

Sixth Annual

FREIGHT AND LOGISTICS SYMPOSIUM

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A Summary Report

Economic concerns, post-September 11 security measures, congestion, infrastructure innovations, public- and private-sector responsibilities, and the development of a regional air-cargo facility were just some of the many topics examined by freight and logistics professionals, researchers, and policymakers at the sixth annual CTS logistics symposium. CTS director Robert Johns opened the symposium with a brief summary of the challenges facing the industry, especially the projected state budget shortfall and a sluggish economy. This report summarizes the event's five main sessions.

KEYNOTE PRESENTATION

Hang Ten: Riding the Wave of Transportation Integration

Arno Hart, Vice President, Wilbur Smith Associates

CURRENT ISSUES

Regional Air Cargo Facility Study

Cecil Selness, Director, Modal Operations Division, Minnesota Department of Transportation

Exclusive Truck Lanes

Naresh Amatya, Lead Senior Planner, Southern California Association of Governments

PANEL: MINNESOTA'S GLOBAL CONNECTIONS

Moderator: Richard Murphy Jr., President, Murphy Warehouse Co.

Panelists: Fred Beier, Professor of Marketing and Logistics Management, Carlson School of Management, University of Minnesota; Dick Bowman, Logistics Manager, Rosemount, Inc.; Aaron Jorgensen, Director of Corporate Transportation and Traffic, Medtronic; Cecil Selness; and Naresh Amatya.

PUBLIC POLICY PERSPECTIVE

U.S. Rep. Mark Kennedy, 6th District of Minnesota

KEYNOTE PRESENTATION

Hang Ten: Riding the Wave of Transportation Integration

Arno Hart, Vice President, Wilbur Smith Associates

Wilbur Smith Associates is an international consulting firm of engineers, planners, and economists. Established in 1952, WSA provides specialized planning, engineering, design, and construction engineering inspection for transportation, community development, and municipal infrastructure projects.

As suggested by the title of his presentation, Arno Hart focused on transportation integration, concentrating in particular on logistics systems, public-delivery systems, possible options for progress, and waves of change. Hart, a senior economist with WSA and director of the firm's freight economics and finance service division, assists primarily public-sector clients with institutional financial planning and marketing for highways, ports, airports, and rail systems.

Hart cited declines in economic activity and declining returns in transportation productivity as key factors currently pressuring transportation logistics. He said he chose a surfing metaphor for his presentation because of a recent report that talked about logistics and freight as the perfect storm. "It's always changing," he said. "We don't know what's going to happen next. It's riding the wave that's key—being able to stay on top of the wave is what's important in terms of our competitiveness."

In terms of logistics productivity, Hart reported that falling logistics costs as a percentage of the gross domestic product had stalled at around 10 percent after a long period of improvement. He outlined several factors influencing those costs as a percentage of the GDP, including the product supply-chain concept, government regulation, equipment-carrying capacity, mode optimization, global logistics and technology, and inventory reduction.

"Essentially, we are moving from a push to a pull economy," Hart observed. "Information is key. What else is key is transportation, transportation, transportation. Inventory material ownership is a small piece of what we're doing now."



"Transportation fused with information is the catalyst for the new distributive business process."

***—Arno Hart,
Wilbur Smith Associates***

Though significant cost savings already have been realized, Hart said that some experts estimate inventories could be reduced by another 80 percent. To achieve such a goal—which amounts to about a trillion dollar savings in inventory carrying costs—he stressed the need to further shorten supply chains and cycle times. But how?

For part of the solution, Hart pointed squarely at the public sector to develop multimodal transportation systems, which involves tackling improvements in system components such as airfreight, trucking, highways, rail, and ports. But Hart didn't stop there. "Having the system in place is key," he added. "But ensuring the reliability of that system is what's even more important."

Next, Hart introduced the concept of a "neuro-logistics" system—a logistics system more responsive to changes and impacts in the transportation system. Procurement, operations management, and transportation and distribution had driven the previous logistics revolution, he said, but "transportation fused with information is the catalyst for the new distributive business process."

As a result, Hart predicts supply chains are going to become the economic unit for competition. What's more, because the supply chain "rides" on the transportation system, service becomes critical to ensure both fast cycle times and turnaround of capital assets. Failure of the system, however, affects industry by hurting productivity, the cost of goods, and competitiveness, and it affects the providers of transportation services by hurting return on assets, access to capital, and driver retention.

