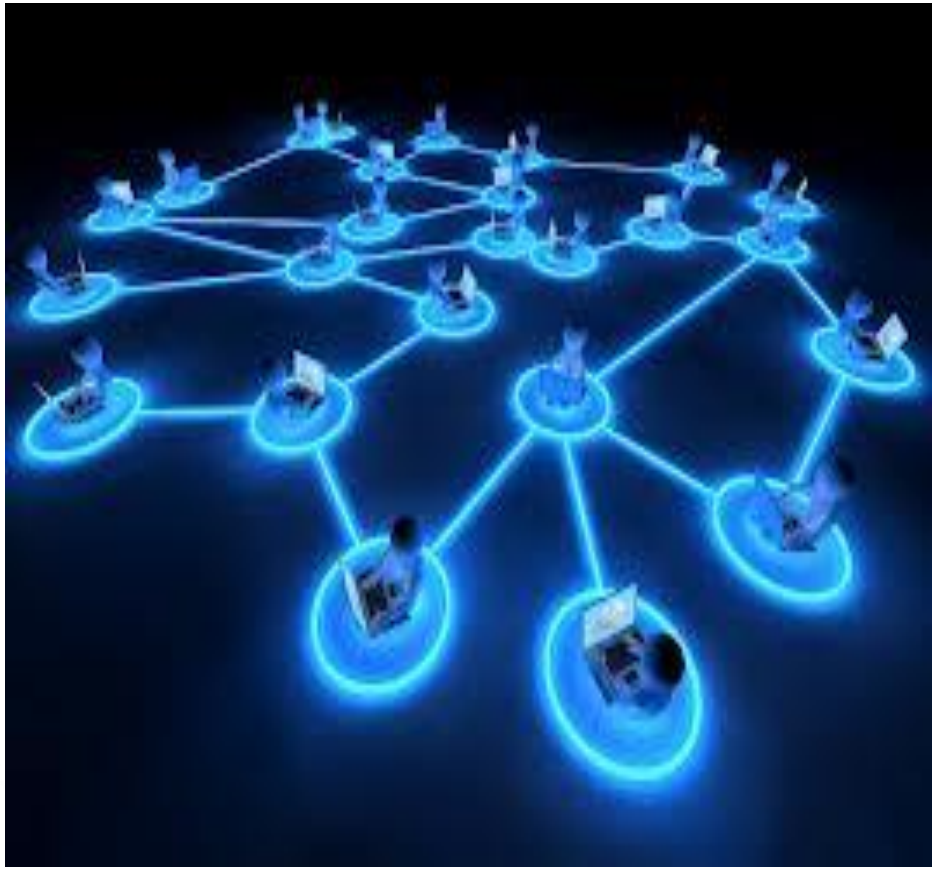
Customer Innovation

SMART FREIGHT



Pete Routsolias-Menlo Worldwide Logistics
Director Solutions Engineering
Nov 18, 2014

Conway Corporation

Con-way

Menlo LOGISTICS

Con-way FREIGHT

Con-way TRUCKLOAD

Con-way MULTIMODAL

Supply Chain Management	
Founded:	1991
2013 revenue:	$1.5 billion €1.1 billion
Employees:	8,000
Geographic scope:	5 continents
Non-asset based	

LTL Transportation	
Founded:	1983
2013 revenue:	$3.5 billion €2.5 billion
Employees:	19,000
Geographic scope:	North America
Trucks: 9,300	**Trailers:** 24,600

Truckload Transportation	
Founded:	1951
2013 revenue:	$637 million €465 million
Employees:	3,600
Geographic scope:	North America
Trucks: 2,700	**Trailers:** 8,200

