# Decisiv User Meeting

## Data, Performance and Benchmarking

Presenter:
Steve Saltzgiver
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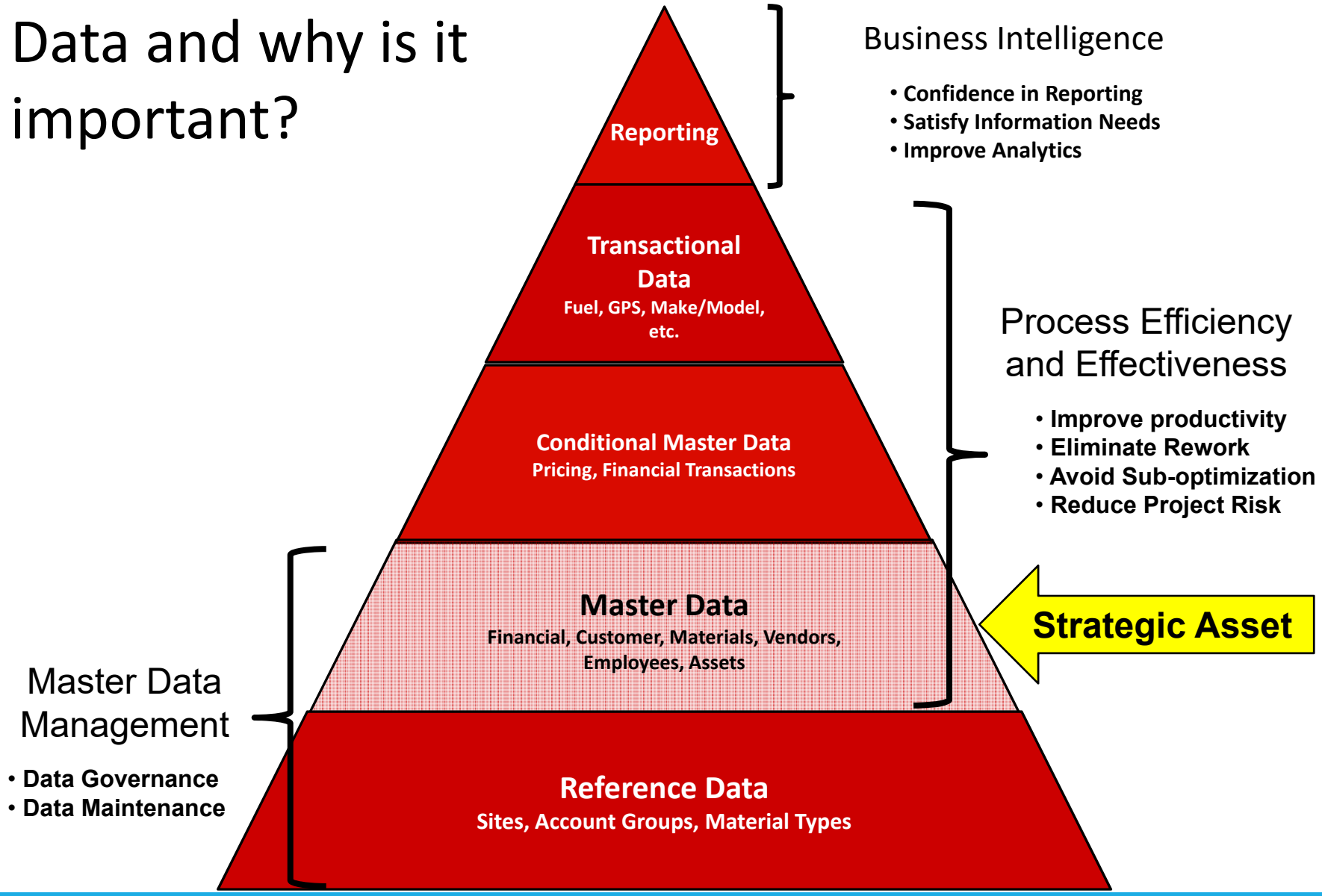
Mercury Associates Inc.

# Presenter Bio

- Mr. Saltzgiver is a Senior Associate with Mercury Associates, Inc. He has unique perspective having served in roles from technician to vice president in public and private fleet organizations. Mr. Saltzgiver has led diverse fleets of over 50,000 assets with annual budgets over $1B dollars. He has taught workshops on a wide array of topics throughout the US, Canada and Europe.
- Recognized as a change advocate who has led innovative programs as an executive for two Fortune 500 companies and two large state fleet. (i.e., Utah, Georgia) Mr. Saltzgiver has been recognized for his achievements in shop optimization, data analysis, benchmarking for continuous improvement, fleet complexity and cost reduction, sustainable fleet planning and telematics technology deployment.
- He was twice nominated for Automotive Fleet magazine's, Manager of the Year award and is the recipient of the Honda Environmental Leadership award, NCSFA Distinguished Service Award and most recently recipient of the Fleet Technology Expo Sustainable Fleet of the Year award.
- Mr. Saltzgiver has married 42 years and the pinnacle of his life's work is his wife Vickie and their 5 sons and 13 grandchildren.

