In-Warehouse Solution

Partners Training Overview

POWERFLEET®

People Powered IoT

June 2024

WHAT IS **IN-WAREHOUSE EQUIPMENT?**

- Powered Industrial Vehicles:
  - Forklifts, Standups, Counterbalance, Powered Jacks, Walk/Ryder Pallet Jacks, Order Pickers, Tuggers and many more…
- Man-lifts – Boom and Scissor
- Scrubbers and Sweepers
- Yard Tractors

WHERE IS IN-WAREHOUSE **EQUIPMENT USED**?

Warehouses (all sizes)

Retail stores

Manufacturing plants

Mining

Forestry

Construction

Ports

Airports

IN-WAREHOUSE **MARKET OVERVIEW**

7.2

Million industrial vehicles

in the Americas and Europe (1.5M with a solution in use today) including forklifts, tow motors, order pickers, man lifts, yard trucks, etc.

Warehousing & distribution, retail, manufacturing, and automotive

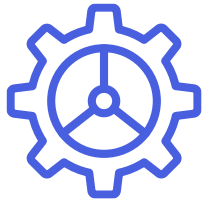
have the highest adoption rate.

Upward trending employee safety focus

due to labor shortages, high turnover rates (43%) 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 and costs increase.

IN-WAREHOUSE OPERATIONS UNDER PRESSURE – **DOING MORE WITH LESS**

Growing Demands & Labor Challenges

- Operational demands and labor shortages are driving up wages and overtime.
- Budgets and employees are under strain.

Cost-Productivity-Safety Triangle:

- Persistent pressure to cut costs and boost productivity.
- Elevated delivery expectations
- This exists alongside serious safety concerns within the warehouse

Safety Imperative Amidst Efficiency:

- A proactive approach to safety measures is crucial.
- The challenge - achieving more with less in a high-activity warehouse environment.

DRIVING FORCES – **GLOBAL COMPLIANCE**

Globally, regulations ensure the safe operation of material handling equipment, focusing on protecting workers. Despite variations in enforcement and specifics, the goal is universally shared: to safeguard those in material handling roles.

United States (OSHA)
Implements National Emphasis Programs and specific guidelines for forklifts and material handling equipment operation.

European Union (EU-OSHA)
Runs safety campaigns and sets guidelines across member states for workplace practices.

Germany (DGUV, BetrSichV)
Enforces detailed guidelines for the safe use of industrial trucks, backed by the German Social Accident Insurance (DGUV) and operational safety regulations (BetrSichV).

Australia (Safe Work)
Develops national policies for workplace safety, including material handling operations, with regulations adapted and enforced by state and territory bodies.

South Africa (Department of Employment and Labor)
Oversees occupational health and safety through the OHSA, including provisions for lifting equipment and machinery.

Mexico (STPS, NOMs)
Enforces workplace safety through the Federal Labor Law and Mexican Official Standards (NOMs), covering material handling safety.

Brazil (MTE, NRs)
Regulates workplace safety through specific Regulatory Norms (NRs), with NR-11 focusing on material transportation and handling.

Argentina (SRT)
Manages workplace safety policies through the Superintendence of Occupational Risks, addressing safety in material handling.

TODAY'S WAREHOUSE OPERATIONAL **REALITIES**

90%
of all forklifts will be involved in some type of accident during their useful lifetime

Source: OSHA

668k to 1.9m
Warehouse & distribution employee increase 2011 to 2023

Source: OSHA

29%
Increase in trucking-related fatalities over the past decade

Source: FMCSA

5,486
workers died from work-related injuries in 2022

Source: U.S. Bureau of Labor Statistics

$44K
Average compensation for workers injury

Source: NSC

Forklifts caused
7,290
nonfatal injuries in 2020

Source: NSC

70%
of warehousing businesses struggle to hire skilled workers

Source: Manpower's Group Survey

43%
employee turnover dramatically exacerbated the safety risks in recent years

Source: Bureau of Labor Statistics

Over
11%
of the forklifts in the US will be involved in an accident each year

Source: OSHA

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TODAY'S WAREHOUSE OPERATIONAL **REALITIES**

22.7%
Of non-fatal accidents in EU are caused by impact with stationary objects

Source: eurostat

2.1 million
EU manufacturing enterprises employed 30 million people in 2021

Source: euorstat

25.7%
Fatal accidents in EU are due to uncontrolled machinery

Source: eurostat

3,347
workers died from work-related injuries in 2021

Source: eurostat

€476 Billion
Annual Cost of Work-Related Injuries and Illnesses in the EU

Source: EO-OSHA

During 2021
31.2 %
EU non-fatal workplace accidents occurred primarily in industrial sites

Source: eurostat

63%
of EU SMBs experience employee shortages due to labor and skills gaps

Source: European Commission

80%
of forklift accidents include a pedestrian

Source: The European Commission

90%
of forklifts are involved in an accident throughout the span of their lifetime

Source: UK's Health and Safety Laboratory

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EVERY **3 DAYS**, A **LIFE IS LOST** TO **MATERIAL HANDLING** EQUIPMENT*

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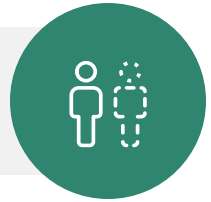
*IN THE UNITED STATES ALONE

DRIVING FORCES – **EFFICIENCY**

Boosting efficiency goes beyond adding equipment, operators, or shifts. Although automation is a goal for the future, it brings its own set of challenges.

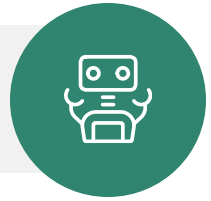
Adding More Trucks: Effective balance of capital and operational expenses is essential. With extended truck lead times and insights from COVID-19, extending equipment life is achievable through diligent maintenance.

Adding More Operators: The labor shortage is real and intensifies when unqualified drivers are added, compounding problems rather than solving them.



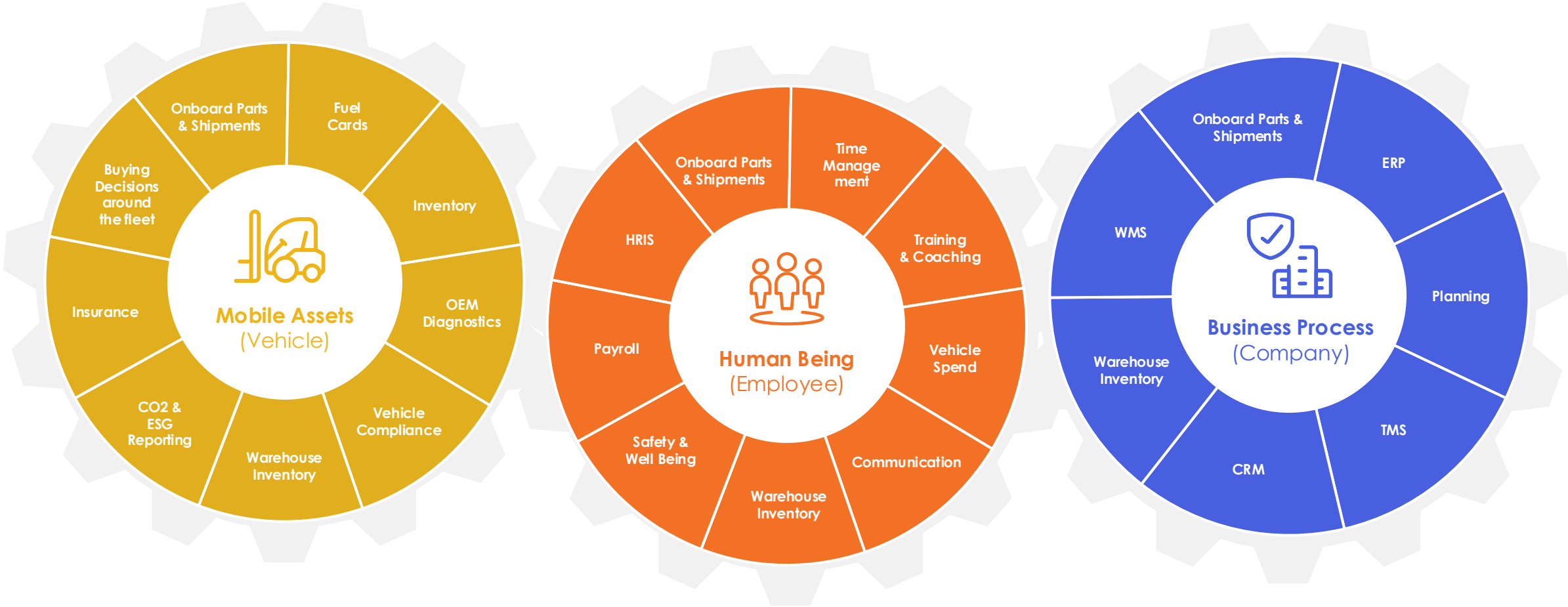
Adding More Shifts: Worker preferences are shifting away from extended night hours and weekend work, posing scheduling and staffing challenges.

