15th Annual
State of Logistics Report®
Sponsored by the Council of Logistics Management

Globalization

June 7, 2004
National Press Club ■ Washington, DC

Presenter
Rosalyn Wilson  P: 703-404-4362  F: 703-430-6430  E: rosalyn@transopolis.com
Globalization

Remembering Bob Delaney

Bob Delaney has been a part of my life for more than twenty years. We actually started out on opposite sides of an issue – trucking deregulation. I had only just joined the Economics Department at the Association of American Railroads. As a matter of fact, one of my first assignments was to assist a colleague to punch holes in the methodology we now use for the State of Logistics Report®! We were officially opponents, but Bob eventually convinced me that trucking deregulation was good for the nation. Bob could be very persuasive when he believed in something passionately.

Through the years, Bob and I traded information, shared contacts, debated issues and grew to be good friends. Somewhere along the way he took me under his wing and mentored me through my career. He coached me through job changes and challenged me to stretch. He encouraged me to take over Transportation in America from Frank Smith when he was ready to pass the baton. In fact, he managed to convince me that I was the only person for the job. His faith in me helped me take opportunities I might have passed by.

As friends, we have seen each other through some bad times and celebrated some wonderful times. Although we only saw each other three or four times a year, we talked often on the phone. When we didn’t connect, Bob didn’t just leave a name and number, it was always a long phone message full of news, questions, and inquiries about my family. Bob’s phone messages were legendary in my household.

A decade ago I started providing the transportation data for the State of Logistics Report®, which was a part of the responsibilities that went with Transportation in America. With each succeeding year Bob asked me to do a little more – researching, editing and critiquing – and in 1999 he asked me to join him as co-
author of the report. Bob persuaded me that I was up to the task and would “grow in to the job.” I am honored to have learned from someone of Bob’s stature. We settled into a comfortable division of the work – each of us doing what we did best for most of the year, and then an intense collaboration for a month or so before the report came out.

This year was to mark a change in the way we had done business. After Bob’s retirement from Cass and ProLogis, we began a search for a new sponsor for the report. We were lucky and found a great match in the Council of Logistics Management. Bob took the first part of this year settling in to his new independent consultant role. Our plan was to prepare this year’s report the same way we had done in previous years and then gradually transition more of the responsibility to me in future years. We, and CLM, were confident that this was the best way to see that the report had a solid future.

Well, the best-laid plans have a way of going awry. Bob’s sudden death came just ten days before we were to meet to exchange information and begin the writing process. As had been our practice, we had not yet shared much of the information that either of us had gathered. Bob left me one of his famous long messages the morning he died letting me know that he had a package of background info ready to send me the following week in advance of our meeting. I never got that package. Unfortunately, all of Bob’s work papers and the historical backup for earlier editions were disposed of before I could request they be sent to me, and all of us are familiar with Bob’s penchant for paper and ink instead of technology. To say this was a major blow is an understatement.

Over the last two months I have struggled with the personal loss of a wonderful friend and colleague and the professional loss of a huge knowledge base. I know this was not Bob’s idea of transitioning the report. I was determined that Bob’s legacy would not die with him and the report would come out as planned. I said to Maria McIntyre, at some point along the way, that even if I stood on my
tiptoes I could not see the world the way Bob did. This year’s report has been a learning experience for me, and, as Bob did for me, I hope that you too will give me the time to grow into the role.

**Introduction**

2003 was a demanding year for the U.S. business logistics system. As rates rose in virtually every mode, shippers turned to the logistics industry to squeeze out savings. We experienced capacity constraints, rising sales, a brief period of declining inventories mid-year followed by steadily rising inventories, and the uncertainty of new security regulations. During 2003, our business logistics costs were $936 billion and were equal to 8.5 percent of our nominal Gross Domestic Product (GDP). This represents a jump of $26 billion over 2002 or an increase of 2.9 percent. *(Figure 1)* Despite the rise in 2003, logistics as a percent of our nominal GDP has fallen for the third year in a row. *(Figure 2)*

When we met last June, the growth in world trade had slowed considerably from the average annual growth rate of 6.3 percent experienced from 1950 through 2001. The outbreak of severe acute respiratory syndrome (SARS) and the impact of heightened tensions in the Middle East combined to dampen the economic recovery in the first half of 2003. However, during the second half of the year, the global economy started to build and resulted in an annual average increase in world merchandise trade of 4.5 percent, along with a rise of 2.5 percent in global GDP as measured by the World Trade Organization (WTO). The growth was led by Asia and the so-called transition economies (Central and Eastern Europe and the Russian Trade Federation). In real terms these regions experienced 10 to 12 percent growth rates in merchandise exports and imports. This is more than double the total world merchandise trade. WTO economists expect the acceleration in trade growth to continue into 2004. Their expectation is that the growth in world GDP will rise to 3.5 percent and that the growth in global trade will reach 7.5 percent. *(Figure 3)*
This phenomenal growth in world trade, and the rebound in the U.S. economy, has profound implications for logistics. In 2003, we saw the demand for shipping outstrip the capacity in many markets, altering the supply demand equilibrium and pushing up prices. During my research for this report, I was given estimates that it now costs from 5 to 15 percent more to move products than it did in 2002. Shifts in global manufacturing as the U.S. loses manufacturing facilities to other global markets with lower labor costs, such as China, India, and South Korea, are redrawing the landscape for transportation strategies. Inventory levels need to be rethought to account for increased and even variable lead times, and this could drive an increase in both cycle and safety stocks. Some sectors of the economy were operating on razor thin inventory levels in 2003 and “stock outs” were not uncommon. Shippers are increasingly looking for a more integrated supply chain with reliable end-to-end information streams.