# Capturing Quality Data for Analysis

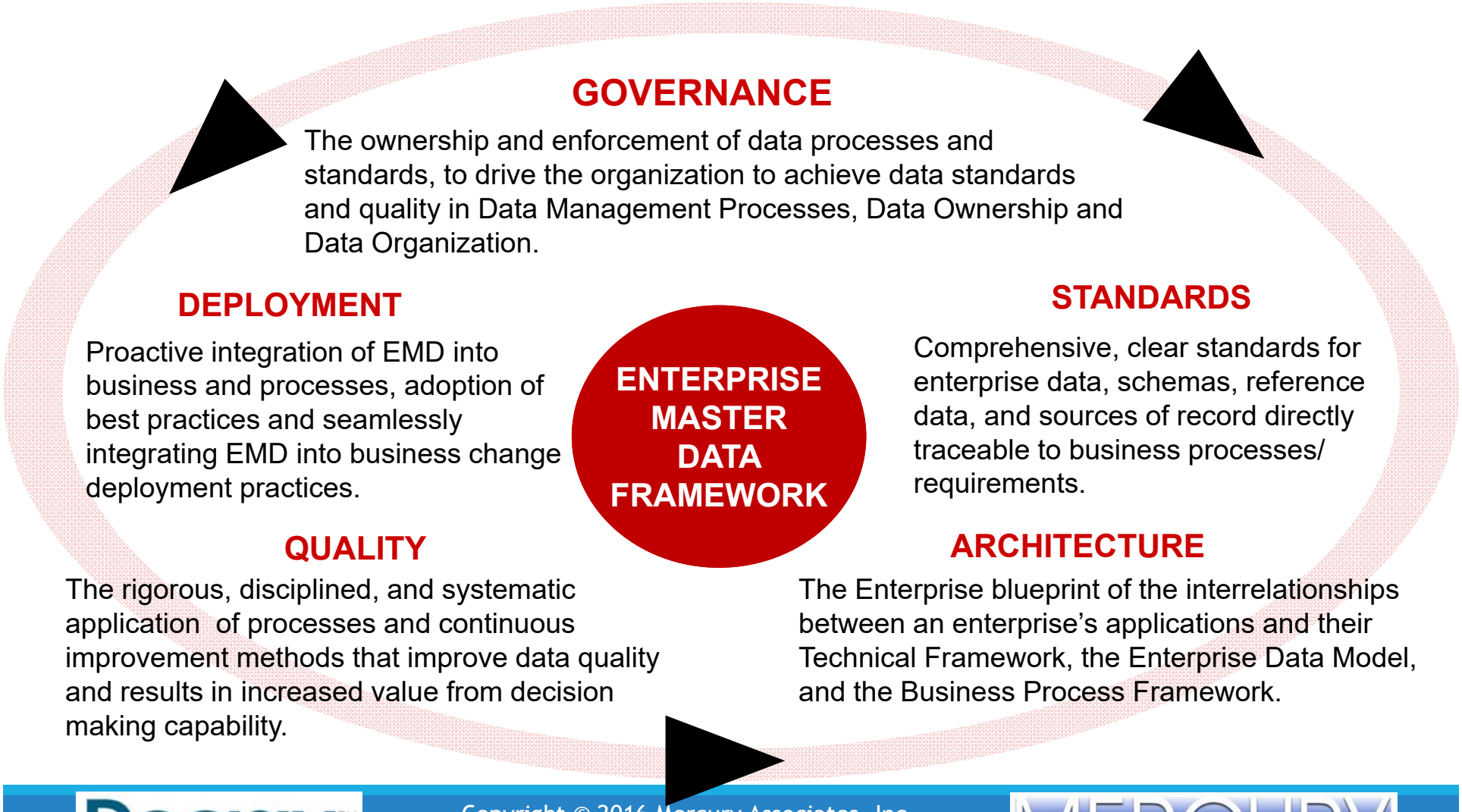
# What is Master Data and why is it important?



# Master Data Management - Core Accountabilities

- Define and implement Data Governance policies and leading practices to strengthen MDM environment
- Define and document all data standards and business rules published
- Actively engage in IT projects and Business initiatives to provide advanced MDM expertise and improve project delivery
- Define and manage data quality program and lead data quality improvement initiatives

