

# The Evolving Freight Supply Chain: An Overview

National Capital Region Transportation Planning Board  
Freight Subcommittee Meeting  
March 2017



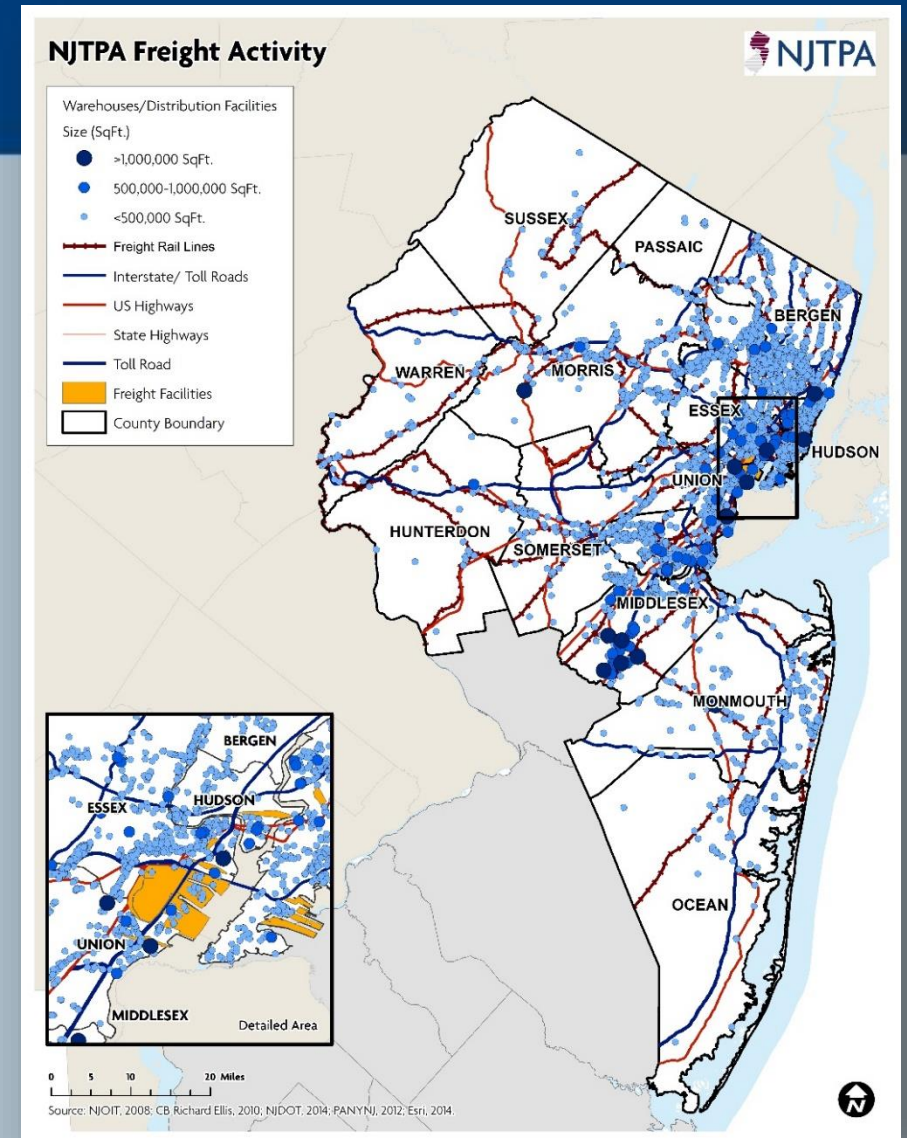
Anne Strauss-Wieder  
Director, Freight Planning  
North Jersey Transportation Planning Authority



NORTH JERSEY  
TRUCK CENTER  
FREIGHTLAND

# New Jersey is a Key Distribution Platform

- 808 million square feet of industrial space in area, with 11 million additional under construction.
- Largest Port on the East Coast – 6.4 million TEUs in 2015.
- Robust Rail Freight Network – 2 Class Is, Conrail, shortlines.
- Extensive Roadway Network
- Newark Liberty International Airport – 10<sup>th</sup> largest in the US