**New Sponsor**

Beginning with this 15th edition of the State of Logistics Report® the Council of Logistics Management (CLM) is the new sponsor. Bob and I considered many options for the future home of the report, and we believed that we have found that home. I am pleased to have the backing of CLM as I go forward with this report. The wealth of knowledge and willing hands to guide the direction and assist with the information gathering will add a new dimension to the report. We have already formed an advisory committee, and I look forward to working with them. In addition to the annual report, CLM is also sponsoring the establishment of a quarterly index of logistics costs that will be based on the same methodology used for the annual report. This index will debut at the 2004 CLM Annual Conference this fall in Philadelphia. *(Figure 4)*

**Agenda**

Here is the agenda. First I will examine in detail the cost of the U.S. business logistics system in 2003 in twelve line items of detail. I will review the trends in
transportation costs, inventory carrying costs, and total logistics costs since 1982. Next, I will take a look at globalization and its implications for the logistics industry. That discussion will focus on several main issues including the impact of changes in the world economy, the growing need for real time reliable data shared with all partners in the supply chain, and the impact of new security regulations. With the help of Armstrong and Associates, I will update you on the expenditures managed by third-party logistics service providers and their revenue growth. Finally, I will summarize and call for questions. (Figure 5)

The Business Logistics System – 2003

During 2003, the cost of our business logistics system increased to $936 billion, or the equivalent of 8.5 percent of nominal Gross Domestic Product (GDP). Once again the largest share of the increase can be accounted for by rising transportation costs, particularly trucking, which represents over 50 percent of total logistics costs. Inventory carrying costs remained almost flat because of low interest rates. (Figure 6) The average investment in all business inventories in agriculture, mining, construction, services, manufacturing, wholesale and retail trade was $1.49 trillion, a new record high. Inventory investment during 2003 was $49 billion higher than 2002. (Figure 7) This reverses the significant drop in 2002 and restores inventories to the levels they have held since 2000. Retailers were wary of adding to inventories early in 2003 when sales were slow. As sales rebounded, retailers often found it difficult to rapidly stock up and began to deplete inventories. Several analysts believe the rapid rise in inventories in late 2003 and early 2004 is a reaction to the mid-year supply chain crunch.

The cost of carrying inventory during 2003 includes interest at the annualized commercial paper rate of 1.1 percent. Monthly commercial paper rates continue to drop off and have been hovering just above 1 percent for over ten months. (Figure 8) The cost of taxes, obsolescence, depreciation and insurance follow the Alford-Bangs Production Handbook formula that has been used in this methodology since its publication in 1973. The 9/11 terrorist attacks exacerbated
the problems of an already deteriorating insurance market. Since then, premium increases of 20 to 50 percent have been common, but industry experts feel that the outlook for 2004 is much better and do not anticipate similar jumps. The cost of warehousing has been held flat again this year based on expenditures for public warehousing reported by the Commerce Department’s Census Bureau. I have, however, read some recent reports indicating that the end of 2003 saw the start of a trend of increased expenditures in this area. It will be interesting to see if the trend continues through 2004.

Transportation costs are my preliminary estimate based on the methodology used for the annual Transportation in America time series published by the Eno Transportation Foundation. Trucking costs increased by $20 billion compared to 2002. After a slow start, many carriers reported strong end of year results as capacity problems led to higher rates. Intercity trucking revenues rose almost five percent in 2003. Reversing a four-year trend, 2003 saw the fewest number of trucking failures since 1999. Most trucking companies were able to raise freight rates to recoup the rising fuel costs and cover increases in overall operating costs. The increased demand for their services allowed larger companies to be more selective in the freight they were carrying, opting not to carry the less profitable freight, and to push through rate increases. The skyrocketing growth in operating costs slowed greatly in 2003, with the rise in insurance premiums slackening off and equipment prices abating. With shippers still constrained by a lack of shipping options, the trucking industry is continuing to be able to push through fuel surcharges to cover their surging fuel costs as diesel fuel prices hit over $1.75 a gallon. As of mid-May, Transport Topics reported that average diesel fuel prices were almost 25 cents a gallon higher than they were at the end of 2003.

Costs of transportation by rail were up slightly. Revenues for Class I railroads rose 3.8 percent, but expenses increased more, leaving the industry with a drop of over 15 percent in net income in 2003. Rising fuel costs, offset partially by fuel
surcharges, and substantial wage increases resulting from contract settlements eroded the gains in revenue. The outlook for 2004 is similar with the industry report increasing prices for materials and supplies, and even some instances of steel surcharges.

Maritime and domestic water traffic decreased by $1 billion during 2003, with all gains coming from the maritime trades. Oil pipeline transportation was flat. International airfreight increased by $1 billion during 2003. Domestic airfreight revenues were flat. Domestic freight forwarder revenues, after payments to line haul carriers, increased slightly. Shipper related costs combine the loading and unloading of transportation equipment and the operation of traffic departments. Logistics administration is imputed at 4 percent of total logistics costs following the methodology that we have consistently employed since its publication in 1973.