Hart envisions the fusing of production with transportation and information to create a more agile logistics system, where everyone plays a part and it's about the supply chain itself rather than individual businesses. "Logistics is becoming a strategic weapon for economic development," he said. "In the past, logistics was all about cost, and then it became

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PUBLIC POLICY PERSPECTIVE

U.S. Rep. Mark Kennedy, 6th District of Minnesota

During the final segment of the symposium, U.S. Rep. Mark Kennedy shared his ideas about transportation policy and discussed his legislative agenda for the next two years. Kennedy serves on the Financial Services Committee and the Transportation and Infrastructure Committee in the U.S. House of Representatives.

Kennedy touched on a wide range of transportation-related topics, from a fundamental public responsibility for building roads to the demands of increasing globalization. “We need to make sure we have the capacity to move goods and services around this state and the country, and internationally,” he said. “We’ve had one of the biggest increases in congestion in the last 20 years of any metro area around and that’s having its impact. Clearly, government does have a role here.”

Kennedy emphasized the important role that transportation infrastructure plays in economic success, and he bemoaned the wasted time, resources, and threat to commerce resulting from increased congestion. Free movement of goods is a fundamental factor in deciding where to locate a business, he pointed out, citing his experience tackling logistics concerns as an executive with Department 56.

Despite the problems stemming from growing congestion in the Twin Cities, though, Kennedy touted the value of high-functioning elements in the area’s transportation system, especially the international airport, which he said is one of the busiest in the country. “If we can be the

centerpoint of the Upper Midwest, that’s going to provide jobs—good-quality jobs—here in Minnesota,” he said, explaining his perspective as Congress prepares to reauthorize transportation-funding legislation. “I know the importance of that to business, to growing our economy.”



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U.S. House of Representatives

Kennedy urged everyone from the industry to educators to better tell the whole story about the role of transportation in society because often people don’t realize the true cost of goods. Specifically, he used the example of how everyday products typically travel a circuitous route through a production process, from the raw-material stage to factory to stores and consumers.

During lively presentation that included fielding questions from freight and logistics professionals, researchers, and policymakers, Kennedy also challenged Minnesota to turn recent 9-11-enhanced security threats into a competitive advantage and opportunities for business success. He specifically pointed to the strategic development of freight and cargo-handling facilities and operations, which he feels the state is ideally positioned to

do, as a way to address a critical, but long-ignored, national security issue.

Kennedy also said he supports measures to better preserve right-of-way and other efforts to streamline the administrative process involved in building transportation infrastructure. Overall, there needs to be a focus on reducing costs and on faster delivery of projects, he said.

CURRENT ISSUES

Regional Air Cargo Facility Study Update

Cecil Selness, Director, Modal Operations Division, Minnesota Department of Transportation

Mn/DOT's Cecil Selness, following up on a presentation last year about the Minneapolis-St. Paul international air cargo study in 2001, emphasized that opportunities to create a regional air-cargo facility are running out. "There isn't enough capacity and need to support these same kinds of facilities in a lot of places in the country," he said, pointing out that Denver and other areas are also exploring similar options. "The window is open, but only for a period of time."

At present, because the Twin Cities heavily depends on Chicago's air-cargo hub—455 miles away—for moving freight, the forwarding process takes about six days, which can seriously hamper the logistics of any operation. As a result, Selness said, this region is at a competitive disadvantage and will continue to lose business segments and employees if changes aren't made. Some Minnesota businesses, for example, are relocating their distribution and manufacturing operations to be near national distribution hubs outside of Minnesota.

Selness also pointed out several inefficiencies that stem from trying to support 65 freight forwarders in the Twin Cities area, especially those arising due to redundancies in movement, warehousing, and air-cargo service. In addition, the fact that Minnesota has no international freighter flights, compared with 52 weekly international freighter flights in Chicago, keenly describes the situation.

To address the problem, Selness, who titled his presentation "A Public Agency and Private Industry Proposal," outlined three main objectives. First, he expressed a need to maintain good integrator services and operations, such as UPS and FedEx, at Minneapolis-St. Paul International Airport. Next, he suggested expanding international mail services at MSP. Finally, Selness proposed establishing a regional distribution center that can provide 48- to 72-hour destinations to international markets through MSP. A remote cargo airport might eventually be considered also.

A regional distribution center would include centralized security, customs, and other federal inspection services, as well as computerized package tracking, warehousing, sorting, pallet and container building, and delivery services. An economic development zone around the RDC also would support the development of international markets by providing a location for import and export manufacturing.



"There is enough cargo in this Twin Cities area to support the Minnesota regional distribution hub—that's a really important finding."

—Cecil Selness, Mn/DOT

"This [also] really helps us to think about how can we address the issues of security," Selness added, "and provide a way for much improved centralizing of these security functions that are ongoing."

