers control and what factors are out of our control? Everyone has a sense of this tipping point, but when and where will that be? When will the driver shortage have a true impact to rates and in capacity?"

One trend that C.H. Robinson sees is that larger and larger blocks of freight are being aggregated and managed by centralized authorities around the country, Craig said. This means that freight decisions may not be controlled at local facilities within Minnesota but instead are likely controlled outside the region, making it harder to connect with local policymakers. This also makes it difficult to find capacity and develop and execute procurement strategies that are national and not just local and regional, he said.

Cargill: Capacity Constraints, Data Analytics

Randy Brown, Vice President of Transportation and Logistics, Cargill

Cargill also faces many supply-chain-related issues, Randy Brown said. One of its main challenges is that Cargill's supply chains are extremely diverse—involving anything from feed-plant shipments to direct store delivery—and a lot of things in between. Products being moved range from chocolate and whole grains to high-fructose corn syrup and oils. What is common among these supply chains, however, is constrained capacity, along with forecasts that capacity problems are getting worse.

"To deal with those challenges, we are deploying a new strategy around trucking," Brown said. "We've also woken up to the fact that data drives our decision making, and that the ability to analyze all of the available information to make decisions requires a deeper level of analytics." The firm is now rolling out an improved global analytics capability. "We don't currently have the data and the information to deal with these diverse supply chain issues. Because we previously lacked a truck strategy, we had been very reactive in the marketplace. Being reactive when capacity is tightening brings with it a lot of problems," he said. "Some of these issues are due to the new hours-of-service rules, but some are due to how we have been managing the business."

Bay and Bay Transportation: Driver Shortage, Federal Safety Regulations

Chip Smith, CEO, Bay and Bay Transportation

Many trucking companies today are finding themselves at a series of crossroads and decision points that could potentially determine their success or failure, Chip Smith declared. Capacity constraints, for one thing, continue to present challenges. A major issue is the ability to find and keep enough qualified drivers. Even though Bay and Bay Transportation's driver turnover is far below the industry average, it is still a problem for the company. "It's not that our entire driver fleet turns over, but it's the newest drivers who are most likely to turn over," he said.

Recent federal safety regulation changes bring another set of problems, Smith reported. Along with the Federal Motor Carrier Safety Administration's (FMCSA) new hours-of-service driver rules that took effect in July, the industry is also adjusting to the changes brought by FMCSA's 2010 launch of its Compliance, Safety, Accountability (CSA) initiative to improve large truck and bus safety and ultimately reduce crashes, injuries, and fatalities. Now, three years in, the CSA remains a source of contention and confusion for the U.S. trucking industry, he said. Among the issues are enforcement and reporting inconsistencies between states and the fact that many within the industry feel the CSA is not really a safety rating, even though most trucking customers look at it as such. Although the FMCSA spells out that CSA scores don't imply a safety rating, it encourages public use of the scores as a kind of safety assessment. "We need a red light/green light system from FMCSA, similar to what we had previously, with satisfactory, unsatisfactory, or conditional ratings," Smith argued. "What we don't need is to be given a carrier's basic CSA scores and then have to figure out what blend of those justifies a safe or unsafe carrier and have to defend this position in court."

Smith also said that Bay and Bay is concerned about recent attacks in various states on the independent contractor business model. "For some reason there is a belief that this [business model] takes advantage of drivers. But these drivers choose to be independent contractors and are a major part of what we do in transportation and trucking. In several states—New York, Massachusetts, California—this is an issue already, and we have a watchful eye on what happens in Minnesota. On a state level, the worst situation would be 50 states with 50 different regulations on interstate commerce. Fluidity with the rest of our adjoining states is a key factor, and anything we do to help promote the fluid flow of goods and interstate commerce works to our favor," he said.

Despite all these challenges, Smith is guardedly optimistic that the trucking industry is well positioned for the future, because the demand for freight movement by truck is growing. So, while the near-term micro view for trucking continues to be challenging, he said, the long-term macro outlook for trucking seems fairly bright.

"On a state level, the worst situation would be 50 states with 50 different regulations on interstate commerce."

— Chip Smith

St. Paul Port Authority: Public Awareness and Support

Louis Jambois, President, St. Paul Port Authority

"Our goal is to get out into the community and talk to people at a grass-roots level to get them to appreciate the value of what we do and, by extension, the value of the things that you do."

—Louis Jambois

For more than 75 years, the St. Paul Port Authority has contributed to the East Metro's economic growth. Despite its long history, many Minnesota residents—St. Paul's included—do not realize the city has a harbor, Louis Jambois said. The St. Paul Port Authority owns a majority of the multimodal Mississippi River Terminal property, where commodities are loaded onto, and unloaded from, barges. Chief among the products is grain—including corn, soybeans, and wheat—with an estimated value of $8 billion. Imports include sand, gravel, fertilizer, salt, cement, and coal.

At its core, however, the Port Authority really is a real estate developer, Jambois explained. Through its unique transactional expertise, the St. Paul Port Authority assembles parcels of polluted or underutilized inner-city land, cleans them up for redevelopment, and then sells them. "We have 21 business centers throughout the City of St. Paul, with 600 businesses supplying about 20,000 jobs within those business centers," he said.

The big challenge in this urban core is obtaining land-use control for industrial development, Jambois pointed out. Anytime there is a land-use change in the core city, it is almost always to convert industrial land use to some other use, usually residential development.

For the last four years, the Port Authority has worked to better understand why industrial development is not well appreciated. According to the results of its study, part of the issue is that people are familiar with housing, offices, and retail, but most have never been in an industrial facility. Likewise, people drive cars, take transit, and ride bikes, but they have never been in a freight-hauling train or truck. "Simply put, they do not understand what you [in the supply chain industry] do or how you do it," Jambois explained. "As a result, it is very easy for most people to dismiss what you do in favor of something that better fits their frame of reference."

Based on its study findings, the Port Authority created a public outreach campaign touting the importance of industrial development in St. Paul. For every dollar generated by industrial development in St. Paul, the city spends about $0.60 to $0.70 in services, Jambois reported. In comparison, for every dollar housing generates, the city spends between $1.08 and $1.16 worth of city services. "A corporate entity like St. Paul needs industrial development, and similarly, a corporate entity like the State of Minnesota needs strong business development throughout the state," he said.

To date, Port Authority representatives have given almost 200 presentations. "Our goal is to get out into the community and talk to people at a grass-roots level to get them to appreciate the value of what we do and, by extension, the value of the things that you do. We really had to relieve the policymakers of the burden of defending what the Port Authority does. To a large degree, that is what industrial development needs to do across the state, and what the transportation world needs to do as well."

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