



Driving Fleet Analytics with SAP HANA

Bill Powell -- ARI

Holman Enterprises - founded 1924 – Over \$3 billion in sales



Holman

AUTOMOTIVE

Family Owned
For Over
90 Years

Holman
Dealerships

Holman
PARTS
DISTRIBUTION

AUTO TRUCK

Steward
Financial Services



US



CA



MX

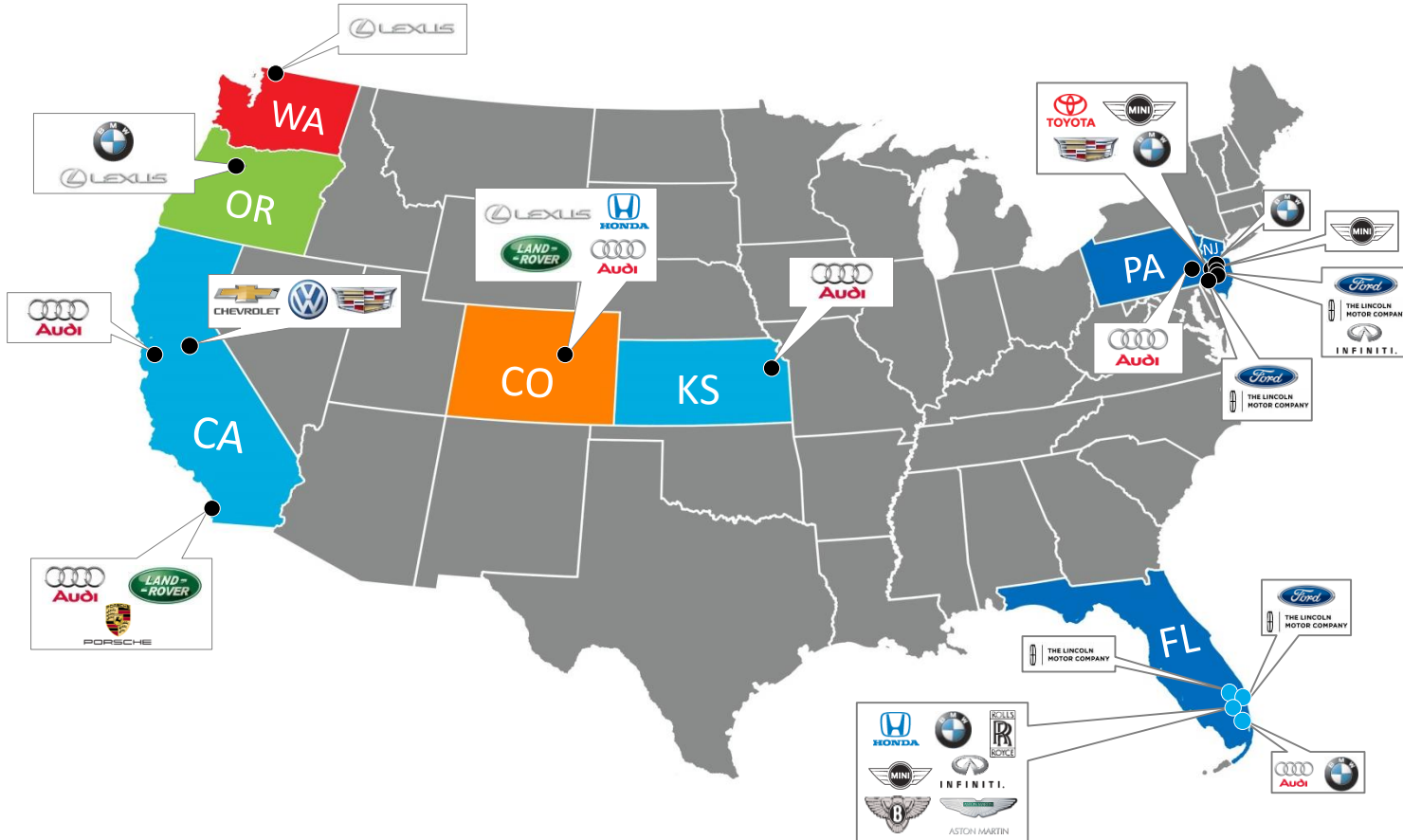


UK



EU

Holman Automotive – Retail Highlights



8
States

17
Cities

33
Dealerships

38
Franchises

17
Brands

Who is ARI?