Here is how the performance of our business logistics system between 1982 and 2003 appears graphically, with 1982 serving as the base. Inventory carrying costs declined by more than 60 percent. Transportation costs declined by 20 percent and total logistics costs declined by 41 percent. *(Figure 9)* In 1996, our report concluded that, as an industry, we needed to set a goal of driving the costs of our logistics supply chain to 10 percent of GDP or below by the year 2000. Well, we missed that deadline by just one year. In 2000, logistics costs were still 10.2 percent of GDP, which was a sizeable drop from the 1982 level of 14.5 percent. However, in each succeeding year, logistics costs have remained below the 10 percent goal.

**Globalization — How Did We Get Here?**

To prepare for this year’s report, I went back and reviewed the themes we had covered in previous years and predictions we had made about the state of the logistics industry and its future directions. It is interesting to note that in the very first State of Logistics Report® in 1990, Bob posed one fundamental question to
be answered: “how efficient are we and what actions have to be taken to improve our world competitiveness?” (Figure 10) I believe that the starting point for the discussion of our industry’s response to the effects of globalization is that same question.

It is actually interesting to note that, over the last fifteen years, there has not been a dramatic shift in the relative weights for each of the components that make up total logistics costs. Carrying costs represented 39 percent of total logistics costs in 1989 and account for 32 percent today, while transportation costs have climbed from a 56 percent share to a 63 present share of the total. With the exception of carrying costs, each of the other components have risen over 60 percent since 1989, with both transportation and shipper related costs jumping 75 percent. (Figure 11) We have reported every year that the industry has reduced costs by managing inventories more efficiently, reducing warehousing expenses, and minimizing risk. The numbers bear out that we have been quite successful with this strategy. Yet shippers are pushing for even more efficiencies in this area. Will the old strategies we applied so successfully work in our rapidly changing global environment? I think the evidence will show that to maintain the gains we have made and to improve our world competitiveness will require innovation and a re-engineering of supply chain management. Leading the pack in this arena is the contract logistics market.

In the third annual report in 1992, Bob predicted that by the year 2000 the third-party logistics market would reach $60 billion. Richard Armstrong is the internationally recognized expert on the contract logistics industry, and he estimates that the figure was actually $56.6 billion – Bob was right on the mark! (Figure 12) At that point in time, Bob said that “customized services were frustrated by our laws and public policy prior to deregulation.” In the report, Bob cautioned the industry to move slowly into the contract logistics market because the companies did not have a proven history. He further pointed out that such arrangements were far more common in Europe where they had been used quite
successfully. European countries have long relied on cross-border trade and used outsourced logistics services to facilitate the movements of goods. Today, the future success of our global logistics system will depend on customized supply chain services and contract service providers are leading the way.

Third-party logistics providers have been agile in responding to the dramatic growth in international trade and the expansion of supply chains into global markets. Multi-national manufacturers and retailers are turning to contract service providers to ensure that they have reliable sources of supply. In an article published this month in Global Logistics and Supply Chain Strategies, “Top 25 Third-Party Logistics Providers Extend Their Global Reach”, Dick Armstrong and Thomas Foster profile an elite group of 25 3PLs that are dominating logistics outsourcing around the world. The success of these companies rests on their ability to enhance their customers’ worldwide supply chain performance by providing expertise, reach, reliability and flexibility. They are being relied on to “provide transportation, consolidation, forwarding and customs brokerage, warehousing, fulfillment, distribution and virtually any logistics and trade-related services that their international customers need.”

Roughly 100 3PLs control almost a third of the $270 billion spent on outsourced value-added logistics services worldwide. Armstrong & Associates, Inc. reports that gross revenues for contract logistics services grew by 8.2 percent in 2003 to $76.9 billion. (Figure 13) For the ninth consecutive year, U.S. growth in third-party, contract logistics services exceeded U.S. economic growth. Net revenues for 2003 grew by 6.1 percent, following 7 percent growth for 2002. Dedicated contract carriage grew by 21 percent. Domestic transportation management grew by 21 percent in the face of competition from the so-called dot com freight exchanges. Warehouse based integrated services grew by 23 percent. U.S. based 3PLs with international operations grew by 15 percent. Further, in 2004, revenues for this sector are expected to grow between 6 and 8 percent. The latest issue of Who’s Who in Logistics? – Armstrong’s Guide to Third Party...
Logistics Service Providers includes research of 3PLs in Europe and Asia. It is the essential reference for anyone who is interested in understanding what is going on in business logistics.

“It’s all about time” was the catch phrase for the fifth State of Logistics Report® in 1994. We talked about order cycle times and transit times. Bob reported that “we used to measure these service levels in days. We now measure them in hours.” Things have not changed at all – it’s still all about time, but our concept of time is changing with the reality of the global marketplace. (Figure 14) With research and development, production and marketing facilities spread out across the globe, time can no longer be measured in hours. The industry standards we were setting in the mid-90s to meet just-in-time supply needs no longer apply. Supply chain strategies require constant reevaluation of the supply landscape. Manufacturers and retailers are now faced with longer lead times and, with the greater distances and the involvement of multiple carriers and other players, even variability in lead times for receiving supplies. It is still all about time.

