Reducing Empty Miles through Process Improvement

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Impact of Empty Miles on Profit

Dallas to Los Angeles	Linehaul Rate	Fuel	Total Rate	Empty Miles	Loaded Miles	Total Revenue	Profit
Ideal	1.13	0.28	1.41	0	1449	2043.09	202.86
10% Deadhead	1.13	0.28	1.41	144	1449	2043.09	47.34
Vegas OOR	1.13	0.28	1.41	208	1449	2043.09	-21.78

Effect of Empty Miles on Profit

Truck Miles per Week	**2,000**
Tractor Count	**1,500**
Total Miles per Week	**3,000,000**
Monthly Miles	**12,000,000**
Annual Miles	**36,000,000**
Monthly Impact of 1% Load Ratio	**$120,000**
(Monthly Miles * .01 * $1.00)	
Annual Impact of 1% Load Ratio	**$1,440,000**
(Annual Miles * .01 * $1.00)	

Empty Mileage

- Categories of Empty Miles

  Deadhead – Mileage between Load destination and Pickup

  Out-of-Route – Mileage beyond the legal route-line

- Out-of-Route

  Unauthorized

  - Driver Decisions

  Authorized

  - Home, Maintenance, Safety, Relays, Breakdowns, Fueling

Cause of Deadhead

- ***# 1 Cause***… Your network – Only as good, and never as good as the network
- Inefficient Planning
  - Lack of Visibility
  - Unable to see the Big Picture
- Inefficient Scheduling – Relays for Appointment Inefficiency

The Network Effect

U = Undersold – More Trucks than Loads in a geography
O = Oversold – More Loads than Trucks in a geography

2 Ways to address Undersold Market
- •Reduce Inbound Volume
- •Solicit Outbound Volume

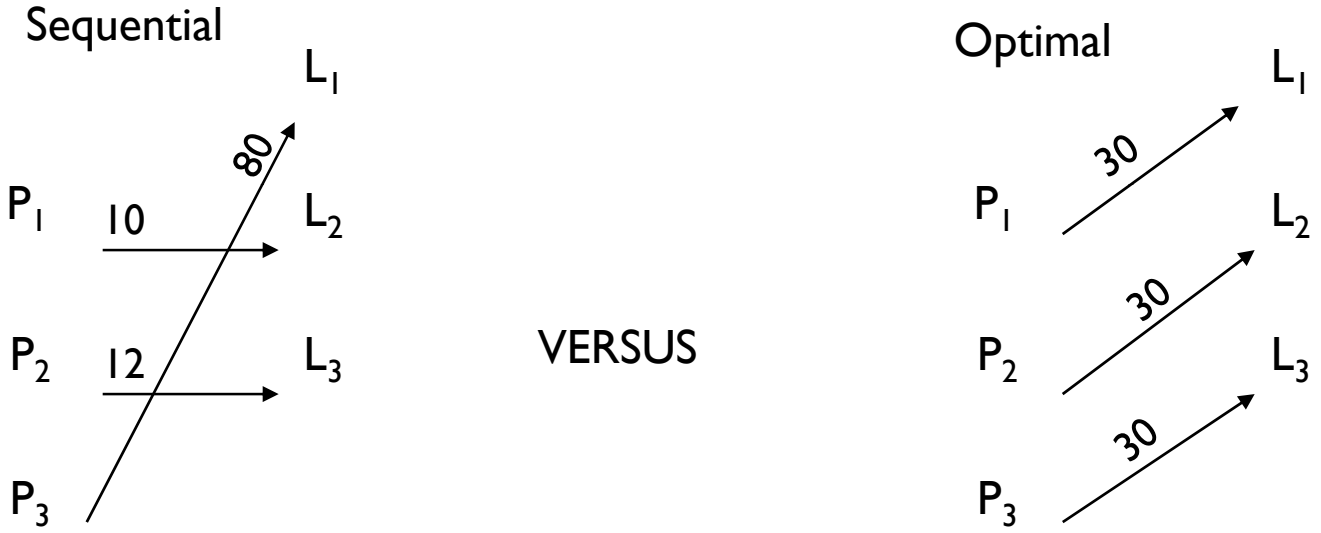
2 Ways to address Oversold Market
- •Solicit Inbound Volume
- •Reduce Outbound Volume