Developing such a facility includes several elements, which Selness listed in detail. Besides building an RDC and establishing economic development zones, he proposed establishing a public-private work team for design and implementation, using public bonding to seed what eventually will include privatized elements, creating a public oversight body, and improving roads to provide freight access to the RDC and the highway system. Plans also involve construction of cargo and freight access facilities at MSP, and development of marketing plans to attract new business as well as public and private users.

To move the project along, Selness estimated it would take about \$2.7 million to assemble a project team and work with consultants to recommend a site and design the buildings and information systems. An additional million eventually would be needed to fund subsequent phases, too.

"There is enough cargo in this Twin Cities area to support the Minnesota regional distribution hub—that's a really important finding," Selness said, citing a study by Palmer Consulting.

"We've become ever mindful that a strong and broadly based economy is very beneficial, and to have a strong international economy can only help," he concluded. "[A regional distribution center] can increase regional and statewide employment, lower our product and service costs, and create a competitive advantage through direct connections to the global marketplace."

CURRENT ISSUES

Feasibility of Building Exclusive Truck Lanes in Southern California as a Traffic Congestion Relief Measure

Naresh Amatya, Lead Senior Planner, Southern California Association of Governments

It's no secret that Southern California is running out of freeway. In fact, the influx of trucks from Mexico as a result of NAFTA, rankings that place the combined ports of Los Angeles and Long Beach as third-busiest in the world, and a steady increase in air traffic spell big trouble, especially where the rubber of freight trucks hits the road.

Some estimates show Southern California truck traffic increasing as much as 65 percent in the next 20 years. And, in terms of population, consider jamming 6 million more people—or roughly two cities the size of Chicago—into the area. That's a lot of pressure on a major freight hub and vital link in the nationwide flow of goods.

"You can imagine the enormity of the challenges that we face," said Naresh Amatya, the acting manager of planning and analysis with the planning and policy department of the Southern California Association of Governments. Amatya described the area's congestion problem and possible relief measures using State Route 60 as an example. SCAG studied the feasibility of using truck lanes to improve the 37-mile, east-west route in Los Angeles.

SR-60, one of the busiest of four corridors SCAG identified to implement exclusive truck lanes, carries 40,000 trucks each day. According to Amatya, each truck—depending on the congestion level—could be adding the equivalent of 15 cars on the roadway. Besides the impact on congestion levels, safety is a



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—Naresh Amatya, SCAG

major concern, too, because of the resulting high number of accidents along the packed route.

"It makes a lot of sense to implement these truck lanes from an economic standpoint," Amatya said, adding that at least two truck lanes in each direction were needed. "Depending on the location, we will need as many as three lanes more in each direction to accommodate the traffic if we do not implement the concept of truck lanes."

Next, Amatya addressed the thorny issue of choosing at-grade or above-grade truck lanes, each option having serious implications for existing traffic and surrounding land. Related questions involve lane

placement and, if elevated, whether cars or trucks use those lanes. In the end, with the SR-60 study, they recommended adding outer lanes for trucks with more costly aerial structures where right-of-way issues would prove even more expensive.

To fund the \$4 billion SR-60 project, SCAG explored revenue-based financing and found that private industry would be willing to pay part of the cost if they were ensured at least a threefold productivity gain, or three trips during the time it now takes for one. At best, however, such a plan would only fund about a third of the total, or about \$1.2 billion. Amatya said that the public—at local, state, and federal levels—would need to contribute the remainder, which he acknowledged would be difficult.

"There are a tremendous amount of stakeholders, so coming up with a consensus is a major challenge," Amatya concluded, once more listing the many benefits of the truck-lane concept. Specifically, Amatya cited the benefits of traffic congestion relief, improved efficiency delivering goods to and from sources, better air quality, and increased safety as justifications for using public dollars to fund truck-only lanes.

PANEL: MINNESOTA'S GLOBAL CONNECTIONS



Looking to the Supply Chain for Opportunities in Tight Times

Moderator:

Richard Murphy Jr., President,
Murphy Warehouse Co.

Panelists:

Fred Beier, Professor of Marketing and Logistics Management,
Carlson School of Management, University of Minnesota

Dick Bowman, Logistics Manager, Rosemount, Inc.