Founded 1948

6K+ Employees *(Holman)*



1.4 Million+ Managed
Vehicles



Truck
Expertise



Global Reach



Innovative
Technology

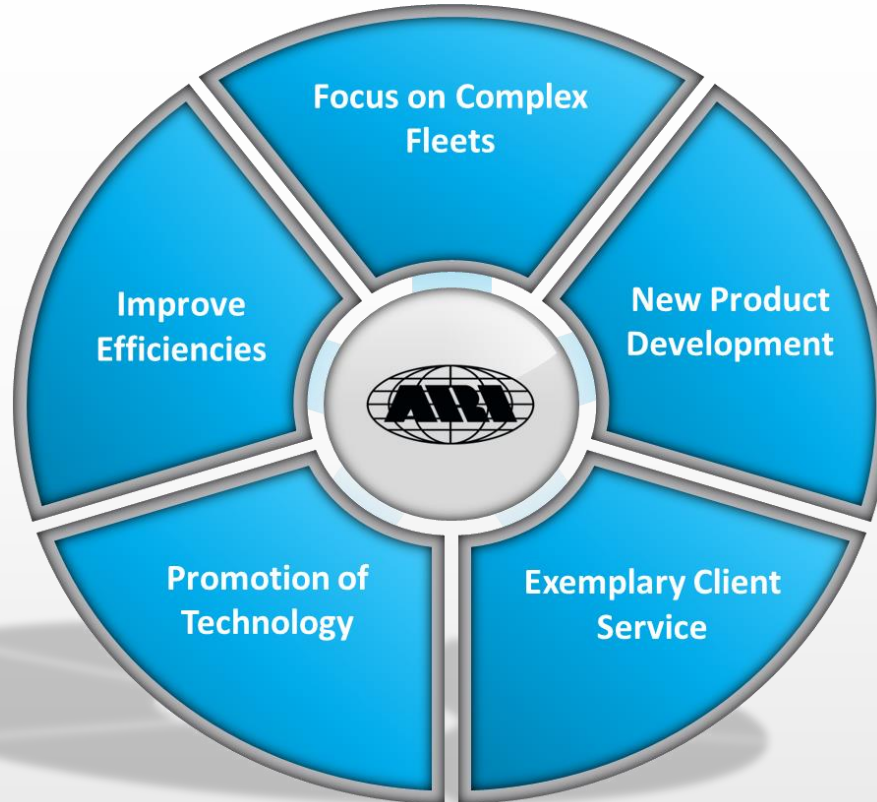


Best Workplaces for
Millennials



5th

Consecutive
year for
"100 Best
Companies to
Work for"