Fact - Every load creates or eliminates deadhead at both origin AND destination

O to U – Creates a deadhead at origin and destination
O to O – Creates a deadhead at origin and eliminates at destination
U to U – Eliminates deadhead at the origin and creates at destination
U to O – Eliminates deadhead at **both** origin and destination

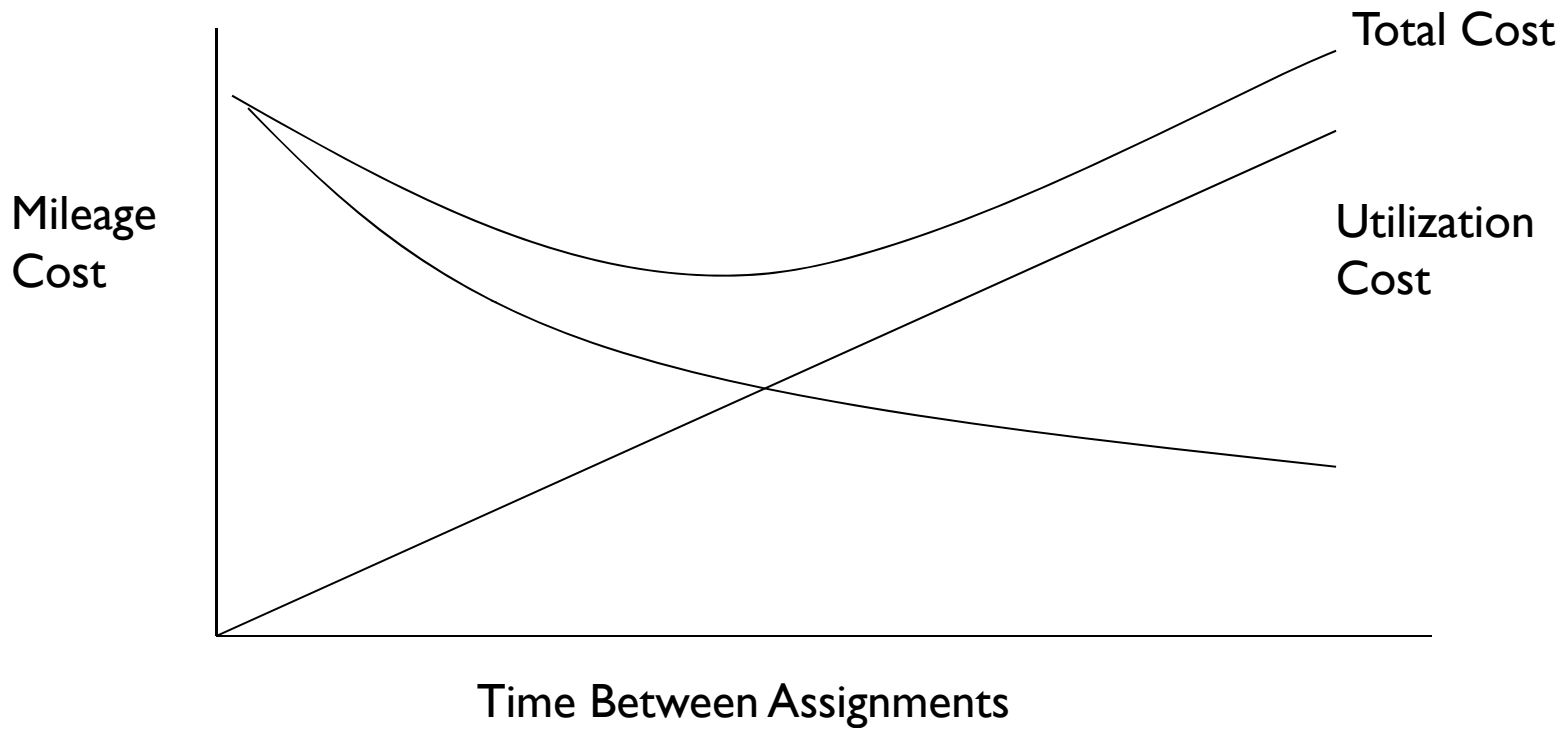
Pitfalls of Sequential Planning

Why not assign the closest driver to the closest load?