The fourth theme that dominated previous reports was information technology. Throughout the years, we reported both good and bad things about the state of supply chain information. We talked about the failure of some companies to realize the potential they expected from heavy investments in information technology systems. We discussed the failure of the industry to adopt industry standards for information sharing and the bottlenecks created when systems couldn’t “talk” to each other. On the other side of the coin, we shared success stories of companies that demanded that their suppliers, carriers, and contract service providers share information on a timely basis to ensure the seamless integration of their supply chains. Today, there is an increased demand for real-time supply chain information shared end-to-end. Although, our domestic logistics industry has come a long way in the fifteen years this report has been tracking its performance, the reality of a truly global economy is forcing us to revisit old issues and come up with new solutions.
Globalization

A recent Deloitte Touche Tohmatsu study found that over 80 percent of the almost 400 North American and European companies they surveyed, ranging from small businesses to global giants, already operate on a global scale. Most operate distribution, sales and/or marketing centers outside of their home markets. The shift of factory jobs out of these regions to lower cost facilities in Asia, Mexico and Central Europe makes global operations a necessity. With the growth of mega-retailers like Wal-Mart, the pressure to reduce costs and increase efficiency have forced many companies to outsource pieces of their supply chain. In Deloitte’s survey, about 60 percent of the companies had moved production to a lower cost location, closed production facilities because of over capacity, and outsourced distribution or marketing activities. *(Figure 15)*

Global manufacturing is driving many companies to devise innovative strategies for ensuring reliable sources of goods. Home Depot has moved cautiously into the global market, with foreign goods representing roughly 7 percent of their inventory, up from 5 percent in 2002.

The expansion of trade and global production gained considerable momentum in the second half of 2003. World merchandise trade ended the year 4.5 percent higher than 2002 and world GDP was up 2.5 percent. World Trade Organization economists are predicting even faster acceleration in 2004, with expected growth rates for world GDP and world trade of 3.7 percent and 7.5 percent, respectively. *(Figure 16)* The on-going shift of manufacturing to Asia is putting new stresses on an already congested and overburdened domestic transportation system. The squeeze is being felt particularly on shipping in the Pacific. The region has already been operating at full capacity. Last year there was a 6 to 10 percent increase in cargo growth eastbound as U.S. imports of goods from the region rose. Shipping rates went up an average 40 percent in 2003 and carriers have warned shippers to expect another possible 20 percent increase this year.
For the third year in a row, U.S. import growth exceeded the world average, but the most noteworthy trade development in 2003 was the astounding expansion of China’s merchandise trade. China’s imports expanded by 40 percent and its exports grew by 35 percent in nominal dollar terms. (Figure 17) China has expanded from toys, shoes and apparel into almost every other area of production. As China enters new markets, it is quickly becoming the dominant force in the industry. While U.S. growth is expected to be 3 to 4 percent, China’s growth is forecasted to be 11 to 12 percent. Fueling China’s expansion is its own consumption of consumer goods. The Chinese middle class is one of the fastest growing sectors in the world. It is estimated that by the year 2007, the Chinese middle class market could be larger than the entire U.S. market!

In early December, the United States and China signed the first maritime agreement between the two nations to facilitate trade. China has made logistics a major national priority, and there has been significant investment in transportation infrastructure to accommodate the burgeoning industrial growth. As a result companies are locating facilities throughout China, not just concentrated in the traditional locales. Intel is building a $200 million plant in Chengdu near an already completed Motorola research and development facility. The Journal of Commerce devotes an annual issue to the Top 50 Ports each year. China has 9 of the Top 50 and accounts for 26.6 percent of all containerized cargo.

**Supply Chain Information and Security**

Reliable, timely accurate data is the cornerstone of the new global supply chain. Collaboration among all of the partners in the supply chain is essential and information is the key to effective collaboration. Information is needed for planning, to enable flexible decision-making in response to changing conditions, to prevent service disruptions and to ensure supply-chain security. Another added benefit of information sharing is the building of true partnerships because each link in the supply chain feels vested in the entire process. (Figure 18)
Again, Wal-Mart is exerting its considerable market power and leading the way in information sharing. Wal-Mart shares much of its proprietary information with its suppliers and, in turn, requires each of its business partners in its supply chain to do likewise. Wal-Mart shares information about sales at individual stores and plans for the future in order to enable suppliers to know what to produce and when. Not every company has embraced the need to share data and often zealously guards internal sales and planning data. Scott Elliff, president of Capital Consulting and Management Inc., points out that sharing critical data is mutually beneficial and often strengthens the vendor-customer relationship, making it less likely that confidence will be breached. *(Figure 19)*

Information requirements have long been an impediment to participation in global markets. The information demands for domestic movements are miniscule compared to those for a cross-border move. Adrian Gonzalez, a supply chain analyst with ARC Advisory Group, notes that handling the paperwork alone can be a serious impediment to doing business. Gonzalez said that “the typical cross-border transaction involves filing 35 documents, interfacing with 25 parties and complying with more than 600 laws and 500 trade agreements.” *(Figure 20)*

The paperwork often involves meeting the requirements of several countries' customs services. “Many types of documents have to be shared, filed and transmitted across different parties.” Many companies are outsourcing this task to contract providers. In addition, integrated carriers like UPS offer a vast array of services to their customers to enable small businesses to exploit international opportunities.

