

Innovation & Strategy Roadmap





Jim Zeitunian

Chief Technology Officer

platform application
information online research
BIG DATA
data analysis intelligence
technology

Product Lines

Saving Lives, Saving Time, Saving Money

Industrial

- Electronic Safety Checklist and Vehicle Inspections
- Pedestrian Proximity Alerting
- Load Sensing
- Prescriptive/Predictive Maintenance
- Impact Management
- Speed Saver Control Unit

Logistics

- Asset Security – Tamper Alerts
- Improve Asset Utilization
- Manage Dwell and Detention Times
- Prescriptive/Predictive Maintenance
- Improve Tractor to Trailer Ratios

Connected Vehicle

- Theft Prevention and Recovery, Incident Management
- Risk Identification for Vehicles and Freight Based on Driver Profile
- Maintenance, Fuel Management and Performance
- Dashcam, ADS, Driver Identification

Insurance

- Mobile Telematics Solution
- Risk Identification and Mitigation Through Insurance Developed Maneuver and Scoring Algorithms
- Rewards and Recognition
- Insurance Discounts Based on Good Driver Behavior

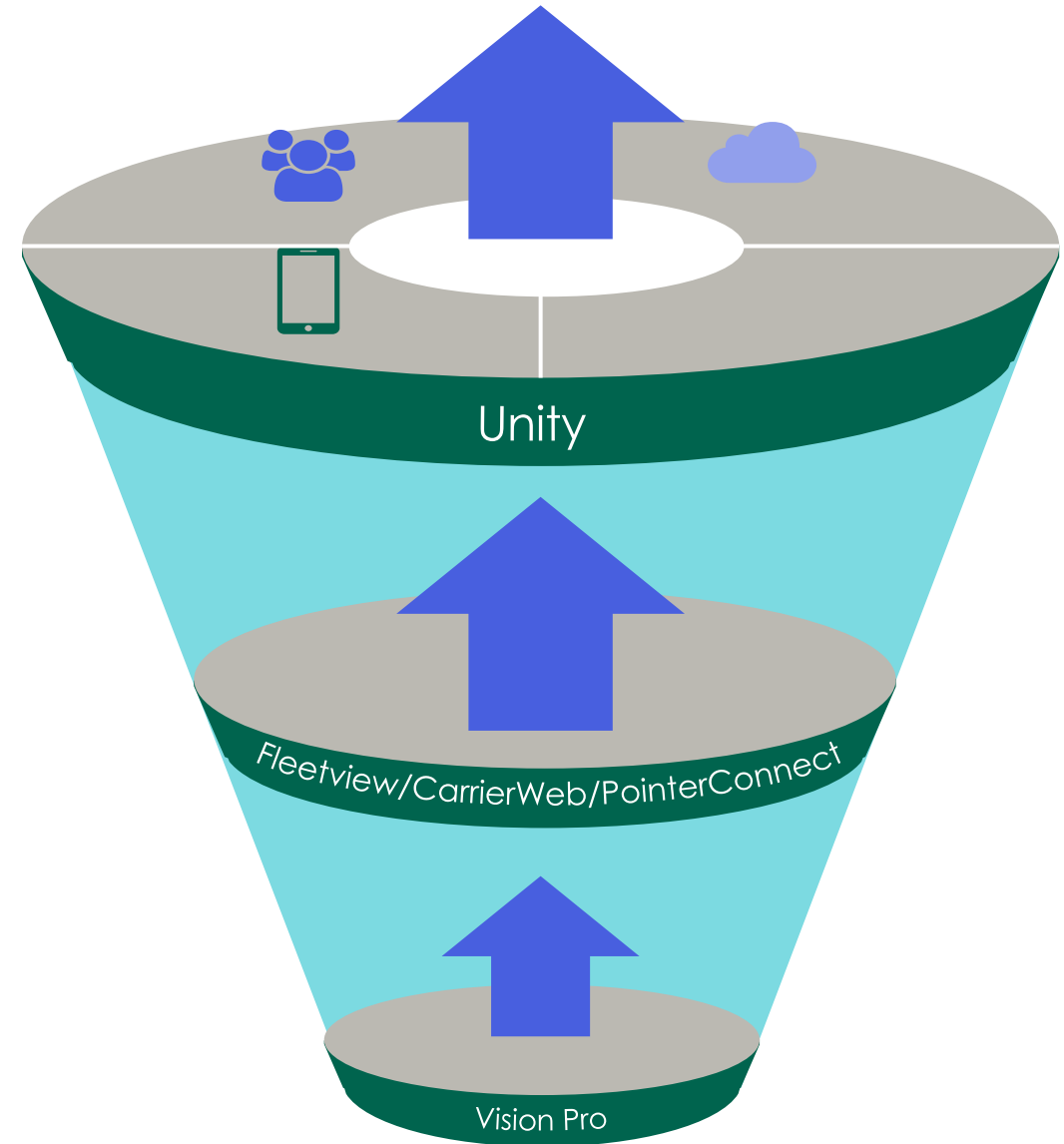


Enterprise Scale Built On Proven Heritage

Since 1993 Powerfleet has been building transformational products and software

By preserving this heritage and building new and innovative enterprise applications, we are still transforming the landscape

Unity – The data and applications that make a difference



Transforming Data to Drive Business Insights

Data Ingestion

- Multi-Input Pipelines
- Device Agnostic
- ERP Software Integration



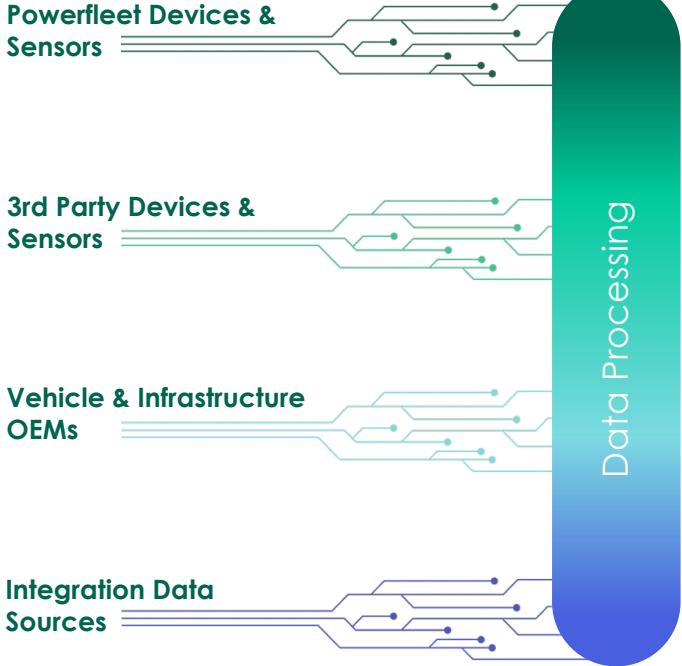
Data Processing

- Data Enrichment
- Harmonizing
- Cleansing
- Understanding



Data Enrichment

- Transformation of Raw Data Into Meaningful Insights
- Organization of Insights Into Consumable Pieces
- Can Be Delivered via APIs or our FrontEnd