Exponential Data Growth

- Volume doubling every 14 months
- Business requires real-time analysis

Complexity of Fleets

- Over 14,000 data points with infinite combinations

Vendor Management

- Consolidate Fleet & IoT data
- Holistic spend from 90+ countries

Data Driven Culture

- Pervasive & transparent analytics
- Drive innovation – empower the business



ARI – Products & Services





Maintain high service levels while reducing our customers' cost

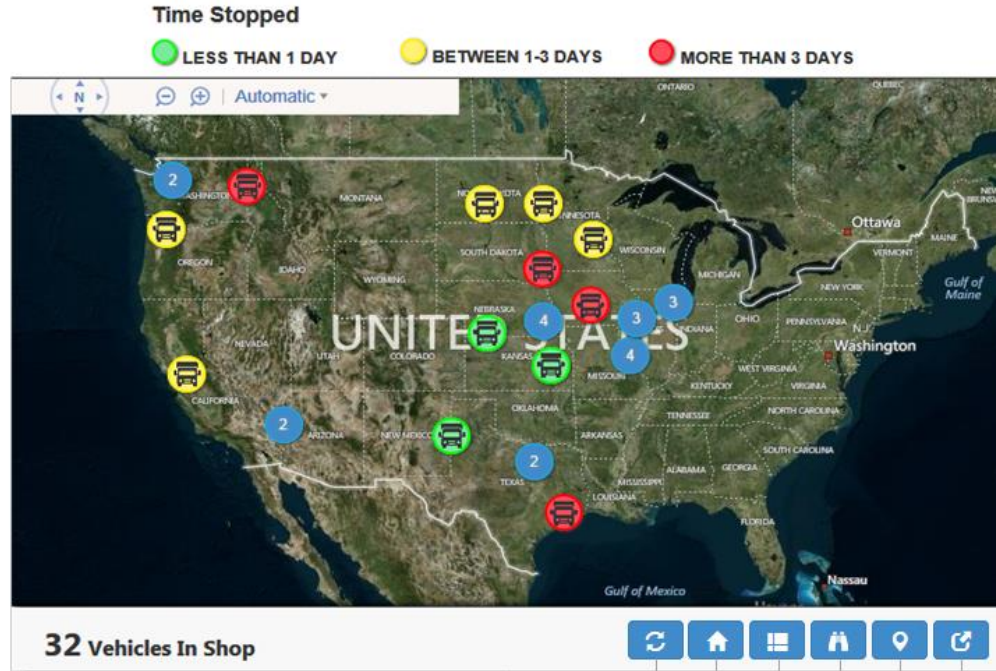
4.8 MM calls handled annually -- **VMS**

3 MM PO's issued annually

Repair Vs Replace Decisions



Holistic View of all Assets being Repaired



Asset Icons

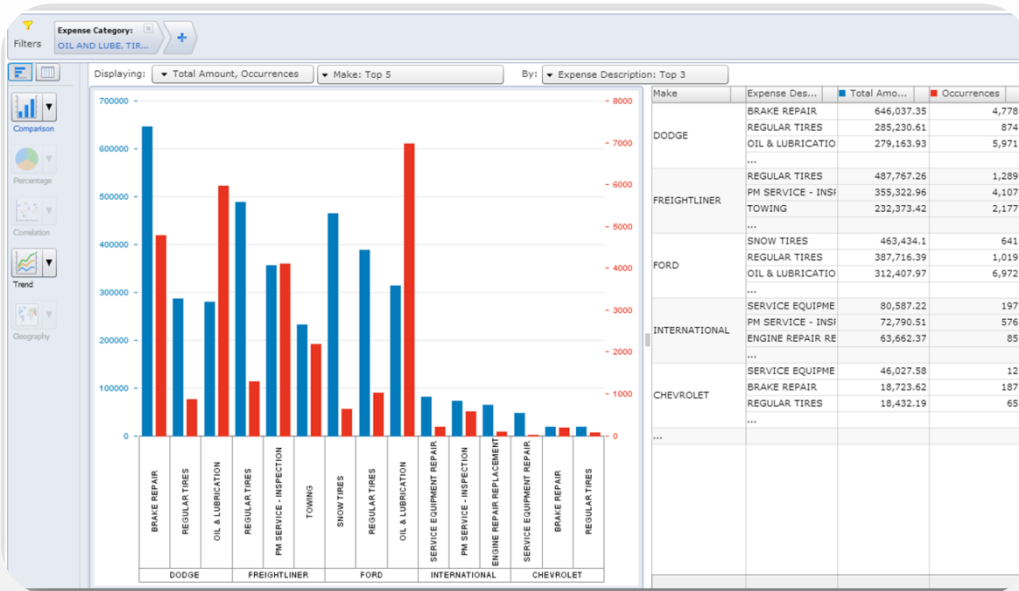


Icons

- Refreshes the map.
- Returns to the **home** page.
- Listing** of all vehicles on the map.
- Search** - filter by saved search or asset data.
- Legend** - key for asset icons and time stopped colors.
- Expand** the map size by opening in a new browser window.