# Examples of NJTPA Freight Initiatives

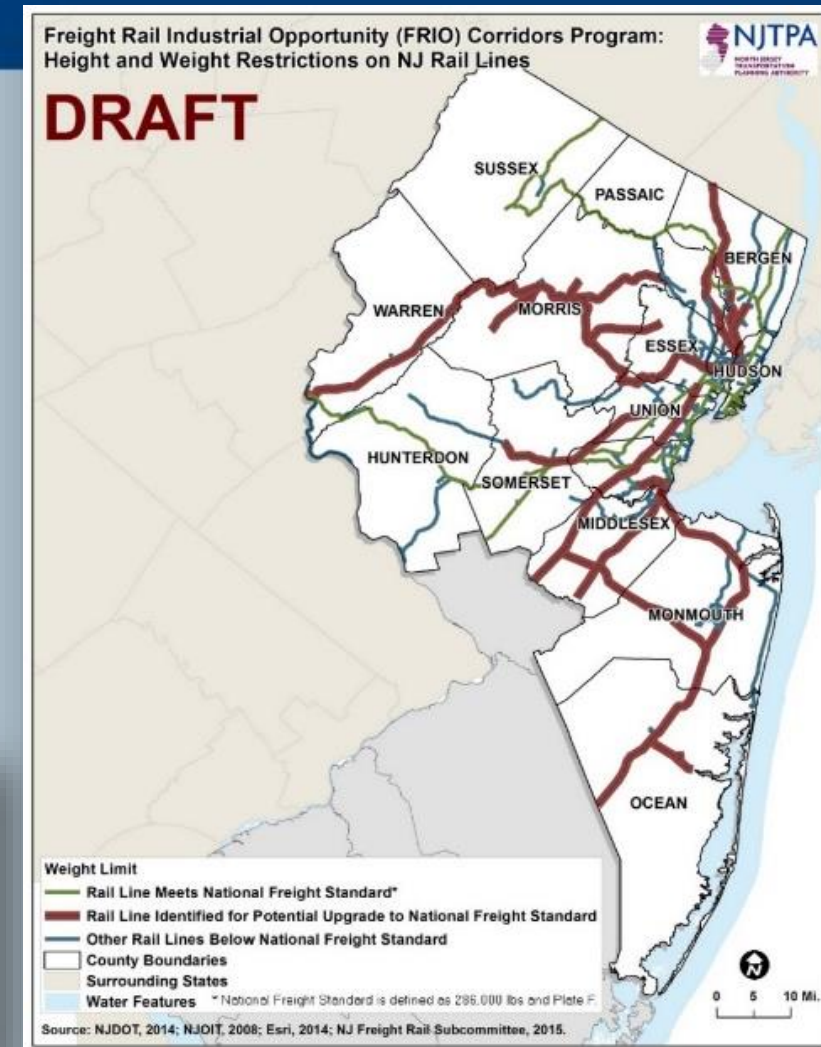
- NJTPA's Freight Initiatives Committee
- Subregion Outreach and Field Visits
- Inventory & Assessment of Waterborne Resources
- Freight Rail Industrial Opportunity (FRIO) Corridors Program
- Pilot Freight Concept Development Program



**Get a New Truck**

Grants Available to Eligible Truck Owners to Purchase Newer Vehicles

REGIONAL TRUCK REPLACEMENT PROGRAM



# Agenda

- Context
  - What is a Supply Chain?
  - What keeps supply chain professional up at night?
- Transformational Technologies:
  - Technologies reshaping freight demand
  - Technologies reshaping the supply of freight services
  - Technologies reshaping the context



# What are Supply Chains?

How goods move from where they are produced to where they are consumed.



# What Keeps Supply Chain Professionals Up at Night?

- Managing the challenges of a rapidly evolving retail environment
  - Compressed delivery times.
  - Expanding delivery location options.
- Guaranteeing temperature controlled supply chains for pharmaceutical and food products.



# What Keeps Supply Chain Professionals Up at Night?

- Identifying and undertaking the actions and investments needed to enable all aspects of the freight system to operate 24/7.
  - Bunching and pinch points.
  - Local ordinances that restrict hours of operation.
- Ensuring on-time delivery
  - Resolving unpredictable truck travel and turn times.