Aaron Jorgensen, Director of Corporate Transportation and
Traffic, Medtronic

Cecil Selness, Director, Modal Operations Division, Minnesota
Department of Transportation

Naresh Amatya, Lead Senior Planner, Southern California
Association of Governments

Managing the flow

University professor Fred Beier, former CTS executive committee chair, opened the panel with a definition and brief review of freight and supply-chain management, which he identified as the emerging managerial method for moving freight. “Essentially,” he said, “it’s the process of managing the flow of product from raw material to consumption, with two objectives in mind: serving the market, which is paramount in my mind, and making money.”

Beier added that the core of the supply chain is the relationship between shippers, carriers, and consignees. In addition, he said that technological advances especially have been a key factor in driving improvements in efficiency and a move away from a just-in-case inventory model.

“There are thin margins and high emphasis on service, which means that supply chain is extraordinarily important,” Beier cautioned, pointing to mass merchandisers as some of the best supply-chain companies in the economy. “If you don’t perform your role in the supply chain, then in fact your trading partners will throw you out or at best exert all kinds of penalties.”

He also focused on actions or strategies that can be pursued by both the public and private sectors to overcome barriers to the development of supply chains. “We’ve moved to just-in-time,” he observed. “And that allows or that exposes us to some vulnerability if that inventory is no longer available.”



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—Fred Beier,
Carlson School of Management

Beier reviewed significant disruptions in service, citing such examples as September 11 and related security concerns (which have slowed data-sharing efforts), bankruptcies, and the strike on the West Coast. To address such risks, besides introducing new security precautions, he suggested that public-sector measures include a commitment to research and development—working with the private sector, for instance, to better utilize information systems. Beier also proposed making it easier to share capacity by creating a legal environment to encourage business alliances and business partnerships, and adding incentives for efficiency.

“Private sector,” Beier concluded, “just keep pursuing your self-interest, know your trading partners, your market, your environment. And this is the bottom line for the private sector: you’ve got to educate the public sector on where the costs and benefits are—where the savings are. They can’t do it for you.”

“Just barely in time”

Drawing on 30 years of experience of moving freight around the world, Dick Bowman echoed the words of his predecessor and former university logistics instructor, Fred Beier, that business success essentially relies on people and interdependencies.

Speaking from a private-sector standpoint, Bowman framed his presentation around doing what is most important to improve the supply chain. “We have to protect a person’s costs, we have to serve their needs, we have to be able to have the flights and the trucks moving 24 hours a day,” he said. “It comes down to what’s in it for me.”

Bowman cited the proposed air cargo facility and regional distribution center as an example to illustrate an idea or project's relevance from a private-sector perspective. The critical issues, he said, are really just cost and transit time.

Bowman discussed the trend toward "lean manufacturing" and its role in a just-in-time (JIT) system, which he mused



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***—Dick Bowman,
Rosemount, Inc.***

has actually evolved into "just-barely-in-time" or JBIT. "When you are in a CONBON [a pull inventory system, short for 'Card Order Notice, Bring Out Notice'] with lean manufacturing, time is more than money, time is almost everything," he said.

In terms of what it will really take to be competitive, or getting freight in the right place at the right time, Bowman supported an estimation by Cecil Selness that it would take a large investment and the patience to wait for a project like the regional distribution center to yield a return. "These projects we looked at this morning abso-

lutely require a ruthless commitment and I mean ruthless commitment to rigorous execution," he concluded. "I believe that it is time for us to lead, follow, or get out of the way. And the way to accomplish that is together—the public and the private sector, including the shippers and the transportation and warehousing providers."

The Medtronic model

As global director of freight and logistics at Medtronic, Aaron Jorgensen presented a comprehensive overview of what it takes to keep the multi-billion-dollar business functioning smoothly. The Minnesota-based company manufactures and sells device-based medical therapies around the world.

Jorgensen credited the company's ability to sustain an annual growth rate of 15 percent to talented staff, technological innovations, and creative partnerships, which he considers extremely important from a logistics perspective. "At



"We can't be the only ones left standing here ... in Minnesota."

***—Aaron Jorgensen,
Medtronic***

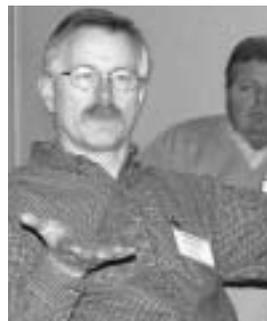
Medtronic," he said, "it's just not teaming up with another company to manufacture or to innovate new technologies, but it's also to be able to take a look at things from the logistics perspective."

In recent years, the company has saved millions by whittling 475 transportation providers down to 35 core providers. Jorgensen recounted the essential role of the company's partners in meeting the challenge of getting badly needed supplies like defibrillators through to New York and Washington in the days following the September 11 attacks.