Since 9/11, regulations have become more complex as new regulations go into place to safeguard the logistics supply chain. A plethora of new initiatives and regulations have been promulgated, and they are having impacts on seamless supply chains. While no one denies the need for the new security measures, the costs of meeting the requirements has yet to be determined, nor who will bear
the brunt of those added costs. It is clear that there will be additional changes to come. I encourage the government, in particular the Department of Homeland Security, to review and better coordinate the information that needs to be provided to ensure a secure supply chain and to reduce the need to provide redundant information to multiple sources. (Figure 21)

One promising technology that is getting a lot of attention today is Radio-Frequency Identification (RFID). If the technology delivers on its promise, it should supplant bar coding for collecting much of the data gathered for logistics purposes today. An RFID tag can hold more information than traditional bar codes. (Figure 22) Wal-Mart announced last year that it was requiring its top 100 suppliers to affix the tags to all cases and pallets by January 2005. In October of 2003, the U.S. Department of Defense made a similar announcement. The divergent requirements of the U.S. Department of Defense versus those of Wal-Mart underscore that this technology has not yet reached maturity. There are no standards for RFID technology, and the tags required by Wal-Mart do not meet all of the requirements for the U.S. Department of Defense. For instance, the U.S. Defense Department wants the information to be encrypted. It would also like to employ a passive RFID tag that cannot be used to determine the location of the tag, but rather will be powered by the reader. (Figure 23)

Summary

Summarizing this report, U.S. Business Logistics costs were equal to 8.5 percent of nominal GDP in 2003. Transportation costs held steady at 5.5 percent of nominal GDP. The inventory to sales ratio declined from 1.38 to 1.32 months of supply during 2003. (Figure 24) That was the best inventory management performance in the history of the revised data.

Globalization is here. China is becoming a dominant force in the world market, and the transportation industry will need to find new ways to respond to alleviate congestion and handle increased volumes of goods. The industry must find
innovative ways to adapt to growing trade, rapidly changing supply markets, and constrained capacity. The new solutions will include ever-increasing information sharing and more individualized supply chain planning. Increasingly, shippers are turning to third-party logistics service companies to provide full service supply chain solutions, and I expect this trend to continue. Globalization will overpower existing relationships as companies access different suppliers, procure new items and drive down prices.

Successful companies will be those that can find ways to accelerate their supply chain. The ability to respond faster to changing customer needs, combined with the flexibility to adjust manufacturing and delivery cycles, will provide the competitive edge in today’s global environment. Developing supply chain security and contingency plans to mitigate service and supply interruptions are necessary parts of today’s successful business strategies. And finally, harnessing the data that is already available and seeing that it is shared with the right partners will enhance supply chain performance. *(Figures 25, 26)*

**Rosalyn A. Wilson**
Rosalyn A. Wilson

Rosalyn Wilson is employed by Reality Based IT Services, Ltd. (RBIS, Ltd.), an information technology security firm. She is also an independent consultant with over 25 years of experience in the transportation field. She has extensive experience in research and writing; data collection and analysis; modeling and benchmarking; and management tasks such as policy formulation, business process redesign, infrastructure systems analysis, market analysis, and institutional strengthening. Much of her experience has been in the transportation and logistics industry. Her practice focuses on the analysis of the performance of various sectors of the industry and identifying and analyzing key issues facing the transportation industry.

Rosalyn has worked with Bob Delaney, founder of the State of Logistics Report®, since 1994. In the early years of the report she contributed data and analysis to assist Bob in the preparation of the report and in 1999 she joined Bob as co-author of the report.

Prior to establishing her consulting practice Rosalyn was a senior consultant with Booz Allen Hamilton's transportation group. She has continued her association with the group, in a sub consultant role, supporting their efforts in transport, trade and technology, both domestically and internationally. She was a director at the Enno Transportation Foundation, managing several of the Foundation's major programs and publications. While at the Foundation she helped establish and directed the activities of the Enno Center for Transportation Leadership Development and served as the Administrative Director for the Council of University Transportation Centers.

Rosalyn has extensive railroad industry experience, having served in various capacities for over 11 years at the Association of American Railroads (AAR). She designed and maintained cost indexes reflecting changes in costs associated with railroad freight service as mandated by Congress when the industry was deregulated. Ms. Wilson developed the index methodology; collected data; calculated indexes; verified and audited railroad input data; and analyzed index fluctuations. She assisted railroads in the design or modification of data collection systems to comply with AAR instructions and to meet Interstate Commerce Commission regulations. Prior to the AAR she was a transportation analyst at the U.S. Department of Labor's Bureau of Labor Statistics.

Rosalyn has written for and served as editor for many publications. Since 1993 she has been the author of Transportation in America, a compendium of transportation information published annually by the Enno Transportation Foundation. She also authored the Foundation's National Transportation Organizations and served as co-editor of the Transportation Quarterly. While at the AAR she compiled many of the association's data publications including the Analysis of Class I Railroads, the Railroad Fact Book, and the Railroad Ten-Year Trends.
The U.S. Business Logistics System Cost is the Equivalent of 8.5 Percent of Current GDP in 2003

### Carrying Costs - $1.493 Trillion All Business Inventory

<table>
<thead>
<tr>
<th>$ Billions</th>
<th>Carrying Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>17</td>
</tr>
<tr>
<td>Taxes, Obsolescence, Depreciation, Insurance</td>
<td>205</td>
</tr>
<tr>
<td>Warehousing</td>
<td>78</td>
</tr>
<tr>
<td>Subtotal</td>
<td>300</td>
</tr>
</tbody>
</table>

### Transportation Costs

**Motor Carriers:**
- Truck - Intercity: 315
- Truck - Local: 167
- Subtotal: 482

**Other Carriers:**
- Railroads: 38
- Water (International 21 Domestic 5): 26
- Oil Pipelines: 9
- Air (International 8 Domestic 20): 28
- Forwards (International 8 Domestic 20): 10
- Subtotal: 111