Jointly Shared Services

Discussion Topics

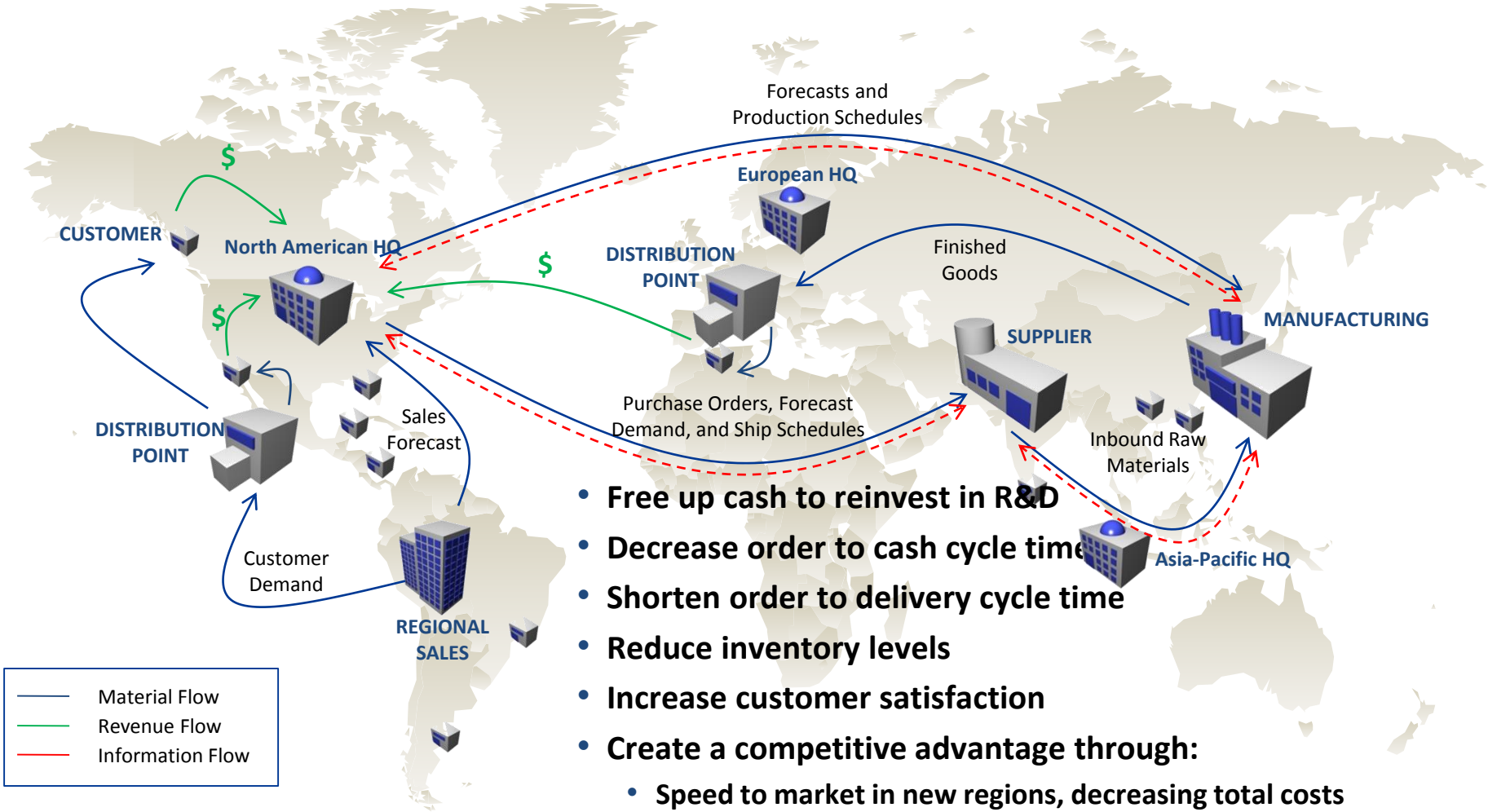
- Software to help drive efficiencies

- Managing/Measuring green initiatives

CarbonNet™

- Examples of how carriers help drive efficiencies

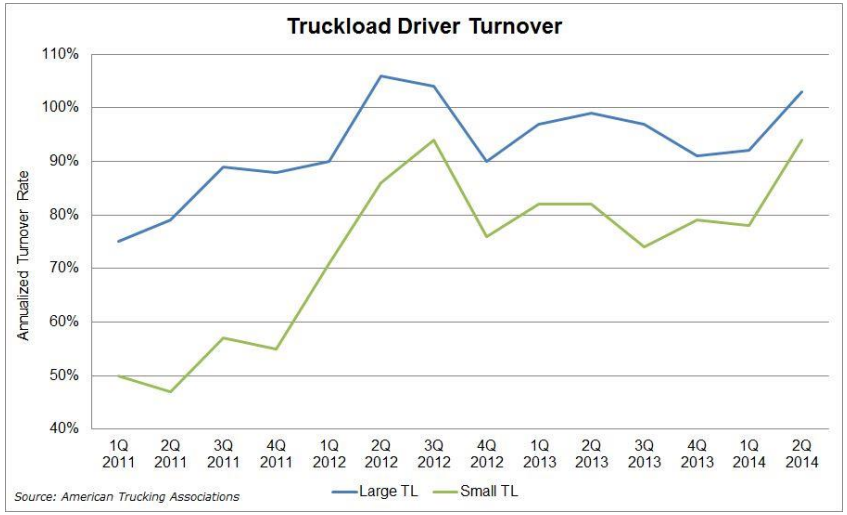
Value of an Efficient Network

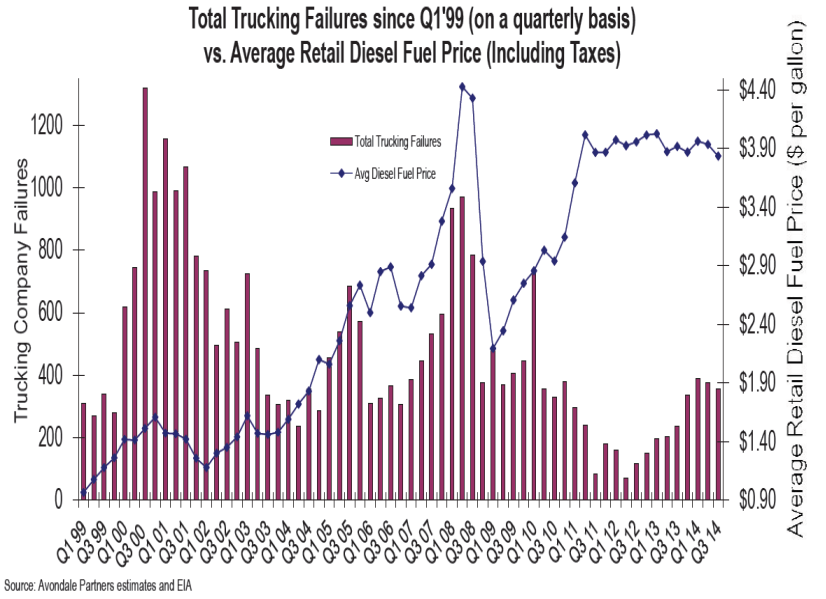


- **Free up cash to reinvest in R&D**
- **Decrease order to cash cycle time**
- **Shorten order to delivery cycle time**
- **Reduce inventory levels**
- **Increase customer satisfaction**
- **Create a competitive advantage through:**
  - **Speed to market in new regions, decreasing total costs and increasing reliability**
- **Increase shareholder value through supply chain transformation**

What is Impacting the industry today

- Driver Shortage
  - Turnover 103% for Quarter
  - 1 in 5 trucks is parked
- Carrier Bankruptcy
  - 725 carriers last 6 months
  - 18K units removed
- Fuel Costs
  - 400% increase the last 15 years
- Government Regulations
  - DOT hours regulation
  - CO2 engine standards
  - Cross-border security concerns
  - EOBR mandates
  - CSA safety scoring system
  - Surety bond changes
- Drive for Green
  - Social responsibility for the planet

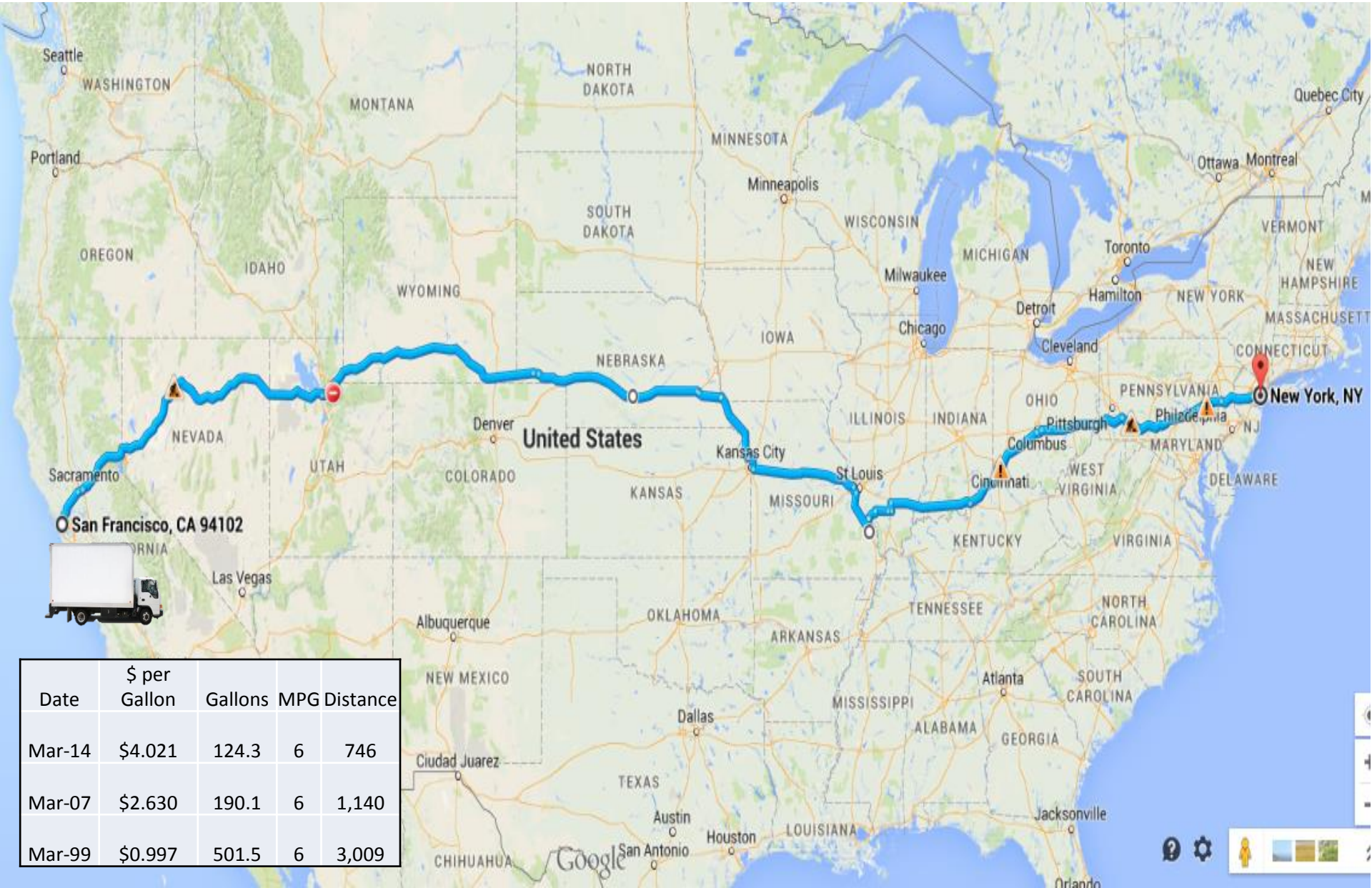




Menlo LOGISTICS

Customer Innovation

How far can you travel on $500 worth of diesel?

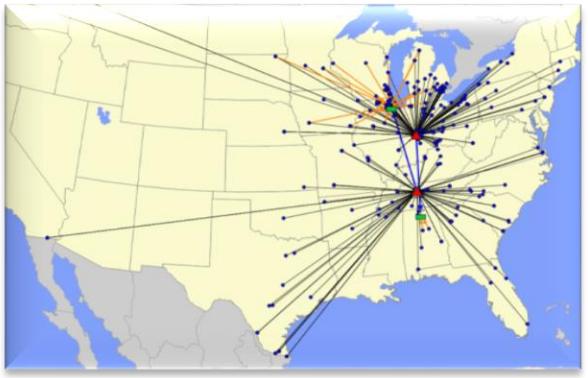


Date	$ per Gallon	Gallons	MPG	Distance
Mar-14	$4.021	124.3	6	746
Mar-07	$2.630	190.1	6	1,140
Mar-99	$0.997	501.5	6	3,009

