CLIMBING DATA MOUNTAIN

**Data-Driven Business:
Challenges and Best Practices
in the Transportation Industry**

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AGENDA

- Basic Themes and Context

  – Data, data, everywhere …

- Making the most of our data mountain

  – Peaks, Plateaus and Crevasses

- Making better decisions

  – Data versus Beliefs

BASIC THEMES AND CONTEXT

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- Abundance and scarcity
  - Data is abundant
  - Information is available
  - Insight is scarce
- Quantity and quality
  - Quantity can mitigate some quality
  - The economics of data storage can support this
  - Not appropriate to drive operational processes
- People and decisions
  - Descriptive, Predictive and Prescriptive Analytics
  - The most powerful model sits between our ears
  - Are we improving our mental models?

MAKING THE MOST OF OUR DATA MOUNTAIN

MAKING THE MOST OF OUR DATA MOUNTAIN

- Peaks
  - Communication to/from the truck
    - Position and work assignment
    - Truck performance (stored and downloaded)
  - Customers and Suppliers
    - Location hours, computed loading/unloading times
    - Train ETAs, Grounding times, computed in/out times
  - Network optimization
    - Evaluate opportunities to balance the network
    - Develop pricing curves for bids and spot freight
  - Dispatch Optimization
    - Creating tours and assigning drivers to reduce empty miles
  - Appointment Optimization
    - Suggesting times for appointments that improve dispatch optimization

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MAKING THE MOST OF OUR DATA MOUNTAIN

- Plateaus and Crevices
  - Congestion and transit time estimation
    - Must be able to predict transit times
    - Congestion models are complex
    - Managing a lot of data to maintain the models and keep them relevant
  - Managing rules, exceptions and penalty costs
    - Needs and desires in different markets
    - Balancing cost and service
    - Fairness

- All theoretically solvable with advanced analytics
  - Need to be vigilant about the cost of complexity

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MAKING BETTER DECISIONS

MAKING BETTER DECISIONS

- Sometimes good data and analysis are not enough
    - "People don't act in accordance with the truth; they act in accordance with the truth as they believe it to be."
        - Lou Tice, Pacific Institute
    - "They don't care how much you know, until the know how much you care."
        - Theodore Roosevelt

- Improving our thinking
    - The path from complexity to simplicity is paved with understanding
        - Data, data everywhere, much less time to think
    - Working on interactive simulations that help us learn and force us to think
        - Trucking Game™
        - Dispatch Simulation
        - System Dynamics models

- Eventually conquering data mountain

Thank You