



# Eco-Cool: Revolutionizing sustainable cold chain

AI driven digital twin for  
mobile refrigerated units

# Thumbnail images



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16:9 image



ECO-COOL CERTIFIED





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# Context and business drivers for sustainability in cold chain

## GHG\* emissions monitoring and remote control of UK Trailer Refrigeration Units (TRUs)



**70,000** refrigerated trailers and vehicles in UK



**28%** of logistics vehicles are running empty miles  
**13%** of goods are affected by spoilage in transit



TRU responsible for **40%** of vehicle GHG emissions from the whole vehicle  
- **50%** refrigerant leakage



Emissions vary hugely based on age and condition of refrigeration unit plus type of distribution

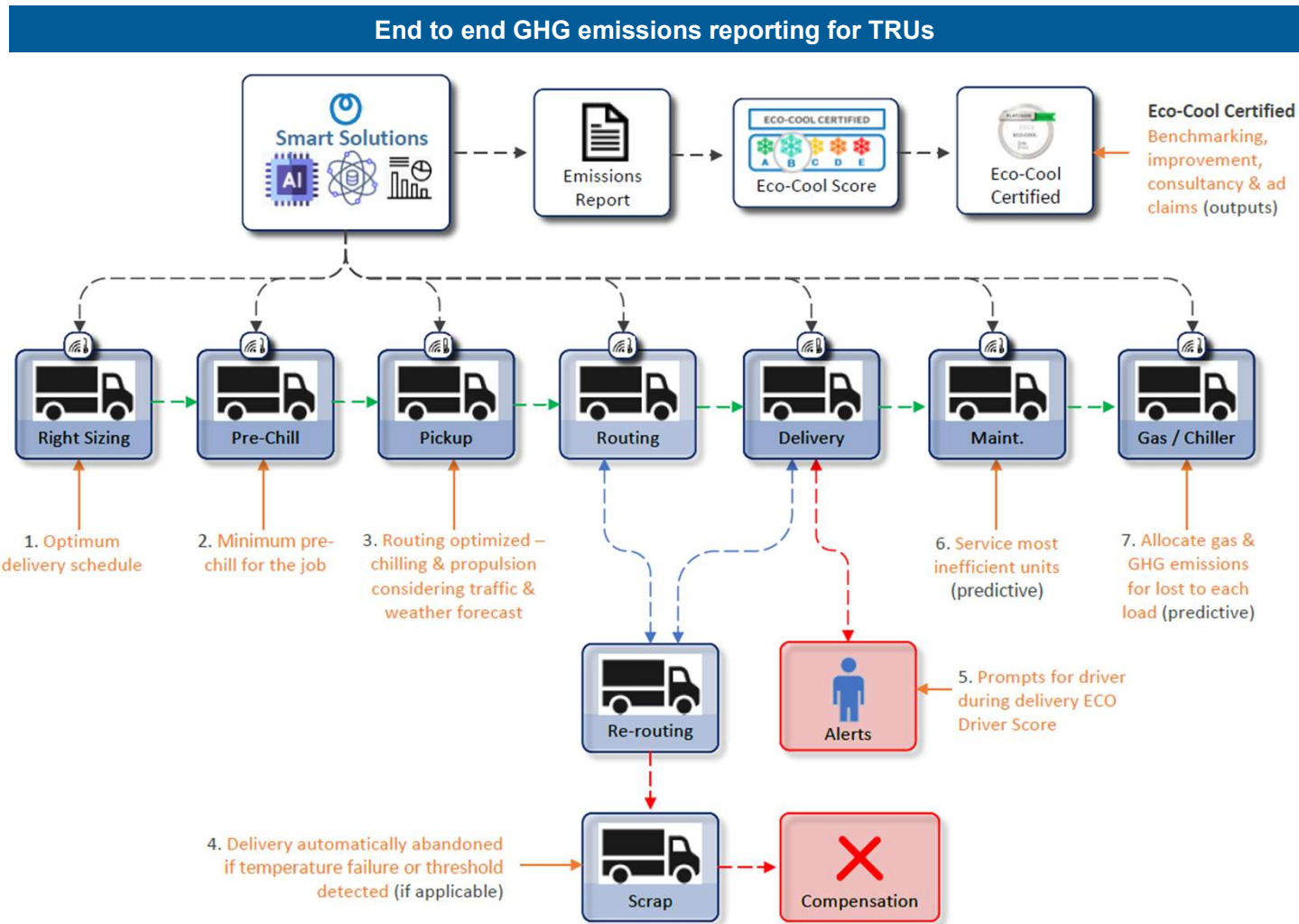
Efficiency and avoidance of waste can improve fleet performance on sustainability  
Assurance that temperature thresholds are strictly maintained