# Comprehensive approach to Master Data Management?



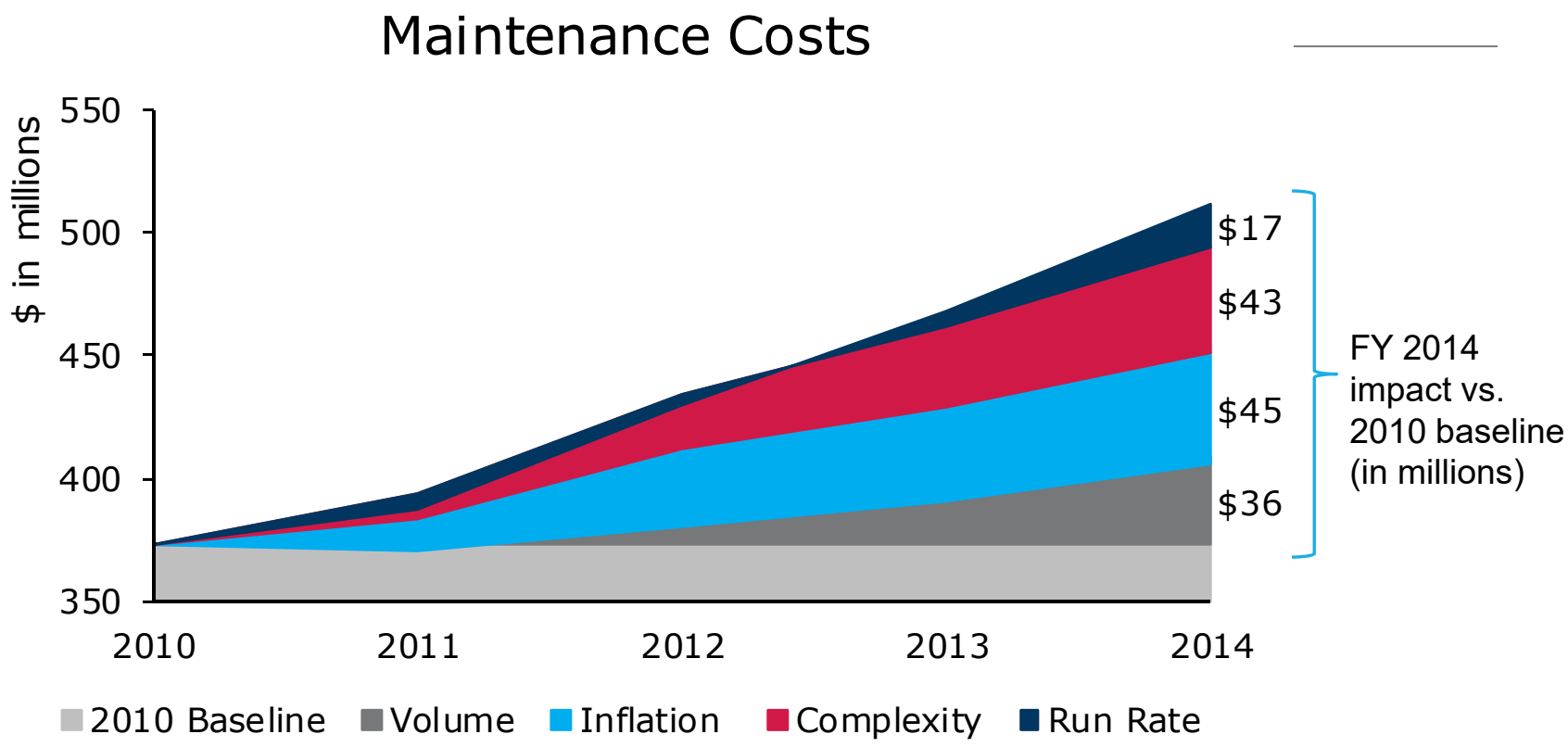
# Collecting Data

- Fleet management information system(s)
- Data sources (Fuel, Financial system, Vendors, GPS, etc.)
- Data input protocols, practices and policies (Master Data defined)
- Data quality control & integrity programs (QC process)
- Data reporting processes & frequency
  - On demand (ad hoc) or user initiated
  - Weekly (Bi-weekly)
  - Monthly
  - Quarterly
  - Annual
  - Special requests or audits
- VMRS Standardized Data Capture