Menlo's Optimization Toolbox

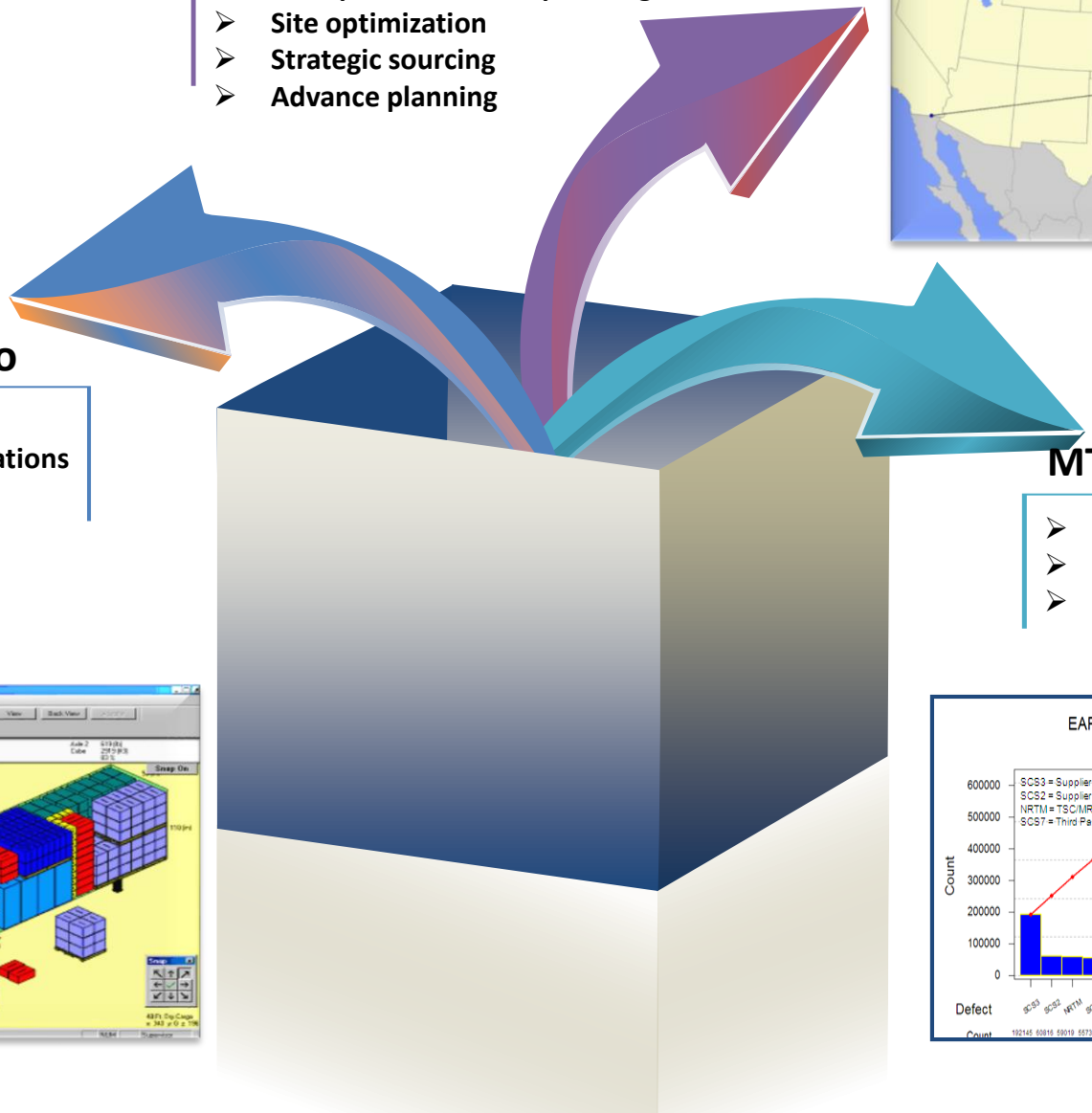
ILOG/Caps

- Transportation route planning
- Site optimization
- Strategic sourcing
- Advance planning



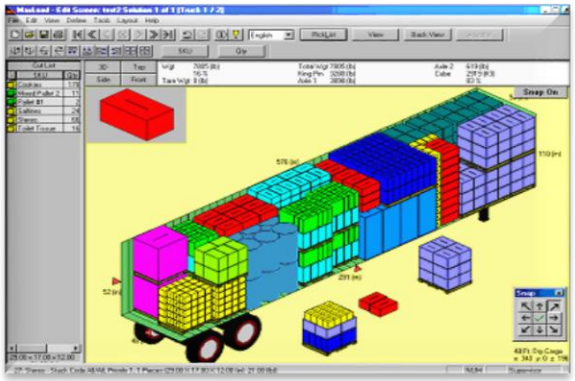
MaxLoad™ Pro

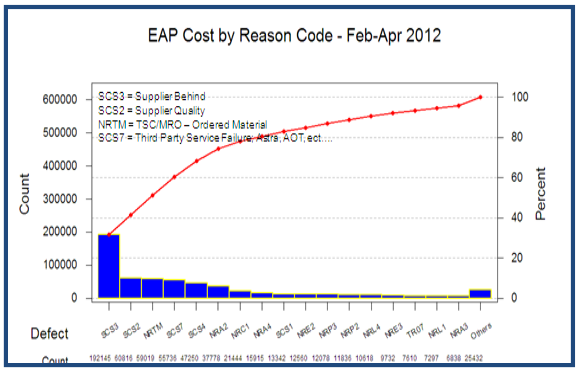
- Load Planning
- Cube & weight calculations
- Asset utilization
- Various load-type calculations



MTMS Optimization

- Dynamic route design
- Cost/Service trade offs
- Monitor

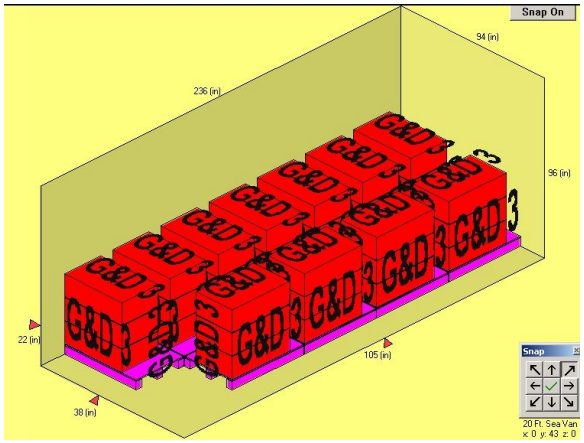




MaxLoad™ Pro

MaxLoad Pro is a cargo load planning, container loading, freight calculation and cube optimization software. It can calculate accurate container and truck load plans by determining the best way possible, through intelligent loading algorithms and extensive stacking rules, to load mixed sized products into containers and vehicles.

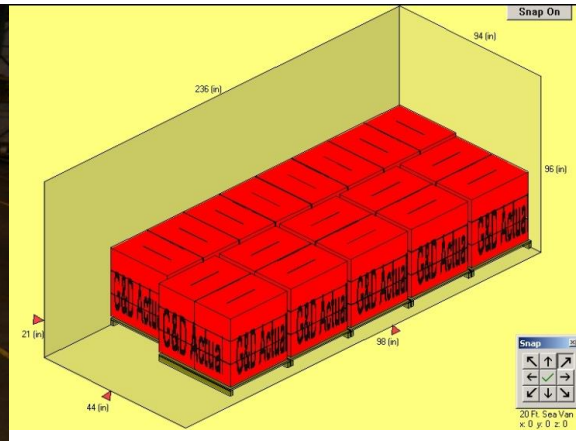
Before



- 33 units/ 20’ @ $ $133 per unit
- Euro Pallet 47.2”x31.5”x5.6”
- 3 units per Pallet
- 11 Pallets/ 20’ Container

Annual Savings $91K

After



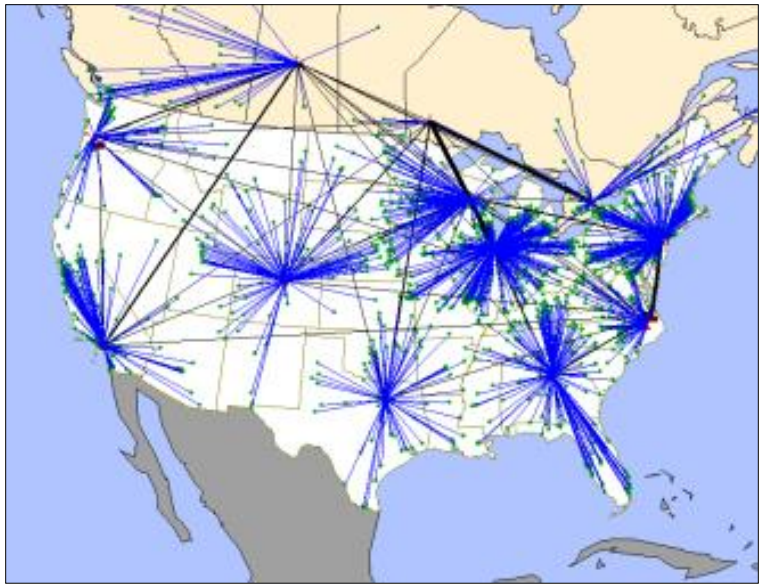
- 54 units/ 20’ @ $81 per unit
- US Pallet 48”x40”x5”
- 6 units per Pallet
- 9 Pallets/ 20’ Container