Measurement and reduction of GHG emissions and refrigerant leakage  
Changing sustainability legislation requires increased transparency across Scope 3 Category 4 (upstream transportation) emissions

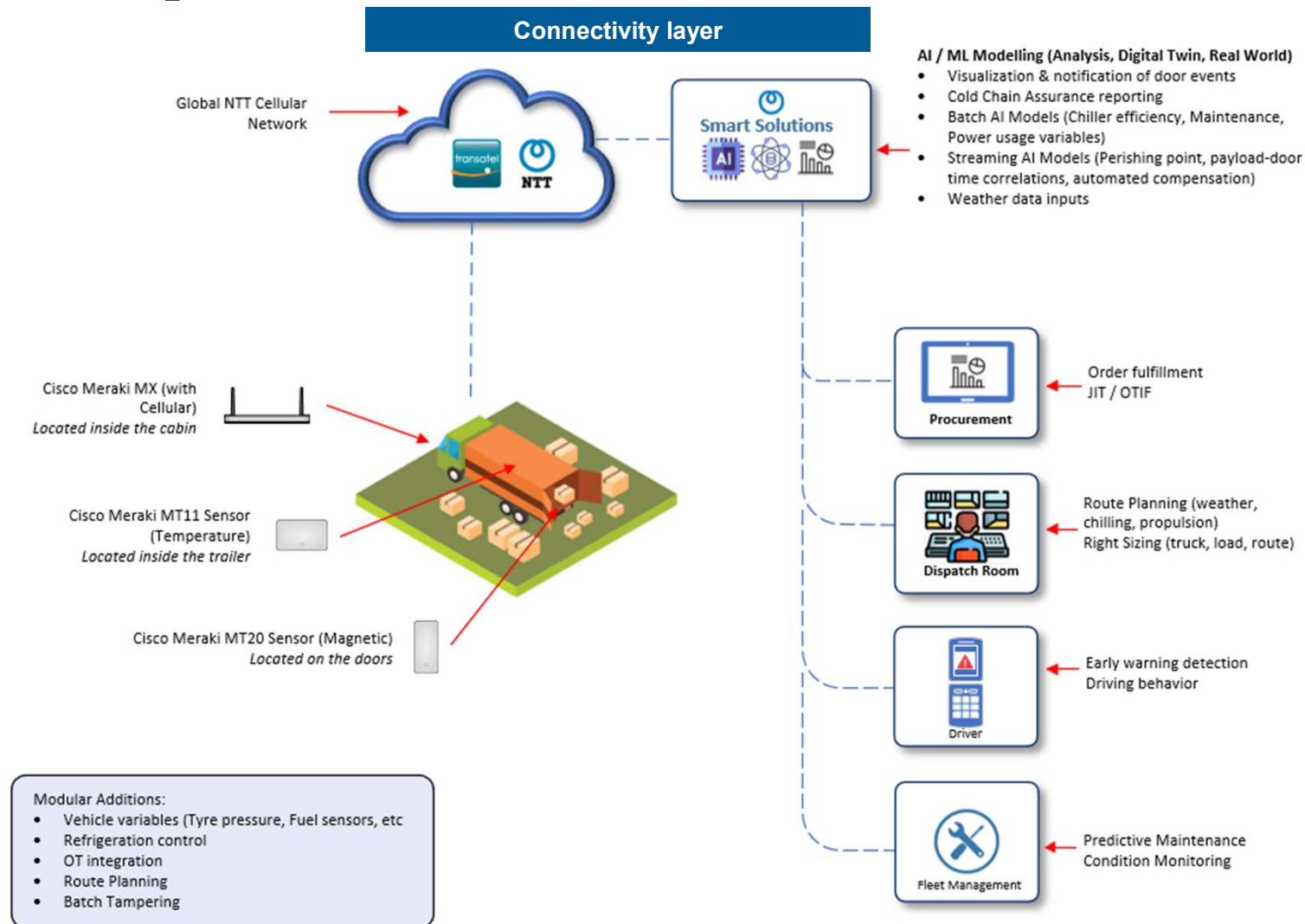
\* GHG – greenhouse gas emissions, measured as CO<sub>2</sub>e

Source: [The Cold Chain Storage Federation – “The journey to emission free temperature-controlled refrigeration on road vehicles”](#)