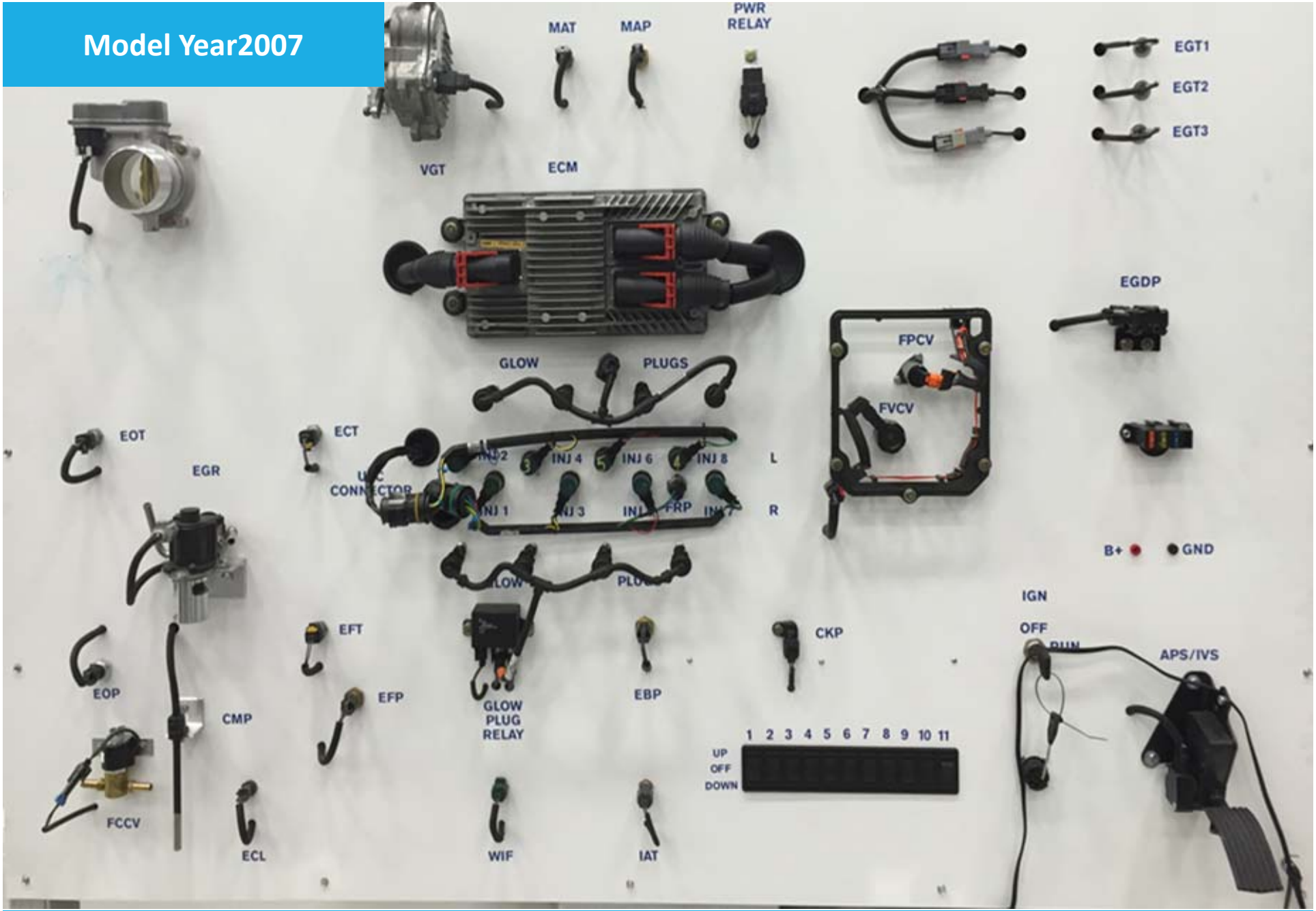
# Complexity Discussion

*"A Case for Quality Data"*

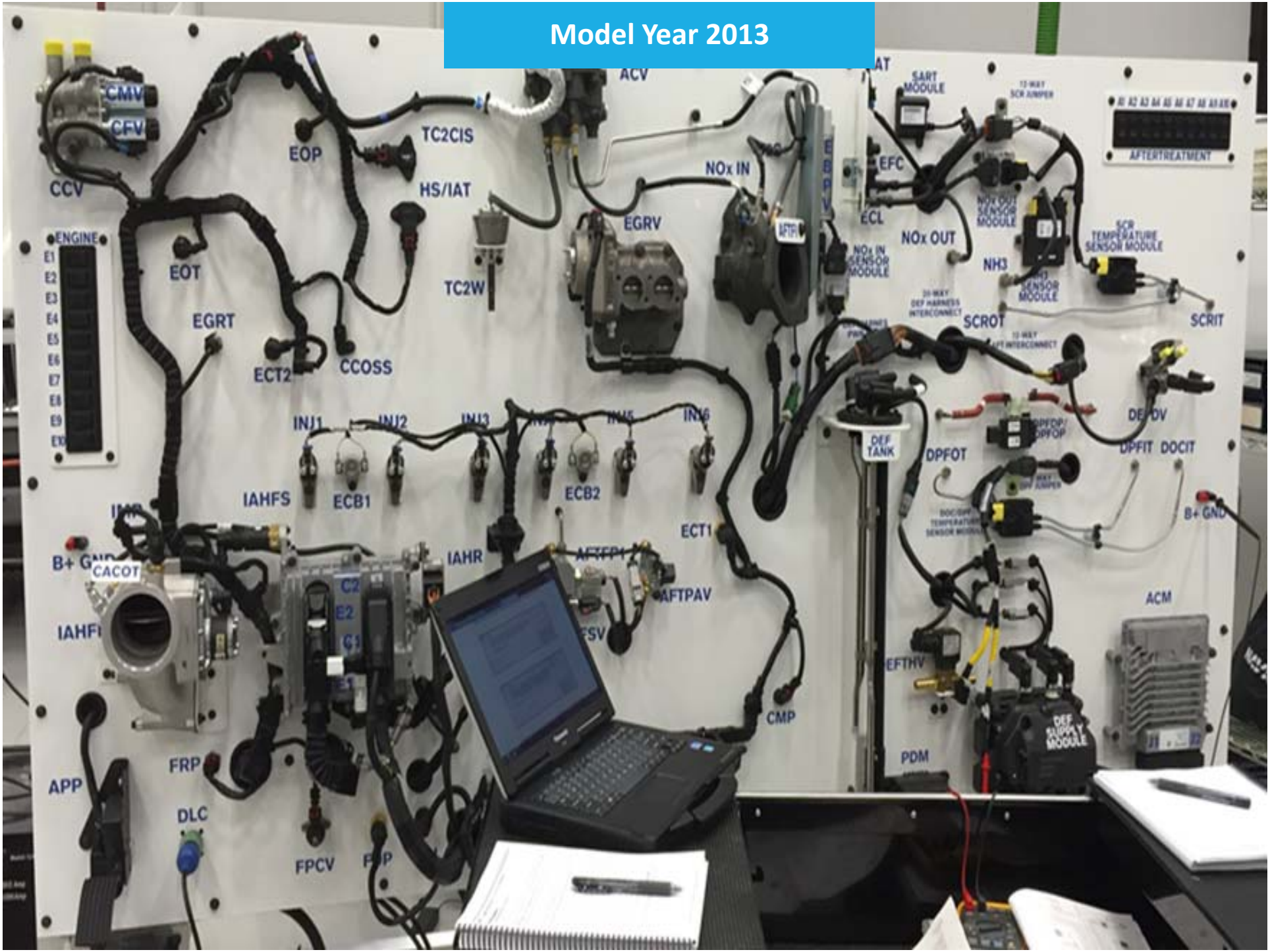
# Evolving Cost of Maintenance



# Model Year2007



# Model Year 2013



# Benchmarking and Performance Measurement

# Benchmarking: What it is and What it isn't?

**Benchmarking is….**

- A continuous process
- A process of investigation that provides valuable information
- A process of learning from others; a pragmatic search for ideas
- A time-consuming, labor-intensive process requiring discipline
- A viable tool that provides useful information for improving virtually any business process

**Benchmarking isn't….**

- A one-time event
- A process of investigation that provides simple answers
- Copying, imitating
- Quick and easy

# Benchmark Methodology Advantages

- Industry specific knowledge and focus
- Sanitized raw data to insure ***apples to apples comparison***
- Full line item disclosure of ownership, operating and overhead cost measures
- Ability to dissect data to a specific line item analysis (fuel, labor, parts, leasing, staff, etc.)
- Ability to compare data regionally, by service territory and interdepartmentally
- Tailored to meet your ***specific needs or challenges***
- Personally present benchmark results
- Web access to the database

# Benchmark Results

- Answer to the Question: ***Is your fleet organization competitive?***
- Establishes a performance baseline
- Defines your fleet organizations strengths and weakness
- Compares you and your fleet strategies with the ***Best in Class Strategies***
- Provides a clear understanding of your ownership, operating and overhead costs and how they affect each other
- Provides a clear understanding of your staffing levels vs. industry
- Provides direction on areas of possible improvement

# Benchmark Uses

**Promote your organization**

You need third party information to promote the fleet group internally.

**Best in Class Strategies**

You need to be able to *keep score,* understand and provide the best in class strategies and how they may differ from your fleet strategies. You need to be able to help management and operations understand what they will need to do in order for you to become best in class.

**Budget Constraints**

You need third party numbers that clearly show what will happen to fleet cost if you are not able to replace vehicles on a consistent basis. You need alternatives to help you self fund your replacement plan.