Maintenance Analytics



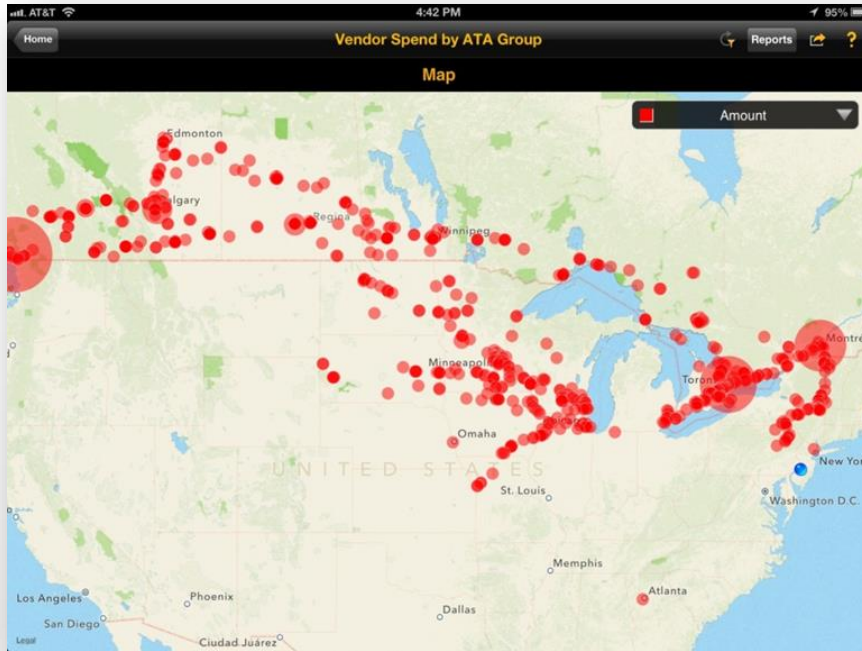
Component failure rate

Seasonality effect

Geography effect

Driver effect





Vendor negotiation

Information guided
conversations

Performance transparency

Context specific analytics

Changing behavior through data transparency



Fuel Management



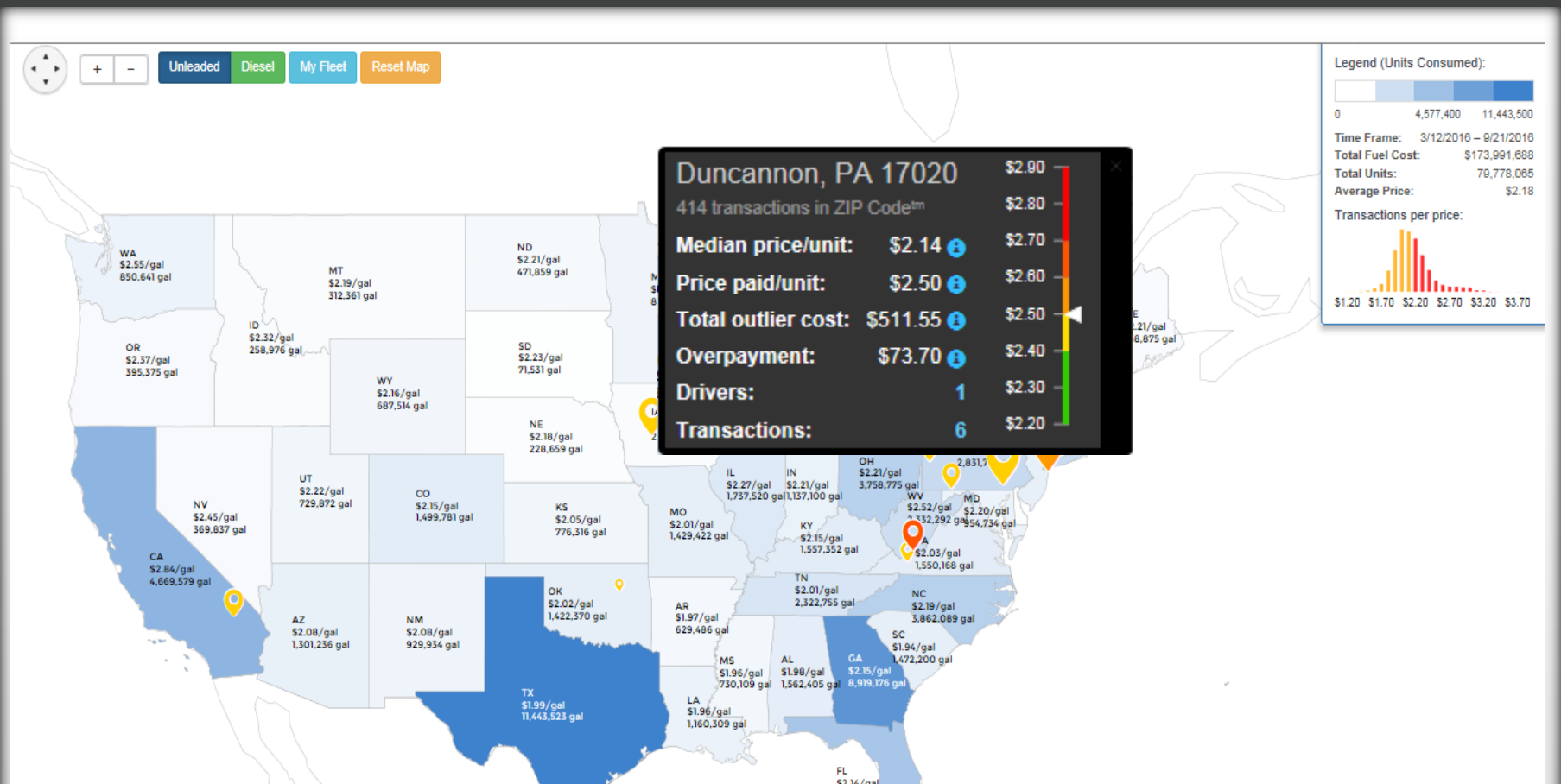
Exceptions

Asset Activity

2nd Largest Spend



Fuel Price Analysis / Purchase Price Anomalies