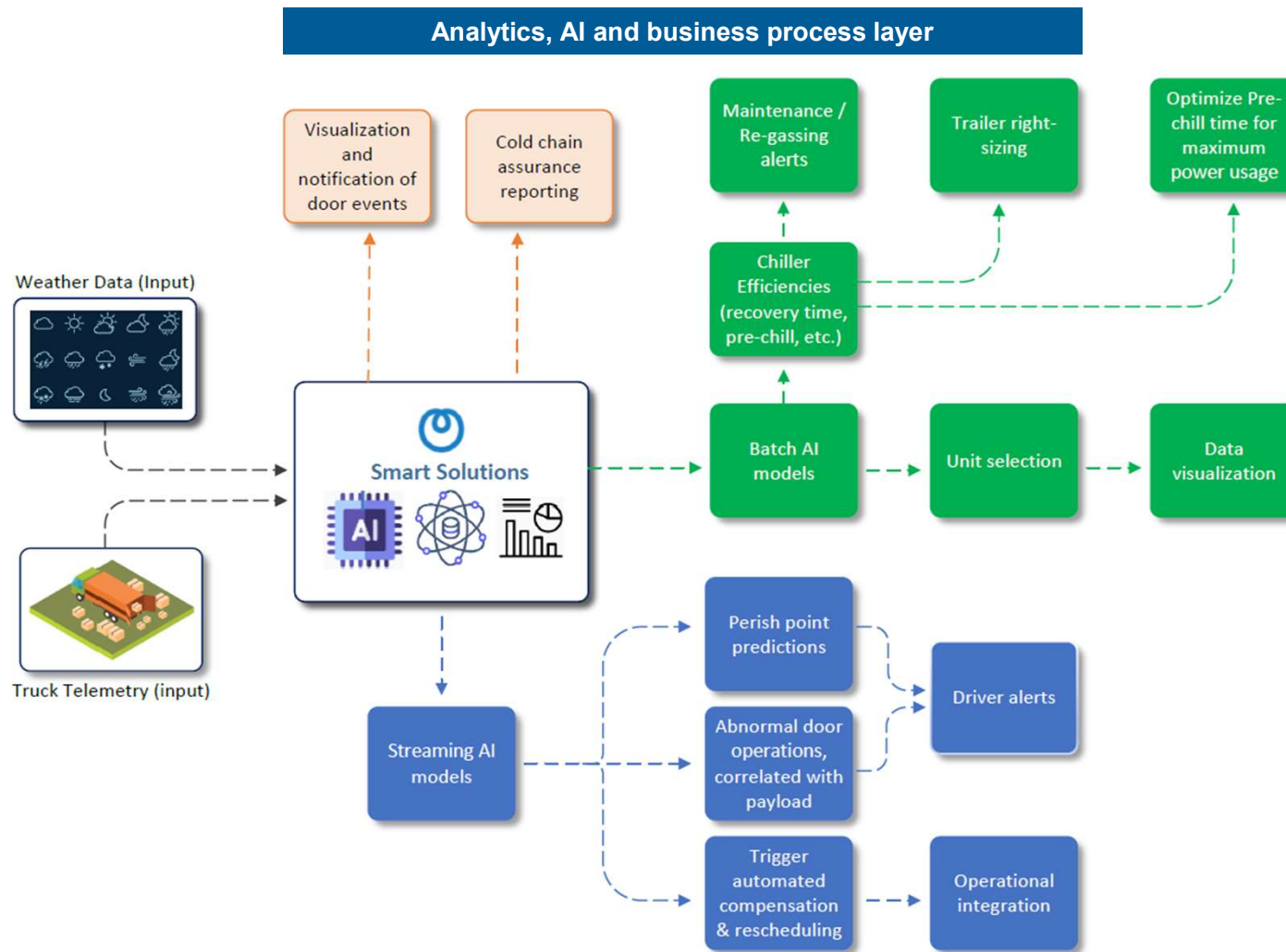
# ECO-COOL CERTIFIED – a vision for sustainable cold chain logistics