IoT transformation

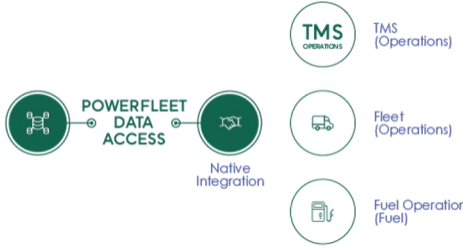
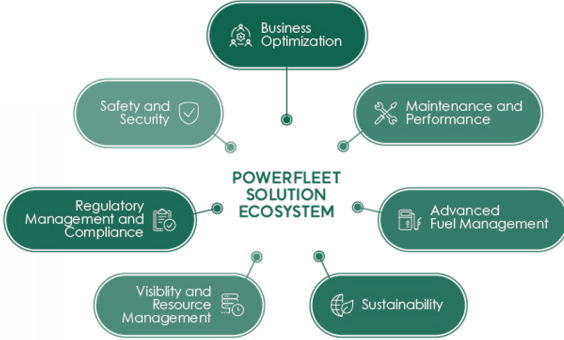
Streaming data >

Analytics/Insights



Data-Powered Applications (SaaS)

Unified Operations & Services (DaaS)

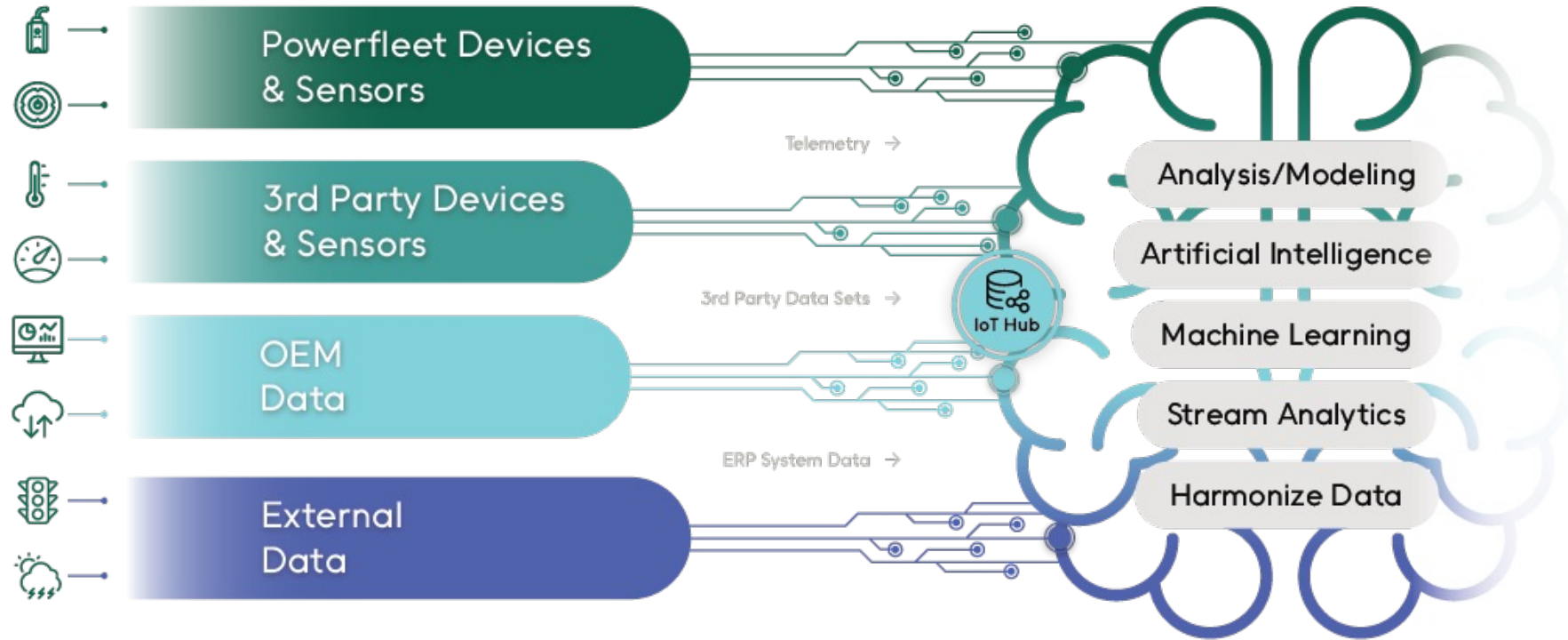


Ingestion of Your Disconnected Data Sources

Phase 1

Data Ingestion

- Multi-Input Pipelines
- Device Agnostic
- Translation of ERP Data Into the System