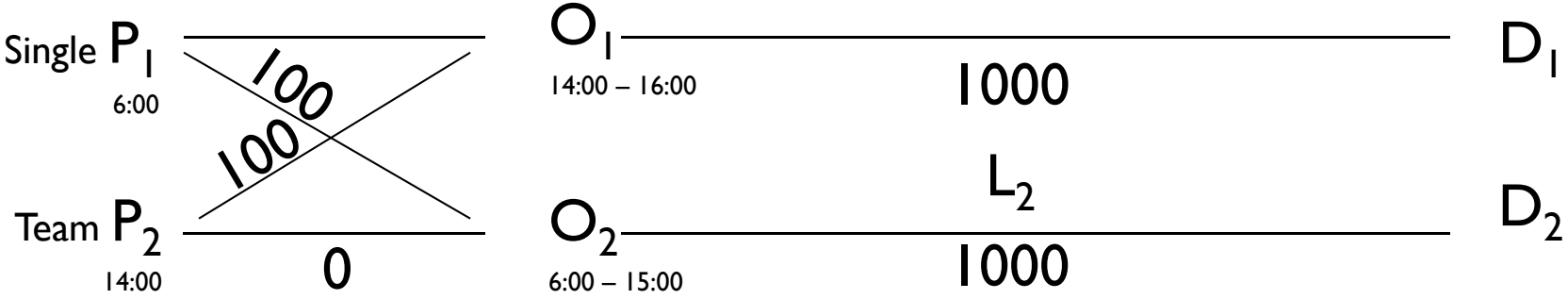
Over time it does not minimize total empty miles. Planning sequentially reduces the number of options as the day progresses.

Empty vs. Opportunity Cost



The higher the utilization cost, the more empty miles justified. Resource Optimization will not necessarily assign the closest driver to the closest load.

Justified Empty Miles



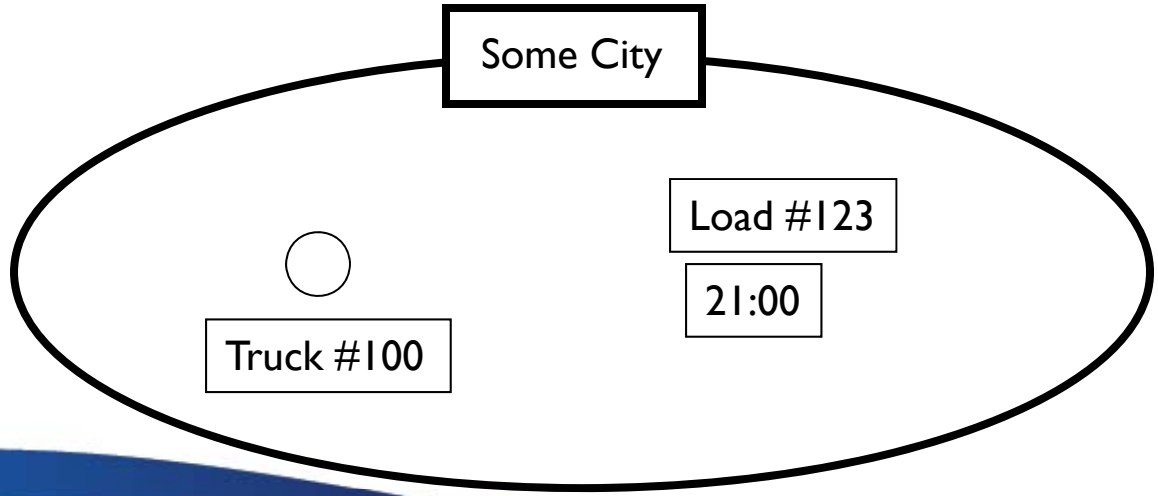
Assignment	Cost	Contrib.	Delay PU	Delay DL	Total Hours	Contrib./Day
P_1-L_1	790	440	0	0	38.2	276.44
P_1-L_2	840	390	0	0	40.4	231.68*
P_2-L_1	840	390	0	0	28.44	329.11*
P_2-L_2	790	440	0	25	51.0	207.06

	Cont/Day	Load Ratio
Optimal	$560.79	90.9%
Non-Optimal	$483.50	100.0%
Difference	$77.27	-9.1%

Eliminate Virtual Boundaries

"I have a load in a city and a truck in that same city.
Why does the optimizer suggest that I move that truck
to another city to pick up a different load?"