# PoC based on temperature and door control

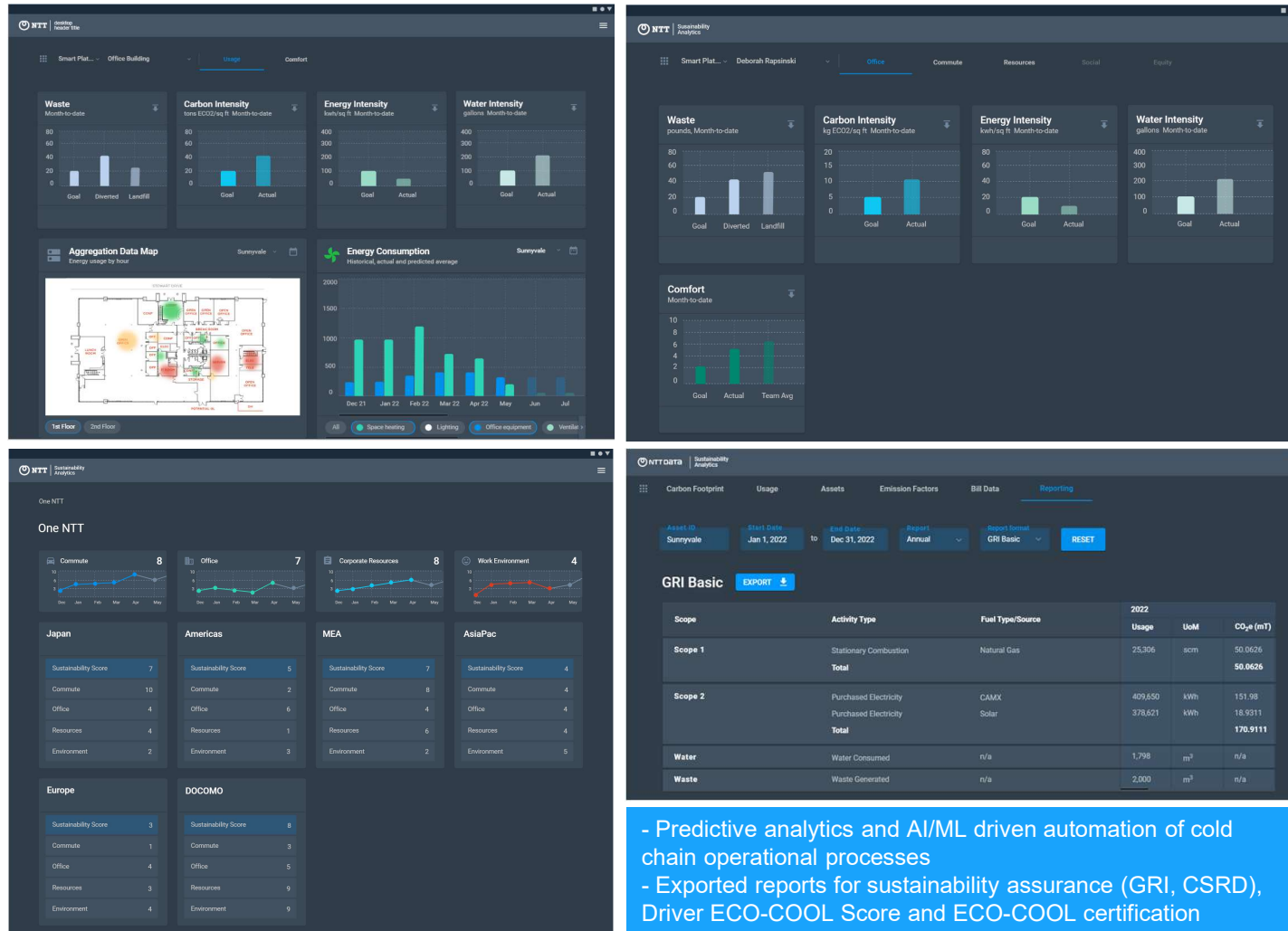


# PoC based on temperature and door control



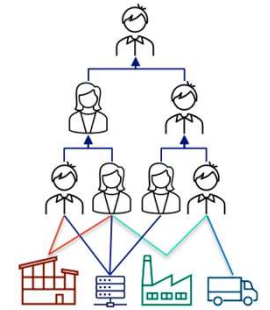


# Smart Solution dashboards to power the digital twin

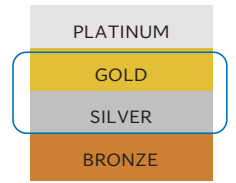


- Predictive analytics and AI/ML driven automation of cold chain operational processes  
 - Exported reports for sustainability assurance (GRI, CSRD), Driver ECO-COOL Score and ECO-COOL certification