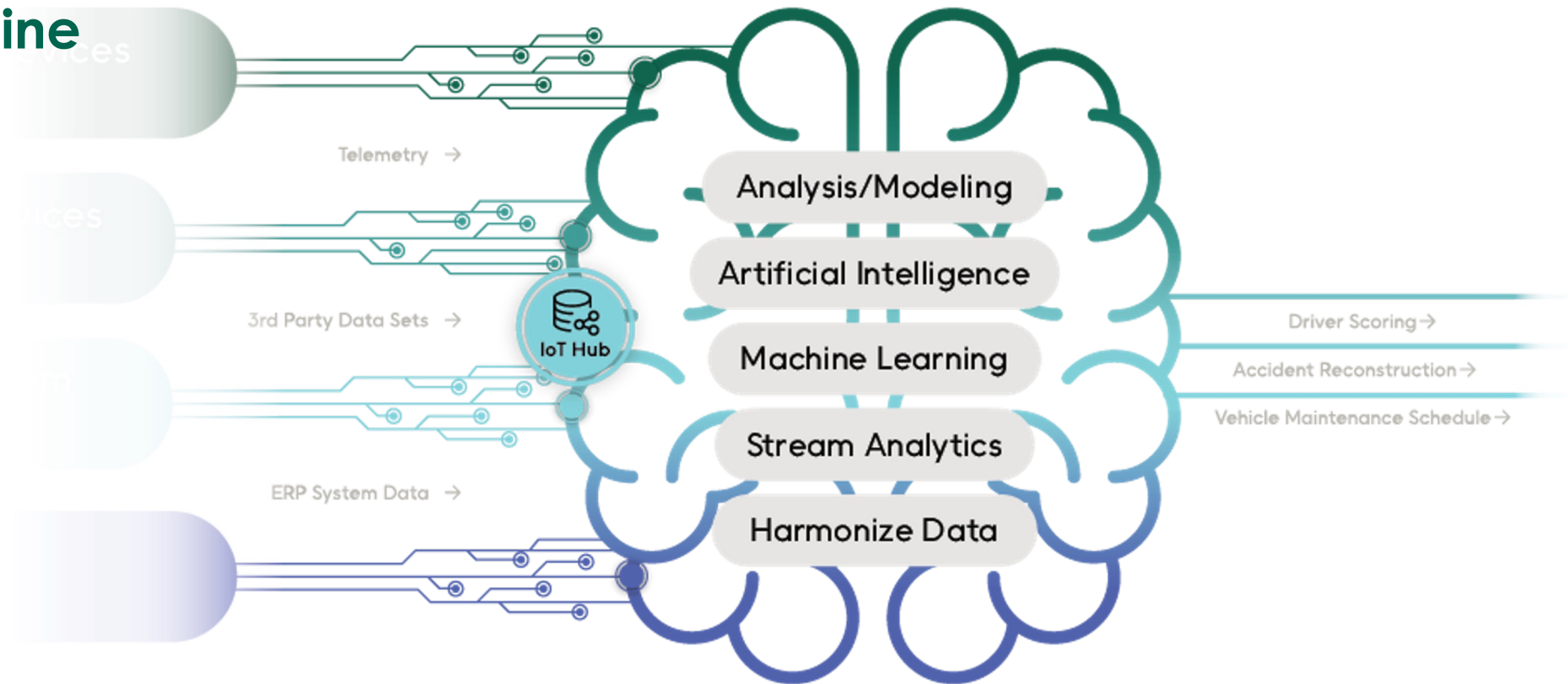


Transforming Data to Drive Business Insights

Phase 2

Cognitive Data Engine

- Refinement
- Harmonizing
- Cleansing
- Understanding

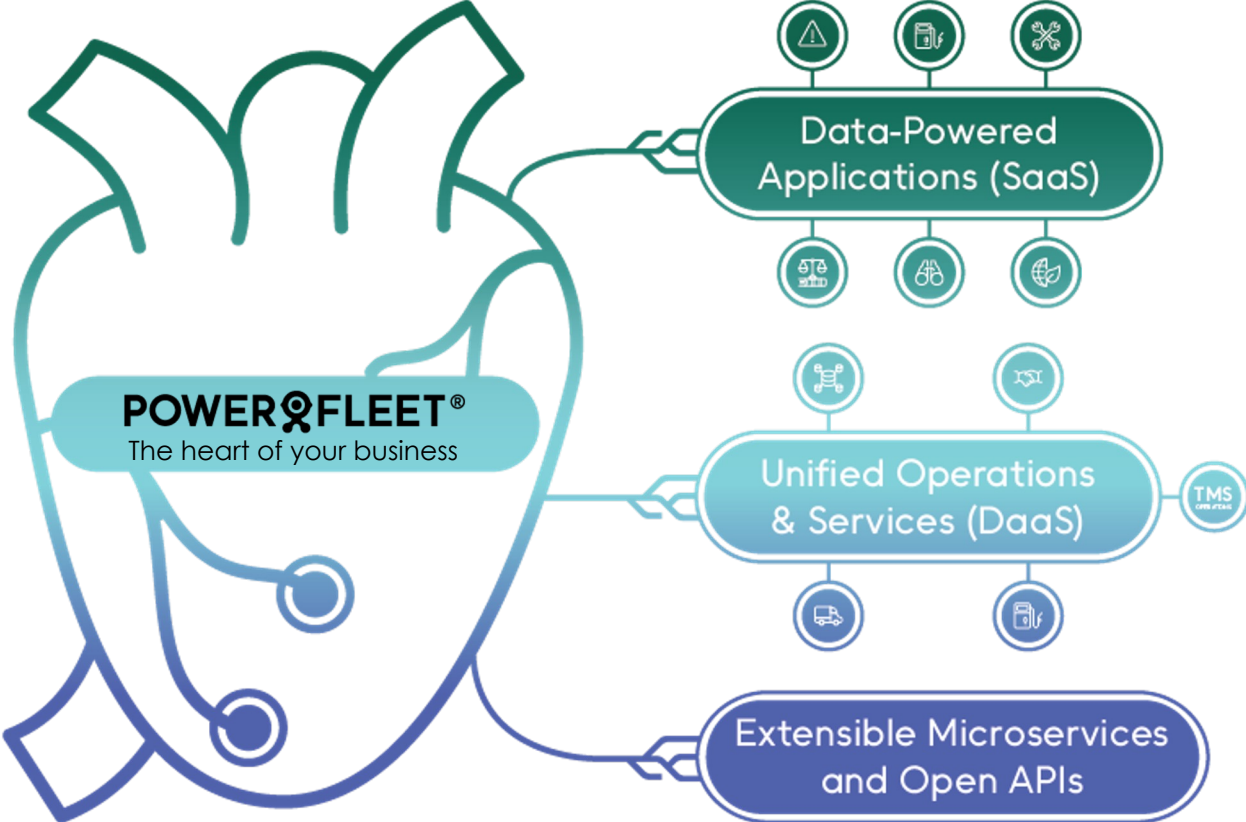


The Heartbeat of Your Actionable Intelligence and Data Strategies

Phase 3

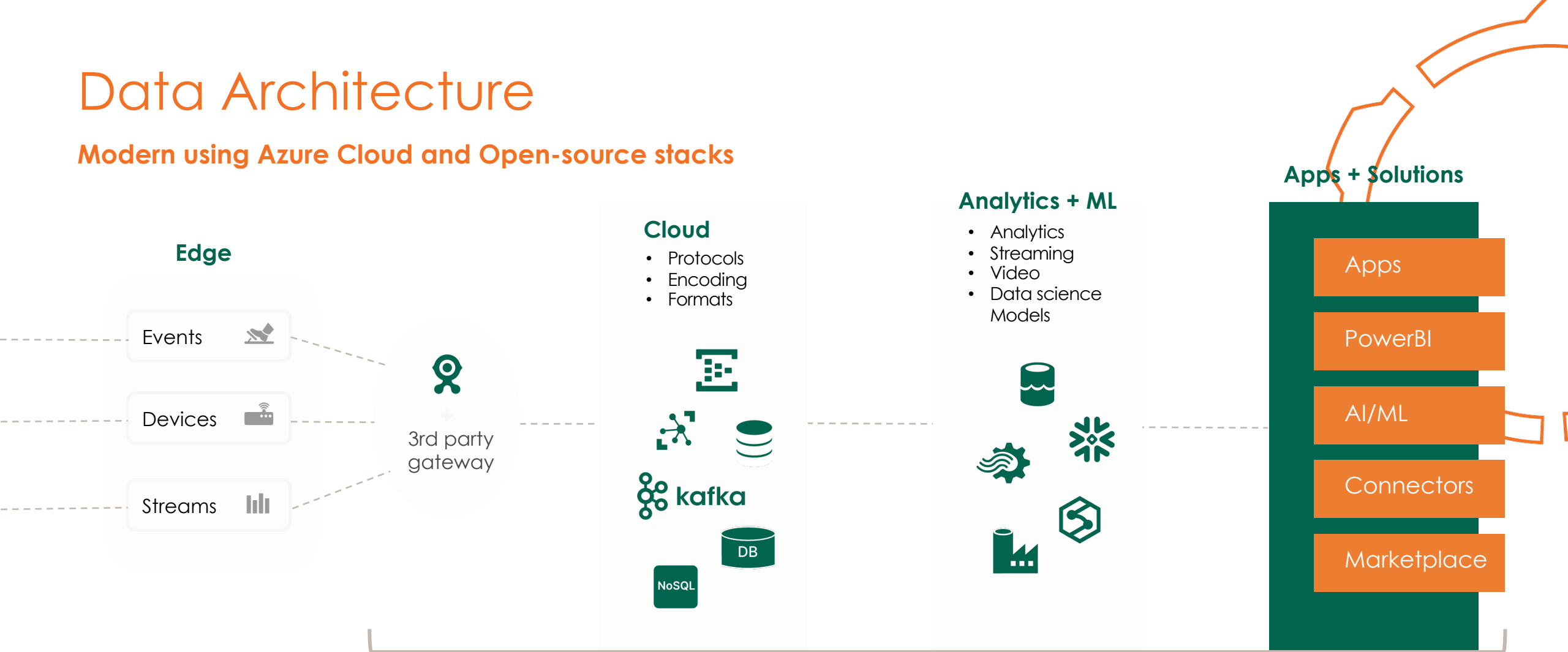
The Heart Of Your Business

- Transformation of Raw Data Into Meaningful Insights
- Organization of Insight Into Consumable Pieces
- Can be Delivered via APIs or our Front-End



Data Architecture

Modern using Azure Cloud and Open-source stacks



Measurement + Observability

Over 150
Software
Integrations

13 Million
Miles
Driven/Day

5 Billion
Landmark Events
Processed/Day

Products



Vehicle Gateway Enterprise (Cello-CANiQ-M)

Intelligent Fleet Management Solution with Dual CAN Interface & Advanced safety algorithm

- Vehicle high-end product
- Dual CANBUS interface
- Supports connectivity & data analytics for variety of vehicle data buses
- OBDII (ISO 15765, 14229)
 - CAN2.0 (ISO 11898, J1939, FMS)
 - K-line, J1708
 - CANFD
- Advanced driver behavior - Safety smart algorithm with driver scoring
- EDR
- DTC support (Digital Trouble Codes)
- On-board logic engine
- More than 300 features
- PointerCept supported



**Dual CANFD, Kline, J1708
EV market leader**



**Advanced Driver
Behavior with driver scoring**



On-Board Logic Engine



Biggest
Logistic
company
in Mexico



Coca
Cola
distributor
in Mexico



leading
provider of
wireless
communicatio
ns services in
Mexico

Keyless Gateway (MVAC)

Wireless, Automated Control, Tracking & Monitoring of Vehicles

- The Keyless Gateway is an after-market, plug-and-play device specifically tailored for large rental or leased fleets. It provides a seamless and straightforward installation process, effortless removal, and features a patented locking mechanism.
- Remote lock and unlock capabilities using cellular or BLE
- Automatic vehicle model configuration for most OBD II equipped vehicles, with a library of over 300 models
- High level security
- Minimal power usage to prevent battery drain when the vehicle is not in use
- Advanced onboard fuel detection algorithm for sloshing and refuel events, to detect fuel accuracy to +/-0.3 gallons
- Coming soon – from a US-based solution to the global rental car market