Source: WSJ

# Dynamic Demand and Expectations Example – Retail





# The Empowered Consumer

- We demand a diverse selection that is always in stock.
  - If the item is not in stock or at the price we want, we'll find it someplace else
- We are informed.
- We require flexibility:
  - Order online, through the mail, on the phone, or in stores.
  - Take home from stores, delivered to the house or office, delivered to someone else.
  - An equally flexible return policy.
- We demand service.
- We care about the environment.
- We want delivery to be free and fast.



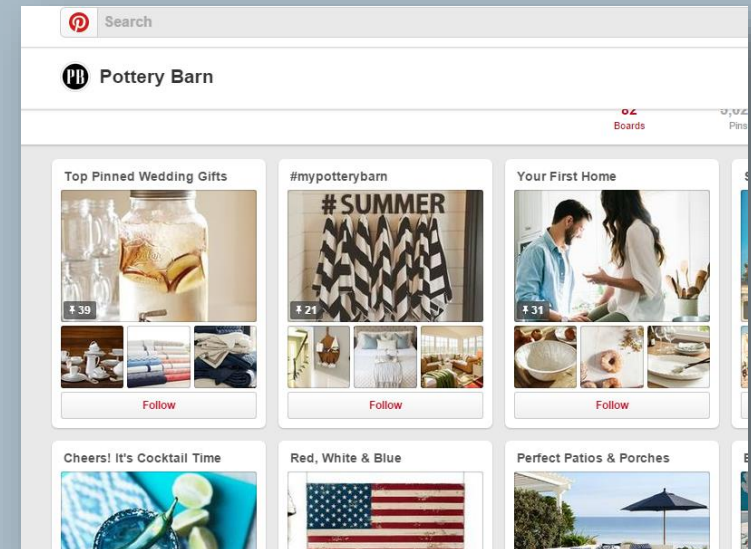
The screenshot shows a PCMag article page. At the top, there's a navigation bar with 'PC' logo and links for 'NEWS / OPINIONS / FEATURES / DEALS / HOW-TO / BUSINESS / VIDEO / SUBSCRIBE'. Below that, a sub-navigation bar lists 'ALL REVIEWS', 'LAPTOPS', 'TABLETS', 'PHONES', 'APPS', 'SOFTWARE', and 'SECURITY'. The main content area features a sponsored section for 'PC // ENTERPRISE' by HP. The article title is 'The 10 Best Shopping Apps to Compare Prices' by Chandra Steele, dated November 19, 2014, with 9 comments. Social sharing icons for Google+, Facebook, Twitter, StumbleUpon, LinkedIn, Pinterest, and Email are visible. A 'Click To View Slideshow' button is present above a photo of a smiling couple looking at a smartphone.

# Retail Channels

- **Omni-channel** – defined as retail merchants that use multiple channels to reach and serve their customer base.
- **M-commerce** – defined as mobile commerce and refers to the increased use of tablets and smart phones role in retail trade.
- **Social commerce** – defined as the use of social media sites such as Facebook and Pinterest to market products, build awareness and increase demand.
- *Since 2010, more than 24 enclosed malls have closed and 60 more are on the brink of closing.*



Source: Cassidy Turley



# Changing Retail Changes Freight Imperatives

- Free shipping
- Faster delivery
  - Free two day delivery
  - Next day delivery
  - Same day delivery
- To anywhere
  - Rural and less accessible locations
  - Manhattan

Free shipping a boon for Alaska's Amazon customers



A screenshot of the Barnes &amp; Noble website. The main banner features the text "Same Day Delivery in Manhattan" and "Order online by 11am. Get it by 7pm." with an illustration of a man on a motorcycle. The website header includes "BARNES &amp; NOBLE BN.com" and "Summer Reading Sale: Select Paperbacks, 2 for \$20".

A screenshot of the L.L.Bean website. The main banner features the text "Enjoy FREE SHIPPING to the US and CANADA" and "Get all your favorites shipped free every day." with an illustration of a shipping box labeled "SHIPPED for FREE". The website header includes "L.L.Bean" and "School's Out Save up to 20% on Kids' Apparel".