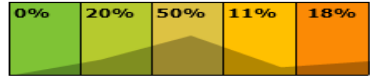
Fleet Health Card



Spend Summary | Asset Summary | Asset Detail | Spend Detail | Repair Category Detail

Cost Per Mile

\$0.08



Vehicle Cost Per Month

\$165.57



Maintenance Cost Per Gallon



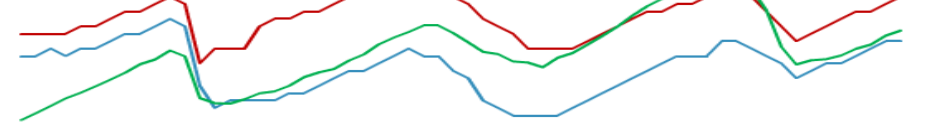
Fuel Spend



Vehicle MIS

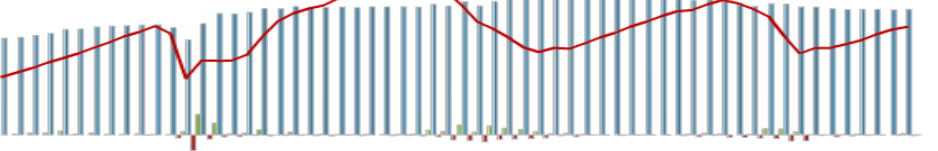
Delivery MIS

Cumulative Maintenance



Vehicle Inventory

Cumulative Fleet Mileage



Asset Summary (Active Vehicles)

