Business Intelligence in Transportation

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Brief History

- Moved from Europe 15 years ago
- Graduated in Industrial Engineering from Georgia Institute of Technology
  - First Prize for best Ph.D. Dissertation in Transportation Science
- For six years assistant professor at the University of Illinois at Urbana-Champaign
- For a year associate professor at Northwestern

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Business Intelligence

- Making sense of data
  - Data mining
  - Analytics
  - Decision support systems
- Cost cutting and revenue increasing solutions
  - Manpower planning (staffing)
  - Resource and asset allocation
    - Allocation and management of aircraft, locomotives, trucks
  - Logistics and supply chain management
    - Network design
    - Mode of transportation

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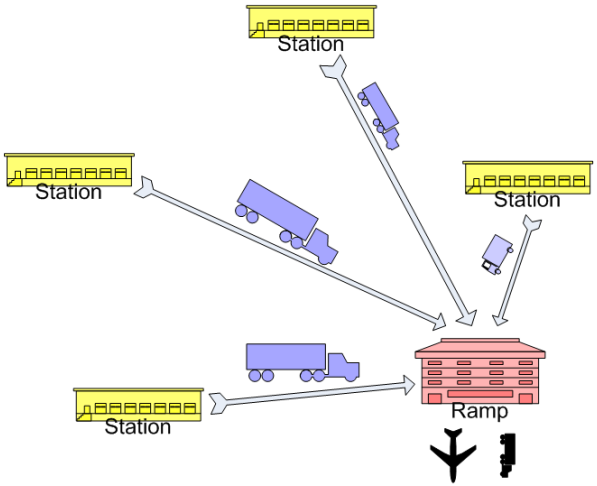
FedEx Express

- Move packages from local stations to ramps
- Streamline
  - Flow of packages
  - Transportation costs
  - Sorting
- Started as proof of concept
  - Significant potential savings revealed
- Current status
  - From proof of concept to production
  - FedEx committed to deploy internally



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Sabre Holdings

- Who is not going to be delayed tonight?
- Develop an information system to assist airlines during irregular operations

- Extremely complex
  - Aircraft, Passengers, Crew
  - Trading-off the direct cost vs. intangibles
    - Passenger goodwill
    - Back on time

- Real-time system
  - Needs to obtain a solution within minutes
  - Dispatch the solution