**InPost**  
simply exciting

inpost.co.uk  
0330 335 0950

Only **7 SECONDS**  
to collect your parcel

ACCESSIBLE  
**24/7**

Shop **online**  
and collect at your  
**CONVENIENCE**



Eyes wide open. CCTV in use

Get **text alerts**  
when your parcel has arrived

**InPost**  
simply exciting



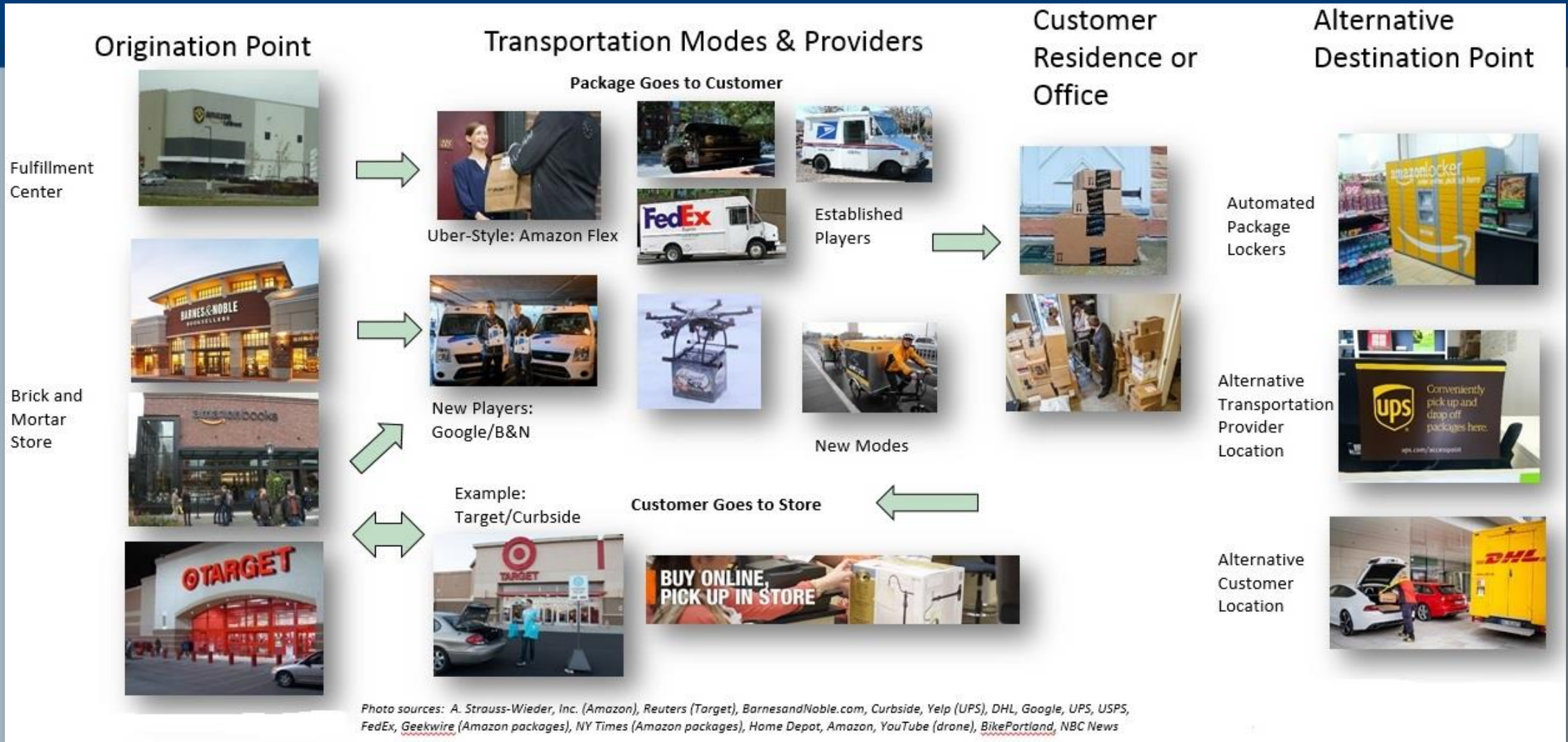
How to use your InPost Terminal

- Shop online and collect your parcels from your most convenient InPost terminal
- You will receive a text message or email when your parcel has arrived
- Pick up your parcel whenever possible (24/7 including weekends and Bank Holidays)