MaxLoad™ Pro

←Before

After →

IBM/ILOG Software tools

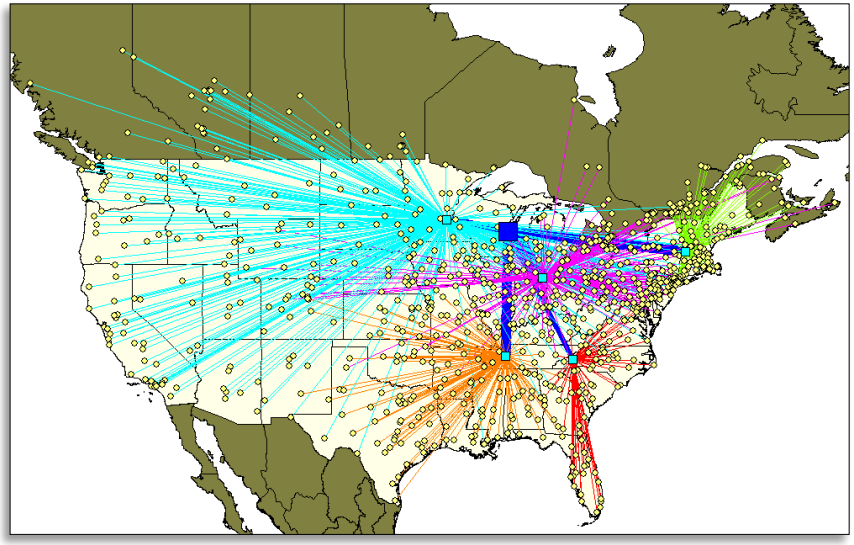


LogicNet Plus XE - Network Design Optimization and planning

Transportation Analyst - Transportation Optimization

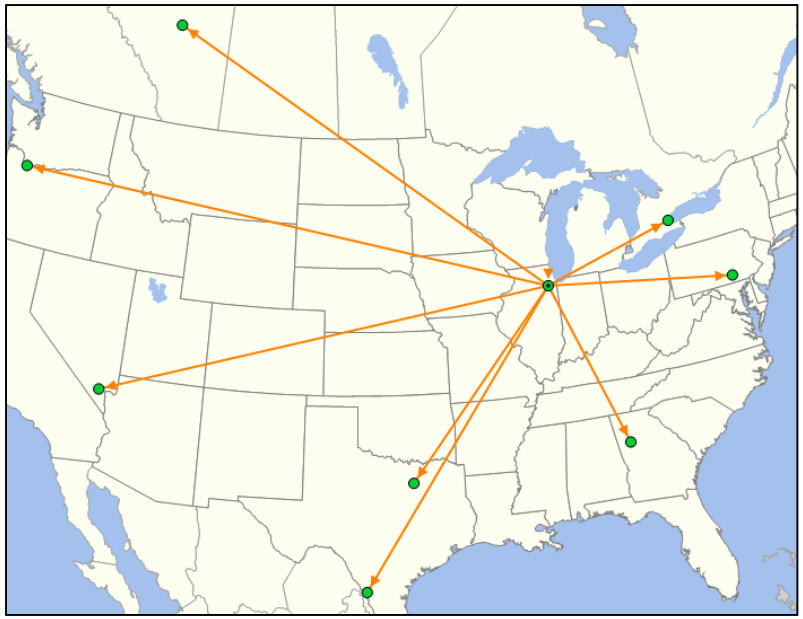
LogicNet Plus XE Overview

- What is the optimal number, location and capacities of suppliers, plants and production lines?
- What is the right number, location and size of DCs, warehouses, consolidation centers, cross-docks, etc.?
- Which products should be made in which location? How are customers and products best assigned to the DCs?
- What is the impact of changes to production and warehousing capabilities on cost and service?
- Transit times identified for each region, state, or customer.



Scenario	Description	Direction	Weight	Linehaul	Cost / lb
Best 1	Select best single warehouse.	Inbound	68,675,992	$ 2,026,627	$ 0.03
		Outbound	68,675,991	$ 9,883,866	$ 0.14
		Total	137,351,983	$ 11,910,493	$ 0.17
Best 2	Select best two warehouses.	Inbound	68,675,992	$ 2,402,204	$ 0.03
		Outbound	68,675,991	$ 8,617,718	$ 0.13
		Total	137,351,983	$ 11,019,922	$ 0.16
Best 3	Select best three warehouses	Inbound	68,675,993	$ 3,196,281	$ 0.05
		Outbound	68,675,991	$ 7,213,943	$ 0.11
		Total	137,351,984	$ 10,410,224	$ 0.15
Best 4	Select best four warehouses.	Inbound	68,675,992	$ 3,181,498	$ 0.05
		Outbound	68,675,991	$ 6,949,632	$ 0.10
		Total	137,351,983	$ 10,131,130	$ 0.15
Best 5	Select best five warehouses.	Inbound	68,675,991	$ 3,253,147	$ 0.05
		Outbound	68,675,991	$ 6,712,295	$ 0.10
		Total	137,351,982	$ 9,965,442	$ 0.15

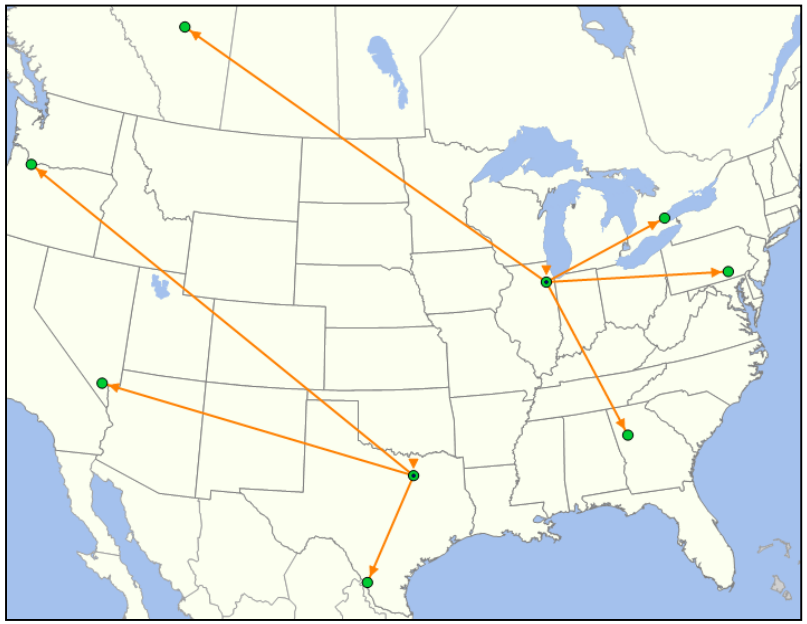
LogicNet Plus XE Overview



Center of Gravity Optimizer

The Center of Gravity can be performed by:

- Adjusted Weight
- Units
- Volume
- Weight

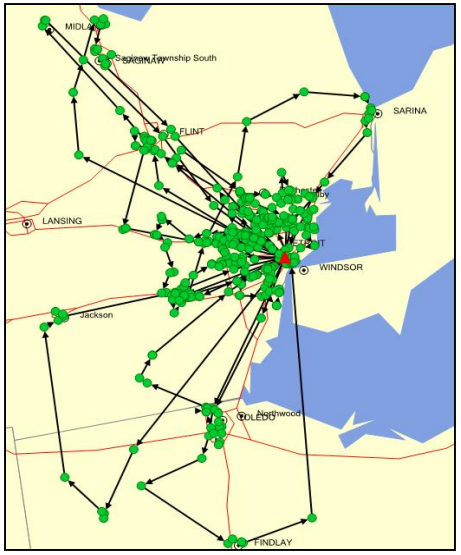


*The Center of Gravity feature can also be performed with the option of choosing multiple centers of gravity for multi-hub solution.

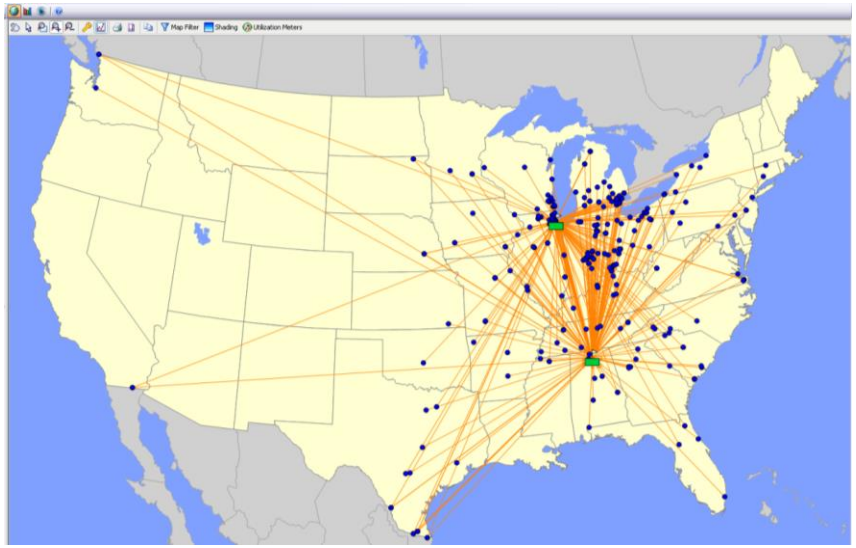
Multiple Center of Gravity Example→

Transportation Analyst Overview

- What are the opportunities for combining shipments and finding continuous moves?
- What mode should be used? What should the fleet size be?
- Pool point and hub analysis--- TL to pool and LTL vs. LTL direct
- What is the impact of backhauls? How can running inbound and outbound transportation together save additional money?
- After you re-design the supply chain, how does this impact the routes, multi-stops, and transportation operations
- Opportunities For Cost Saving:
  - Aggregation
  - Multi-Stop
  - Pool Point and Zone Skip
  - Mode Shifting