**Operational Pressure**

You need third party numbers that can define what the demands placed on fleet by the operations areas are costing the fleet organization.

# Benchmark Uses

**Management Change**

You need to be able to provide the cost history to new management to show that you are proactive and to show that your groups decisions are positively impacting fleet cost.

**Decentralization**

You need to be able to explain what will happen to fleet cost if your fleet moves to a decentralized fleet management scenario.

**Mergers and Acquisitions**

You will need reliable fleet cost data to begin to compare the fleet organizations and develop the best in class methodologies for the merging fleets.

**Networking**

You need access to other fleet personnel that have faced the same battles or pressures you are currently facing in order to succeed in achieving operational excellence.

# What is Performance Measurement?

The expression of some attribute of conditions, activities, or performance in quantitative terms

Whose conditions, activities, or performance?

- Organizations
  - Fleet owner
  - Fleet management (including individual shops, motor pools, and fueling facilities)
  - Fleet user
  - Internal support service (e.g., procurement, surplus property)
  - Contractor
  - Other supplier
- Employees (e.g., drivers, maintenance technicians, call center agents)
- Vehicles and vehicle components

# Why Measure Performance?

**To evaluate** – to develop an understanding of conditions, activities, and performance attributes relative to competitors, trends, and goals that cannot be attained through first-hand observation or second-hand information

**To diagnose** – to delve into underlying causes of, or contributors to, conditions and performance levels

**To monitor** – to maintain awareness of conditions, activities, and performance levels in areas of critical importance and that are susceptible to change

**To motivate** – to define concrete goals toward which to strive and to which rewards can be linked

**To demonstrate** – to illustrate accomplishments in objective, independently verifiable terms

# Definitions

**Performance measure** – the expression of a condition, activity, or level of performance in quantitative terms

- Example – cost per in-house maintenance technician labor hour

**Performance statistic** – the calculated value of a performance measure for a specific organizational unit, employee, vehicle, etc.