Keyless Lock/Unlock



High Level Security



Fuel Management

Vehicles & Micromobility Gateway (CR-100)

Wireless, Automated Control, Tracking & Monitoring of Vehicles

- Very small form factor
- 9 to 90 volts - accommodates two/three-wheeled lightweight vehicles such as scooters and e-bikes, as well as traditional cars and trucks.
- Built-in BLE connectivity
- IP67 – suitable for rough, outdoor environmental conditions
- CAN interface to enable a wide range of applications driven from the vehicle CANBUS data (vehicle status, fuel level, tire status etc.)
- 1-wire interface for driver authentication
- Built-in motion sensor for movement & towing detection.
- Memory that can store up to 7,300 logged events
- Advanced capabilities including crash detection, odometer, jamming detection, tilt tamper and immobilization



Small form factor with 9-90V for Micromobility



Very Cost Effective



CAN Interface

Logistics Gateway (LV-300)

Advanced Asset Tracking and Remote Sensing for Constant Visibility

- Suitable for trailers / containers / high value mobile assets
- 2G, 3G, 4G
- BLE support for Powerfleet and 3rd party sensors
- More than 200 features
- IP67, ISO16750 (Shock, temp, humidity, UV, Chemical...)
- Patented product – recognizing container mount/unmount
- With the Mount and Load Sensor (LV-750) also recognizes container empty/loaded (patented)
- Tire inflation system monitoring – idle and transit airing
- Compatible with HST (Hyundai Smart Trailer)
- Tractor/Trailer matching (with the CelloSense)



**Container Mount/Unmount
& Empty/Loaded**



Tractor/Trailer Matching



**BLE Long range
Communication**

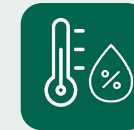
MultiSense

Cold chain and pharmacy temperature & humidity sensor

- 0.5% (Humidity) and 0.1°C (temperature) accuracy with the best response time
- BLE 5 LR
- 5 years Battery Life
- Fully Integrated with the Vehicle Gateway (CR-400) ,Logistics Gateway (LV-300) and Logistics Gateway – Solar (LV-500,LV-550)
- Applicable in 2 types of enclosures – IP69K or Cold Chain
- EN12830 Standard
- On-the-fly alert notifications.
- Data Logger
- Accelerometer For Motion Patterns, Impact/free fall, and movement (+ML Core Option)
- Magnet Sensor (Door Open/Close)
- Temperature and Humidity
- High-value applications.



Just Released!