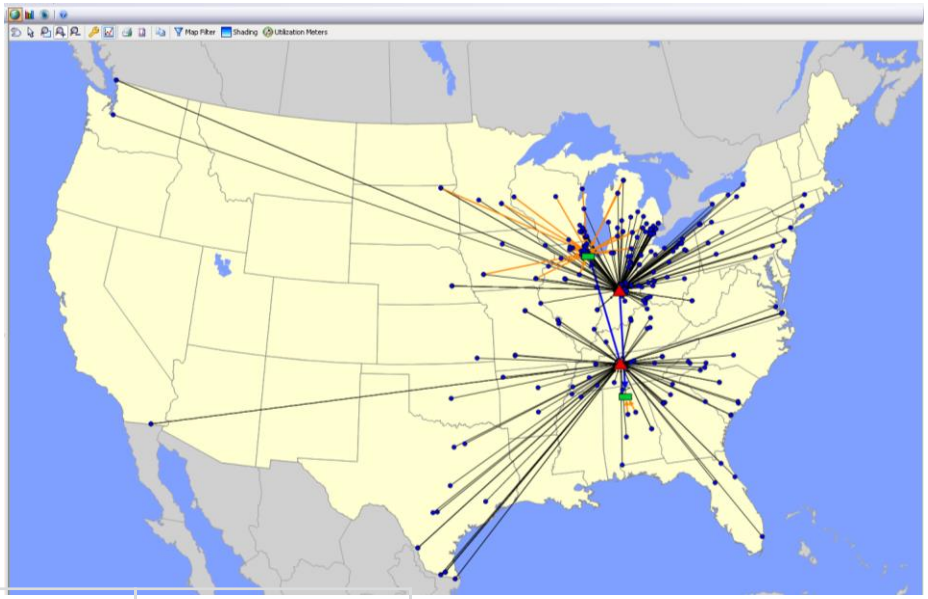


Transportation Analyst Overview



- Current State
  - LTL direct to plants
  - Longer Transit
  - No pool points

- Future State
  - Hubs
  - Pool points
  - More Static Routes/ TLs
  - Lower Transit times

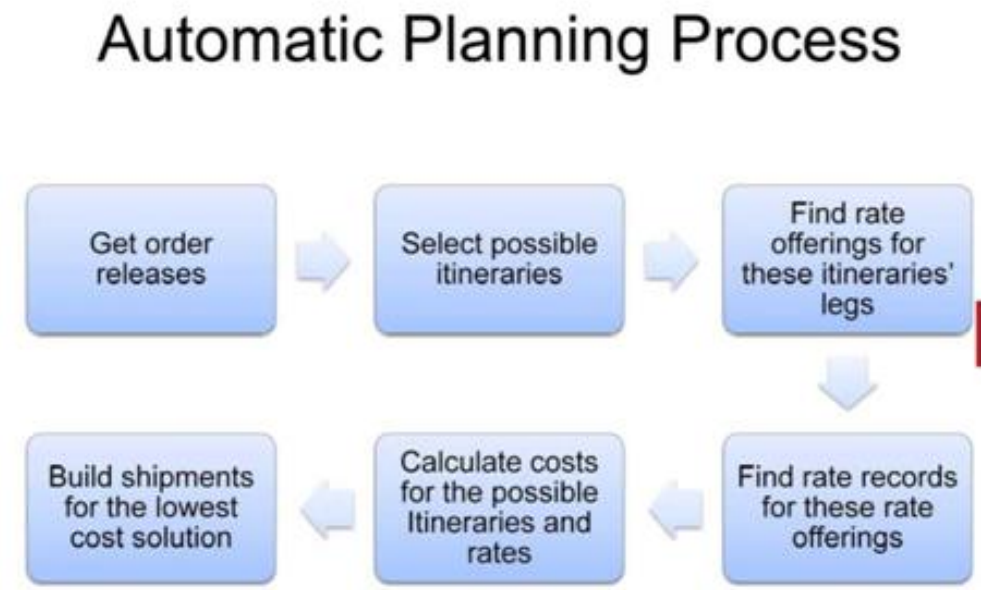


Year	Cost	Savings
2013	7,413,359	$ 620,181
2012	8,033,541	$ 750,852
2011	8,784,393	
Total Savings		$ 1,371,034

Menlo TMS-How Planning Works

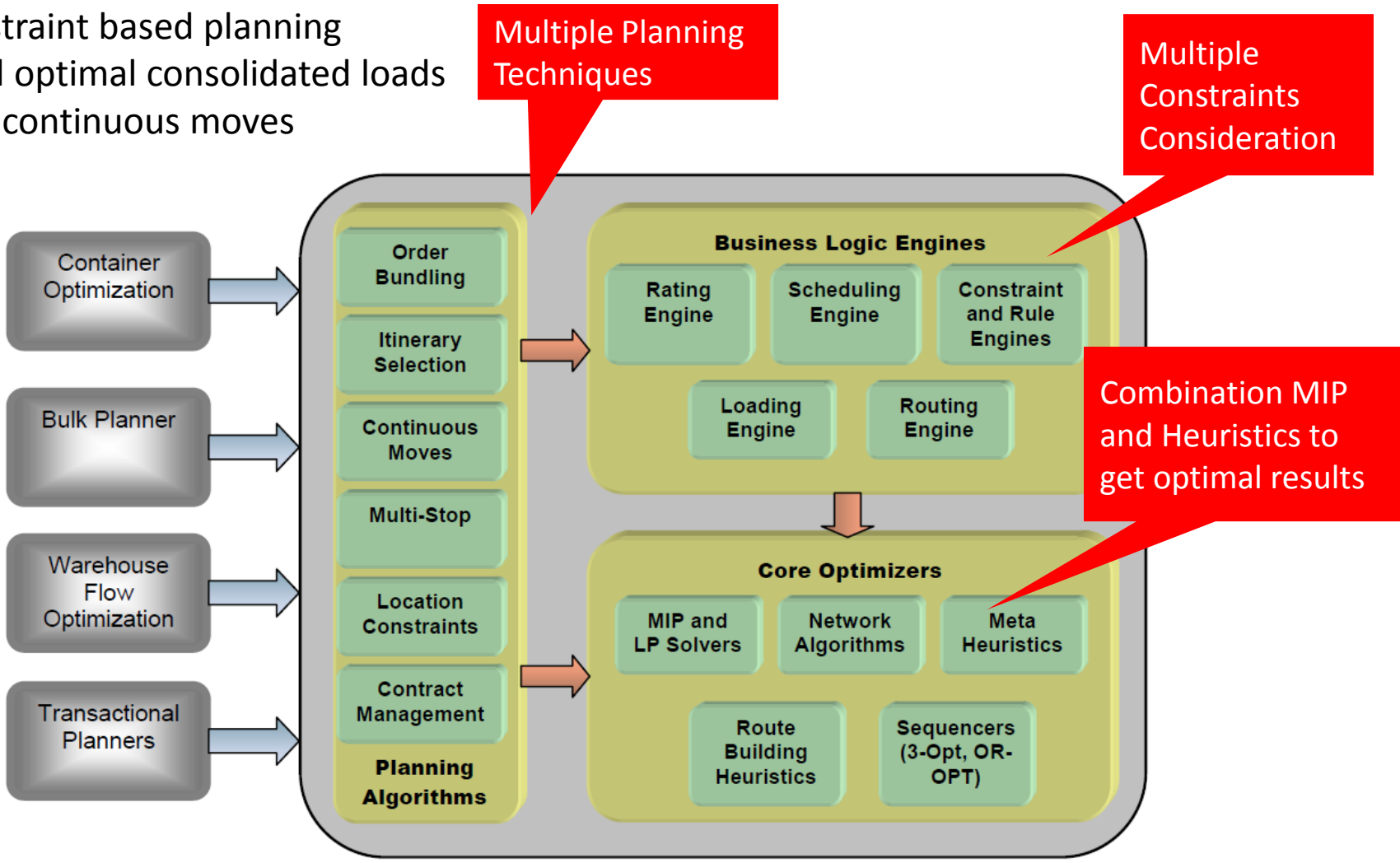
Software creates optimization solution based on rules, constraints, requirements

- Automatic Planning is the process by which TMS finds the optimal solution to one or more transportation requirements
- The transportation requirements are normally represented in TMS as one or more order releases
- The resulting plan is represented in Menlo TMS as one or more shipments

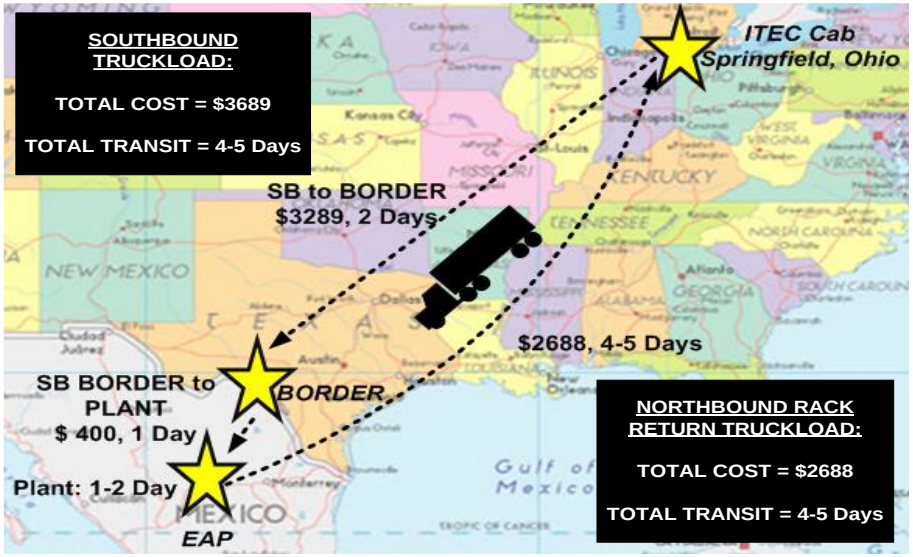


MenloTMS Shipment Optimization

- Optimize carrier and equipment selection
- Maximize equipment utilization
- Constraint based planning
- Build optimal consolidated loads
- Plan continuous moves



Optimization-Mode Conversion



What is the trade off between costs and transit times?