"Each year, we ship 2.8 million packages," he said. "In essence, that equates to a Medtronic product being used every two seconds across the globe."

Jorgensen described a business operation spread across 120 countries and an ambitious goal to increase revenues from foreign sources and expand from successful markets in Western Europe and Japan to Asia, Eastern Europe, and Latin America. He also expressed Medtronic's desire to remain based in Minnesota and the challenges that entails, especially the cold weather's effect on delicate medical devices and the logistics of success, or producing devices almost as fast as the demand to use them.

"We are in a lot of ways a poster child for this international air cargo facility," he concluded. "We can't be the only ones left standing here if we're going to be able to have the kind of industry and the kind of things we want to be able to produce here in Minnesota. We have such talented people and so many innovative things, it just would be a horrible situation not to have the resources and the infrastructure that supports that whole thing."



Mark Miller (left) and Mark Berndt question the panelists about Minnesota's role in a global economy.

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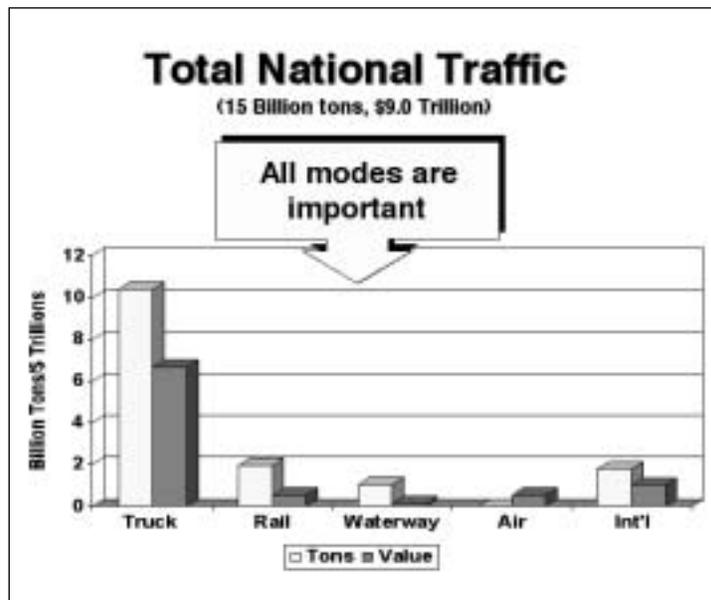
quality, and then it became speed of delivery. Now it's about agility—being able to move quickly and responsively.”

To improve the system, especially in terms of cost and service delivery, Hart suggests such things as consolidating processors and creating freight villages, where “densities” can be developed by combining warehouses and processes. Hart also discussed the emergence of regional and international logistics corridors resulting from public- and private-sector investment.

Nonetheless, congestion resulting from this consolidation and coordination within the supply chain can be a thorny issue, particularly from a public-sector perspective. The problem is not simply local any longer, often spreading across corridors stretching through several jurisdictions.

Hart addressed the congestion problem from the perspective of finding ways to move ubiquitous freight trucks more efficiently through the system, citing a recent project involving the I-10 corridor as an example. Solutions ranged from traditional approaches of adding more lanes and truck-only lanes to mass-flow concepts and truck platoons. In addition, some ideas are likely to require private-sector help, such as utilizing new technologies or time-of-day operations and off-peak periods. But involving the private sector is often a tough sell.

“The only way to share the costs with the private sector is to give them productivity gains,” Hart said. “We’ve got to allow



them to cut their costs, deliver more efficiently, and gain enough to be able to share in the costs for transportation.”

Finally, Hart emphasized the importance of finding ways to increase investment in transportation because of the huge economic impact it has. Such things as increasing user fees and private/public partnership initiatives need to be considered, and action needs to be taken at the federal, state, and local levels.

“Thinking out of the box is where we need to go,” he said. “We’ve got to plan for how our system functions.”

CLOSING



Robert Johns, Director,
Center for Transportation Studies

In summary, CTS director Robert Johns reiterated the consensus that there is a high need for innovation and commitment to meet the challenges spawned by the rapid changes in freight and logistics. Specifically, innovative partnerships, innovative technologies, and innovations in the transportation infrastructure need to involve both the public and private sectors. In addition, in mustering the commitment to get it done, Johns cited

Congressman Mark Kennedy’s caution that transportation funding needs to be connected back to the public—that elected officials respond to their voting public.

Johns also reminded participants to keep sharing resources, information, and dialogue. “We need to continue making that connection,” he said, soliciting ideas for future symposiums, “so that people will understand the benefits of investing in the transportation system to help freight flows.”

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