### Shipper Related Costs
- 7

### Logistics Administration
- 36

**TOTAL LOGISTICS COST**
- 936

---

**Logistics Costs as a Percent of GDP**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
</tr>
</tbody>
</table>

---

**Figure 1**

**Figure 2**
Council of Logistics Management is the New Sponsor of the State of Logistics Report

- Earlier this year the Council of Logistics Management agreed to begin sponsorship of the report beginning with this 15th edition.
- CLM is also sponsoring the development of a quarterly index measuring the cost of U.S. logistics that will debut later this year at the 2004 CLM Annual Conference in Philadelphia. It will be based on methodology similar to that used to prepare the annual report.
Agenda

1. The cost of the U.S. business logistics system in 2003
3. The implications of globalization for the logistics industry
4. The expenditures managed by Third Party Logistics Services Providers in 2003
5. Summary, questions and clarifications

The U.S. Business Logistics System Cost is the Equivalent of 8.5 Percent of Current GDP in 2003

<table>
<thead>
<tr>
<th>Category</th>
<th>$ Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrying Costs - $ 1.493 Trillion All Business Inventory</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>17</td>
</tr>
<tr>
<td>Taxes, Obsolescence, Depreciation, Insurance</td>
<td>205</td>
</tr>
<tr>
<td>Warehousing</td>
<td>78</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>300</td>
</tr>
<tr>
<td>Transportation Costs</td>
<td></td>
</tr>
<tr>
<td>Motor Carriers:</td>
<td></td>
</tr>
<tr>
<td>Truck - Intercity</td>
<td>315</td>
</tr>
<tr>
<td>Truck - Local</td>
<td>167</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>482</td>
</tr>
<tr>
<td>Other Carriers:</td>
<td></td>
</tr>
<tr>
<td>Railroads</td>
<td>38</td>
</tr>
<tr>
<td>Water</td>
<td>26</td>
</tr>
<tr>
<td>Oil Pipelines</td>
<td>9</td>
</tr>
<tr>
<td>Air</td>
<td>28</td>
</tr>
<tr>
<td>Forwarders</td>
<td>10</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>111</td>
</tr>
<tr>
<td>Shipper Related Costs</td>
<td>7</td>
</tr>
<tr>
<td>Logistics Administration</td>
<td>36</td>
</tr>
<tr>
<td><strong>TOTAL LOGISTICS COST</strong></td>
<td>936</td>
</tr>
</tbody>
</table>
Total Business Inventories Are On the Rise Again

Source: U.S. Department of Commerce, Census Bureau

Commercial Paper Rates Continue to Plummet Holding Down Carrying Costs

Source: Board of Governors of the Federal Reserve System
"The question before us today is how efficient are we and what actions can be taken to improve our world competitiveness?"

### The U.S. Business Logistics System Cost in 1989 and 2003

<table>
<thead>
<tr>
<th></th>
<th>$ Billions</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2003</td>
<td>1989</td>
</tr>
<tr>
<td>Carrying Costs</td>
<td>300</td>
<td>228</td>
</tr>
<tr>
<td>Transportation Costs</td>
<td>593</td>
<td>327</td>
</tr>
<tr>
<td>Shipper Related Costs</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Logistics Administration</td>
<td>36</td>
<td>22</td>
</tr>
<tr>
<td>TOTAL LOGISTICS COST</td>
<td>$936</td>
<td>$581</td>
</tr>
</tbody>
</table>

Source: Armstrong & Associates Inc.

### 3PL/Contract Logistics Market Turnover Growth ($ Billions)

Source: Armstrong & Associates Inc.
The 3PL/Contract Logistics Market Grew by 8.2 Percent in 2003

<table>
<thead>
<tr>
<th>Third Party Service Providers</th>
<th>2003 Gross Revenue $ Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Transportation Management – Asset Based ¹</td>
<td>9.0</td>
</tr>
<tr>
<td>Domestic Transportation Management – Non Asset Based</td>
<td>21.4</td>
</tr>
<tr>
<td>Value-Added Warehouse/Distribution</td>
<td>19.8</td>
</tr>
<tr>
<td>International Transportation Management</td>
<td>23.5</td>
</tr>
<tr>
<td>3PL Software</td>
<td>3.0</td>
</tr>
<tr>
<td>Total Contract Logistics Market</td>
<td>76.9</td>
</tr>
</tbody>
</table>

¹ Primarily dedicated contract carriage

Source: Armstrong & Associates Inc.

“We conclude this Fifth Annual State of Logistics Report by recommending that your planning horizon assume a fast changing time-zero world...Our transportation systems are moving products and materials rapidly, economically, world-wide...It will be done even faster because it is all about time.”

Fifth Annual State of Logistics Report, 1994

IT IS STILL ALL ABOUT TIME!!
Outsourcing Pieces of the Supply Chain Equals Lower Costs for Some Companies

Source: Deloitte Touche Tohmatsu

Figure 15

World Merchandise Exports and Gross Domestic Product Rebounded in 2003

Source: World Trade Organization

Figure 16
Share of China in Exports and Imports of Major Traders, 2000 and 2002

(Percentage shares imports or exports)

<table>
<thead>
<tr>
<th></th>
<th>Imports</th>
<th></th>
<th>Exports</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>8.6</td>
<td>11.1</td>
<td>2.1</td>
<td>3.2</td>
</tr>
<tr>
<td>EU</td>
<td>6.8</td>
<td>8.3</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Japan</td>
<td>14.5</td>
<td>18.3</td>
<td>6.3</td>
<td>9.6</td>
</tr>
<tr>
<td>Developing Asia</td>
<td>7.2</td>
<td>10.0</td>
<td>7.0</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Figure 17

Benefits of Information Sharing

• Strengthens vendor-customer relations
• Facilitates planning at all levels
• Allows all partners in the supply chain to monitor shipment progress
• Minimizes bottlenecks created by waiting for proper documents
• Enables all parties to participate in process improvements
• Eliminates duplicate efforts
• Enhances supply chain security

Figure 18
“Wal-Mart is a tough customer, but they will share a tremendous amount of information to suppliers as part of their effort to reduce costs to the consumer, increase service levels, i.e. stock in stores, and to shorten the overall supply chain.”