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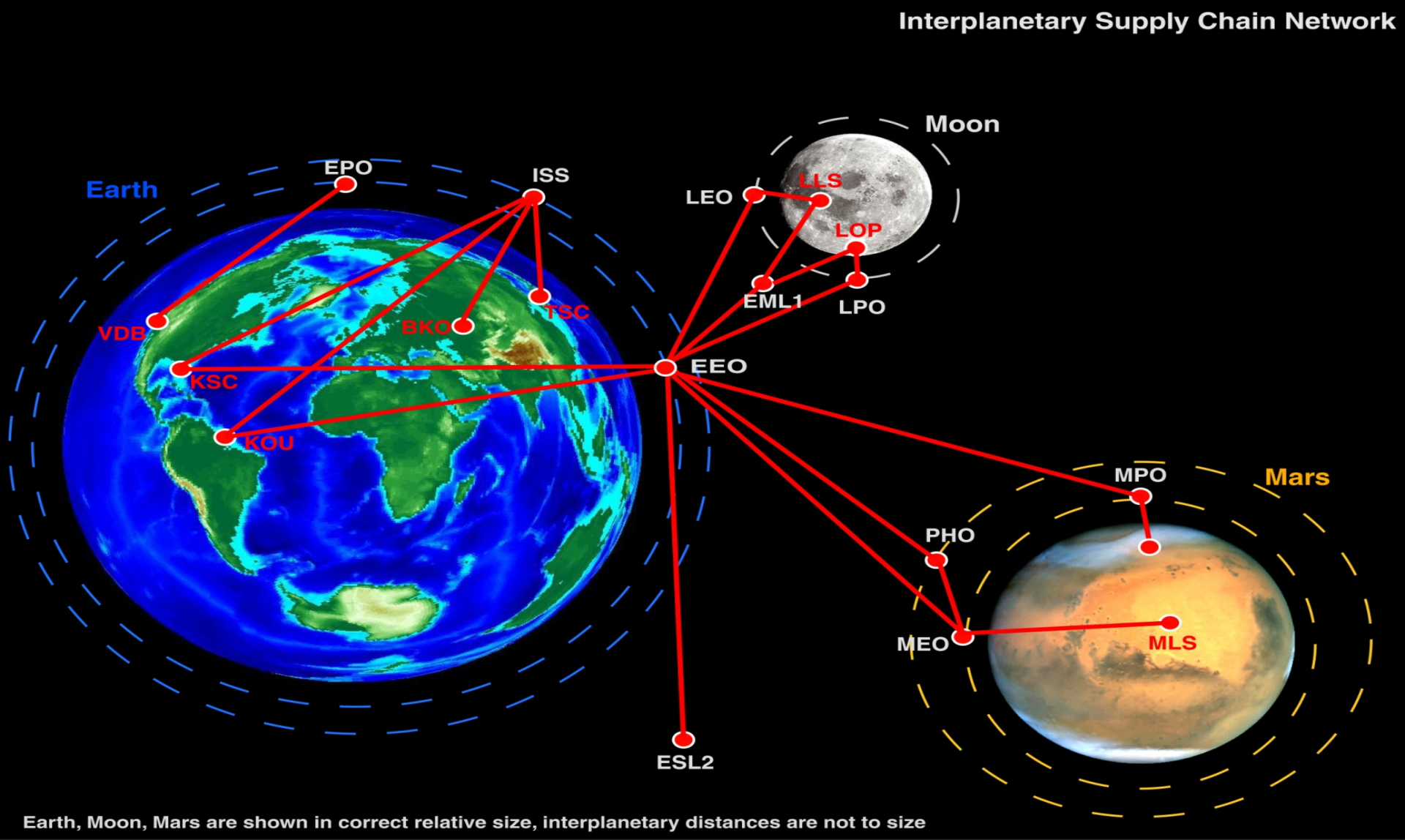
Interplanetary Logistics for NASA



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Norfolk Southern

- Gang scheduling
  - Just started
- Gangs are teams of maintenance workers
- Several times in a year are relocated
- Efficient way for
  - Relocating gangs
  - Scheduling day shifts
- Transportation Center an important link

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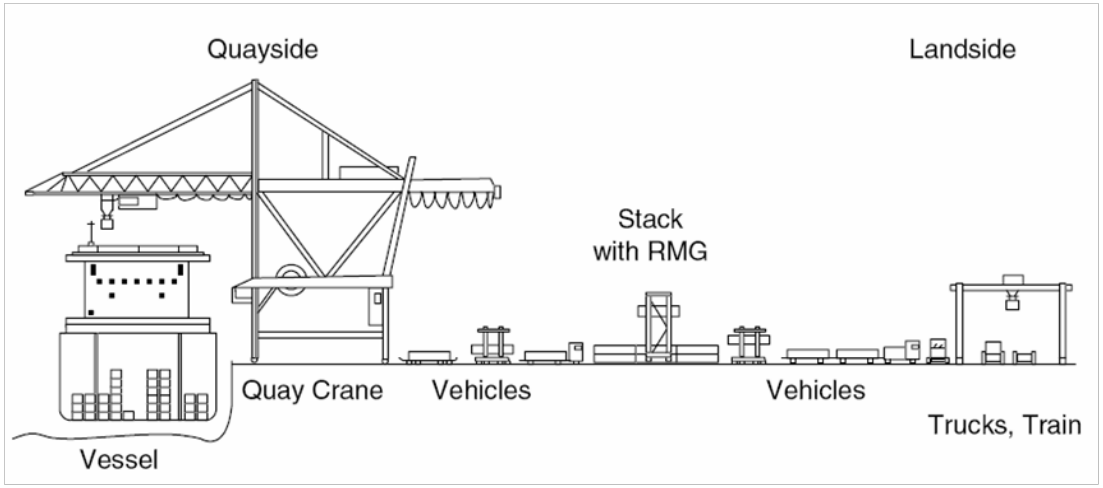
Other Partners and Projects

- Northwest Airlines
  - Aircraft management
- Port of Singapore: PSA Singapore
  - Quay crane operations
- American Airlines, United Airlines (sponsored my Ph.D. thesis)
- IDOT




How may
I help you?