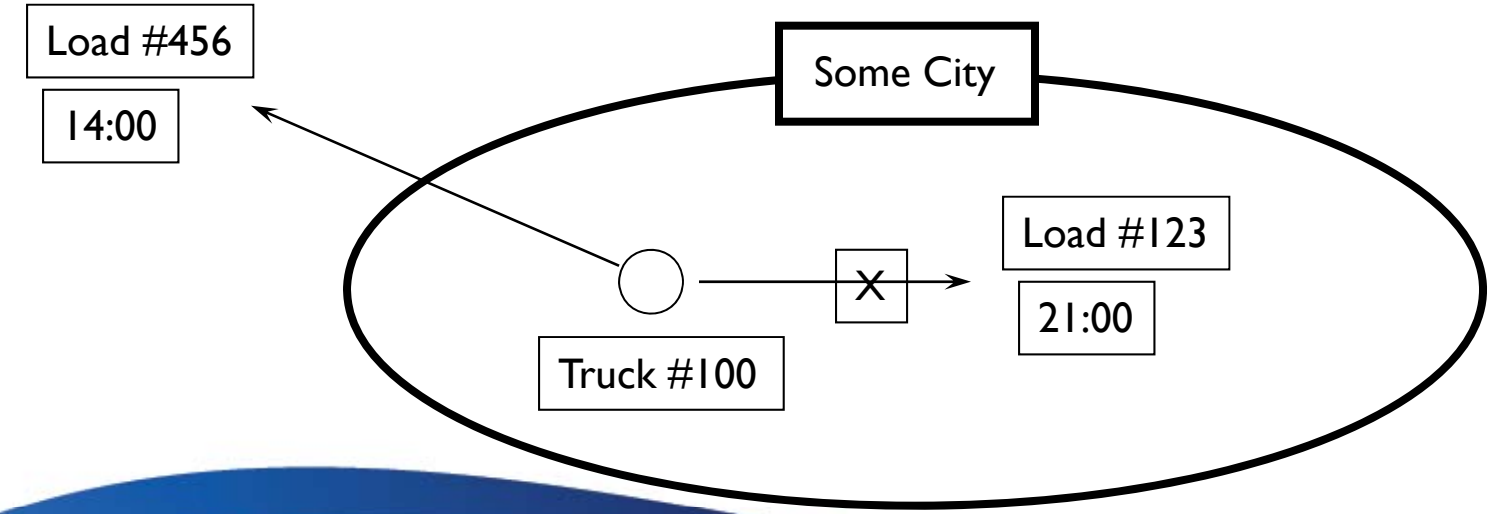
Situation:
--Truck 100 and Load 123 are in the same city.
-- It is 12:00 now and Load #123 can be picked up anytime between now and 21:00



Eliminate Virtual Boundaries

Resource Optimization Suggestion: "Send Truck #100 to **Another City** to pick up Load #456."

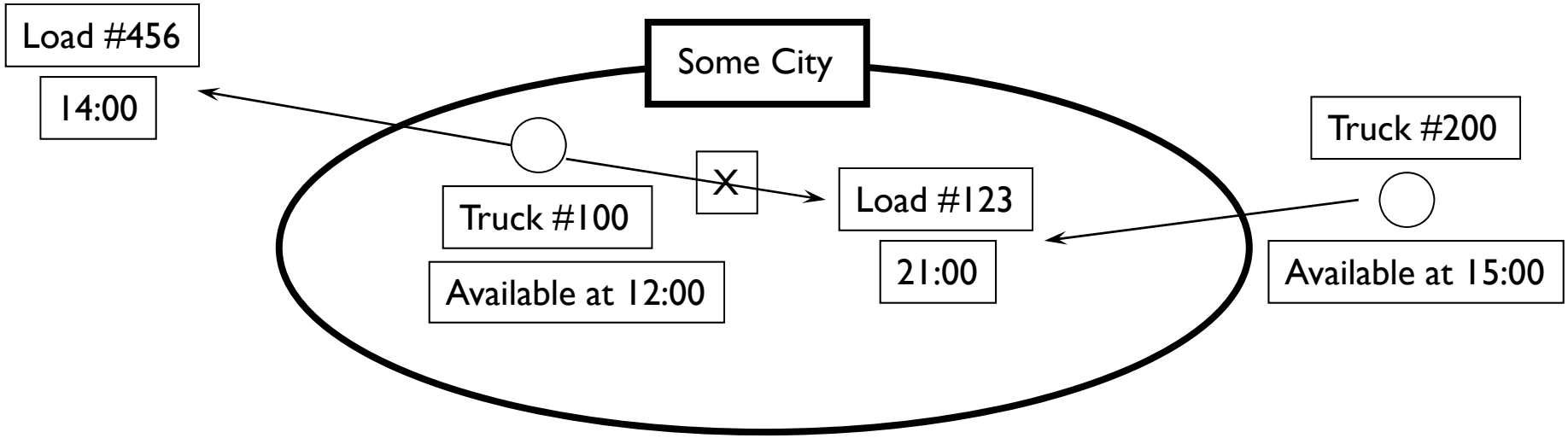
Optimization User: "Isn't it supposed to suggest Truck #100 to Load #123 ? You've just increased my empty miles!!"



