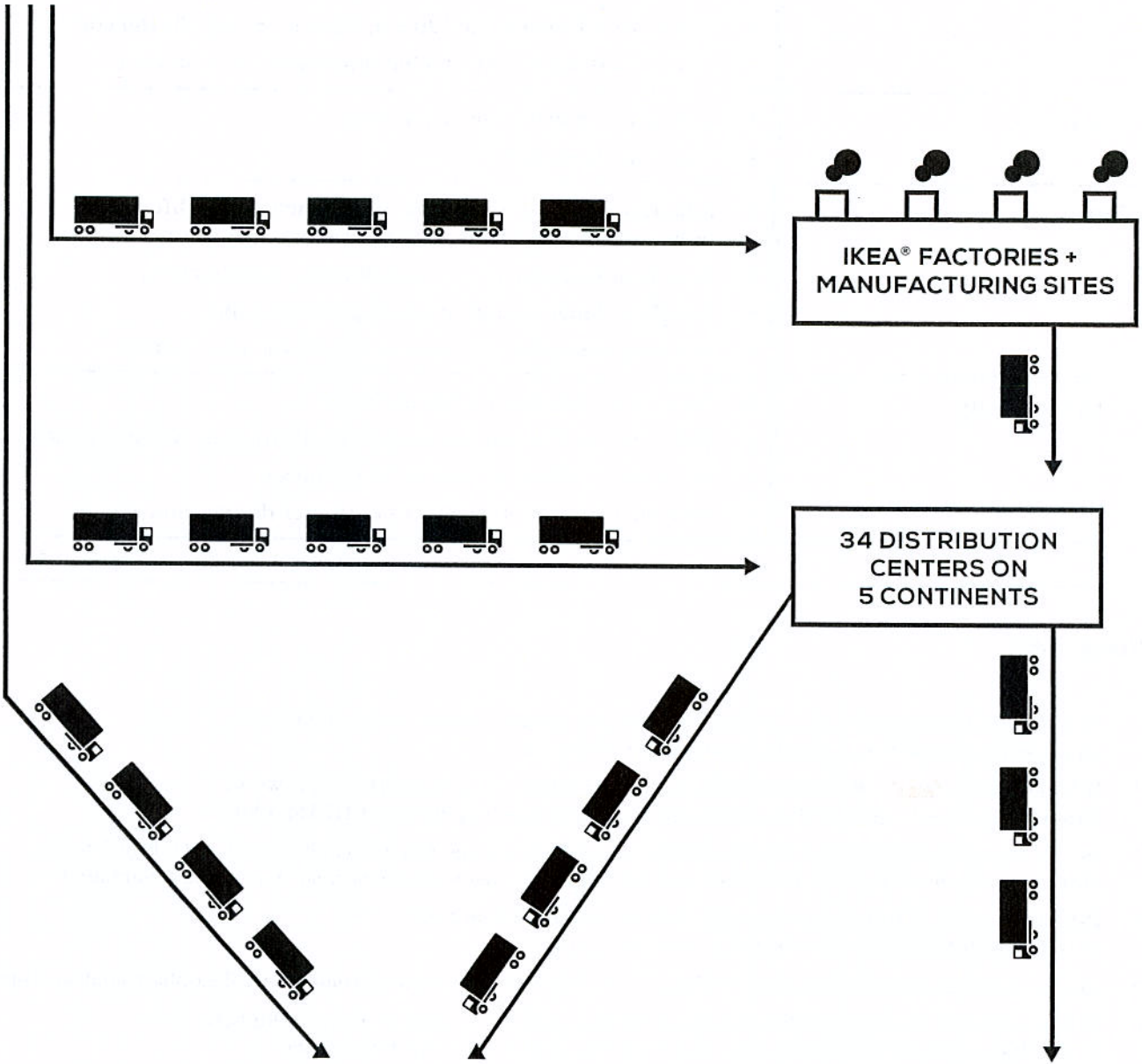
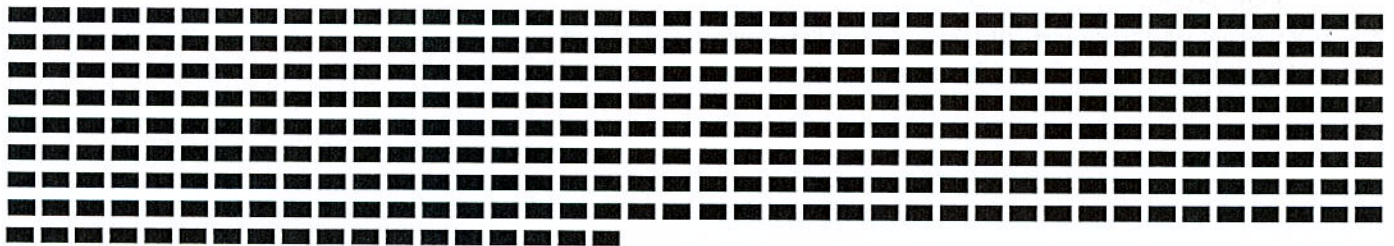