	Units	MIS	PM	Wear	UnSch	OutInf	Rntls
Truck LD	2	49	\$2,386	\$3,517	\$10,994	\$7,937	
Truck MD	97	35	\$214,754	\$105,564	\$566,285	\$153,984	\$125,689
Van	641	42	\$625,817	\$722,194	\$1,753,748	\$1,124,201	\$280,637
Car	179	34	\$93,531	\$76,532	\$76,017	\$196,047	\$43,961
SUV	1	22	\$201	\$852	\$88		
	920	39	\$936,689	\$908,659	\$2,407,132	\$1,482,168	\$450,287

Repair Category (Active Vehicles)

Repair Category	Total	0%	20%	50%	10%	23%	0%
Lube/Oil/Filter	\$605,579	0%	22%	57%	12%	28%	1%
Brakes	\$256,496	0%	17%	34%	10%	16%	47%
Tires	\$753,464	1%	34%	64%	25%	34%	10%
Exhaust	\$122,512	1%	4%	11%	2%	4%	77%
Fuel System	\$154,086	0%	5%	12%	3%	6%	73%
Engine	\$623,579	1%	19%	50%	9%	24%	1%
Transmission	\$267,924	0%	4%	11%	3%	5%	75%
Glass, Cab, Body	\$699,545	0%	23%	53%	15%	35%	18%
Rentals	\$489,090	0%	4%	11%	2%	5%	71%
Roadside	\$217,387	0%	5%	18%	4%	9%	57%
Accidents	\$1,076,30	0%	9%	30%	5%	19%	46%
Equipment	\$554,388	0%	17%	47%	8%	22%	1%
Application	\$93,923	0%	2%	7%	2%	3%	81%

Active Vehicle Spend

\$ <-----> \$\$\$\$\$

Category	Total	0%	16%	50%	10%	23%	0%
Total	\$6,184,935	1%	16%	50%	10%	23%	0%
Total True	\$4,252,480	1%	18%	50%	10%	21%	0%
Preventive Maintenance	\$936,689	5%	17%	50%	13%	16%	0%
Scheduled (Wear)	\$908,659	3%	13%	41%	11%	14%	18%
Un-Scheduled	\$2,407,132	0%	17%	50%	10%	23%	1%
Outside Influence	\$1,482,168	0%	12%	37%	6%	18%	27%
Rentals	\$450,287	0%	4%	12%	3%	5%	76%



- Insurance Discounts
- Fuel Savings – idle time & slow the fleet
- Diagnostics feed to our Contact Centers
- Audit Controls – fuel & maintenance
- Mileage Capture – Fringe Benefit
- Driver Safety – Assign specific modules

Telematics enriches other data sources





As the market evolves data volumes
Dramatically Increase

Regulatory
Compliance

Prices Begin
to Lower

Equipment
Connected

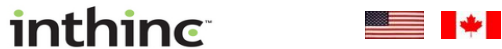
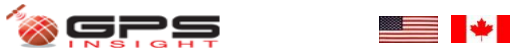
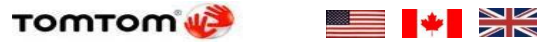
Drivers
Connected

Frequency
Increased

More
Verbose Data



Telematics Solutions & Integration Partners

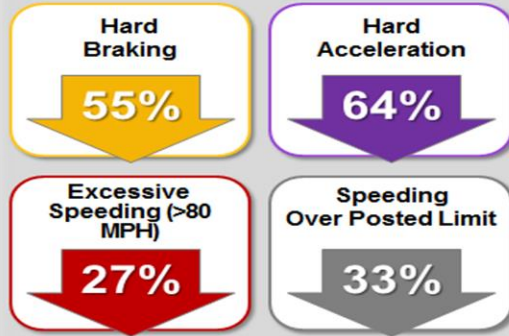




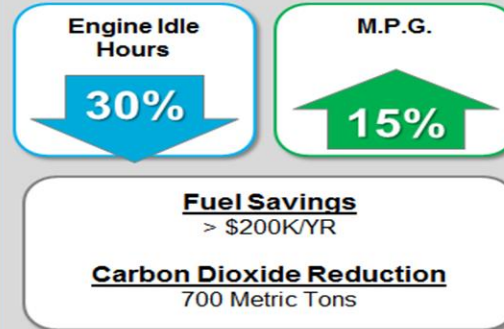
1,100 Vehicle
Fleet

Implement a solution to track and report fuel consumption, safe driving behavior, and vehicle data reporting.