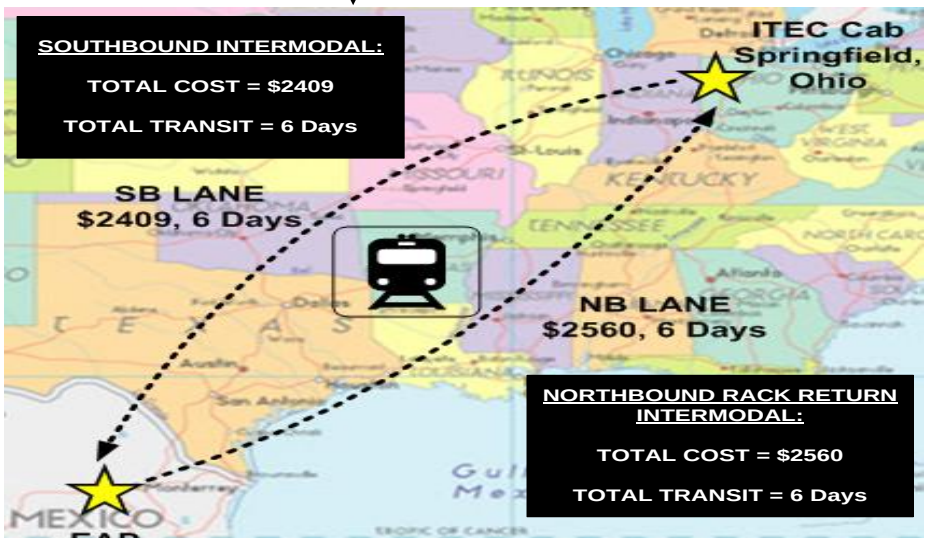
← Current mode-Truckload

Proposed mode-Intermodal ↓

TODAY
1297 TL SB 1297 x $ 3689 = $ 4,784,633
FUTURE
1297 IM SB 1297 x $ 2409 = $ 3,124,473
SAVINGS $ 1,660,160

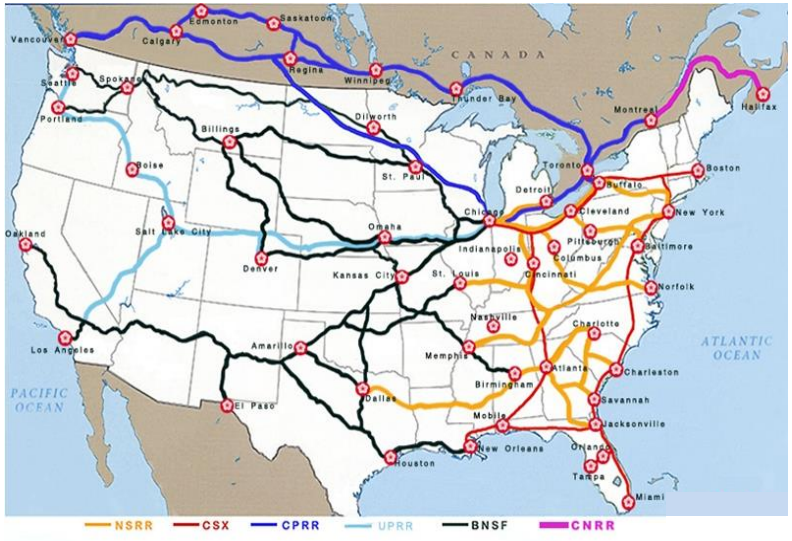
RACK RETURN:
TODAY
1297 TL NB 1297 x $ 2688 = $ 3,486,336
FUTURE
1297 IM NB 1297 x $ 2560 = $ 3,320,320
SAVINGS $ 166,016

TOTAL SAVINGS = $ 1,826,176



Benefits of Intermodal

- East-West &West-East expect 10%-20% cost reduction vs OTR
- Additional reduction in FSC
- North-South & South-North expect 5%-10% cost reduction vs. OTR



- More of a capacity solution
- Readily available to handle peak seasons or individual surge in business
- Traditionally a more reliable mode

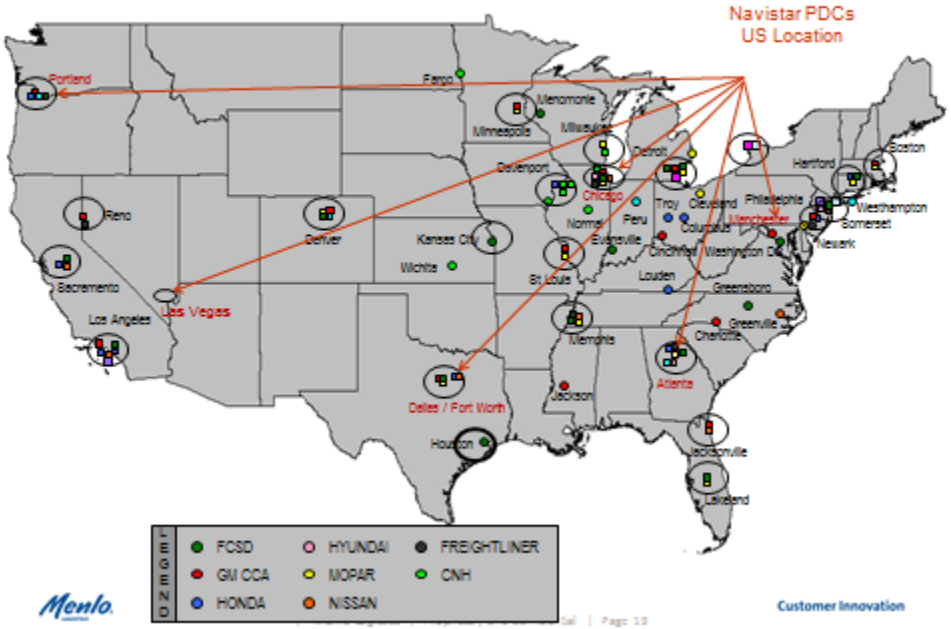
Additional Opportunities to Drive Efficiencies

- Consolidating same O/D pair shipments
  - Same day
  - Once a week
- Shared Transportation
  - OEM
- Round Trip
  - Synergies with multiple customers

10-Baseline			
Mode	**Shipments**	**Weight**	**Total Cost**
Expedite	716	15,944,818	$ 817,397
LTL	2,195	13,705,525	$ 873,078
TL	931	27,433,338	$ 1,744,080
Total	**3,842**	**57,083,681**	**$ 3,434,555**

10 - Same Day: Consolidation			
Mode	**Shipments**	**Weight**	**Total Cost**
Expedite	683	15,944,818	$ 791,862
LTL	1,624	15,246,497	$ 993,469
TL	747	25,892,366	$ 1,221,869
Total	**3,054**	**57,083,681**	**$ 3,007,200**

Multi-Client Synergies Exist



Continous Round Trip - Savings by Plant							
Plant	**Total Line Haul IB and OB**	**No. of IB/OB Shipments**	**New IB Line Haul Amount**	**New OB Line Haul Amount**	**IB Savings Amount**	**OB Savings Amount**	**Total Savings**
#1	$13,555,535	3,181	$4,011,827	$2,963,469	$280,828	$207,443	$488,271
#2	$8,640,852	1,174	$2,143,115	$1,947,774	$150,018	$136,344	$286,362
#3	$2,009,577	1,279	$793,399	$665,644	$55,538	$46,595	$102,133
#4	$3,993,544	1,901	$1,265,109	$1,030,511	$88,558	$72,136	$160,693
#5	$144,657	124	$59,222	$60,981	$4,146	$4,269	$8,414
Total	$28,344,165	7,659	$8,272,671	$6,668,379	$579,087	$466,786	**$1,045,874**
Total-Other	$2,709,781	1,078	$702,686	$709,159	$49,188	$49,641	$98,829
Grand Total	$31,053,946	8,737	$8,975,357	$7,377,537	$628,275	$516,428	**$1,144,703**

CARBONNET™

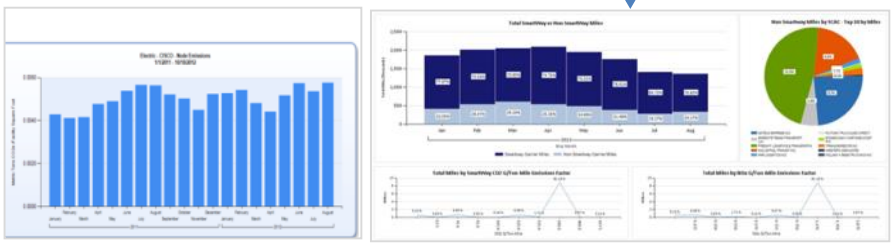
CarbonNet™ solutions is a proprietary cloud based carbon management system.