High Accuracy Temp & Humidity Sensing



Cold Chain, EN12830



5 Years Battery

Forklift Gateway (VAC5) - Simplify & Integrate Inputs/Outputs

Android RTOS, Based on Off-the-Shelf Tablet



Wireless Access & Checklist



Motion/
Seat/Lift



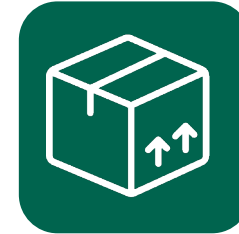
Speed
Monitoring



Load/Weight
Sensing



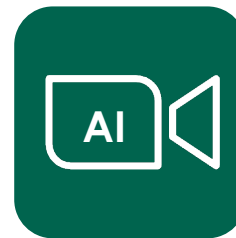
RTLS



Cargo
Tracking



Battery/
Fuel
Management



Video AI + Events
For DMS, Face Recognition &
Pedestrian Warnings

Product Offerings



Industrial Overview

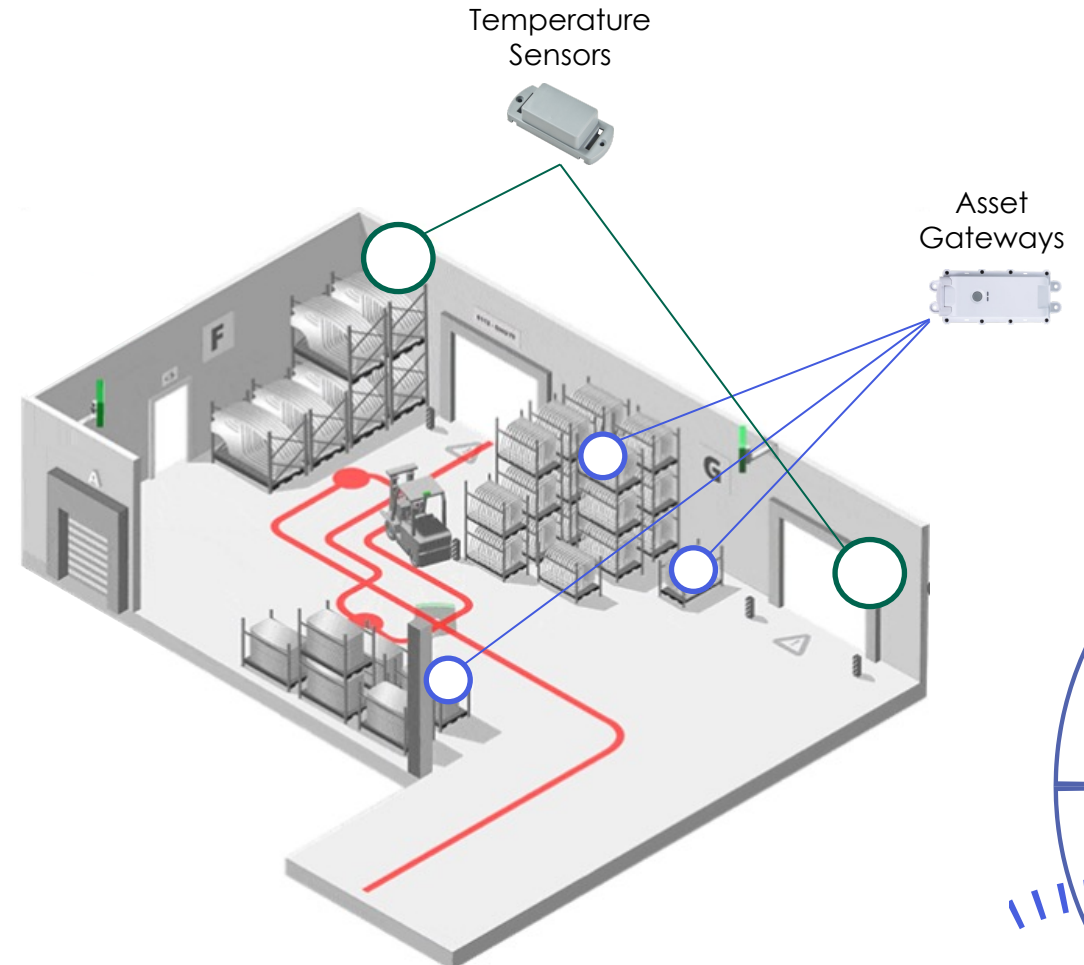
- 7.2 million industrial vehicles in the Americas and Europe (1M with a solution in use today)
- Vehicles include forklifts, tow motors, order pickers, man lifts, yard trucks, etc.
- Highest adoption in warehousing & distribution, retail, manufacturing, and automotive
- Employee safety focus has been trending upward due to shortages, high turnover rates (49%) and unpredictability in supply/scheduling
- Automation for vehicles and picking/packing continues to be a market emphasis with AI technologies enablement
- Corporate sustainability a key metric as regulations evolve, costs increase



Facility Compliance

Never lose valuable material...

- Temperature measurements to validate cooling systems by area or container/pallet, loss prevention
- Location system to pinpoint where goods were last seen and for guiding to at risk goods
- Stationary and rolling data collection points provide real-time coverage



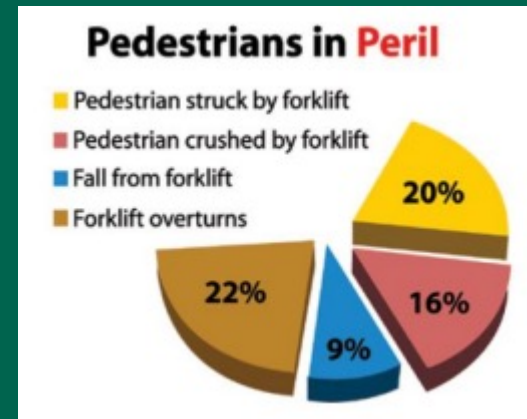
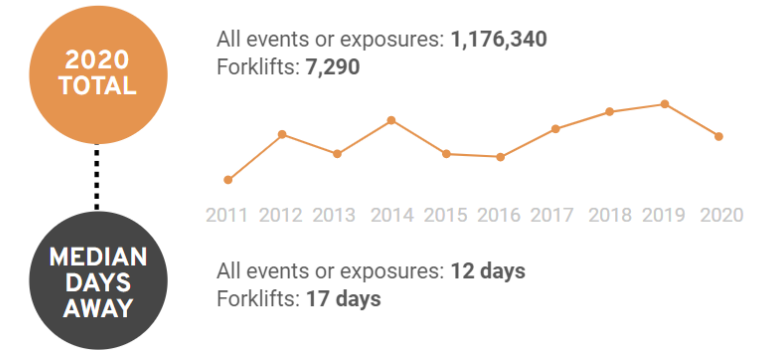
Keeping Employees Safe in Fast Paced Material Handling Environments

Solutions designed to predict and prevent workplace incidents

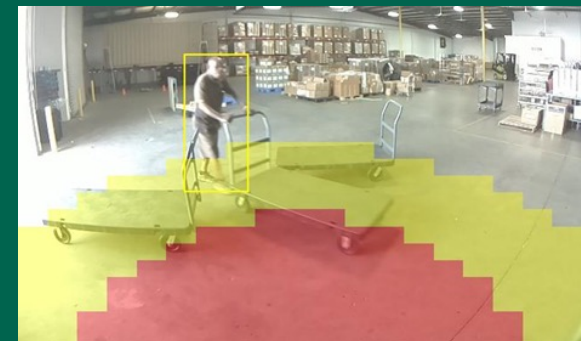
- Powerfleet solutions have made facilities safer with top businesses in the world for over 25 years
- Dramatic employee shortages and increase turnover (49%) have exacerbated the safety risks in recent years
- AI pedestrian proximity systems help drivers avoid high risk situations through situational awareness and forced vehicle slow-down
- Driver authorization enforcement prevents uncertified vehicle use, limits vehicle speed by experience, and immobilizes unattended vehicles
- Integrated OSHA recommended pre-use safety Inspections (DVIR)
- Insights and driver performance scoring to support coaching initiatives
- Impact tracking with machine learning and DVR provides analysis of critical events without distracting false events
- Powerfleet partners with Forklift Training Systems, a leading provider of license accreditation programs for forklift drivers

Personal safety ranks second only to physiological needs for employee retention!

