TRENDS SHAPING THE FUTURE OF FREIGHT

FREIGHT MATTERS webinar series
March 29, 2017
Webinar Housekeeping

• Submit a question via the Questions box on your GoTo control panel.

• After the presentation, as time permits, our EPA presenter will answer questions submitted via the Questions box.

• Please complete the survey at the end of today’s webinar. Your feedback is important to us!
Webinar Housekeeping

The presentation slides and recording will be available at:

http://www.epa.gov/smartway/smartway-webinars-events

(select the “Past Webinars/Events” tab)
SmartWay

Attention Truck Carrier Partners:
The 2017 SmartWay Truck Carrier Tool is now available, with supporting documents.

Learn about SmartWay
- Overview of SmartWay
- Why Freight Matters
- How SmartWay Advances Sustainable Transportation Supply Chains
- Carbon Accounting & Reporting
- SmartWay Program Successes
- Trends, Indicators & Partner Statistics (TIPS)

Participate in SmartWay
- How to Participate in SmartWay
- How the SmartWay Partnership Works
- Become a SmartWay:
  - Shipper
  - Logistics Company
  - Carrier
  - Affiliate
- Tools & Resources for Partners & Affiliates

SmartWay Latest News
Watch our new About SmartWay video to learn how efficient freight improves supply chain performance!
More SmartWay News

Upcoming Webinars & Events
- Education Webinar, March 15, 2017: Shippers: Learn About Resources For Aligning Win-Win Relationships With Your Carriers
- Freight Matters! Webinar, March 29, 2017: Key Trends Shaping the Future of Freight
More SmartWay webinars & events
SmartWay Webinars & Events

EPA hosts events and webinars to help you learn how to get the most out of the SmartWay Program.

**Upcoming Webinars:** To participate in an upcoming SmartWay webinar, you must pre-register. Registration links are provided below in webinar descriptions. After registering, you will receive a confirmation email containing information about joining the webinar.

**Past Webinars:** Selecting the “Past Webinar Resources” tab shows you previous training topics and may include additional resources such as slides, recordings, and transcripts.

**Freight Matters Webinar Series:** Hear from leaders in the industry about freight-related trends and issues that matter to your business.

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**Suggest a Webinar Topic:** If you would like to see a webinar about a particular topic, email your idea (smartway.transport@epa.gov) with the subject line “SmartWay Webinar Suggestion.”

**Event Type Legend**

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<thead>
<tr>
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<tr>
<td>Education Webinar</td>
<td>March 15, 2017</td>
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<tr>
<td>Freight Matters Webinar</td>
<td>March 20, 2017</td>
<td>Key Trends Shaping the Future of Freight</td>
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</table>
Denise Kearns
Environmental Protection Specialist
U.S. Environmental Protection Agency

Denise is a key member of EPA’s communications team that supports the agency’s SmartWay program, a public-private partnership that since 2004 has reduced fuel use by over 170 million barrels of oil, lowered fuel costs by almost $25 billion, and achieved significant reductions in carbon, NOX and particulate.
TODAY’S TOPICS

- Emergence of clean freight & efficiency in the U.S.
- Current trends in freight transportation
- Supply chain logistics and the e-commerce BOOM!
- Green retail in an era of change
U.S. transportation energy use & emissions

• Transportation consumes roughly 2/3 of all *petroleum-based* fuel use & emits almost 1/3 of all carbon and other harmful emissions in the U.S.

• Freight sector accounts for over 25% of all fuel consumed and air emissions from transportation

• For trucking companies, fuel is second high operational cost

• Freight sector is the fastest growing source of transportation emissions globally
U.S. leadership in clean freight & efficiency

- **NEW EQUIPMENT**
  - Emissions and fuel efficiency standards for medium and heavy duty trucks

- **‘LEGACY FLEET’**
  - Clean diesel grant, loan & community programs

- **EQUIPMENT, TECHNOLOGY, COLLABORATION, SUPPLY CHAIN**
SmartWay, transportation efficiency, collaboration and clean air

- Improve U.S. freight efficiency and competitiveness
- Highlight industry efforts to improve sustainability
- Provide a standardized benchmarking and performance assessment system
- Facilitate collaboration between freight carriers, 3PLs and shippers
- Address trends, future opportunities for freight sustainability
Bob Costello
Chief Economist & Senior Vice President
American Trucking Associations (ATA)

As chief economist for ATA, Bob manages ATA's collection, analysis and dissemination of trucking economic information, regularly producing several reports about trucking economic activity, an annual freight transportation Forecast, driver wage studies, weekly diesel fuel price and economic reports and a yearly trucking almanac.

Bob is often cited in the news media as an expert on trucking economics, including the Wall Street Journal, Business Week, CNBC, FOX Business Channel and National Public Radio.
Trucking’s Importance to the Economy Has Surged Over the Decades

Billions of Tons

Source: U.S. Freight Transportation Forecast to 2027, Eno Foundation, ATA
Distribution of Tonnage by Mode: 2015

- **Total Trucking: 70.1%**
  - TL: 34.9%
  - LTL: 1.0%
  - Private: 35.0%
  - Rail Carload: 11.8%
  - Pipeline: 10.5%
  - Rail Intermodal: 1.3%
  - Water: 5.3%
  - Air: 0.1%

**2015**

**Truck Tonnage Only**

Source: U.S. Freight Transportation Forecast to 2027
Fact: In 2015, the top 20 for-hire TL carriers accounted for just 11% of total TL industry revenue.

Sources: U.S. Freight Transportation Forecast to 2027; American Trucking Trends
Trucking is Ultra Competitive, Leading to Small Margins

**Number of For-Hire Firms**

- **Motor Carriers**: 586,114
- **Rails**: 575

**Operating Margins**

- **Motor Carriers**: < 5%
- **Rails**: > 20%

*There are over 500,000 private fleets as well, some which are beginning to do some for-hire (back hails).

**There are 7 Class I railroads and the remaining are short-lines.

Sources: FMCSA, AAR, ATA
Trucks vs Trains

More Fiction Than Fact
All Modes of Freight Transportation Will Grow

Total Increase in Tonnage from 2015 to 2027

Source: U.S. Freight Transportation Forecast to 2027
Tonnage Growth 2015 to 2027
& Market Share in 2027
(Baseline Forecast)

Sources: ATA & U.S. Freight Transportation Forecast to 2027
Instead of growing 61% from 2015 to 2027, we doubled Intermodal’s growth rate all at the expense of trucking – the impact is very small.

Sources: ATA & U.S. Freight Transportation Forecast to 2027
Sources: ATA & U.S. Freight Transportation Forecast to 2027
2015 Competitive Freight Among Truck and Rail Tonnage

Billions of Tons

FACT: Trucks and Trains Compete on a Very Limited Basis

Note: Maximum competitive freight is 1.2 billion tons in a total market (truck and rail only) of 12.6 billion tons, or less than 10%. Competitive freight includes all freight traveling at least 500 miles, but excludes coal tonnage. There is a significant amount of time definite freight in this category that really isn’t competitive, but it is included. So in reality, the competitive market is even smaller than suggested here.

Source: ATA Analysis based on Commodity Flow Survey (US Census Bureau) data and US Freight Transportation Forecast to 2027
Recent Trends Impacting the Industry
It is now difficult for loads to grow as fast as GDP for a host of reasons, including:
- Miniaturization of freight (products and packaging)
- Services are a growing part of our economy, and we don’t put services in trailers
- We are buying more “experiences”, which generate less freight

Source: ATA
Dry Van Average Length-Of-Haul is Down

Source: ATA
Patrick Browne serves as Director of Global Sustainability for UPS, a global leader in logistics, offering a broad range of solutions including the transportation of packages and freight. He is responsible for managing various sustainability initiatives and strategies’ working with cross-functional teams from various business units within the company. Patrick has been managing UPS’s sustainability programs since 2008, which includes calculating and reporting UPS’s global GHG inventory and reductions. Patrick joined UPS 28 years ago and has held various assignments throughout the company.

Patrick is active with many agencies and organizations focused on advancing sustainability practices around the world. He resides in Atlanta Georgia with his wife.
Supply Chain Logistics & the e-commerce Boom

Patrick Browne – Director, Global Sustainability
Global Trends Impacting Supply Chain Logistics

- Climate Change
- Global Trade
- Urbanization
- e-commerce
More Residential Deliveries

More Stops

More Miles, Fuel and Emissions
UPS Rolling Laboratory

A diverse fleet of alternative fuel and advanced technology vehicles.

Through our rolling laboratory, we can determine how alternative fuels and advanced technologies perform in real-world operating conditions, quickly deploy viable options at scale, and spur market growth for alternative solutions.

- **Propane**
  - Rural routes of 100+ miles

- **Electric/Hydraulic Hybrid**
  - Suburban trips that average 100 miles

- **Electric**
  - City center trips less than 60 miles

- **Ethanol**
  - City center trips less than 60 miles

- **Electrically Assisted Tricycle**
  - Such as Cargo Cruisers in city centers for trips less than 20 miles

- **Liquefied & Compressed Natural Gas (LNG & CNG)**
  - Regional long haul trips of 400-600 miles; CNG package cars also support suburban routes of ~100 miles

- **Biomethane or RNG**
  - Regional long haul trips between 400 and 600 miles

- **Package Car of the Future**
  - Will use advanced propulsion, maintenance forecasting systems, and high-tech materials to deliver millions of packages a day more sustainably
A More Sustainable Shipping Journey

We know many of our customers want to ship more, with less impact. We offer sustainable solutions to help minimize the environmental impacts associated with their supply chains.

1. Analyzing
   Carbon Impact Analysis helps customers understand the climate impact of UPS shipments. We use the findings to offer optimization techniques that improve efficiency and reduce impact.

2. Packing
   Our Eco Responsible Packaging Program recognizes shippers who are committed to sustainable packaging. Shippers who meet criteria for damage prevention, appropriate sizing, and packaging material can participate. We also offer a packaging solution that enables customers to create a right-sized box for any item.

3. Shipping
   UPS carbon neutral shipping is an easy, cost-effective way to offset GHG emissions from shipments of any size. With UPS Smart Pickup service, customers can schedule a pickup only when needed, avoiding unnecessary trips and emissions.

4. Receiving
   UPS My Choice service enables customers to adjust delivery times or locations, while UPS Access Point locations enable centralized pickup. These solutions increase customer convenience and help avoid unnecessary trips, miles, and emissions.

5. Returning
   We simplify returns for customers and consumers with turnkey packaging, preprinted labels and more than 150,000 convenient drop-off and pickup locations. UPS’s reverse logistics solutions also help customers reclaim and refurbish products to be used again.
Thank you
Carla Stickler
Senior Analyst
Carrier Relations and Solutions
Home Depot Supply Chain

With over 9 years of experience in privately owned and global multi-billion dollar corporations, Carla has developed an in-depth knowledge of integrating transportation sourcing solutions and process improvement strategies across various Supply Chain platforms. In her current role at The Home Depot, she also serves as Mentor for the EPA to ‘coach’ new suppliers on the SmartWay® Program.
THD Moves ~9 Million Shipments/Loads Each Year
Supply Chain Carbon Emission

Six Year Results:
- Reduced Emission by over 30%
- Increased shipped inventory by 50%
  - Network Optimization Efforts
  - Improved Cube utilization
  - Shifting LTL to Truckload
  - Truckload Conversion to Rail

Results:
- Eliminated over 1 Million Metric Tons of Carbon
- Eliminated 200 Million Travel Miles
## Supply Chain Transformation

<table>
<thead>
<tr>
<th></th>
<th>Prior to 2007 % of COGS</th>
<th>2015 % of COGS</th>
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<tbody>
<tr>
<td>RDC</td>
<td>~30%</td>
<td>~50%</td>
</tr>
<tr>
<td>Stocking &amp; Bulk</td>
<td>~30%</td>
<td>~20%</td>
</tr>
<tr>
<td>Direct to Store</td>
<td>~70%</td>
<td>~30%</td>
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Synchronize Flow and Manual Floor Load
Transportation Modal Shifts

- **2014**
  - 22K truckloads to Intermodal Rail
  - Inbound Freight Consolidation - LTL to Truckload
  - Removed 22 million miles of truck travel

- **2015**
  - 5K truckloads to Intermodal Rail
  - Removed 4.8 million miles of truck travel

- **2016**
  - Multi-Stop Truckload from Vendors
  - Removed 18 million miles of truck travel
Direct Fulfillment-Online

DF DC Network
SmartWay®

EPA’s SmartWay® Excellence Award in 2016, 4th year in a row!

- SmartWay® Partner since 2004
- Score our carriers based on compliance to SmartWay® program requirements
- Serving as a Mentor for the EPA to ‘coach’ new supplier on the SmartWay® Program
Questions?