Adding Automation: The transition to automation is daunting, with implementation phases lasting 18-24 months and ROI timelines extending 8-10 years.



UNIFIED OPERATIONS & SERVICES

Platform integration with outside data sources optimize mobile assets, individuals operating the assets, and business processes



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Plan > Communicate > Execute > Operate > Administer > Improve

MANUAL, ERROR-PRONE **PROCESSES** & **DISPARATE SYSTEMS**

Reliance on manual processes for compiling data from OEMs and third-party systems leads to significant operational blind spots, errors, and bias.

Key Consequences:

Safety & Security:

Absence of actionable insights on driver performance and high-risk areas impairs the ability to coach drivers or take corrective actions, affecting safety protocols

Maintenance & Performance:

Dependence on rigid OEM schedules not attuned to actual usage results in improper maintenance, higher costs, and equipment issues.

Compliance & Standards:

Manual compliance procedures are error-prone, reducing accuracy in adherence, and may decrease driver productivity due to cumbersome checks.

Visibility & Integration:

Inconsistent telemetry and data systems across PIVs complicate data interpretation, obstruct incident resolution, and limit equipment choices.

BUSINESSES NEED A **BETTER WAY TO…**

IMPROVE PRODUCTIVITY

CONTROL COSTS

PROTECT THE SAFETY OF THEIR PEOPLE

CUSTOMER **PAIN POINTS**

Save time, save money, save lives…

Safety compliance
enforce best practices (licensing, training and certifications, inspections)

Coaching initiatives
provide insights and scoring where they are needed most

Minimize unsafe environment
proactively warn and interject in real-time

Capture incidents
including ownership, video evidence and event profiles

Right equipment
ensure its available when and where it is needed

Optimize maintenance
for supporting operations needs while minimizing costs

Right-size equipment and employees
to maximize shift performance

Energy costs
contains costs to improve sustainability

INTRODUCING THE **POWERFLEET DIFFERENCE**

Powerfleet transforms how warehouses operate

Our solutions offer real-time, real-world insights for all powered industrial vehicles, significantly optimizing safety and maintenance.

Leveraging advanced AI, we streamline compliance and drive operational excellence.

With our unified platform, organizations of any size can achieve a new standard of efficiency and cost-effectiveness.

POWERFLEET **PURPOSE-BUILT SOLUTION** FOR IN-WAREHOUSE

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

Insights and driver performance
scoring to support coaching initiatives and optimize fleets

Integrated OSHA
recommended pre-use safety Inspections (DVIR)

Impact tracking
with machine learning and DVR provides analysis of critical events without distracting false alarms

Maintenance planning
With CMMS integration makes fleets more available and cost effectively extends longevity

TARGET MARKET & **IDEAL CUSTOMER** PROFILE

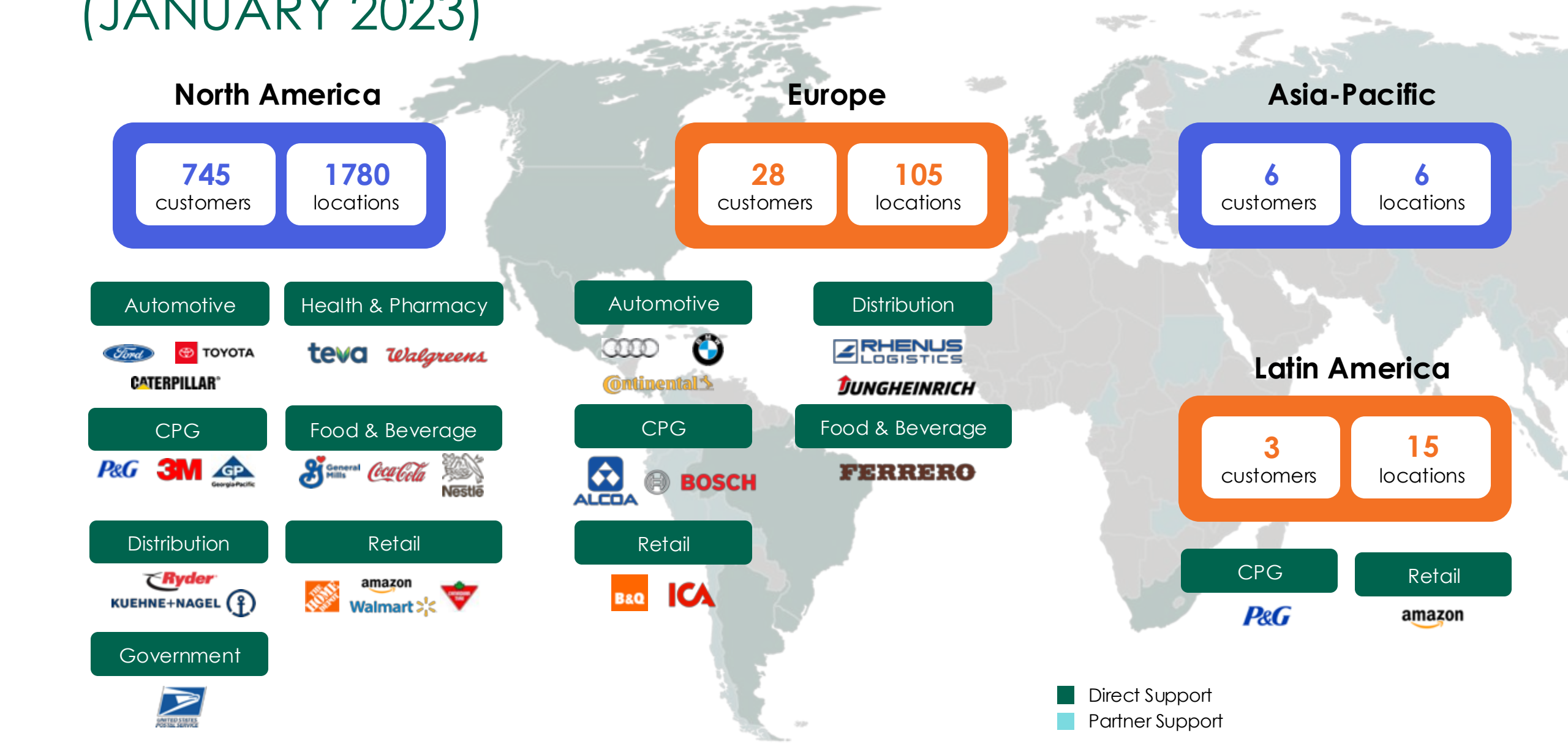
Primary Verticals

- Manufacturing & Automotive
- Logistics/3PLs
- Warehousing & Distribution
  - Food & Beverage
  - Consumer Packaged Goods
  - Retail

ICP Criteria

- On-campus fleets of material handling equipment
- Multiple facilities
- Fleet size of 15+ vehicles
- Latin alphabet

MATERIAL HANDLING **MARKETS** AND **INDUSTRIES** (JANUARY 2023)



North America

745 customers

1780 locations

Automotive

Ford, TOYOTA, CATERPILLAR

Health & Pharmacy

teva, Walgreens

CPG

P&G, 3M, Georgia-Pacific

Food & Beverage

General Mills, Coca-Cola, Nestlé

Distribution

Ryder, KUEHNE+NAGEL

Retail

The Home Depot, amazon, Walmart, Target

Government

United States Postal Service

Europe

28 customers

105 locations

Automotive

Audi, BMW, Continental

CPG

ALCOA, BOSCH

Retail

B&Q, ICA

Distribution

RHENUS LOGISTICS, JUNGHEINRICH

Food & Beverage

FERRERO

Asia-Pacific

6 customers

6 locations

Latin America

3 customers

15 locations

CPG

P&G

Retail

amazon

Direct Support

Partner Support

IN WAREHOUSE SOLUTIONS **OVERVIEW**

Advanced solutions

Needs
High speed and complex facilities drive need for innovative IoT solutions.