- Computes a total environmental footprint
- Lets customers track, find, and implement solutions to reduce their footprints
- Simplifies GHG emission tracking and reporting
- Delivers measurable results for continuous improvement
- Reduces costs and mitigates risk
- Hones organization's competitive edge

CarbonNet helps our customers track emissions across the supply chain

CarbonNet™ supports emission reduction strategies by analyzing warehouse and carrier emission data and visualizing performance across the entire supply chain

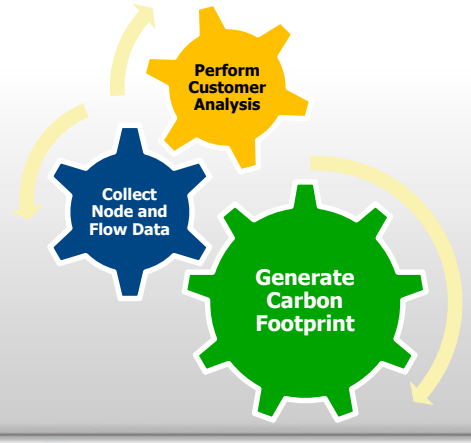
International Supplier	Port of Exit	Port of Entry	Rail Yard	Warehouse	Retail #1
15 MT CO_2	3,500 MT CO_2	1,500 MT CO_2	60 MT CO_2	2,700 MT CO_2	825 MT CO_2



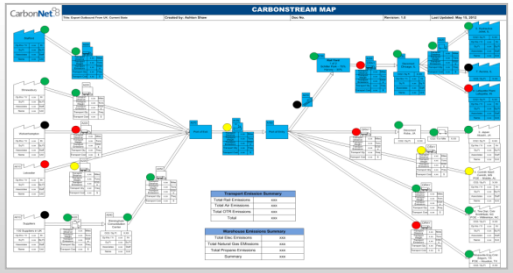
Understanding and proactively managing your SC CO_2 footprint will improve resilience as requirements + expectations increase

Our reporting solutions are flexible, based on your organizations needs.

Carbon Calculator



Carbon & Value Stream Map



Analytics & Dashboards

C# Microsoft .net

Windows Azure Microsoft's Cloud Services Platform

Microsoft SQL Azure

Microsoft Visio 2010

Microsoft SharePoint 2010

Microsoft SQL Server 2012

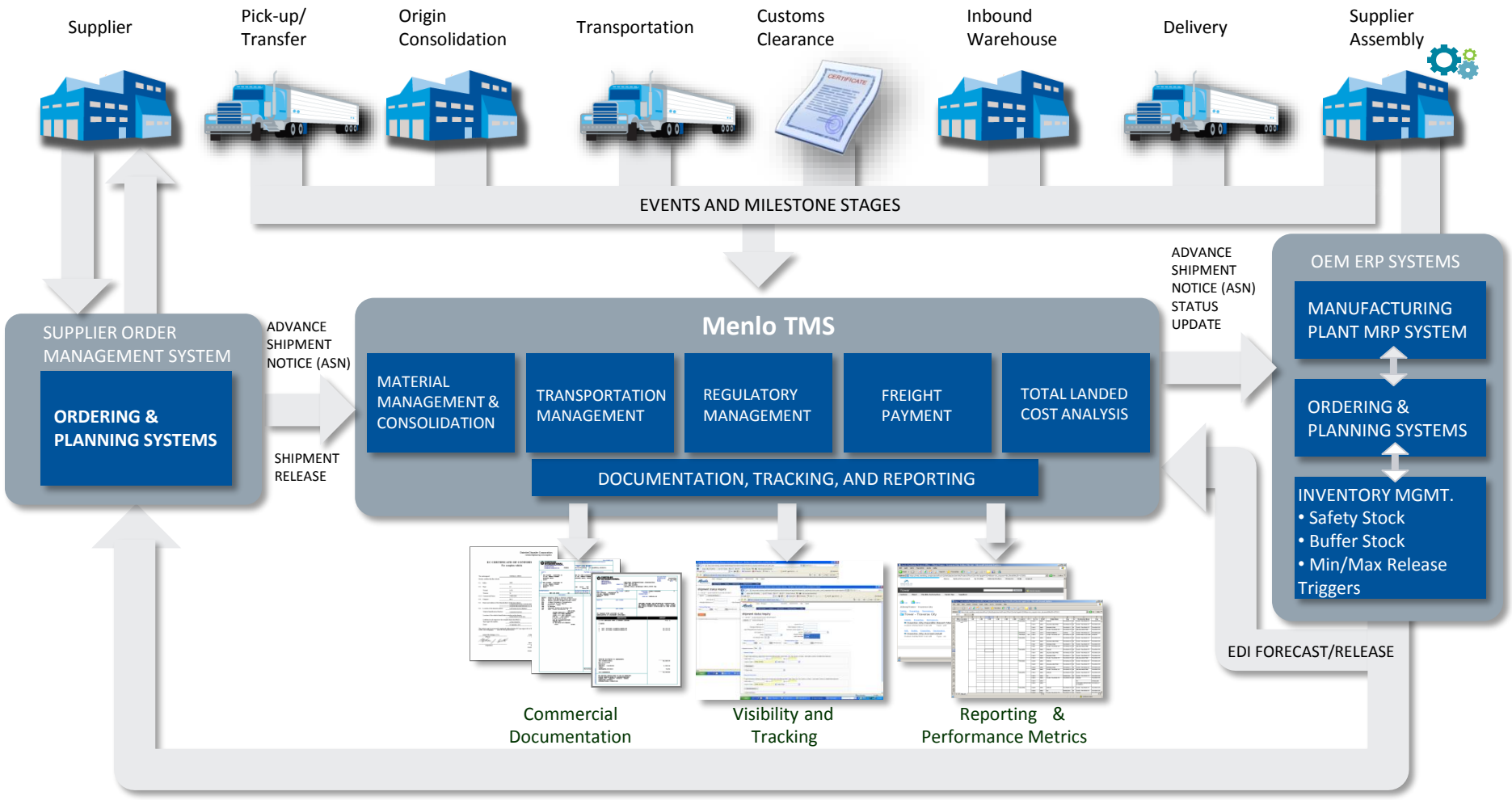
Node and Flow Data
- TMS / WMS
- PACE / WM
- Etc.

Carbon Calculations:
- CO2 Emissions
- Site Specific Analysis / Data

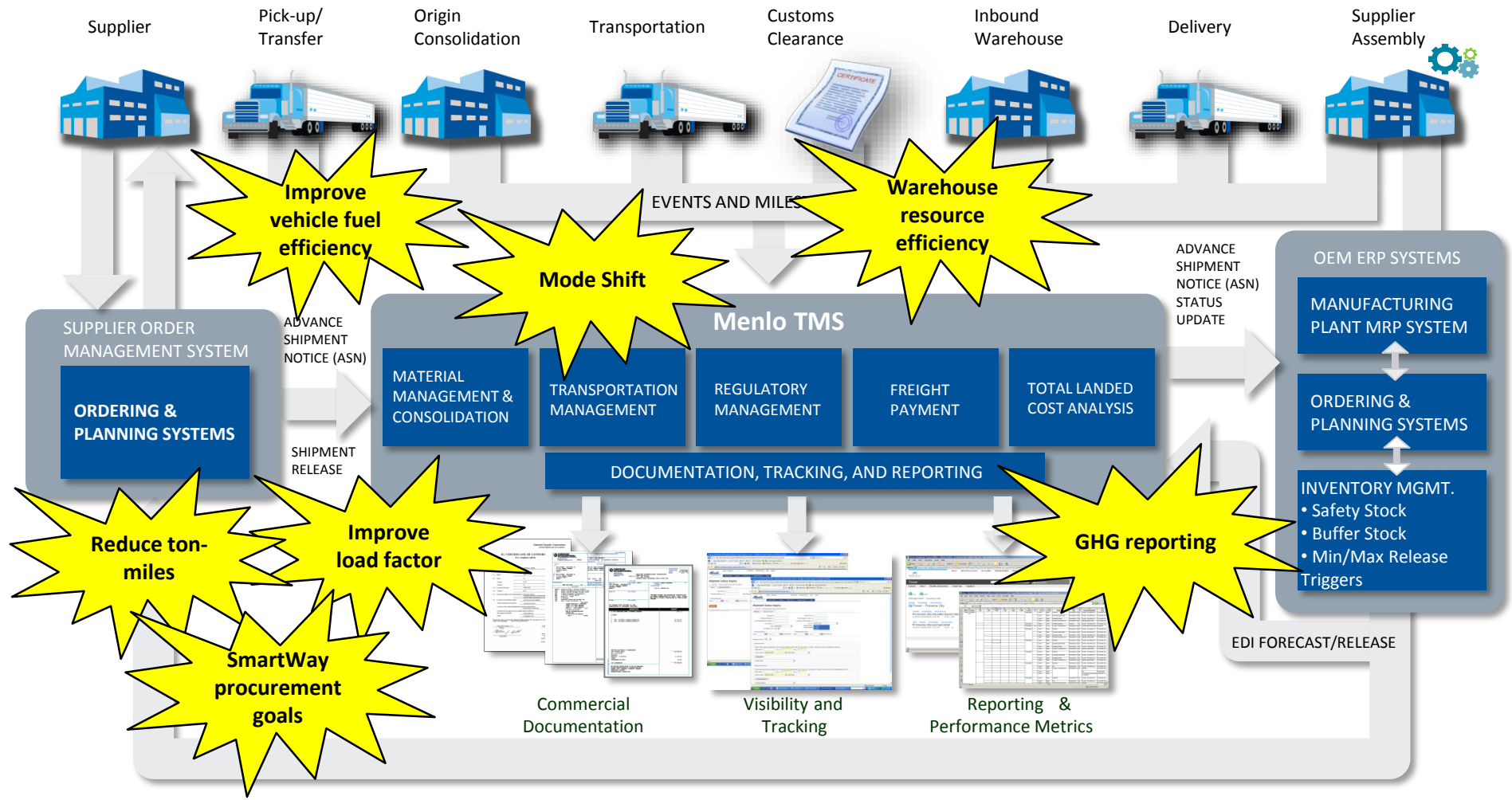
Menlo Data Warehouse

Microsoft SQL Server 2012

Opportunities to improve supply chain sustainability exist across the value chain