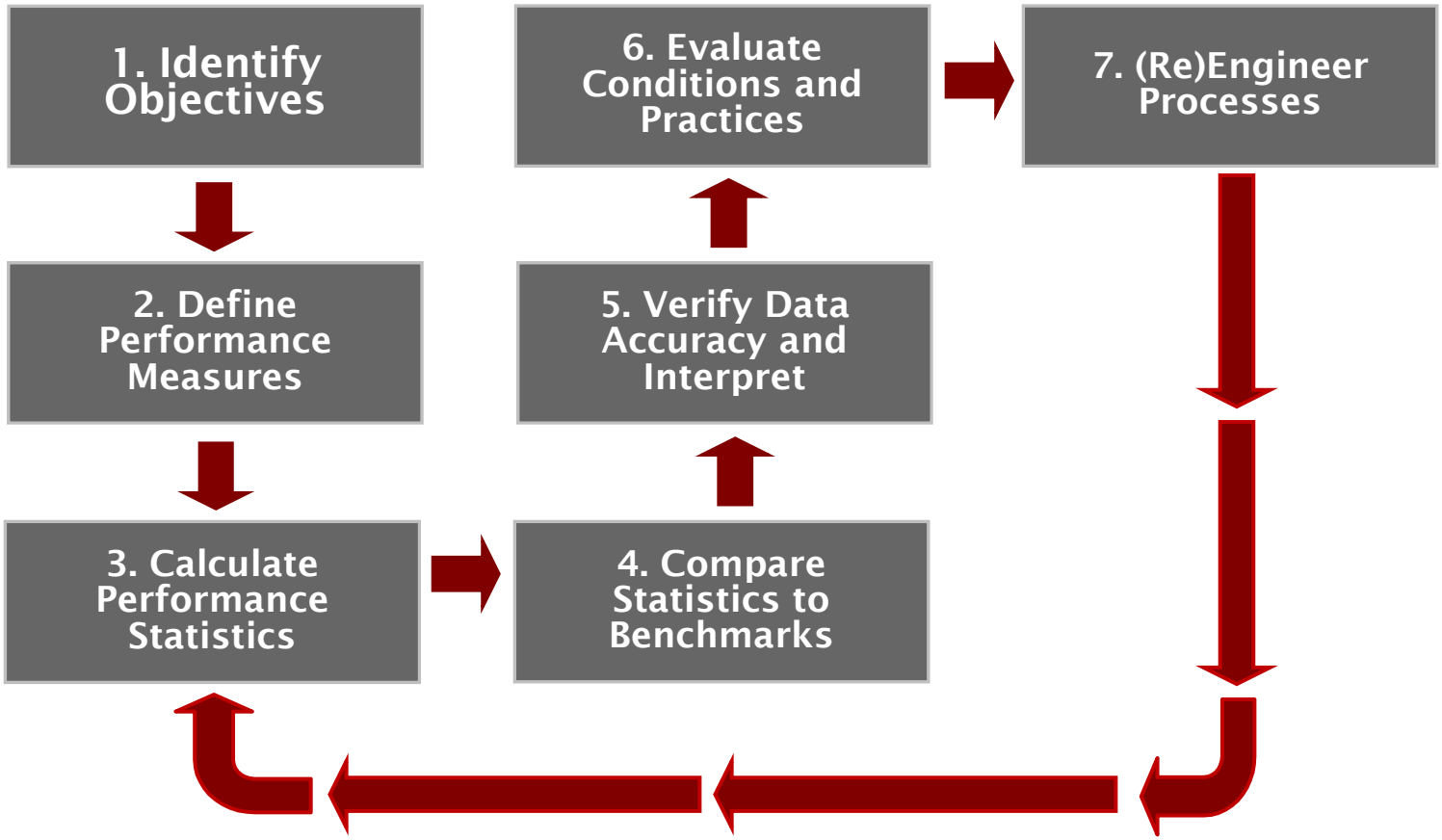
- Example – $105 per hour for in-house maintenance technician labor

**Benchmark** – a numerical value that serves as a gauge of the reasonableness or acceptability of a performance statistic

- Example – average or typical labor rate charged by local commercial repair shops (for comparable service delivery capabilities), say, $95 per hour