Features
Vehicle access control, driver vehicle inspection reporting, pedestrian proximity detection, collision logging, maintenance planning, utilization and productivity analysis, location tracking, enterprise level insights

Competitors: OEMs

- Crown
- Jungheinrich
- Toyota
- Yale/Hyster
- Raymond

Competitors: Aftermarket

- GemOne
- Elokon

Safety solutions

Needs
Simple and smaller facilities that desire automation of compliance and safety measures.

Features
Vehicle access control only or with driver vehicle inspection reporting, collision logging, maintenance planning, utilization analysis

Competitors: OEMs

- Crown
- Jungheinrich
- Kion
- Toyota
- Yale/Hyster
- Raymond

Competitors: Aftermarket

- GemOne
- Sierra AI
- Elokon
- Access control group

Maintenance & Repair

Needs
Simple and smaller facilities that desire automation of compliance and safety measures.

Features
Remote hour meter and fault code recording for maintenance

Competitors: OEMs

- Crown
- Jungheinrich
- Toyota
- Yale/Hyster
- Raymond

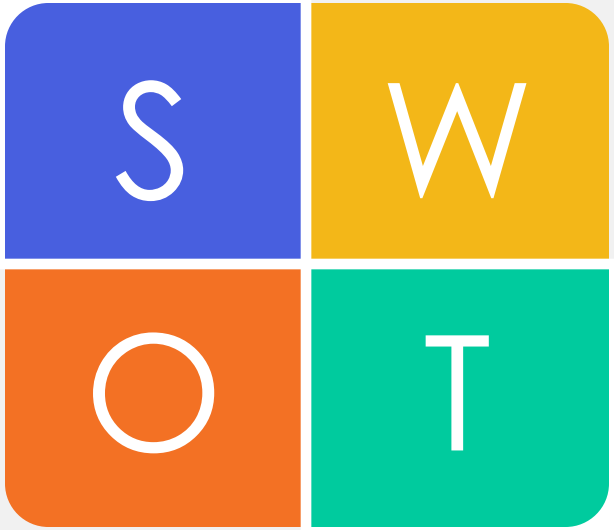
Competitors: Aftermarket
No sizeable participants

STRENGTHS

- Agnostic to OEM
- Value presentation
- Agility (customizations)
- Flexibility (options)
- Implementation & Support system

WEAKNESSES

- Driver engagement / UX
- Wireless limitation
- Location tracking
- Onboard Coaching/Training



OPPORTUNITIES

- HW Platform update
- Partner opportunities
- Data ingestion
- App development for supervisors, mechanics
- Logistics/Fleet integration

THREATS

- Homologous sites
- Vehicle connections and OEM concurrence, vehicle designs
- Installation costs, resources
- Vehicle design evolution

BENEFITS BY STAKEHOLDER

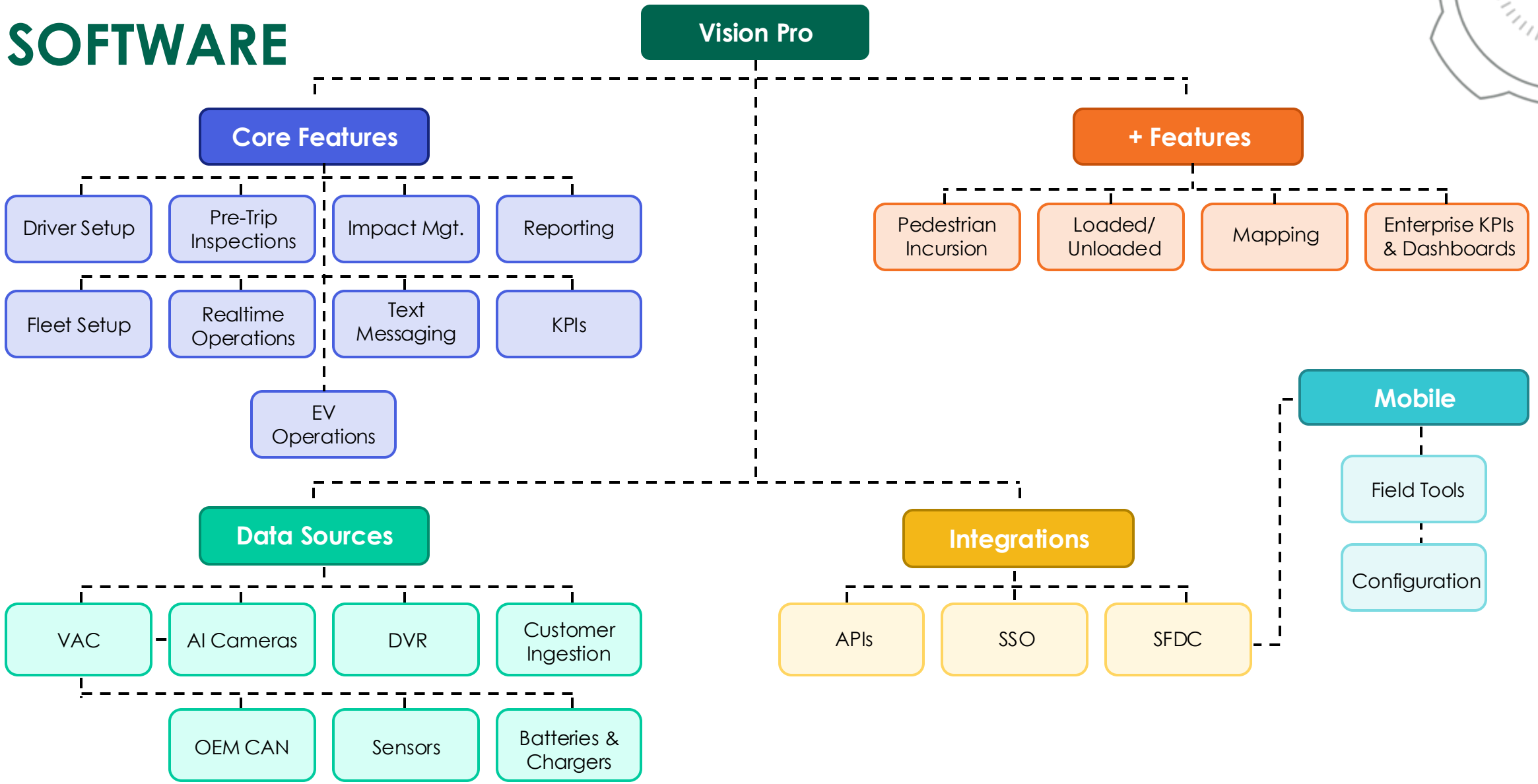
STAKEHOLDER	BENEFITS
• Industrial Engineers	• Optimized workflow standards • Determining fleet mix
• Maintenance/Fleet Managers • Rental Managers	• Reduced maintenance costs • Maximized uptime • Reduced lease overage and supplemental fleet handling
• Safety/Health/Environment (SHE) Managers • HR Managers	• Avoid fines • Minimized risk • Reduced employee turnover, workers comp. • Reduced duplication • Data-driven performance evaluations
• Operations Managers • Plant Managers	• Cost reductions and avoidance • More productive shifts • Directed coaching • Reduced disruptions
• Technology Integration/Business Technology Integration	• Unified operations • Pathway to automation
• Operational Executives	• Reduced operational costs • Capital cost avoidance • Enterprise standardization • Reduced legal exposure