Safer Driving



Less Waste



Surfacing Telematics Data to Customers



Home | Explore: Demo Telematics - Trips and Events

Facets | Split | Visualize | Create View set | Add to View set | Find

Records 1,659,249 / 2,014,379 (27.128s)

Measures (1/3 max)

- Trip Duration (SUM)
- Trips (SUM)
- PTO Hours (SUM)
- Engine Hours (SUM)
- Events (SUM)
- Idling Duration (SUM)
- Idling Occurrences (SUM)
- Speeding Violation Duration...
- Speeding Violation Occurren...
- Hard Acceleration Occurren...
- Hard Braking Occurrences (...)**
- Harsh Cornering Occurren...
- Add Calculation...

Vehicle Status	Model Year	Make Name	Model Name	Series	GVW				
Active	111,706	2013	43,204	FORD	74,091	EXPLORER	27,113	103,563	6,160
Sold	1,294	2014	30,110	CHEVROLET	21,185	F250	21,820	4,143	10,000
Out of Service	290	2012	18,685	RAM	10,085	SILVERADO	15,179	2,434	7,720
Sold Previous Year	209	2011	9,622	DODGE	3,426	EXPEDITION EL	10,193	1,455	9,500
New	0	2015	7,297	NISSAN	2,298	F350	8,799	482	6,800
		2008	1,820	FREIGHTLINER	1,499	COLORADO	5,543	272	5,150
		2009	1,153	JEEP	512	1500	5,102	261	10,700
		2007	590	TOYOTA	189	F150	3,445	202	6,700
		2006	329	KENWORTH	61	RAM PICKUP	3,239	197	8,200
		2005	304	GMC	57	5500 CHASSIS	3,001	194	19,500
		2010	228	PONTIAC	41	FRONTIER	2,288	123	11,000

Filters: Start Year: 2014, 2015

Displaying: Hard Braking Occurrences | Start Year Month: First 20 | By: None

Start Year Month	Hard Braking Occurrences
2014-01	1,478
2014-02	1,608
2014-03	961
2014-04	13,668
2014-05	3,443
2014-06	3,793
2014-07	5,958
2014-08	10,260
2014-09	21,691
2014-10	22,000
2014-11	4,000
2014-12	4,000
2015-01	4,000
2015-02	2,000
2015-03	5,000
2015-04	3,000
2015-05	4,000
2015-06	5,000

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2014-01	1,478
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2014-04	13,668
2014-05	3,443
2014-06	3,793
2014-07	5,958
2014-08	10,260
2014-09	21,691
Total (17)	113,499

19

Technology Overview



SAP Lumira

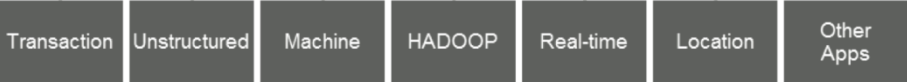
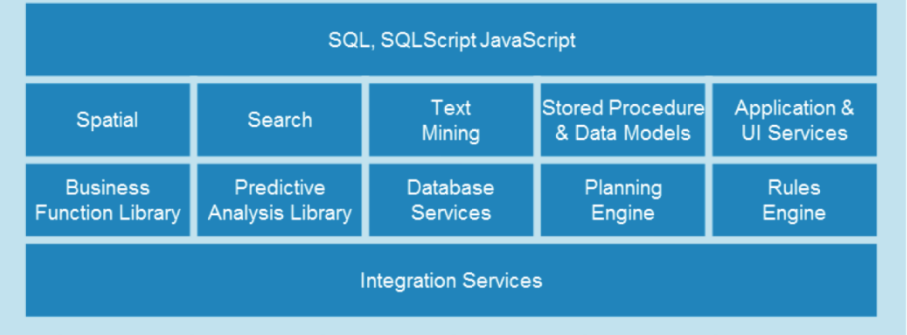