InPost terminals can also be used to send parcels

# Transforming Freight Services (Supply)

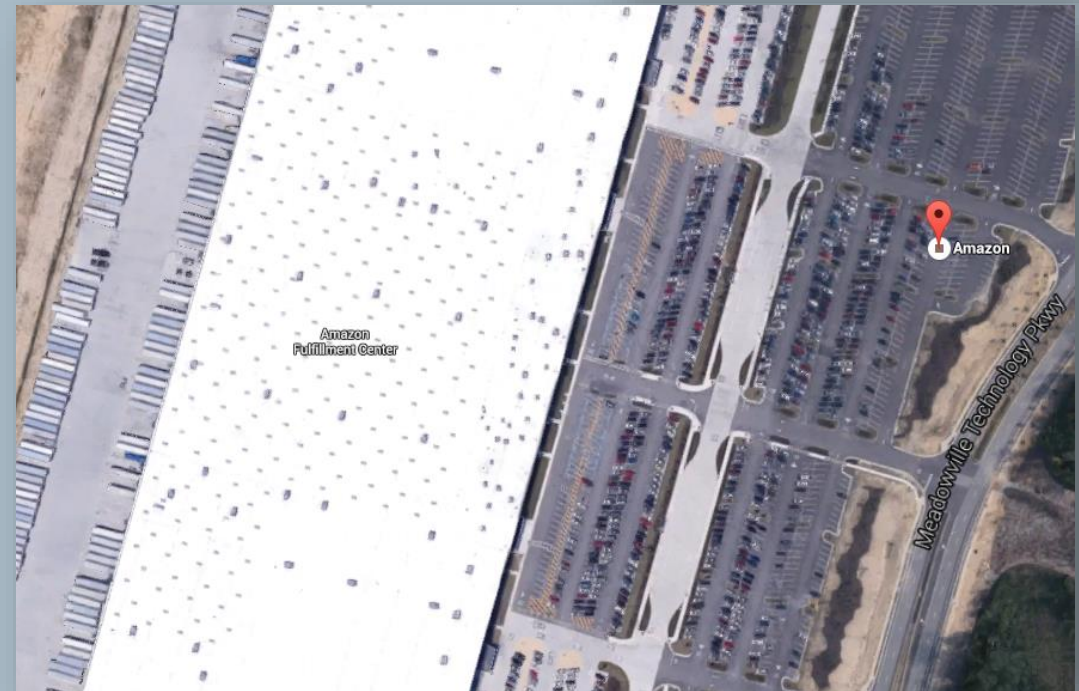
# The Changing Last Mile of Retail



# Distribution Center Layouts



# Fulfillment Centers – More Truck and Associate Parking



# Increasing Accessibility to Emerging Workplaces



Sources: NJ.com and Greater Mercer TMA



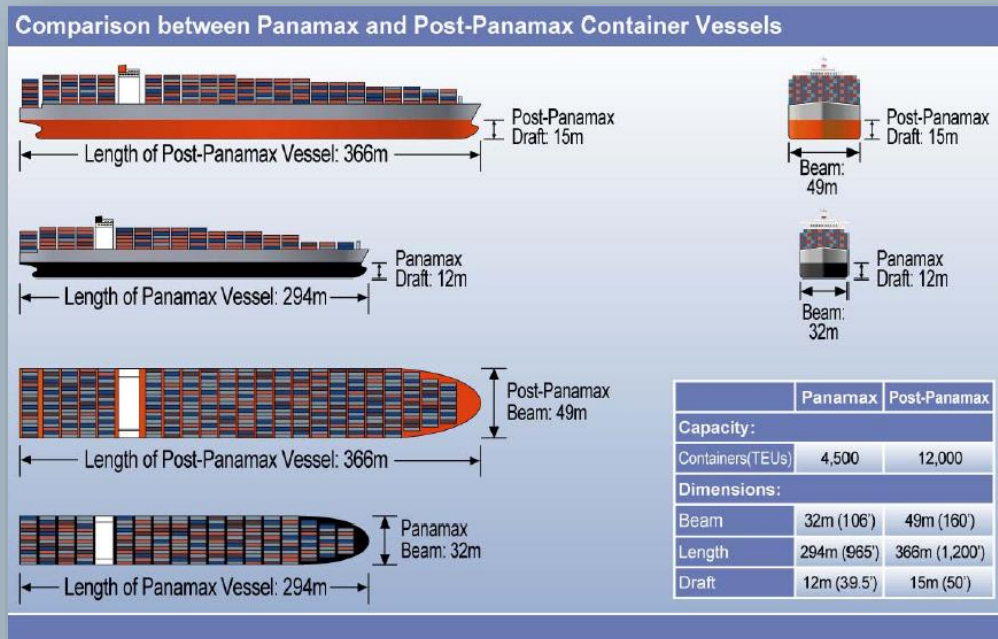