SYSTEM OVERVIEW

Features

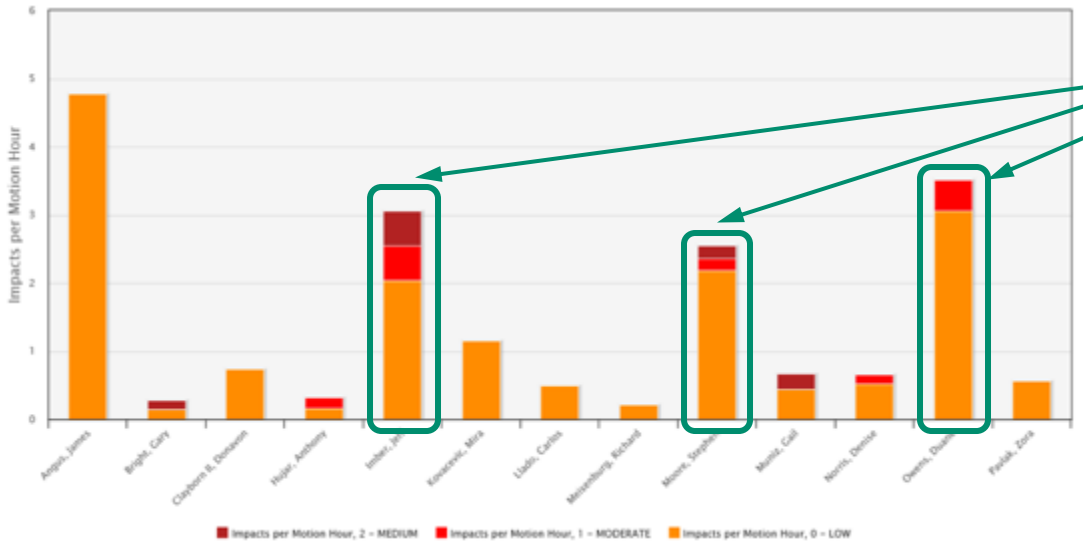
- Access Control
- Electronic Safety Checklist
- Impact Management
- Fleet Utilization
- Preventive Maintenance
- Text Messaging
- Battery Monitoring
- Automated Notification
- On Demand & Scheduled Reporting
- Pedestrian Proximity Detection
- Speed management
- Incident reconstruction
- Location assessment
- APIs

SOFTWARE


Vision Pro
Core Features
Driver Setup
Pre-Trip Inspections
Impact Mgt.
Reporting
Fleet Setup
Realtime Operations
Text Messaging
KPIs
EV Operations
+ Features
Pedestrian Incursion
Loaded/ Unloaded
Mapping
Enterprise KPIs & Dashboards
Mobile
Field Tools
Configuration
Data Sources
VAC
AI Cameras
DVR
Customer Ingestion
OEM CAN
Sensors
Batteries & Chargers
Integrations
APIs
SSO
SFDC

REPORTING EXAMPLES

Impacts per Motion Hour by Operator

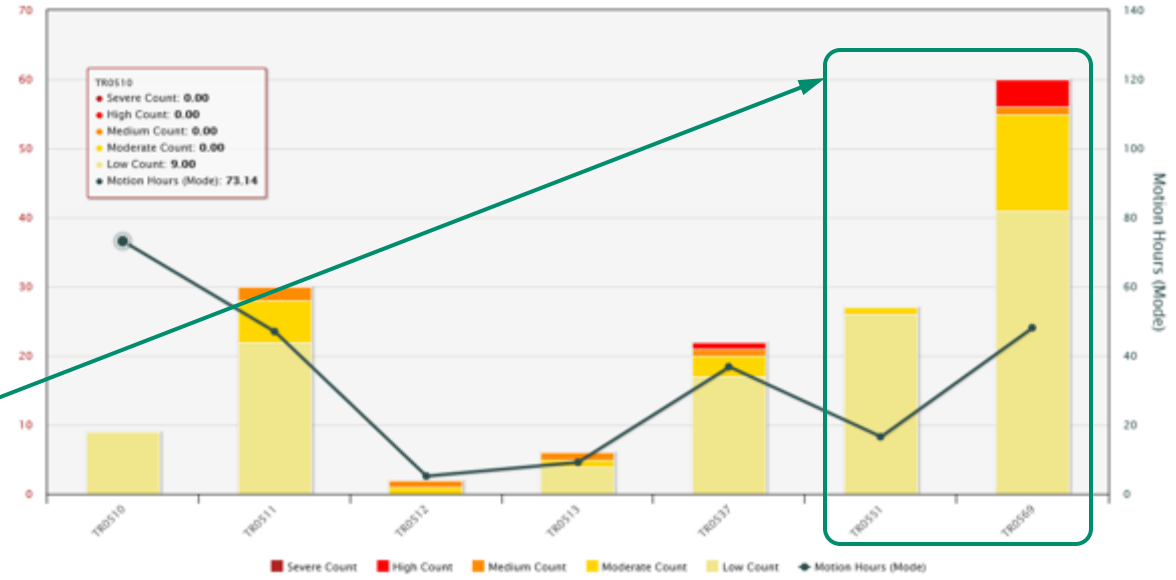


Jeff, Stephen and Duane are much more likely to have a significant impact event than the rest of the team members for each hour that they are operating a vehicle.

This could be process, physical surroundings, or simply operator attitude.

TR0531 and TR0569 have a much higher rate of events per motion hour than the other vehicles used by this work group.

This could be an issue with the vehicle, the process they used in, or the attitude of the primary operators of these vehicles.



Impacts per Motion Hour by Vehicle

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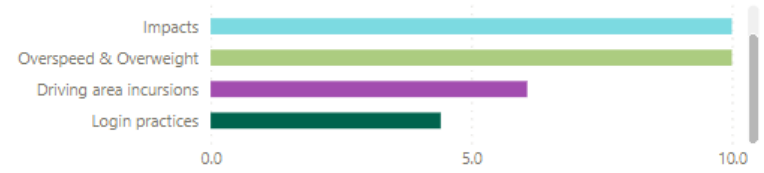
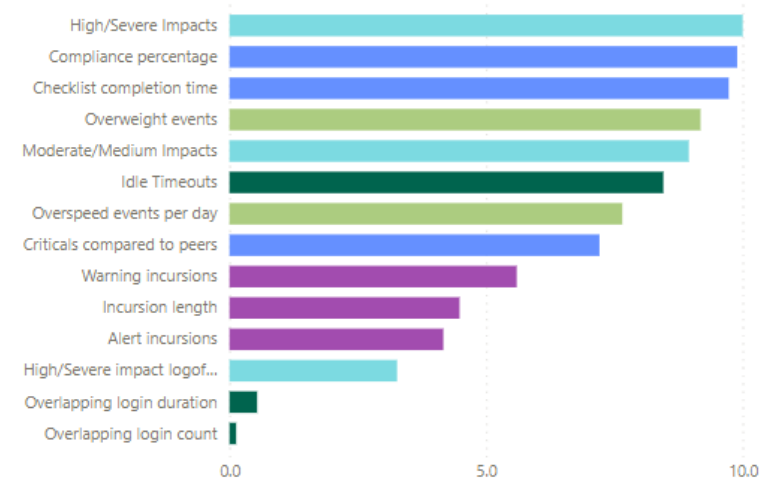
KPI EXAMPLES

Date Range: 3/27/2021 – 3/26/2024 | Drivers: All | Score Category: All

Category Scores



Events Scores



10.0	54K	141K	435
Score	Red Events	Total Events	Drivers

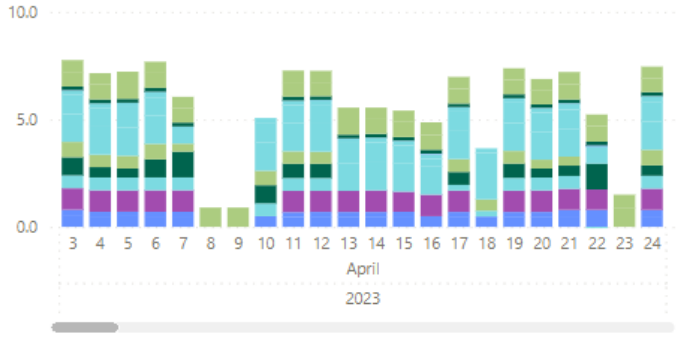
Drivers Leaderboard (Total)