Forklifts, nonfatal injuries and illnesses involving days away from work



Average workers comp:
\$44K per injury
\$1.3M per death
(NSC)



Pedestrian Proximity Detection

Artificial Intelligence empowering safety and efficiency

- Learning neural network for object identification
- Extensive dataset on incursions for prescriptive and predictive modeling

Reduced risk of collisions and injuries

...without pedestrians having to wear tags or special apparel



...travel direction controlled to eliminate false alarms

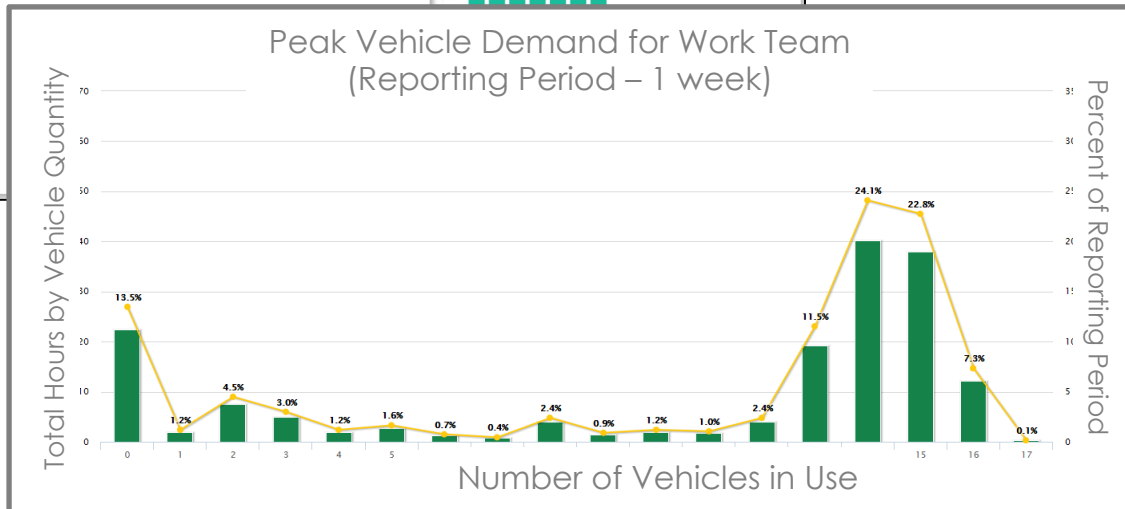
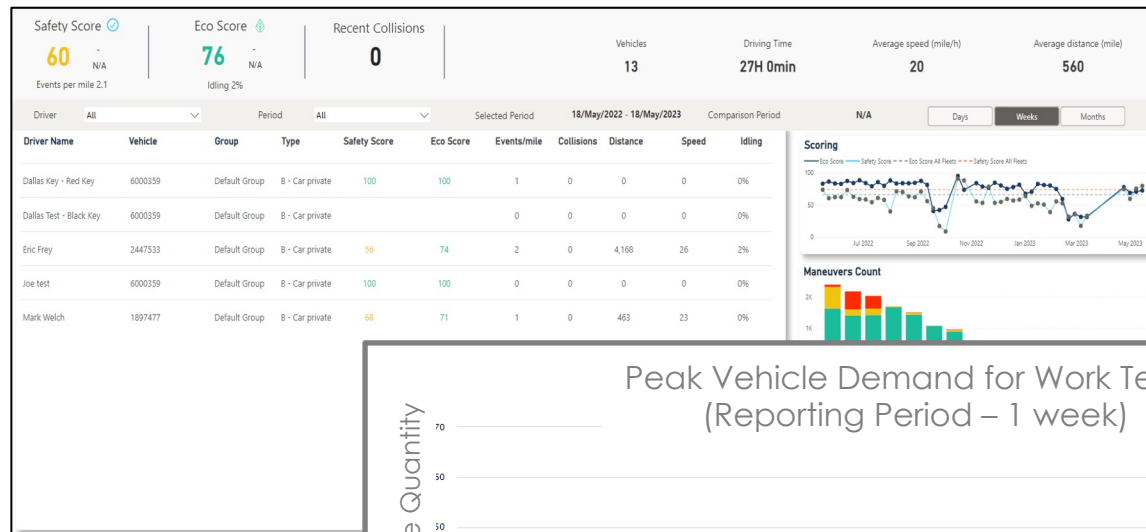


...automatic slowdown

Remote capture & analysis of near misses

Driver evaluation and performance management

- Elevate safety practice within the facility
- Performance-based pay
- Coaching reassurance to improve driver retention



Inspections

- Compliance %
- Finger whipping
- False failures
- Issues count vs. peers

Incursions

- Alert level / motion
- Warning level / motion
- Avg Duration
- Frequency vs. to peers

Impacts

- High/Sev/motion
- Frequency vs. to peers
- Med/Mod/motion
- Lockout to logoff time

Logins

- Idle timeout %
- MVAV rate
- MVAV overlap time

Speed/Weight

- Overspeed rate
- Event rate vs. peers
- Overload rate

Efficiency

- Actual vs. planned trips
- Clock vs. productive time
- Usage vs. peers

Asset Management Platform: Primary Business Objectives

Improved Utilization and Right Sizing Fleet

- Overall Impact: Increase revenue per trailer or reduced capex of new trailers
 - Increased trailer turns
 - Impact: Increase revenue per trailer
 - Manage miles per trailer
 - Impact: Fuel cost reduction and reduce maintenance costs
 - Manage dwell and detention times
 - Impact: Improved use of HOS and validation of trailer availability
 - Improve dispatch and customer service
 - Impact: Enhance driver satisfaction / retention

Enhance Security

- Improve theft prevention or recovery
 - Features: Tamper alerts
 - Impact: Insurance, prevent trailer and cargo loss

Optimize Trailer Pool

Improve tractor-to-trailer ratios

- Getting the right trailer to the right location

Operating Cost Reduction/Control

Predicative/Proactive Maintenance

- Features: Trailer systems status monitoring and fault identification
- Impact: Reduce tire wear/loss, reduce/avoid safety violations/fines



Data Overload

- 180 Zettabytes Worldwide by 2025
- 76% U.S. Workers Sight Daily Data Overload Stress
- Semi Tractors Generate 10s of MB of Data Daily
- Tractor Remote Diagnostic Data Growing Rapidly Driven by Predictive Maintenance, Fleet Uptime Demands, and Sustainability Goals
- Trailer/Chassis “Systems Data” Integration Beyond Track & Trace, Compliance, Proactive Maintenance, and Cargo Visibility

