Rate of Adoption and Investment Viability of LNG Mining Trucks

Motivation and Objectives

Determine the rate of adoption of LNG fueled mining haul trucks to help Caterpillar decide whether to invest in their design and manufacturing.

- Why to invest in LNG?
- What are the challenges?
- When to introduce it to market?
- How to make internal changes?

Adoption Rate Analysis

- Average New Truck Sales (Flow): 1,000
- Active Trucks (Stock): 11,000

Stakeholder Interviews

- Customers
- LNG Suppliers
- CAT Employees
- Complimentary Players
- Open Ended Inquiry

Literature Study

- Fuel Price Fluctuations
- Market Estimation
- Mining Industry
- Ladder of Inference

Caterpillar

- Organization
- Strategy
- Decision Making
- Case Studies
- Shifting the Burden

No. of Trucks

Recommendations

- Fully commit to the development of LNG fueled mining haul trucks through a network of execution processes.

- Closely monitor the key variables
  - Delta between Oil & Natural gas price
  - Implementation of Regulatory policy for GHG emissions
  - Availability of LNG supply and infrastructure

- Invest enough to drive market engagement

- Early Adopter
- Early Majority
- Late Majority
- Laggard

Operations Costs (Fuel + others)

Systems View Dashboard

- Customer’s Perspective
- System’s Approach
- Supply Infrastructure
- LNG Ecosystem
- Challenge Assumptions
- Habits of Thought
- Habits of Action

Adoption Curve


Year

Case Studies