Driver	Score	Trend	Score (Bar)
Temp-00688402	10.00	→	
Temp-01295747	10.00	→	
Temp-03375109	10.00	↑	
Temp-03398914	10.00	↑	
Temp-09231602	10.00	→	
Temp-09786274	10.00	→	
Temp-16238498	10.00	→	

Coaching Corner (Total)

Driver	Score	Trend	Score (Bar)
Temp-01571573	1.00	→	
Temp-01977940	1.00	→	
Temp-00568093	1.33	↑	
Eric Friend	1.41	→	
Total	**1.42**	**0**	**1.42**

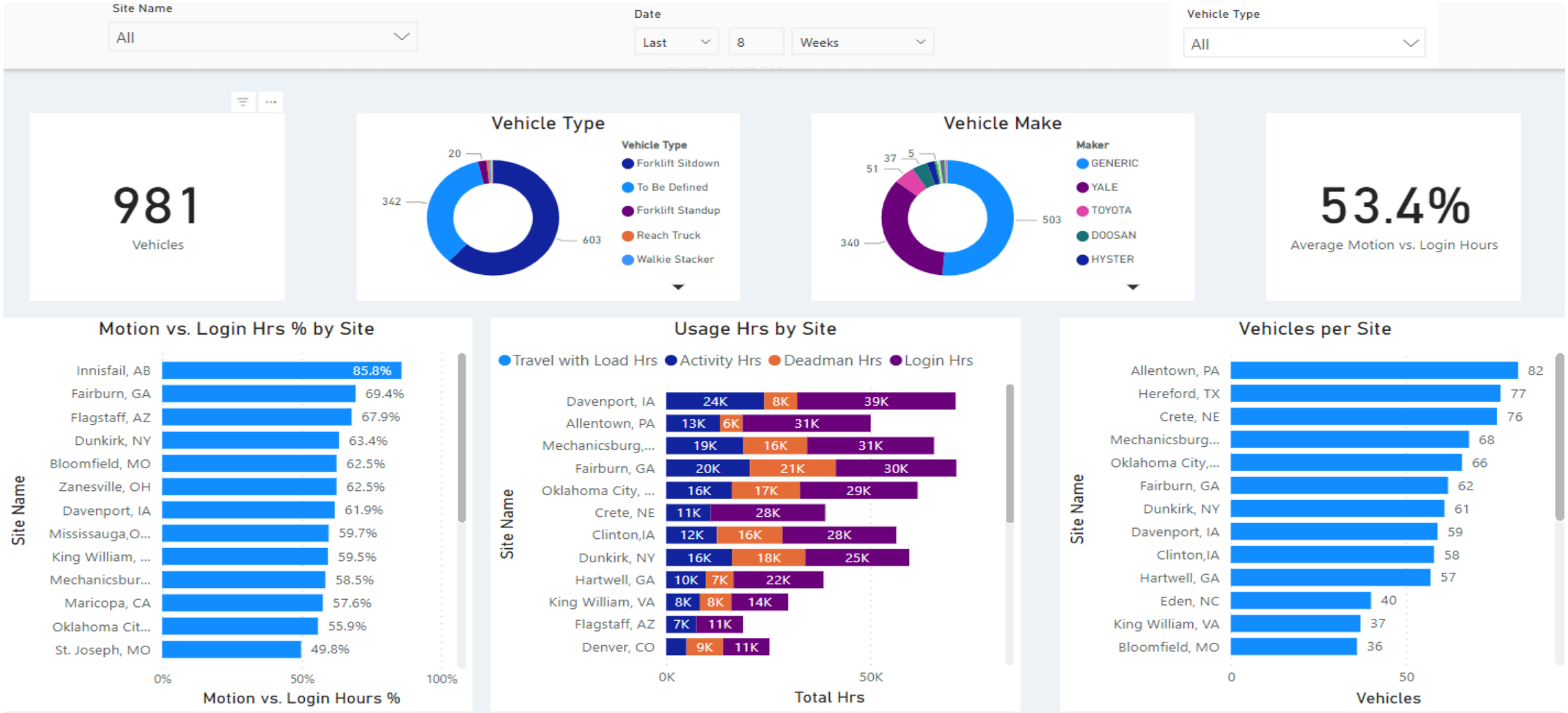
Score Trend



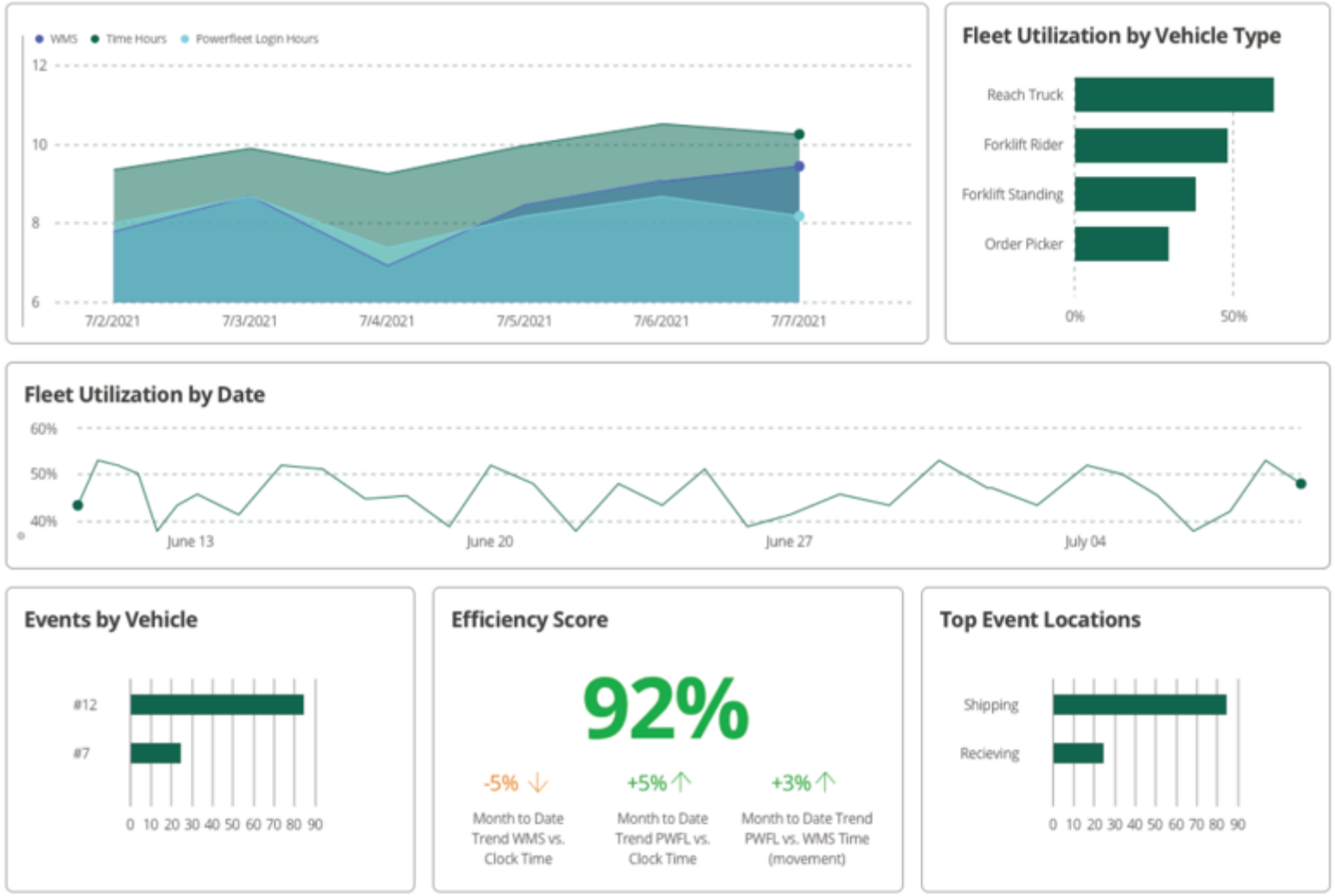
Score vs Previous Score (Total)

Year	Change Rate	Score	Previous Score
⊞ 2024	-3%	6.05	6.22
⊟ 2023			
December	1%	6.37	6.27
November	1%	6.27	6.24
October	-1%	6.24	6.29
September	0%	6.29	6.28
August	-0%	6.28	6.28
July	-0%	6.28	6.29
June	1%	6.29	6.24
May	-2%	6.24	6.38
Total	**-0%**	**6.17**	**6.19**

ENTERPRISE DASHBOARD EXAMPLE



DATA UNIFICATION DASHBOARD EXAMPLE



HARDWARE

Forklift Gateway (VAC)

Automated, wireless tracking and management for industrial vehicles and operators, seamlessly integrating into forklifts as a key part of fleet tracking systems.

