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
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• 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
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
MAKING BETTER DECISIONS
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• 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