# Interior Functions



# Emerging Equipment and Technology



# One Translation of Increased Global Trade and Drive to Lower Costs: Much Larger Cargo Vessels

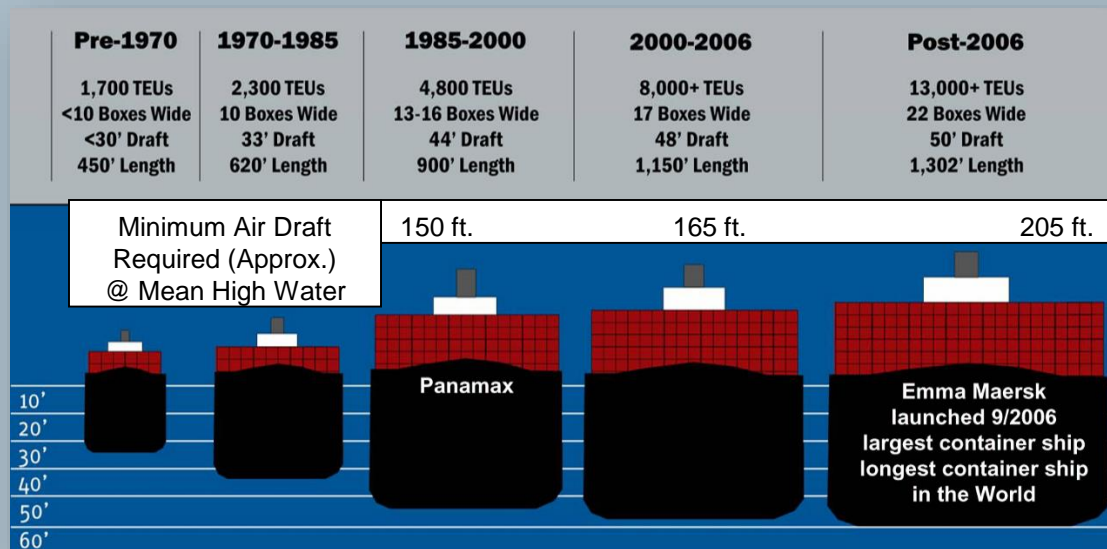


Source: Autoridad Del Canal de Panama



Source: Maersk

# Translation for Infrastructure



# Emerging Truck Trends

- Use alternative fuels
- Reduce empty movements
- Advance truck platooning
- Advance semi- and fully-autonomous trucks