Eliminate Virtual Boundaries

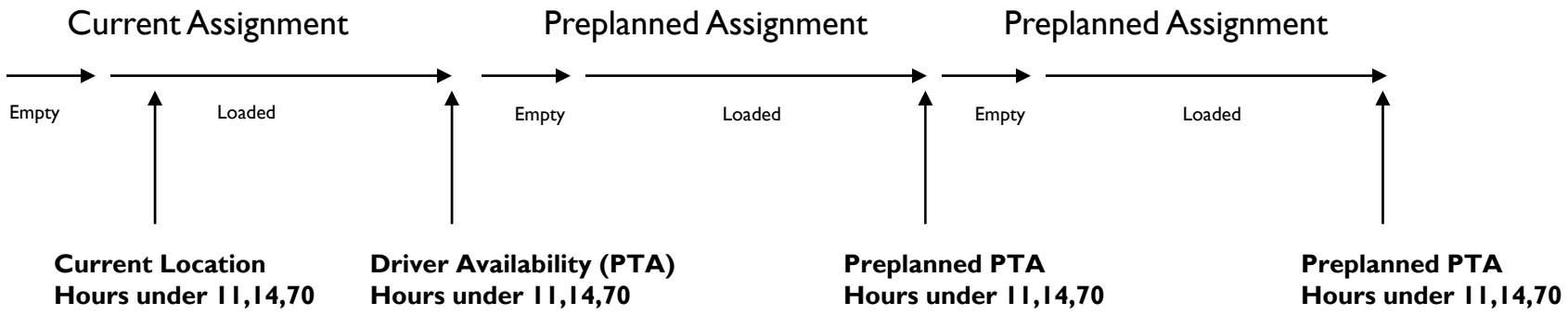
Optimization User: "Isn't it supposed to suggest Truck #100 to Load #123 ? …You've just increased my empty miles!!"

Answer: While you've increased the empty miles for this one truck, you have also just decreased the company's overall empty miles, and have utilized this truck's hours to its full potential in relation to all other trucks available.



Hours of Service Modeling

Driver Hours are calculated at current location, at destination (PTA), and through the destination of any preplanned activities



Managing Deadhead

- Strategic Changes to Freight Mix
- Hire drivers that live in your freight network
- Utilize Planning Optimization
- Focus on Appointment Efficiency
- Create High Visibility

Customer Deadhead Examples

- Central Refrigerated Services – Implemented TMW planning optimization
  - 70% Compliant with Recommendation
  - Improved load ratio by 2.5 % in less than 2 months
- Florilli Transportation – Receive Notification of Excess Deadhead
  - Can Evaluate Empty Miles before they Occur
  - Empty Based on Tractor Position to Pickup
  - Creates Visibility and Accountability

Managing Approved Out-of-Route

- Use Drops and Relays Effectively
- Plan ahead for Maintenance
- Provide a Fueling Plan and Approved Route
- Hire drivers that live in your freight network
- Use your Freight to get Drivers Home
- Proactively Manage Safety Initiatives

Managing Approved Out-of-Route

- EPES Transport – Maintenance Management
  - Uses technology to Identify Low Cost Opportunities
  - Match Equipment in Need of Maintenance to Qualified Facilities In-Transit
- USXpress – Random Drug Testing
  - Geofence Alerts for Target Random List
  - Virtually Eliminated Extra Mileage Required

Managing Unauthorized Out-of-Route

- Establish an Approved Route-Line
- Maintain Real-Time Visibility
- Manage by Exception
  - Instant Notification
  - Mapping
- Utilize Historical Information

Managing Unauthorized Out-of-Route

- TransAm – Historical Reporting
  - Compare Truck Positions to Approved Mileage
  - Mentor Drivers with High Variance
- Paschall Trucklines – Approved Route-Line and Fueling Stops
  - Transmit Authorized Route-Line for each Trip
  - Audit Mileage for Drivers who are below Fuel Compliance Threshold

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