Diagram of IKEA® Supply Chain

UPSTREAM 1,000+ SUPPLIERS IN 51 COUNTRIES



DOWNSTREAM 315 STORES IN 27 COUNTRIES ON 5 CONTINENTS



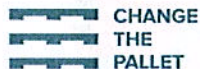
— CHANGE THE PALLET

Case Study of IKEA® System-Wide Adoption

IKEA® Project Name:	Handling Material No Wood (HM NOW) ⁵
Project Description:	Switch from wood to paper pallets throughout the global supply chain—including all suppliers to IKEA® ⁵
Project Launch Date:	January 2012 ³
Project Objectives:	<ul style="list-style-type: none"> ▪ Reduce transport costs by \$193 million per year (10% of total)² ▪ Reduce 20% of CO₂ emissions per cubic meter of products transported by 2016 (base: 2011)¹
Preliminary Project Results:	<ul style="list-style-type: none"> ▪ [By October 2012], “approximately 90% of our transport of products between factories and distribution centers already use paper pallets. This has enabled us to avoid between 50,000 and 100,000 transport movements a year.” Jerome Jansen, Packaging Requirements & Compliance Specialist at IKEA®⁴ ▪ In one year (FY 2012) CO₂ emissions per cubic meter of products transported was reduced by 7.3%¹ and by the end of 2013 the reduction reached 10.5%⁸, putting IKEA® well on its way to reach the 2016 target of 20% reduction (see Project Objectives above)
Operational Objectives:	<ul style="list-style-type: none"> ▪ Cube efficiency in transport⁵; optimal loading of trucks to avoid empty spaces and reduce the number of transports between factories and stores⁴ ▪ Increase operational efficiency by avoiding the need to transport wood pallets to and from production sites⁴ ▪ Reduce product damage⁴
Key Drivers to Attain the Objectives:	<ul style="list-style-type: none"> ▪ Corrugated pallet size flexibility (customization)¹ ▪ Corrugated pallet weight (90% lighter) and size (1/3 the height of wood pallets)⁶ ▪ More than 1,000 suppliers in 50+ countries required to deliver to IKEA® on corrugated pallets² ▪ Usage of bigger trucks and containers¹
Key Metrics:	<ul style="list-style-type: none"> ▪ Filling rates for transport of product (transport from suppliers to distribution centers)¹ ▪ Cubic meters of products per shipment¹ ▪ Reduction of truck trips³ ▪ Reduction in CO₂e per cubic meter of product transported¹
Quotes:	<ul style="list-style-type: none"> ▪ “We hope this will be the start in making transportation systems smarter and freight as compact as possible.” Jeannette Skjelmoose, Sustainability Chief at IKEA®’s supply-chain unit.² ▪ “We don’t know if the paper pallet will be the ultimate solution, but it’s better than wood.” Jeannette Skjelmoose, Sustainability Chief at IKEA®’s supply-chain unit.²

SUPPORTING DOCUMENT C

OVERVIEW OF IKEA'S WORLDWIDE CORRUGATED PALLET PROGRAM



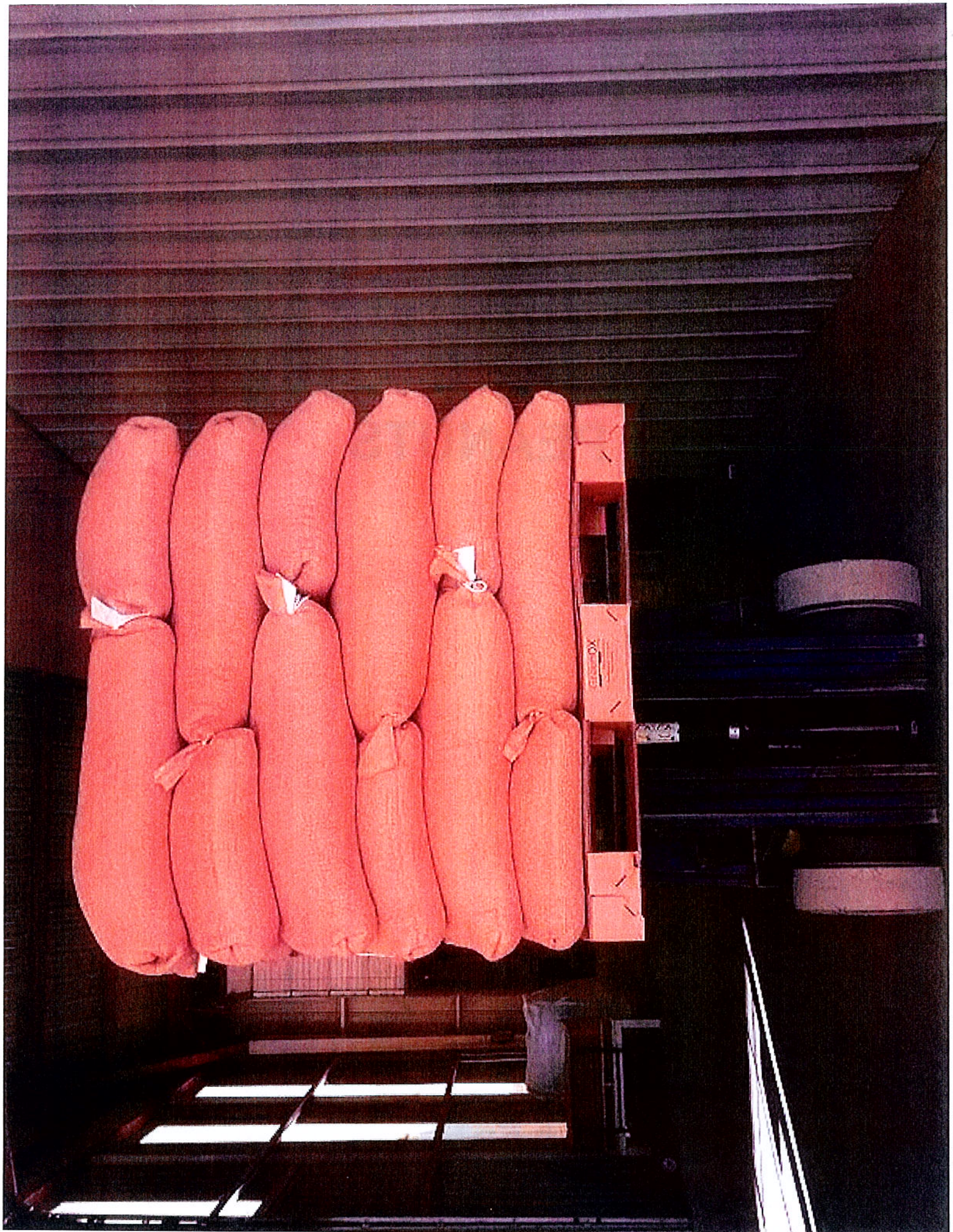
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Change the Pallet™ is a project of The Forward Edge Initiative™ (FEI), an Oregon-based 501(c)3.