Scott Elliff
Capital Consulting and Management, Inc.

As reported in The Journal of Commerce, January 2004

Information Flows are Often Bottlenecks in the Global Supply Chain

“A typical cross-border transaction involves filing 35 documents, interfacing with 25 parties and complying with more than 600 laws and 500 trade agreements.”

Adrian Gonzalez, ARC Advisory Group

As quoted in Traffic World, May 26, 2003
Security Requirements Add an Additional Level of Complexity to Information Requirements

- Security Assistance Act of 2002
- Customs-Trade Partnership Against Transportation Terrorism
- Food and Drug Administration’s Bioterrorism Act of 2002
- 24-Hour Advanced Manifest Rule
- Enables all parties to participate in process improvements
- Eliminates duplicate efforts
- Enhances supply chain security

Radio-Frequency Identification Tags (RFIDs) – The Wave of the Future?

Benefits
- Could supplant the use of bar codes to carry information used in supply chain
- Can carry more information than a bar code
- RFID readers can read multiple tags, unlike bar code readers

Drawbacks
- Lack of standardization
- High cost of tags and readers
Wal-Mart and the Department of Defense Are Requiring the Use of RFIDs by 2005

• Wal-Mart announced that its top 100 suppliers must comply with RFID use by January 2005
• Every pallet and case for Wal-Mart must have a RFID – some suppliers are having trouble complying
• Wal-Mart views the move as another step in their management of items at the store level
• Department of Defense requirements are somewhat different – the Pentagon wants encrypted tags
• To prevent the radio frequency from disclosing locations, would rather use passive tags that are powered by the readers

Source: U.S. Department of Commerce, Census Bureau
Summary

- 2003 Logistics Costs rose to $936 billion, but fell to the equivalent of 8.5 percent of nominal GDP
- Inventory to Sales ratio decline to a new low of 1.32 months of supply during 2003
- Globalization is a reality for the logistics industry and will require innovative and individualized supply chain solutions
- Third-party logistics providers will continue to capture an increasing share of the market as they offer end-to-end solutions

Summary

- China is redrawing the world trade landscape as it expands into new markets
- Real-time, reliable, and accurate logistics information must become more free-flowing and be shared with all partners in the supply chain
- Security concerns and regulations will continue on the forefront of transportation issues
## The Cost of the Business Logistics System in Relation to Gross Domestic Product