Pedestrian Proximity Detection

AI edge processing vision system to help drivers avoid objects of interest in the path of travel while minimizing false alarms.

Digital Video Recorder

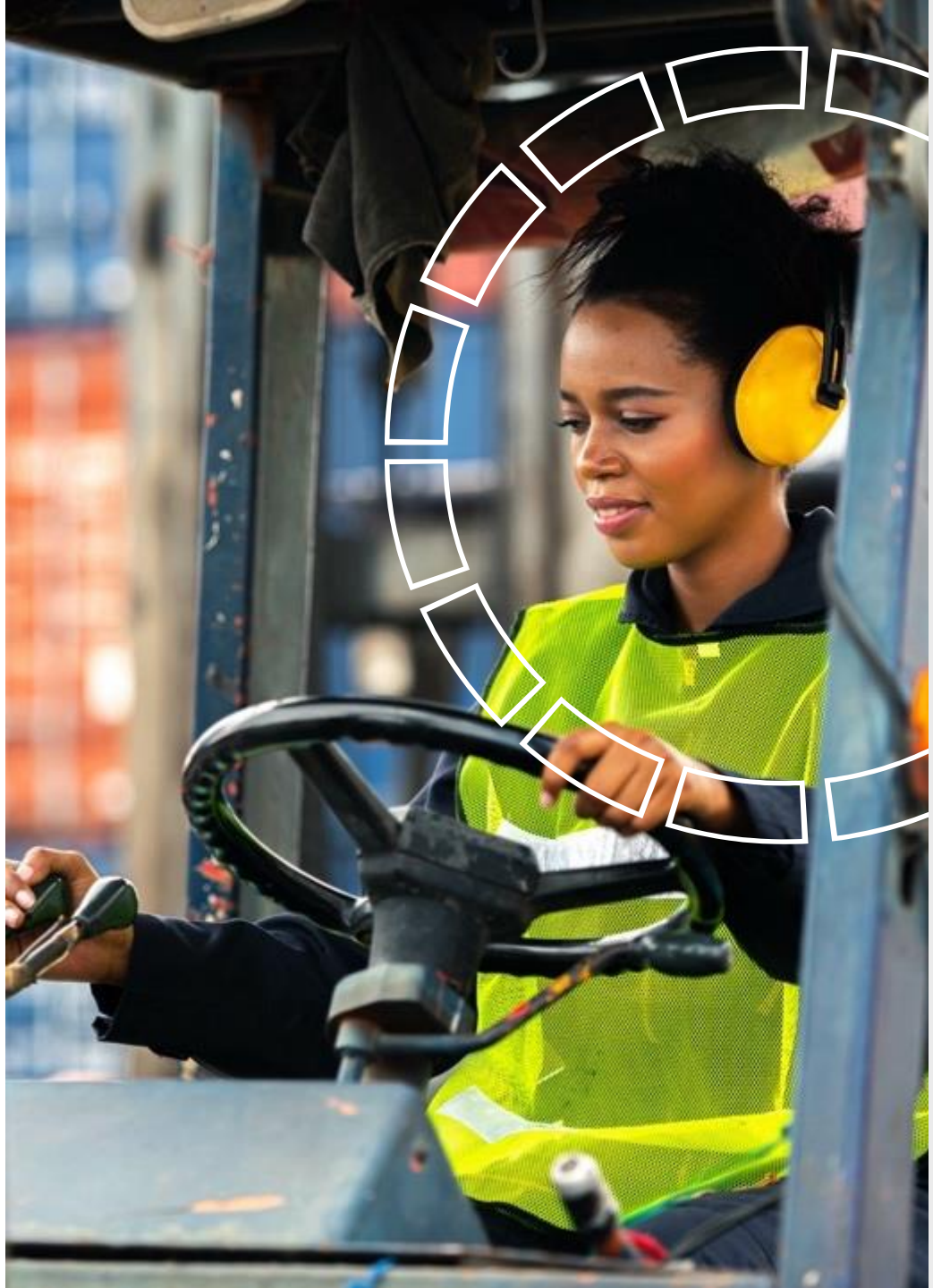
Rolling DVR that saves clips of interesting VAC events to rapid, accurate investigations.

Speed Manager

Throttle/pedal override to slow vehicles down based on VAC or PPD events.

VEHICLE & OPERATOR ACCESS CONTROL

- Only authorized operators can use equipment
- User configurations – which equipment they're allowed to operate and when it's allowed
- Access levels set based on user experience level
- Know who is driving what and when
- Idle timeout by vehicle type
- Automatic operator expirations for license, training certification
- Reduces IC truck PMs/fuel use/emissions
- Superior tamper resistance
- Reader matches existing employee ID



ELECTRONIC **SAFETY INSPECTIONS**

Benefits: Eliminate paper handling, regulatory compliance and improved maintenance.

- Configurable
- Event-based for most effective reactions
- Reports prioritized by severity of problem
- Severe impact triggers supervisor checklist
- Moderate impact triggers driver self-checklist
- Problem identified on main checklist triggers drill-down sub-checklist
- Auto-notifications to maintenance/safety
- Multi-language checklists can be triggered
- Randomized answers (no 'finger-whipping')
- Auto-verification of checklist answers that require vehicle to be motion (e.g. braking)
- Prompt to stop/park vehicle safely before shutdown

IMPACT **MANAGEMENT**

Benefits: Halo effect, reduced collisions, risk measurement, and investigation evidence.

- Combination sensor leveraging accelerometers and other chips sets to detect movement and forces
- Machine learning algorithm for automated calibration and continuous set point readjustment to optimize event creation and minimize nuisance alarms
- Incident severity assignment with configurable post-event actions (lockout, emails/SMS, forced inspections, etc.)
- Connected to external alarm for supervisor alert
- Driver coaching [real-time event notification/feedback, leaderboard analysis]
- "Black box" analysis of vehicle performance before, during and after impact

DVR

Benefits: Simplified investigations, indisputable proof of conditions and events.

- Looping mobile DVR capturing video in front of and behind the forklift on an SD card
- DVR collects before/after video clips when events (impact, speeding, driver prompt) occur
- Connected to the Forklift Gateway (VAC) to trigger event clip information
- Available driver assist display
- Cloud connection option via Wi-Fi or Cellular to event review and live steam cloud application

PEDESTRIAN **PROXIMITY DETECTION**

Benefits: Collision avoidance, increased pedestrian safety, and facility and driver risk assessment.

- Artificial Intelligence vision-based system
- Identified high risk objects (people and vehicles) in the path of travel
- Warns drivers of object incursions
- Connected to the Forklift Gateway (VAC) through a Sensor Hub
- No wearables for infrastructure required!

CUSTOMER EXPERIENCE BY STAKEHOLDER

DRIVER

- Log in to VAC
- Complete inspection
- Perform work tasks
- Respond to events and alerts
- Log out

FLEET MANAGER

- Receive alerts
- Inspect and unlock vehicles and drivers
- Find vehicle
- Implement performance upgrades based on reports and dashboards

OPERATIONS

- Influence business change with data driven insights from reports and dashboards

Walmart

“

Powerfleet’s solution delivered not only the promised safety and control benefits, but also significant incremental productivity improvements, above and beyond what our WMS was providing.

Supply Chain Executive, Walmart

KAUTEX
A Textron Company

Since deploying Powerfleet's solution across our industrial fleet, we have seen a reduction in impacts, accidents, and damage to equipment and goods. We have gone from adopting the solution at a single site to more than eight locations across the globe with plans for continued deployments. The key to making our new deployments so successful has been Powerfleet's global presence and its ability to work with us in multiple geographies. This along with Powerfleet's easy-to-use software played a major role in our decision to grow our partnership with Powerfleet.