**Benchmarking** – performance measurement

# Process for Using Performance Metrics to Benchmark Performance

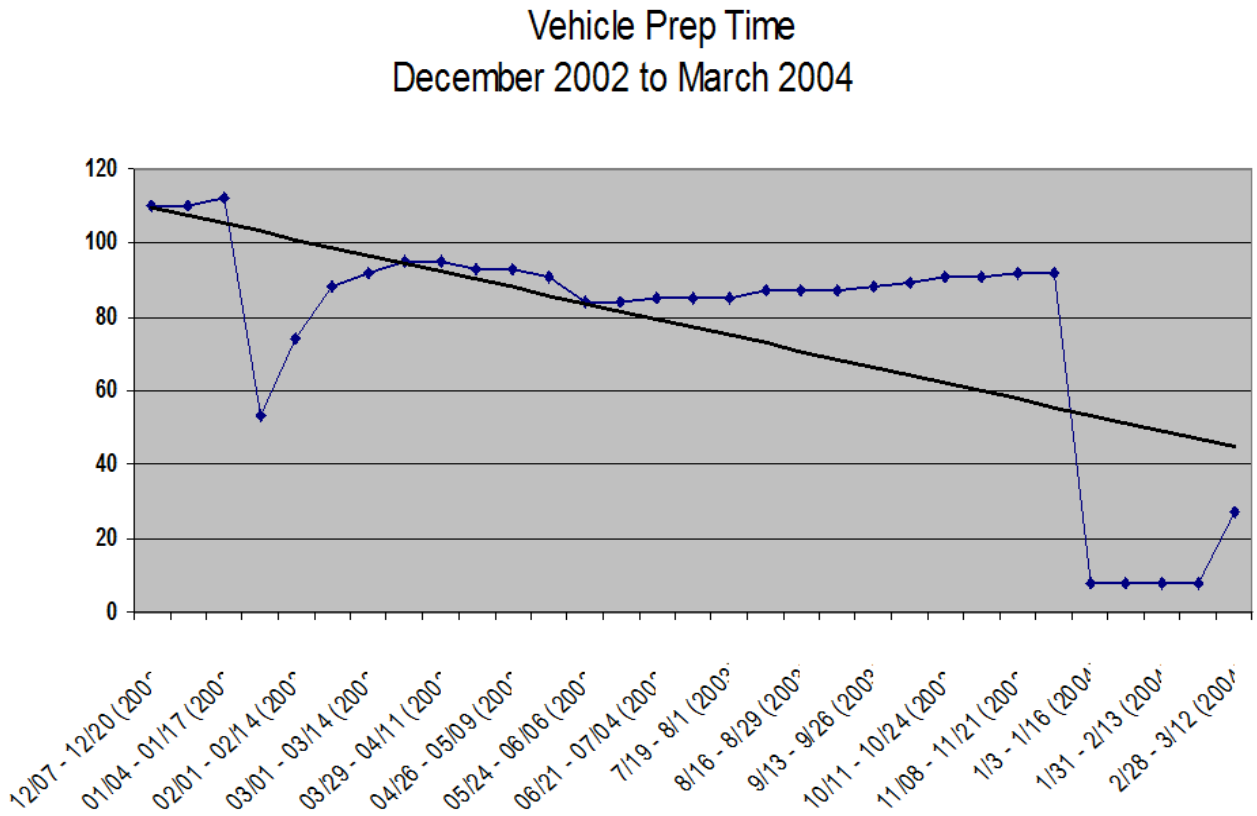


# Steps 1&2: Defining (Broad) Objectives and Measures of Performance

| Objective | Performance Attribute | Performance Measure |
|---|---|---|
| Available of Service/Day | Downtime | % of Units Out |
| Suitable Mi, Hours/Mo | Extent of Use | Utilization in |
| Reliable Breakdown | Breakdowns | Mi, Hours/ |
| Safe Mi Driven | Crashes | Crashes/Million |
| Economical | Costs | Cost/VEU, Mi, Hour |
| Sustainable | Fuel Efficiency | MPG/GPH |

# Step 1: Identify More Specific Objective(s)

Determine appropriateness of fleet maintenance and repair (M&R) costs, delivery, productivity, and set goals and objectives to reduce if/where possible



# Step 2: Define Performance Measures

Cost per vehicle per year

Cost per vehicle equivalent unit (VEU)

- Total M&R cost
- M&R labor cost
- M&R parts cost
- M&R transaction (work order, service, etc.) management cost

Cost per M&R service

- Preventive maintenance (PM) service
- Tire rotation
- Brake job

Cost per mile or hour of use

# Step 3: Calculate Performance Statistics

Example: Average* M&R cost per VEU per year

- 1 VEU represents the amount of effort required to maintain and repair 1 passenger vehicle for 1 year; generally about 12-15 hours of direct maintenance technician labor
- The size of any fleet can be expressed in terms of VEUs once the ratio of annual hours required to M&R each type of asset in it to the hours required to M&R a passenger car has been determined through analysis of historical data

Formula: Annual cost of all M&R activities or services / number of VEUs in the fleet (e.g., $3.34M/1,200 = $2,780)

# Step 4: Compare Statistics to Benchmarks

Benchmark: $1,500 per VEU per year

| Fleet Type | US Region | Total VEUs | Cost-Per-VEU |
|---|---|---|---|
| University | Northeast | 225 | $ 2,128 |
| City | Northeast | 1,000 | $ 1,500 |
| University | Southeast | 350 | $ 1,500 |
| City | Northwest | 1758 | $ 1,369 |
| City | Northwest | 171 | $ 1,116 |
| City | Northwest | 678 | $ 1,957 |
| | | **Average US** | **$ 1,595** |
| | | **Average NW** | **$ 1,537** |

# Step 5: Verify Data Accuracy and Interpret

What is the basis for the cost amount?

- Budgeted costs? Actual expenditures?

Is the cost amount consistent with historical *trends*?

What's included in/excluded from the cost amount?

- Transaction management and administration costs (for outsourced M&R services)?
- Other costs of using outside shops (access to service providers, parts prices, "shop" charges, upselling of services)
- Service level (hours of operation, prioritization, emergency service)
- Infrastructure and other overhead costs (for insourced services)?

How much of the annual cost of insourced services is *avoidable* (if all M&R work were outsourced)?