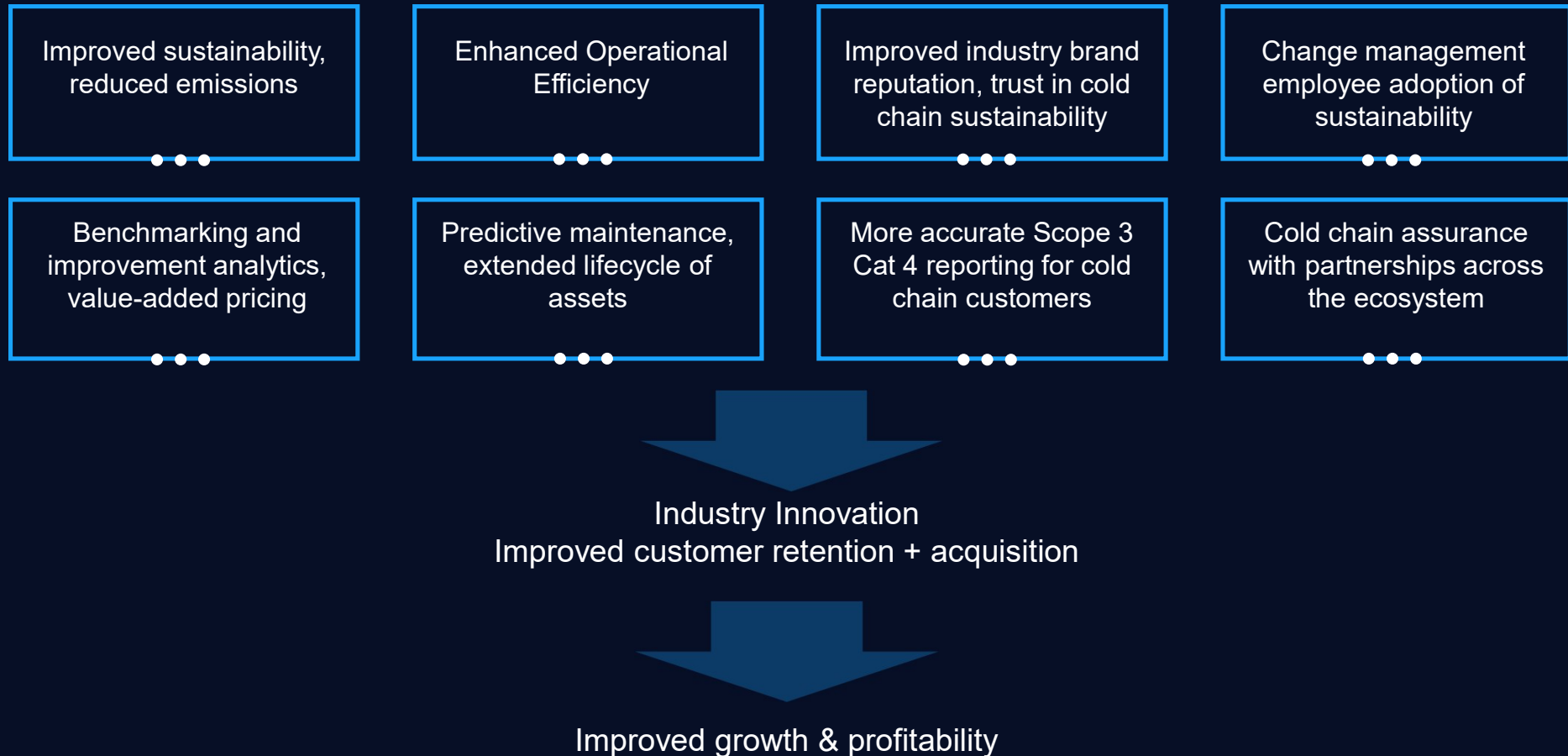
## Reporting access



## Assurance reporting



# Summary of ECO-COOL certification benefits



# ECO-COOL assurance for cold chain logistics – summary description

Team NTT have created a vision for an assurance program that uses IoT, connectivity and data analytics to deliver sustainability outcomes for cold chain logistics by monitoring and controlling performance of trailer refrigeration units on reefer trucks.

**ECO-COOL Certified** will provide data driven sustainability benchmarking for cold chain logistics with real time capabilities to enable dispatch and drivers to track and optimize refrigerant leakage and overall GHG emissions. This will help the FMCG and pharma sectors to manage and optimize their Scope 3 Category 4 (upstream transport) emissions.

**The PoC** will take an MVP approach and provide core end to end functionality, including AI driven machine learning and visualization for two key variables: temperature control and reefer door operation.

The solution will use Cisco sensors, connectivity and data visualization but will also incorporate NTT Transatel M2M connectivity which provides global coverage for vehicle mobile connectivity. AI driven analytics will deliver predictive analytics and operation business processes as part of the digital twin.

**Cisco/NTT** will develop the PoC with an existing NTT client. This will lay the groundwork for the joint GTM planning and a roadmap for the industry level solution.