Opportunities to improve supply chain sustainability exist across the value chain



We have been able to successfully reduce GHG emissions over 12,000 MT for HP

HP examples:

- Center Pool design has enabled an increase in Rail resulting in a 12,489 (17%) Metric Tons (MT) CO2-e reduction
- A Dedicated Natural Gas tractor pilot has reduced GHG emissions on selected HP lanes by over 20 MT CO2-e
- Menlo supports HP's objective of using 100% SmartWay carriers, next steps to expand into procurement process
- Quarterly CO2-e reporting provided to HP per request

Technology Driving Efficiency: Using ArcMap to Improve P&D operations

10/15/2014

Con-way Freight's Drive Safe Systems™

DSS™ DRIVE SAFE SYSTEMS

Our tractors are equipped with cutting-edge technology to keep our employees, our customers and the freight safe.

EVENT RECORDER

- DriveCam 2-way event recorder
- Recognizes safe driving behaviors
- Captures coaching opportunities

Lytx Delivering insights. Driving results.™

EOBR

- Vnomics in-cab performance management platform.
- Real-time feedback provides audible keys to driver
- Increases operating efficiency, improves fuel economy

ON-GUARD SYSTEM

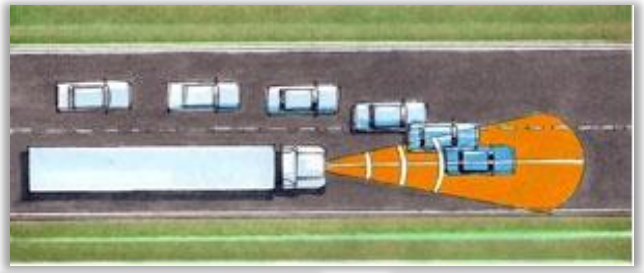
- Forward collision warning, collision mitigation and lane departure warning systems
- Roll stability control

Drive Safe Systems™ EOBR

- Fuel economy analysis
- Live real-time audio feedback for driver to encourage progressive shifting
- Provides visibility to crashes or near-misses
- Root cause identification
- Registers hard braking

At the end of their shift, the driver receives a daily performance scorecard

New Technology



Drive Safe Systems

Our fleet is equipped with Electronic On-board Recorders, DriveCam Event Recorders, aerodynamic trailer side skirts, roll stability control and accident avoidance detection.

SafeStack

Our advanced cargo loading system is custom designed to anchor and strap your freight during transit for the ultimate protection.

Alternative Fuel Options

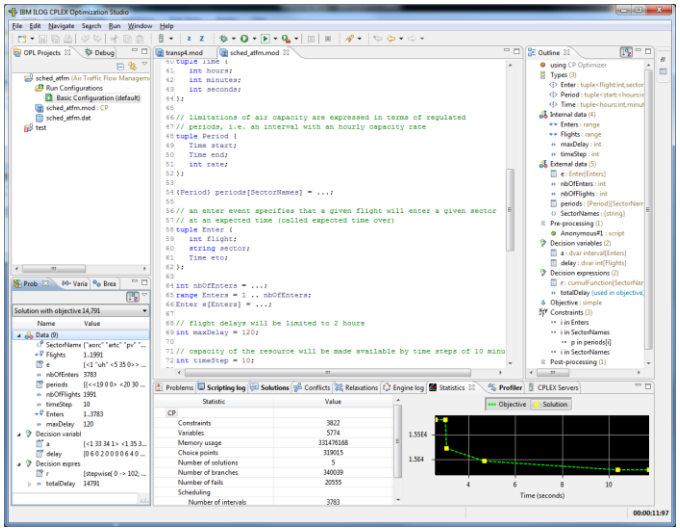
Since 2011, we've been testing alternative fuel options adding Freightliner Cascadia Compressed Natural Gas-powered trucks to our fleet.

Automated Manual Transmissions(AMTs)

Minimize driver stress and in-cab distraction
Improve operating performance
Reduce maintenance and increase
MPG by optimizing shifting.

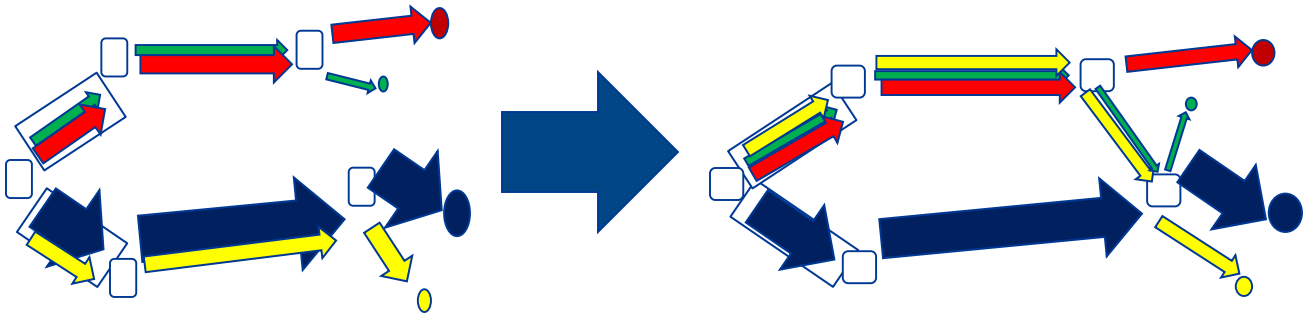
Daily Optimization - Technology

IBM Cplex Optimization Studio



With daily fluctuations in demand, costs, and capacity what's the best way to move the freight today?

- Must meet standard transit days
- Minimize cost
- Solution must be real-time
- Solution must be executable

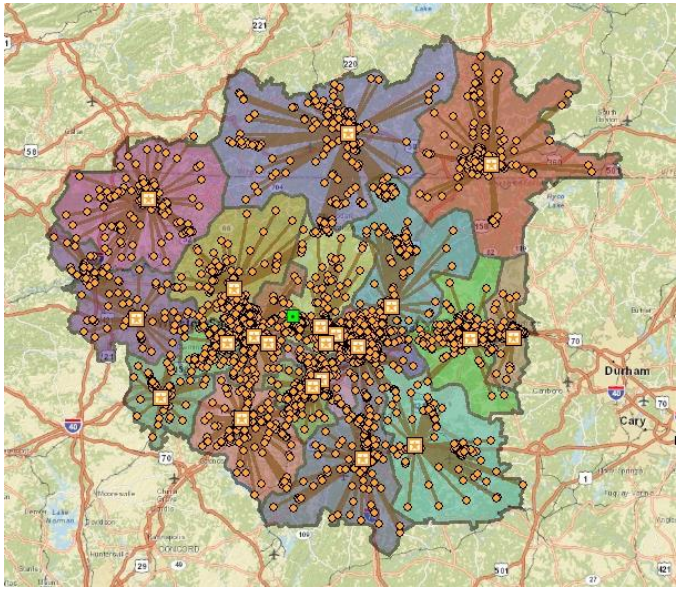


1% reduction in Linehaul miles

Facility Location Selection

- ArcMap has 7 different algorithms that can be used in the selection of facility locations.
  - These consider criteria ranging from meeting a defined service level to minimizing the number of locations required to service a given level of demand.

- We use a combination of these algorithms to define delivery territories used for local route planning by an LTL carrier.
  - This approach has increased routing efficiency by 4.7%
- We are also able to visualize customer density, territory utilization and equipment used and use these for coaching planners in making changes that support increased routing efficiency



Con-way Inc. sustainability stems from a culture of continuous improvement

- Auto idle shutoff after 3 minutes
- Tractor/Trailer Redesign ↓ 670 lbs
- Fuel Opps on-board Perf. Mgt.
- Auto Transmissions – MPG ↑ 5%
- Tractor / trailer aerodynamics ↑ 10%
- Network load factor ↑ 7.7% from ‘10
- DoubleStack ™ ↑ floor area 100%
- Over 300 lighting retrofits complete

Looking Forward

- Collaboration across carriers
- Collaboration across customers
- Government regulations will expand/change
- New modes will appear
- Gas will be gas
- Driver shortage will continue to impact carriers
- Mergers/Acquisitions
- More shipments but in smaller quantities
- E-commerce will change the industry
- Speed to market will be key