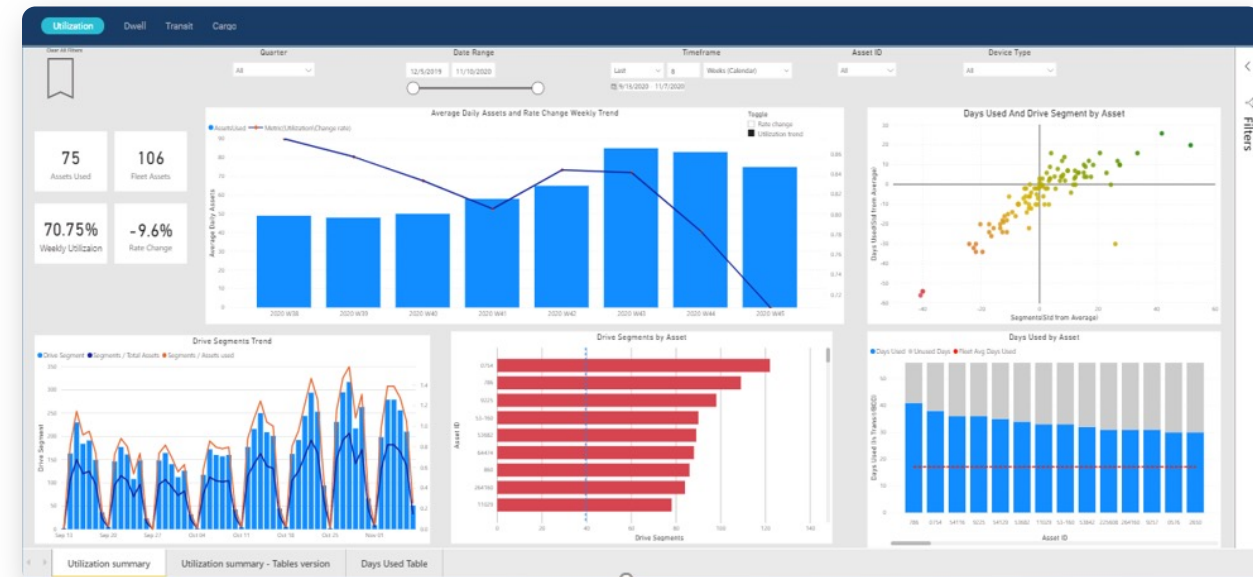


Logistics Analytics

Logistics dashboards provide asset Usage, Dwell, and Transit visibility in convenient and dynamic graphical formats for actionable business intelligence for critical operations analysis and continuous improvement measurement.

Logistics Dashboards Focus:

- **Utilization:** Answers how many and which assets are active and utilized.
- **Dwell:** Provides key metrics of landmarked locations including:
 - How much equipment cycles through and when?
 - How long does equipment sit?
 - What geographical areas does equipment tend to sit?
- **Transit:** Displays volume and travel time metrics for equipment trips between landmarked locations.
- **Cargo:** Enables quick access to load optimization reporting and images accumulated from your equipment.



Connected Vehicle Overview

- There were over 15 million IoT equipped vehicles in the US in 2022
 - Annual growth rates expected to exceed 15% over the next four years
- Vehicles include class 2-8, which can include passenger vehicles, utility/field service, buses
- Highest adoption in transportation, construction, field services, government, healthcare, education, manufacturing, food & beverage
- Driver safety remains a high focus, leading to accident reduction, reduced maintenance costs over the life of the vehicle, and insurance premium discounts
- Sustainability goals and EV adoption planning continue to drive the need for emissions reporting, fuel spend analysis, and utilization insights to support buying decisions

Unified Business Operations - SaaS

Innovative IoT solutions that include vehicle insights, prescriptive analytics, and multifaceted integration into several business systems to automate planning, optimize efficiency, and cost control for enterprise customers

- Samsara, Verizon Connect, Geotab, Solera, Trimble, Zonar

- Advanced utilization and productivity analytics
- Insights into sustainability, spend management, predictive maintenance, resource planning, and workflows
- Integration with OEMs, ERP, WMS, TMS, insurance, HRIS

Fleet Management

Basic tracking that may include vehicle diagnostics (CAN), driver behavior, video dashcams, and resource management for small to mid-size fleets

- Samsara, Verizon Connect, Geotab, Solera, Trimble, Azuga, Lytx
- Mix Telematics, Teletrac Navman, Gurtam, FleetComplete, Webfleet, FordPro

- GPS tracking, speed, geo-fence violations, odometer, fuel, trouble codes, engine hours
- Driver Behavior, coaching and safety analytics, video ADAS/DMS, accident reporting/reconstruction
- Alert notifications, reporting, scheduled Reminders

Competition

Capabilities

Safety & Security Objectives

Save Lives, Time, and Money

Gain Visibility

- Manage Incidents in real-time (accidents, theft, distracted driving, speeding)
- Utilize DMS and ADAS video
- Highlight areas of risk

Increase Driver Safety

- Retain most qualified drivers
- Provide coaching
- Reduce Risks of Distracted Driving
- Ongoing evaluation

Reduce Costs

- Eliminate accidents caused by distracted driving
- Counteract fraud resulting from unsubstantiated claims
- Reduce time spent on filing claims
- Increase chances of theft recovery

By the numbers...

9 On average, **nine people** die every day from distracted driving.

41% **41%** of daytime drivers participated in at least **20 seconds** of cumulative phone distraction.

15% **15%** of all motor vehicle crashes in **2019** were due to distracted driving

43% **43%** of drivers talked on a handheld phone once in the **past 30 days**

Collision Reconstruction

Mitigate Risk, Save Time and Money

- Visualize exactly what happened in great detail, including
 - Location
 - Severity
 - Weather
 - Speed
 - Impact Time & Direction
 - Video
- Utilize the document repository to upload photos and notes
- Export as a report with all media content for simplistic claims processing

Possible Collision Not Reviewed

Resource SE45689 Occurred on 3/8/2023 at 07:30:32

Description A vehicle with license plate SE45689 sustained a High impact to the front right at a force of 16 starting at 3/8/2023, 7:30 AM over 0. The vehicle was driving near I-95 NW 14th St at a speed of 65 before the impact occurred. Based on this data it is unlikely that a rollover occurred.

Collision Type Possible Collision Detected

Severity High

Airbag deployment N/A

Address I-95 NW 14th St

Coordinates (Lat, long) 25.788113 -80.203896

Weather conditions Clear

SE45689 License Expiration 08/2023
Manufacturer **Kenworth** Model **W990** Color **White**

Eric Frey License Expiration 05/2024 +1 201678 7732
Re-occurrence Last 30 Days **1** Safety score **77**

Condition: Clear
Precipitation 0 in
Visibility 21.2 km
Wind speed 4.29 km/h

1 Photo View All ->

Close

Theft Recovery

Mitigate Risk, Save Time and Money

- Detect possible thefts automatically using sensors, geofences, and device intelligence
- Know exactly where the theft occurred and where it is now
- Visualize and track the theft in real-time using the breadcrumb trail
- Take action by immobilizing vehicles or initiate advanced tracking to increase the chance of recovery

Possible Theft Not Reviewed set by admin.PWFLProductMgmt.QA on 2023-03-21 02:11:49PM
Resource 2470066 LV100 Occurred on 3/20/2023 at 08:07:20

N/A

Theft closed on	2023-03-21 07:01:22AM
Last event location	345 Cadima ave, Coral gables, FL, 33134-7307
Last event state	Moving at 0 mph / Dormant
Theft Type	Possible Theft Detection Triggered (Emergency Tracking)
Theft Detected	2023-03-20 08:07:20AM
Theft Address	345, Cadima Avenue, Coral Gables, Miami-Dade County, Florida, 33134, United States
Theft Coordinates (Lat, long)	25.739145 -80.261955