Custom Trailer Configuration Using Corrugated Pallets

53' Semi-Trailer





There is little question that once Oregon makes this change, corrugated pallets will be specified in public contracts throughout the country. The question is, does Oregon have the vision to go first? IKEA set a global precedent in the private sector, proving the concept and reducing emissions by 75,000 metric tons per year in the process. I hope very much that our state is the next global leader to seize the opportunity to reduce costs and emissions, and set the trend for state and local governments across the nation.



Wood Pallets vs. Corrugated Pallets

While the use of wood pallets vary, the National Wood Pallet & Container Association (NWPCA) says the average wood pallet gets five uses before it goes to the landfill. However, Modern Material Handling's 2010 Pallet Survey states that 29% of respondents use a pallet only once: http://www.mmh.com/images/site/MMH1009_SpecialRptPallet.pdf.

With proper handling and usage, corrugated pallets can be used all the way through the supply chain. IKEA recycles the pallet at the last stop on their supply chain. Corrugated cardboard pallets have been compression-tested up to 10,000 pounds. IKEA regularly ships on a smaller, Euro-style pallet. Those pallets are reported by IKEA staff to hold as much as 3-4K pounds per pallet. The picture in Supporting Document A is a standard U.S. corrugated pallet holding 2,700 pounds of peanuts, and full truckloads are shipped each week from Texas to Mexico without incident.

When conducting its evaluation of all available pallet life-cycle analyses (LCA's), Change The Pallet applied the NWPCA's number of five uses per pallet, and very conservatively assumed only one use per corrugated pallet before recycling. The positive impact on the environment by switching to corrugated paper was still substantial due to the ability to reduce the number of trucks needed to ship the same amount of product.

Further, our evaluation found that the environmental impact of making one million wood pallets versus one million corrugated pallets is negligible. Corrugated pallets, however, are significantly better for the environment because they reduce truck requirements at each phase of the supply chain:

- (i) From point-of-manufacturing to point-of-use, during which an average of 1,700 corrugated pallets can fit on a truck compared to only 400 wood ones
- (ii) During product transport, where IKEA reports conservatively a 15% increase in the amount of product it can put on a truck due to the pallet weight, height, size configuration, and the ability to pack the truck to the top of the container cabin
- (iii) End of life, where only 400 wood pallets can fit on a truck compared to compacted corrugated pallets going into a recycling bin

Oregon's government agencies are usually at the end of a pallet's life cycle, where the pallet becomes a liability. According to Republic Services, it costs roughly \$50-\$100 / ton to dispose of wood materials versus receiving \$200 / ton for corrugated recycling. The House Transportation Committee should ask the Department of Administrative Services and other state agencies with procurement authority how many wood pallets are received each year, and what is the total cost to dispose of those pallets? How many injuries are incurred by handling wood pallets?

House Bill 4089 provides an exemption in use of corrugated pallets for prolonged inclement weather in accordance with a corrugated manufacturer's recommendations for proper use of a corrugated pallet. Corrugated pallets can have a water-resistant barrier applied at a nominal additional charge. Coating does not affect recycling. We anticipate that the most regular use by a government agency is dry-dock shipping to dry-dock receiving.



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