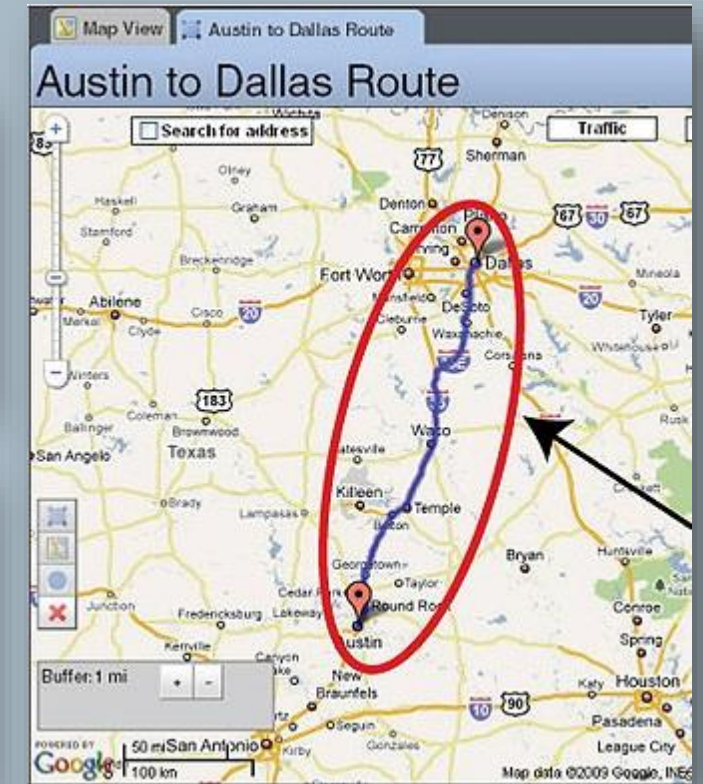
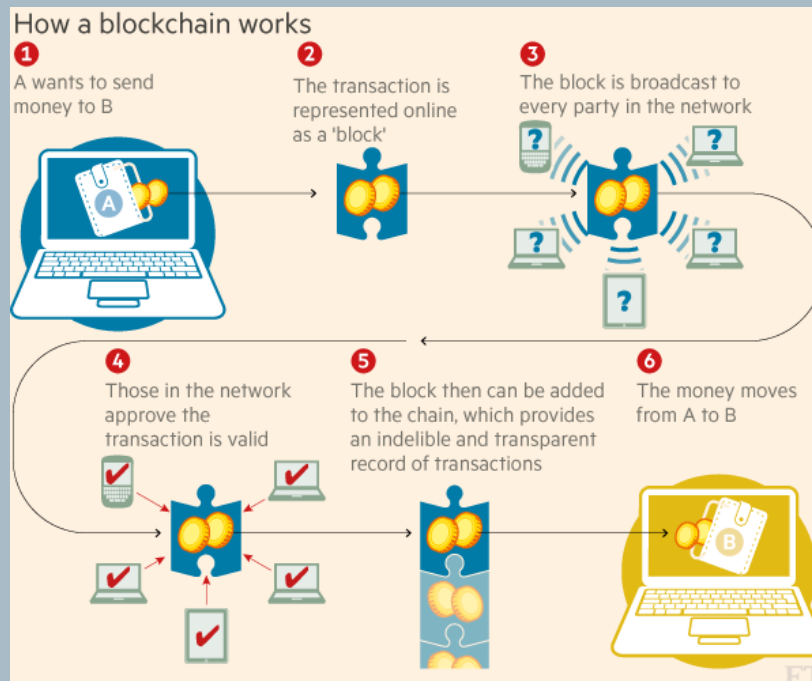
# The Rise of the Drones: They're Coming

- Where is a demand/need met?



# Transformative Information Technologies

- Effective financial and information flows are essential.
- Visibility is essential.
- Security is essential.



Sources include Novartis and the Huffington Post

# The Take Away – The Transforming Context

- Follow the consumer and demand parameters
- Track new technologies
- Identify new service providers
- Identify considerations and opportunities

*The Supply Chain is ever evolving.*

First Jet Engines with 3D-Printed Nozzles Delivered to Airbus

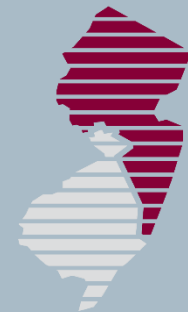




# Thank You

**Anne Strauss-Wieder**  
Director, Freight Planning  
(973) 639-8404  
Strauss-Wieder@njtpa.org

*Defining the Vision. Shaping the Future.*



# NJTPA

**NORTH JERSEY  
TRANSPORTATION  
PLANNING AUTHORITY**