Global Director Material Excellence, Kautex

CUSTOMER **FINANCIAL BENEFITS SUMMARY** BY INDUSTRY

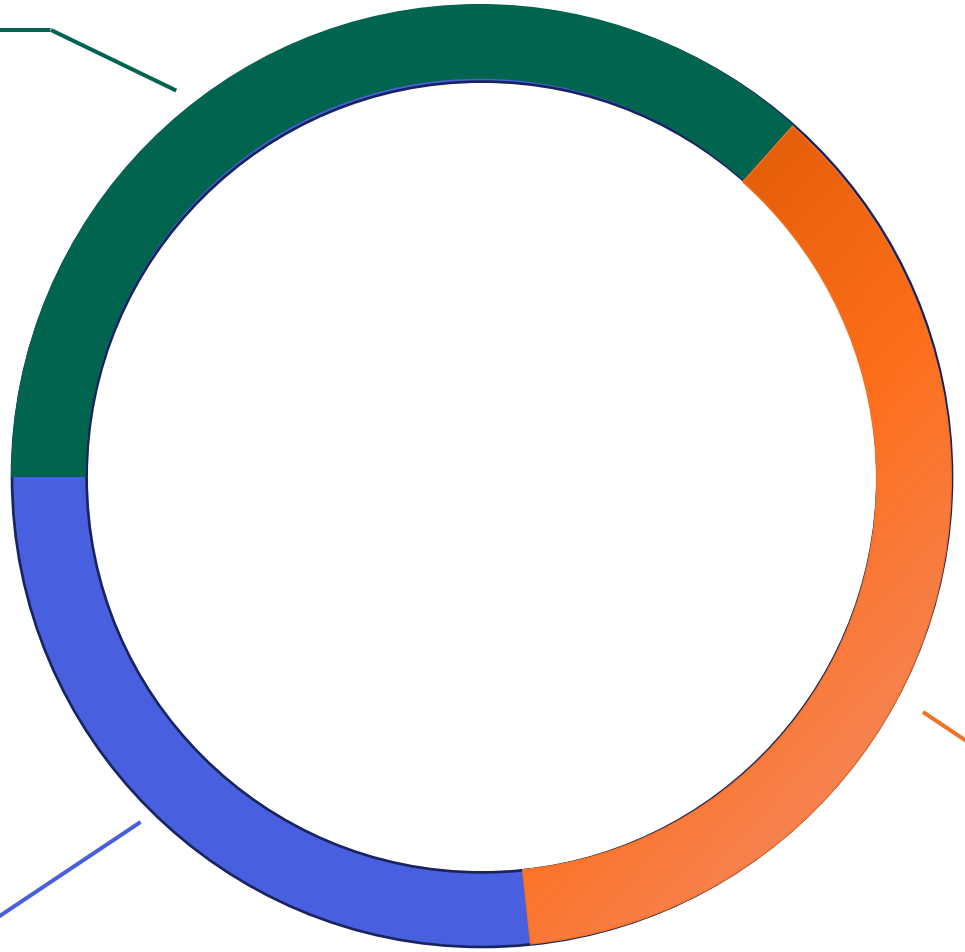
	Retail Distribution		Grocery Distribution		CPG Mfg and Warehousing		Heavy Mfg and Warehousing	
	Improvement	Savings/Vehicle	Improvement	Savings/Vehicle	Improvement	Savings/Vehicle	Improvement	Savings/Vehicle
Assumptions								
Daily Operating Shifts		3		2		3		2
Annual Fully Fringed Labor Rate (2018)		$ 41,400		$ 41,400		$ 48,600		$ 68,100
Areas of Benefit								
Fleet/Equipment Reductions	4%	$ 440	3%	$ 330	5%	$ 549	8%	$ 879
Scheduled Maintenance & Repairs	6%	$ 204	6%	$ 136	3%	$ 120	3%	$ 112
Productivity Improvements*	2%	$ 2,757	1%	$ 919	3%	$ 4,866	4%	$ 6,055
Impact Related Vehicle Damage Reduction	50%	$ 611	50%	$ 407	50%	$ 719	50%	$ 671
Impact Related Facility Damage Reduction	50%	$ 1,325	50%	$ 883	50%	$ 1,559	50%	$ 1,455
Streamlined Incident Investigation	50%	$ 509	50%	$ 339	50%	$ 559	50%	$ 559
Electronic Pre-use Safety Inspections	20%	$ 287	20%	$ 191	20%	$ 338	20%	$ 315
Total Annual Benefit per Vehicle		**$ 6,132**		**$ 3,206**		**$ 8,749**		**$ 10,046**
***Total Annual Benefit per Vehicle without Productivity**		**$ 3,375**		**$ 2,287**		**$ 3,883**		**$ 3,991**

The above data represents the summary of annualized benefits realized by Powerfleet's customers within 12-months of system launch and is the on-going/recurring financial benefits achieved. This data represents over 40,000 vehicles across 800+ customer locations.

PRICING BREAKDOWN

HARDWARE

Gateways, peripherals and sensors, cameras, site kits.



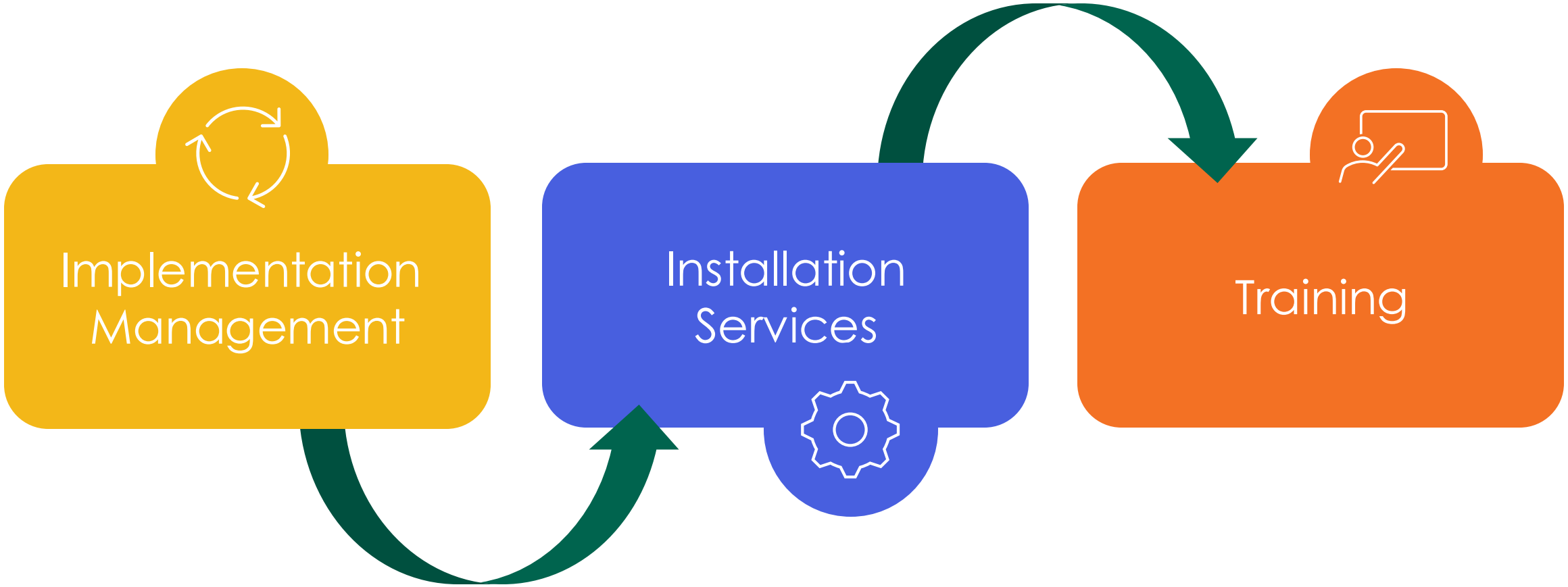
Core apps, value added features, data powered apps, APIs, hardware extended warranty