2470066 LV100 License Expiration 11/2022
Manufacturer 3 - Star Model 3.0 Color N/A

Map Satellite

SW 42nd Ave

Cadima Ave

Cadima

Start Emergency Track

Save and Close

Sustainable Fleets

Several new challenges ahead for fleet vehicles

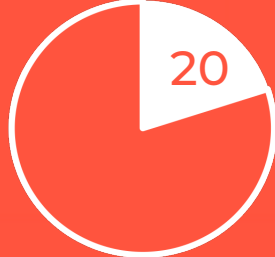


Carbon accounting and ESG reports

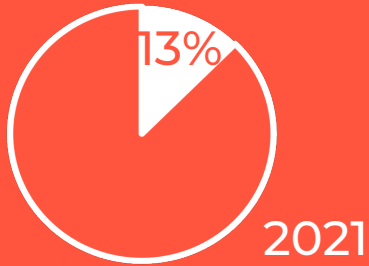


Electrification

BEV Share
Private vehicles

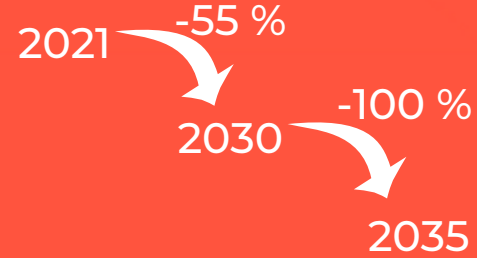


Commercial vehicles



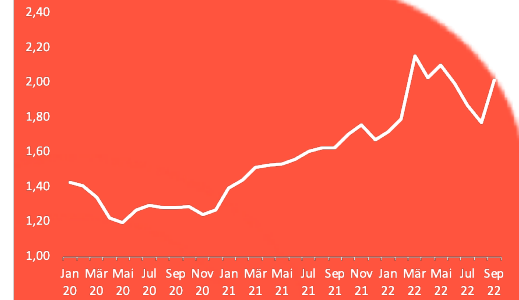
CO₂ targets

US and EU



Emissions

Inflation



Gasoline
USD/gallon

Our strategy

Comprehensive solution portfolio built upon Powerfleet's key pillars

1

Collect

- **Agnostic data collection** from: devices, OEM data platforms, TSPs and aggregator platforms
- **Enrichment:**
 - Map data, like speed limits, slope, charging stations
 - Fuel card data
 - ...

2

Analyze

- **Create Eco Score** on trip level, considering
 - Speeding
 - Idling times
 - Routes taken
 - Maneuvers
- **Assess risks** of making or delaying sustainability decisions

3

Report

- Detailed overview of **historic trip data** with drill-down capabilities and **full exportability** to feed data into ESG reports.
- **Eco Score** total and per trip to highlight **optimization potentials based on speeding events, detected idling times, routes taken**
- Trip profile and **battery health analysis** and resulting **range estimations**

4

Act

- **Fleet electrification planning** tool with full cost-comparison and economic viability analysis considering TCO
- Demonstration of measures to extend range and **reduce fuel and electricity cost**

Outlook 1/2

Fleet electrification planning

Digital Optimization Solution



Optimized vehicle selection and/or fleet electrification

15% average fuel /
CO2 savings
potential



- Supporting TCO and emissions reduction
 - Fuel vs. Electricity cost
 - Local charging infrastructure needs and costs
 - Battery prediction
 - Yearly operation cost (ICE vs. EV)

Roadmap:

- ✓ PoC planning
 - ✓ Vendor selection to support with machine-learning approaches to electrify fleets
 - ✓ Powerfleet customer for prototype testing
- Seeking alliances
 - Technical University Graz (Powertrain modeling)
 - Mobility Technology Center Munich (Battery health assessment)

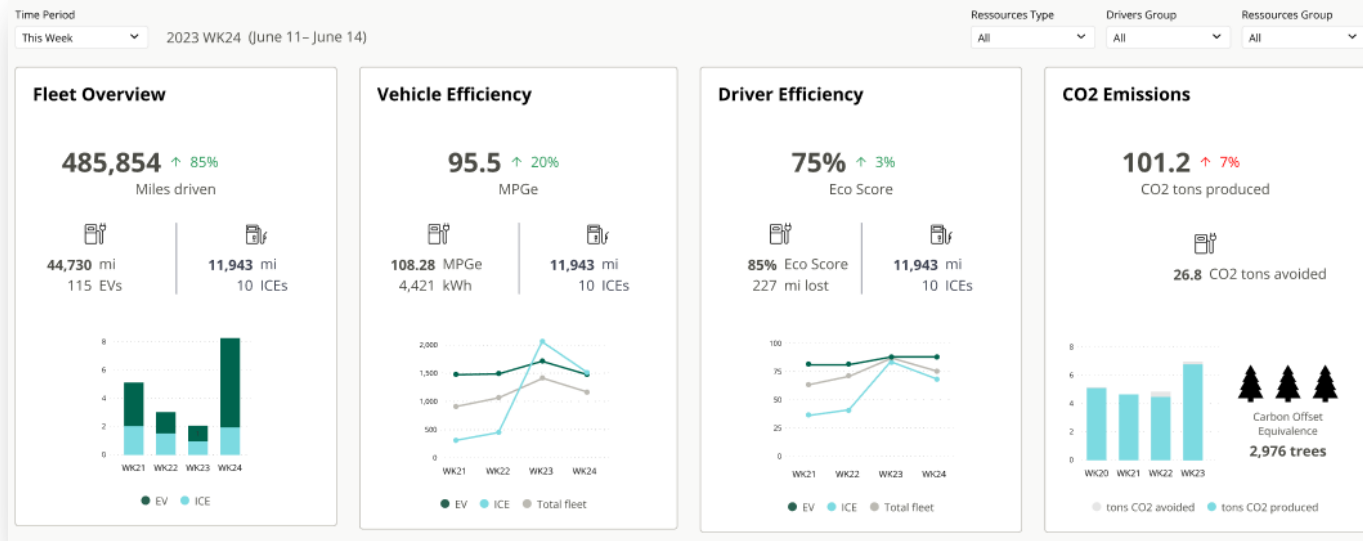
Current Solution

Digital Optimization to Lower Costs, Make Informed Decisions

1

Utilization

Offers a holistic view of your fleet's utilization, showing EV vs ICE distance travelled to understand highest and lowest utilized vehicles



2

Vehicle Efficiency

Measures advertised efficiency against actual efficiency for both EV vehicles and ICE vehicles, producing a normalized view of efficiency using MPGe to help determine which vehicles to replace in the future

3

Driver Efficiency

Identifies fuel and energy waste by calculating driver ECO scoring and showcasing which drivers are most efficient vs least efficient

4

Carbon Emissions

Improve ESG reporting by providing calculated carbon tailpipe emissions of your ICE fleet. Highlight the carbon savings introduced by your EV fleet and determine how to achieve your sustainability goals

Outlook 2/2

Eco Score: Spotting troubled segments

- Fuel consumptions differ significantly, depending on **driving style**
- Preferred routes are not necessarily the **most efficient routes**
- Strong **correlation with claims frequencies**
- Built upon our **approved risk assessment capabilities** from the insurance industry

Ø Speed vs. WLTP deviation