$ Billion Except GDP

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>3.26</td>
<td>760</td>
<td>30.8%</td>
<td>234</td>
<td>222</td>
<td>18</td>
<td>474</td>
<td>14.5</td>
<td>7.2</td>
<td>6.8</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1983</td>
<td>3.54</td>
<td>758</td>
<td>27.9%</td>
<td>211</td>
<td>243</td>
<td>18</td>
<td>472</td>
<td>13.3</td>
<td>6.0</td>
<td>6.9</td>
<td>83</td>
<td>101</td>
<td>92</td>
<td>109</td>
</tr>
<tr>
<td>1984</td>
<td>3.93</td>
<td>826</td>
<td>29.1%</td>
<td>240</td>
<td>268</td>
<td>20</td>
<td>528</td>
<td>13.4</td>
<td>6.1</td>
<td>6.8</td>
<td>85</td>
<td>100</td>
<td>92</td>
<td>121</td>
</tr>
<tr>
<td>1985</td>
<td>4.22</td>
<td>847</td>
<td>26.8%</td>
<td>227</td>
<td>274</td>
<td>20</td>
<td>521</td>
<td>12.3</td>
<td>5.4</td>
<td>6.5</td>
<td>75</td>
<td>95</td>
<td>85</td>
<td>129</td>
</tr>
<tr>
<td>1986</td>
<td>4.46</td>
<td>843</td>
<td>25.7%</td>
<td>217</td>
<td>281</td>
<td>20</td>
<td>518</td>
<td>11.6</td>
<td>4.9</td>
<td>6.3</td>
<td>68</td>
<td>93</td>
<td>80</td>
<td>137</td>
</tr>
<tr>
<td>1987</td>
<td>4.74</td>
<td>875</td>
<td>25.7%</td>
<td>225</td>
<td>294</td>
<td>21</td>
<td>540</td>
<td>11.4</td>
<td>4.7</td>
<td>6.2</td>
<td>66</td>
<td>91</td>
<td>78</td>
<td>145</td>
</tr>
<tr>
<td>1988</td>
<td>5.10</td>
<td>944</td>
<td>26.6%</td>
<td>251</td>
<td>313</td>
<td>23</td>
<td>587</td>
<td>11.5</td>
<td>4.9</td>
<td>6.1</td>
<td>69</td>
<td>90</td>
<td>79</td>
<td>156</td>
</tr>
<tr>
<td>1989</td>
<td>5.48</td>
<td>1005</td>
<td>28.1%</td>
<td>282</td>
<td>329</td>
<td>24</td>
<td>635</td>
<td>11.6</td>
<td>5.1</td>
<td>6.0</td>
<td>72</td>
<td>88</td>
<td>80</td>
<td>168</td>
</tr>
<tr>
<td>1990</td>
<td>5.80</td>
<td>1041</td>
<td>27.2%</td>
<td>283</td>
<td>351</td>
<td>25</td>
<td>659</td>
<td>11.4</td>
<td>4.9</td>
<td>6.1</td>
<td>68</td>
<td>89</td>
<td>78</td>
<td>178</td>
</tr>
<tr>
<td>1991</td>
<td>6.00</td>
<td>1030</td>
<td>24.9%</td>
<td>256</td>
<td>355</td>
<td>24</td>
<td>635</td>
<td>10.6</td>
<td>4.3</td>
<td>5.9</td>
<td>59</td>
<td>87</td>
<td>73</td>
<td>184</td>
</tr>
<tr>
<td>1992</td>
<td>6.34</td>
<td>1043</td>
<td>22.7%</td>
<td>237</td>
<td>375</td>
<td>24</td>
<td>636</td>
<td>10.0</td>
<td>3.7</td>
<td>5.9</td>
<td>52</td>
<td>87</td>
<td>69</td>
<td>194</td>
</tr>
<tr>
<td>1993</td>
<td>6.66</td>
<td>1076</td>
<td>22.2%</td>
<td>239</td>
<td>396</td>
<td>25</td>
<td>660</td>
<td>9.9</td>
<td>3.6</td>
<td>5.9</td>
<td>50</td>
<td>87</td>
<td>68</td>
<td>204</td>
</tr>
<tr>
<td>1994</td>
<td>7.07</td>
<td>1127</td>
<td>23.5%</td>
<td>265</td>
<td>420</td>
<td>27</td>
<td>712</td>
<td>10.1</td>
<td>3.7</td>
<td>5.9</td>
<td>52</td>
<td>87</td>
<td>69</td>
<td>217</td>
</tr>
<tr>
<td>1995</td>
<td>7.40</td>
<td>1211</td>
<td>24.9%</td>
<td>302</td>
<td>441</td>
<td>30</td>
<td>773</td>
<td>10.4</td>
<td>4.1</td>
<td>6.0</td>
<td>57</td>
<td>88</td>
<td>72</td>
<td>227</td>
</tr>
<tr>
<td>1996</td>
<td>7.82</td>
<td>1240</td>
<td>24.4%</td>
<td>303</td>
<td>467</td>
<td>31</td>
<td>801</td>
<td>10.2</td>
<td>3.9</td>
<td>6.0</td>
<td>54</td>
<td>88</td>
<td>70</td>
<td>240</td>
</tr>
<tr>
<td>1997</td>
<td>8.30</td>
<td>1280</td>
<td>24.5%</td>
<td>314</td>
<td>503</td>
<td>33</td>
<td>850</td>
<td>10.2</td>
<td>3.8</td>
<td>6.1</td>
<td>53</td>
<td>89</td>
<td>70</td>
<td>255</td>
</tr>
<tr>
<td>1998</td>
<td>8.75</td>
<td>1317</td>
<td>24.4%</td>
<td>321</td>
<td>529</td>
<td>34</td>
<td>884</td>
<td>10.1</td>
<td>3.7</td>
<td>6.0</td>
<td>51</td>
<td>89</td>
<td>69</td>
<td>268</td>
</tr>
<tr>
<td>1999</td>
<td>9.27</td>
<td>1381</td>
<td>24.1%</td>
<td>333</td>
<td>554</td>
<td>35</td>
<td>922</td>
<td>10.0</td>
<td>3.6</td>
<td>6.0</td>
<td>50</td>
<td>88</td>
<td>68</td>
<td>284</td>
</tr>
<tr>
<td>2000</td>
<td>9.82</td>
<td>1478</td>
<td>25.3%</td>
<td>374</td>
<td>590</td>
<td>39</td>
<td>1003</td>
<td>10.2</td>
<td>3.8</td>
<td>6.0</td>
<td>53</td>
<td>88</td>
<td>70</td>
<td>301</td>
</tr>
<tr>
<td>2001</td>
<td>10.10</td>
<td>1486</td>
<td>22.8%</td>
<td>339</td>
<td>581</td>
<td>37</td>
<td>957</td>
<td>9.5</td>
<td>3.4</td>
<td>5.8</td>
<td>47</td>
<td>84</td>
<td>65</td>
<td>310</td>
</tr>
<tr>
<td>2002</td>
<td>10.48</td>
<td>1444</td>
<td>20.6%</td>
<td>298</td>
<td>577</td>
<td>35</td>
<td>910</td>
<td>8.7</td>
<td>2.8</td>
<td>5.5</td>
<td>40</td>
<td>81</td>
<td>60</td>
<td>321</td>
</tr>
<tr>
<td>2003</td>
<td>10.99</td>
<td>1493</td>
<td>20.1%</td>
<td>300</td>
<td>600</td>
<td>36</td>
<td>936</td>
<td>8.5</td>
<td>2.7</td>
<td>5.5</td>
<td>38</td>
<td>80</td>
<td>59</td>
<td>337</td>
</tr>
</tbody>
</table>

Data Sources:
- National Income and Products Accounts - Levels; Survey of Current Business March 2004
- U.S. Statistical Abstract: U.S. Department of Commerce
- Transportation in America: Rosalyn Wilson, 2004 ENO Transportation Foundation, Washington, DC

Methodology: