Sustainable Supply Chains: How New Mobility Strategies and Technologies Are Changing Goods Movement

Susan Zielinski: Manager Director, UM Sustainable Mobility Accessibility Research and Transformation (SMART)
  • Summarized the wide range of New Mobility strategies and technologies that advance sustainable next generation goods movement
  • Goods movement is growing and changing fast
  • There are many emerging opportunities including new technologies, services, products, policies, and business models
  • One simple way to address emerging needs and opportunities is to reduce the negative impacts of trips to make the supply chain more efficient
  • At the very basic level, some of the approaches to negative impact reduction include alternative fuels, lighter materials, vehicle design, and speed limits
  • Beyond the basics, IT-enabled load and route optimization, multi-modal integrated systems, and physical consolidation, are being implemented.
  • One of the most transformational elements of next generation goods movement is information technology and big data, enabling monitoring, seamlessness, security, and more
  • Some of the barriers to sustainable and efficient goods movement include competitiveness, lack of understanding and information, lack of integrated policy, and fragmentation of solutions and lead players
  • Some of the most effective approaches to sustainable goods movement involve bringing together players from the public sector, the private sector, NGO’s and research.

Sophie Punte: Executive Director, Smart Freight Center, Amsterdam
  • Discussed the complex global issues related to the sustainable freight movement
  • Global freight and logistics sector has challenges such as explosive growth, inefficiency, and high impact such as CO2 emissions
  • Solutions to these problems include cleaner fuels, reducing trips, and a multi-modal freight optimization
  • To solve these problems, industry must do the heavy lifting, but they will need the help from others such as the government, private sector, and civil society
  • The automotive sector can strengthen green freight programs such as Lean and Green
  • Adopting the GLEC Framework as the universal way of logistics emissions accounting can also help regulate emissions more effectively
Thomas Kearney: Transportation Specialist at Federal Highway Administration (USDOT)
- Discussed FHWA’s strategy and projects related to sustainable goods transport
- Large portion of the public sector decision making is done at the state level
- By using the North American Fluidity Analysis, the automotive supply chain with border crossing took a straight path and the shortest travel time
- With the FHWA probe data representation of the same automotive supply chain, the travel time was significantly faster, and the trips taken were not direct
- Goal is to work with partners on continued supply chain analysis and state and regional analyses
- Partnership would allow for improved data and the investigation of aggregated transaction options

Cheryl Bynum: National Program Manager, SmartWay
- Discussed the key strategies SmartWay partners use to save fuel, money, and protect the environment
- Freight CO2 emissions are growing faster than passenger transportation
- Some technologies can be disruptive
- Mega-ships may be more efficient for ocean route, but they may produce higher shore side emissions
- E-commerce may lead to fewer consumer trips, but many of these last mile trips are done by smaller trucks
- 3-D printing may allow for the fewer shipment of finished goods, but it can also lead to an increased in the demand for goods, especially disposable goods
- SmartWay extends business’ capacity to respond to market signals about sustainability
- Help companies improve their transportation operations. They are a voluntary partnership to promote the greener goods movement

Komal Anand: Research Area Specialist, University of Michigan SMART
- Described a broad range of examples of New Mobility innovations and enterprises from around the world that address:
  - SUPPLY CHAIN EFFICIENCIES. These include examples of platforms for intermodal efficiencies; crowdshipping; innovative delivery services; last mile, capillaries etc.;
  - TRIP REDUCTION & REPLACEMENT. These include examples of approaches like route & load optimization; light & efficient product design; fleet management; local production & distribution; tele-everything etc.
  - REDUCING IMPACT OF TRIPS. These examples employ clean fuels, improved vehicle design, human power vehicles, alternative delivery times etc.
- Described how the SMART Mobi platform (www.mobi-platform.com) of global enterprise includes a wide range of sustainable supply chain innovations along with innovations in people movement. Mobi’s goals are to source innovators, entrepreneurs, and investors, to support data-driven knowledge, to enable a robust B to B Eco-System, to share information, and more broadly to advance a multi-trillion dollar New Mobility industry.

Mary Wroten: Senior Manager, Supply Chain Sustainability, Ford Motor Company
- Discussed her work with Ford’s supply base in supporting Ford’s sustainability goals, particularly with the environment
- Environmental initiatives at Ford include analyzing and quantifying freight GHG emissions, improving efficiency to reduce emissions, and increasing sustainable packaging materials
- Ford utilizes a multi-faceted approach to reduce freight emissions by optimizing operations and using greener modes of transportation such as rail and water
- Water-saving technologies and process improvements have been implemented across Ford’s global operations.
Dave Hoover: Director of Outbound Logistics, Meijer Food Stores
- Discussed Meijer’s recent innovations in logistics and supply chain management
- Meijer has one of the most fuel efficient fleets in the industry
- Fleet is 100 percent EPA/SmartWay Clean Diesel Emissions certified
- Meijer has cultivated a range of initiatives that focus on minimizing their environmental impact
- Some of the supply chain trends include aisle ready pallets, taller pallets, and aisle ready totes

Mike Dargis: President, Zip Xpress
- Discussed the recent research that Zip Xpress has completed on the issue of carbon footprint reporting and their load optimization program as it relates to manufacturers product delivery
- Zip Xpress has focused on load optimization
- Zip Xpress has created a metric known as carbon per unit of freight
- Allows for a less ambiguous carbon emissions report. Their goal is to have higher utilization and lower emissions which will lead to a sustainable business

Mike Maceroni: Director of Sales, Global Logistics and Distribution
Brian Becker: Director of Sustainability, UPS
- Discussed the sustainable supply chain strategies that UPS is employing today as well as some of their future strategies
- UPS is testing many new technologies and utilizing an alternate fuel and advanced technology fleet
- Moving more volume and emitting less carbon
- UPS has a carbon emissions calculator to provide an accurate and certified measurement of the transportation CO2 emissions
- Supply chain optimization services include warehouse and network optimization to help create efficiencies and reduce the impact across the enterprise
- To minimize the environmental impact of packaging, optimized packing solutions were determined
- UPS also helps consumers minimize the environmental impacts of their supply chain which allows for fewer trips, less fuel, and reduced emissions

Cherry Burke: Associate Director of Logistics EHS and Sustainability, Dow Chemical Corporation
- Discussed the sustainability goals that Dow Chemical Corporation has set for 2025 and what they are doing to meet these goals, including innovative logistics and supply chain strategies
- Dow’s 2025 sustainability goals include delivering breakthrough innovation, engaging employees for impact, valuing nature, leading the industry in its blueprint for sustainability, and increase confidence in chemical technology
- Over the next decade, Dow will continue to reduce its own operation footprint, and deliver a blueprint for a sustainable planet and society
- Dow is working towards having sustainable suppliers, becoming more energy efficient, and creating sustainable packaging

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