SAP BusinessObjects



SAP HANA Platform

SQL MDX R OData Open Connectivity



Simplify the ecosystem

Reduce data latency

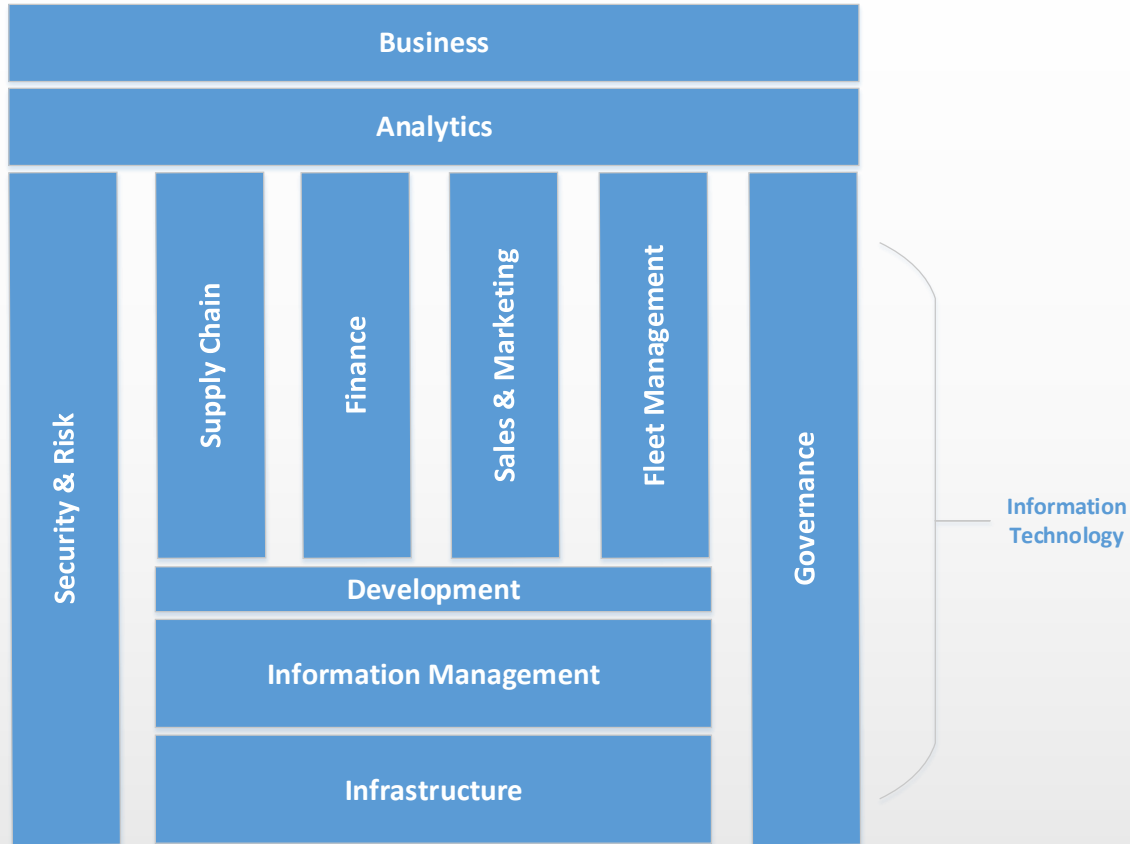
Reduce the data footprint

Integrated analytics

Enable innovation



Information Technology Overview & Alignment





**Data Footprint
Reduction**

60%

Indexes, data copies,
& aggregates are not
necessary

**Staff Time
Reduction**

40%

Less time reacting & more
time spent designing
reusable architecture

**Call Handle
Time Reduction**

5%

Efficiencies through
context specific
analytics

Payback Period

1 Yr.

Quick payback for
initial use-cases.





Machine Learning



Natural Language Processing



Collapse the Transactional & Analytic Systems