SAAS

Installations and training, program management, launch support

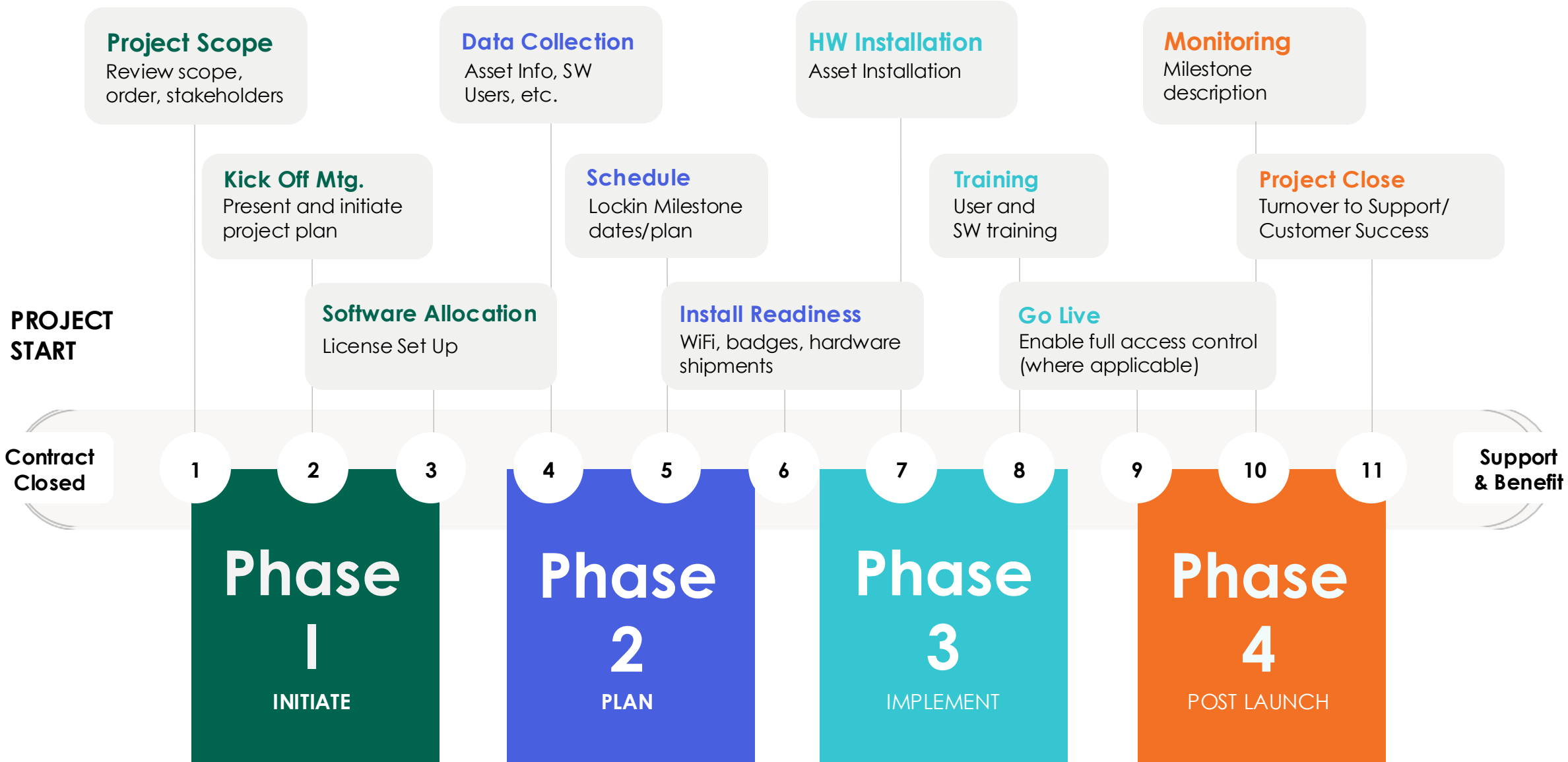
SERVICES

SERVICE OVERVIEW – INSTALLATION & IMPLEMENTATION



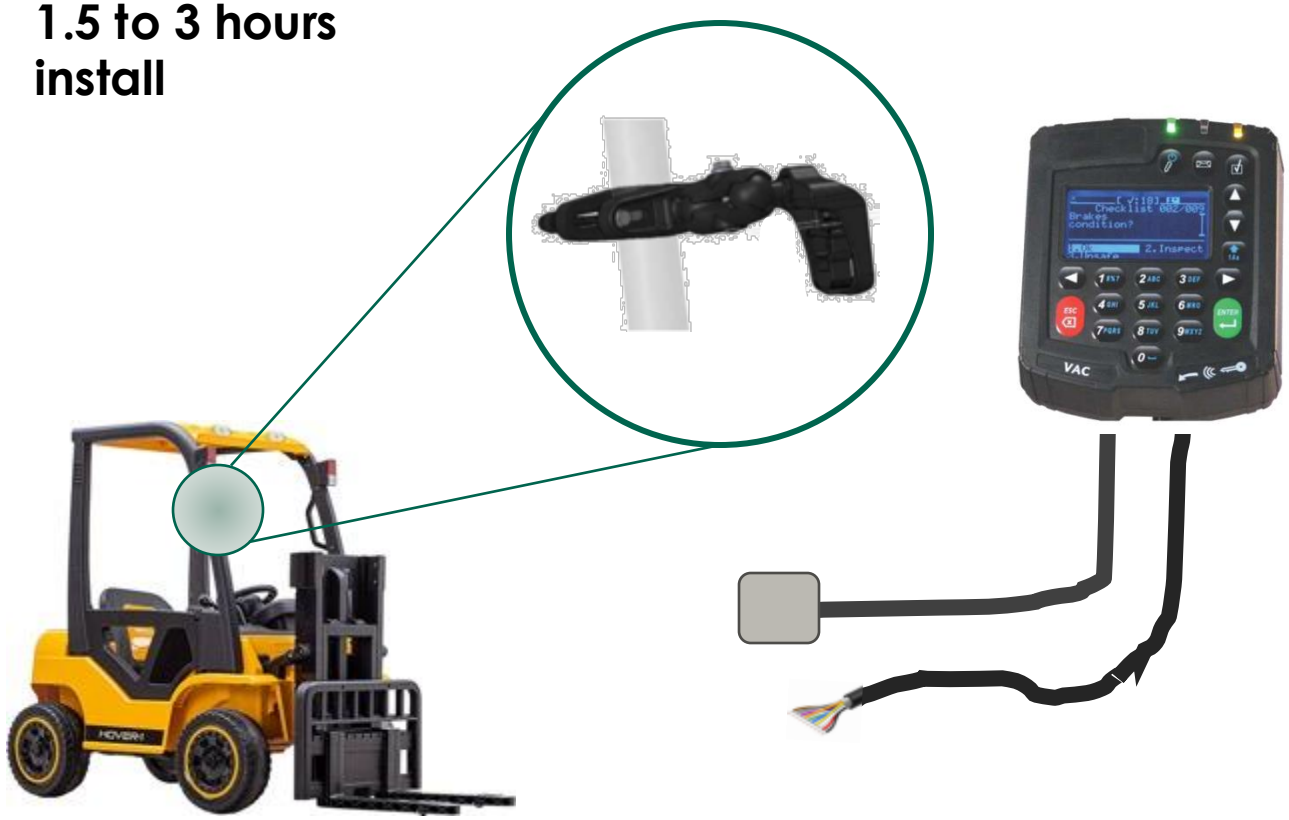
Implementation

CUSTOMER JOURNEY – **IMPLEMENTATION MILESTONES**



Installation

1.5 to 3 hours install



Wire Connections

QUESTIONS & ANSWERS: WHAT'S NEXT?

Thank you for your participation today. We're excited to continue this conversation and address any further questions you may have.

Here's how we continue the conversation:

Submit Further Questions:

If your question isn't in the FAQ or you have more to ask, please submit them through this meeting chat or email us directly at

swalker@powerfleet.com

Look Out for Our Follow-Up:

We'll compile all questions received and provide detailed answers in a follow-up communication, ensuring you have all the information you need.