# Step 6: Evaluate Conditions and Practices

Conditions and practices affecting M&R costs

- Fleet age
- Fleet size, composition, and deployment
- Mission criticality of some or all fleet assets
- Fleet operating practices and utilization levels
- Driver management practices
- Supplier selection and management practices
- Contract terms and conditions
- Service requirement definition, authorization, and acceptance
- Cost transparency and accountability

# Step 6: Evaluate Conditions and Practices

In-house M&R practices affecting M&R costs

Maintenance organization structure and staffing levels

Maintenance facility size(s), layout(s), and condition

Work methods

- Preventive maintenance program
- Work planning and service writing
- Technician training, supervision, and seniority
- Technician compensation
- Quality assurance
- Parts/services procurement and management
- Management analysis and reporting

# Step 6: Evaluate Conditions and Practices

## M&R outsourcing practices affecting M&R costs

### Work methods

- Preventive maintenance program
- Vehicle inspection and defect reporting
- Contractor/vendor selection
- Contract/PO terms and conditions
- Service transaction management and administration
- Management analysis and reporting

# Step 7: Implementing Management and Operating Improvements

Improvements that may reduce M&R cost per VEU:

- Fleet modernization
- Fleet standardization
- Better driver training
- Improved employee morale and productivity
- Better management of third-party service provider activities and charges
- Better management of in-house M&R resources, processes, activities, and expenditures
- Increased cost transparency and accountability

# Benchmarking In-House Parts Management Practices: An Example

| Statistic | Org 1 | Org 2 | Org 3 | Org 4 | Org 5 |
|---|---|---|---|---|---|
| Parts Cost/VEU/Yr | $801 | $431 | $711 | $699 | $568 |

# Benchmarking In-House Parts Management Practices: An Example

| Statistic | Org 1 | Org 2 | Org 3 | Org 4 | Org 5 |
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| Average Veh Age (yrs) | 8.6 | 11.4 | UK | 7.4 | UK |
| Fleet Size (VEUs) | 11,605 | 6,494 | 15,041 | 5,148 | 7,040 |
| Parts Expenditures/Yr | $9.3M | $2.8M | $10.7M | $3.6M | $4.0M |

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| Sublet Rpr Expends/Yr | $9.6M | $0.8M | $6.6M | $1.7M | $1.7M |
| Sublet Rpr Costs/VEU/Yr | $827 | $123 | $439 | $330 | $810 |

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| Parts Mgt Expends/Yr | $1.6M | $0.8M | $3.2M | $0.8M | $1.4M |
| Parts Mgt Cost/VEU/Yr | $138 | $123 | $213 | $155 | $199 |

# Key Points to Remember

- Performance should not measured for its own sake but in order to evaluate how an organization is performing relative to a specific goal or objective
- The same performance measure can result in different performance statistics depending on the objective being examined
- The accuracy of performance statistics can be heavily affected by data codification, capture, and verification practices
- Benchmarks must be chosen with care to ensure “apples-to-apples” comparisons
- Performance measurement rarely produces definitive conclusions about how to improve business practices

# *Monitoring* Performance on a Continuous Basis

Performance measures can be input or output based

- Percentage of available time charged to work orders by maintenance technicians (input)
- Work orders completed within acceptable time allowance (output)
- Average days to sale by remarketing company or surplus property agency (input)
- Vehicle residual value as a percentage of suitable industry benchmark – Manheim UCMR, Black Book, Ritchie Bros., etc. (output)

# Monitoring Performance on a Continuous Basis

Performance monitoring generally should focus on dynamic, not static conditions

- Vehicles waiting for work bays
- Open work orders waiting for parts
- Parts waiting for maintenance technician pickup
- Vehicle repairs waiting for customer authorization
- Percentage of drivers purchasing premium fuel
- Percentage of motor pool vehicles rented
- Number of new vehicles waiting to be commissioned
- Number of used vehicles awaiting disposal

# Monitoring Performance on a Continuous Basis

Performance measurement should be tailored to the concerns of different decision makers and other stakeholders

- Upper management
- Finance, procurement, risk management
- Fleet manager
- Shop supervisor
- Maintenance technicians
- Parts manager
- Customer organization representative
- Drivers

# Different Performance Measures for Different Decision Makers

| | |
|---|---|
| Executive Manager, Customer | • Vehicle availability or downtime rate<br>• In-service breakdown rate<br>• Ratio of actual to budgeted expenses<br>• Crash rate |
| Fleet Manager | • PM schedule adherence rate<br>• Work order turn-around time<br>• Average maintenance and repair backlog<br>• Maintenance technician productivity rate |
| Maintenance Supervisor | • Direct/billable hours by maintenance technician<br>• Efficiency rate by maintenance technician<br>• Repair comeback rate by maintenance technician |
| Parts Manager | • Parts order fill time<br>• Parts order fill rate<br>• Inventory turnover rate<br>• Percentage of inventory with no movement in last 12 mos |

# Performance Measurement and Monitoring Data Sources

Internal (condition, performance, benchmark) data

- Historical records
- Surveys
- Measurement

External (benchmark) data

- Peers
- Vendors
- Contractors
- Manufacturers
- Trade associations
- Trade publications

# Sample Performance Measures

**Vehicle cost**

- Purchase price as a percentage of published triple net price (PC Carbook)
- Residual value as a percentage of average auction value
- Fully loaded cost per motor pool vehicle rental day as a percentage of local commercial rental rate (by vehicle type)

**Vehicle operation and utilization**

- Fleet accident rate: accidents per million miles driven
- Average vehicle repair cost per accident
- Daily, weekly, monthly, annual usage in miles or hours as a percentage of class average usage (assigned vehicles)
- Average annual rental days as a percentage of available rental days (motor pool vehicles)

**Vehicle maintenance / Shop management**

- Preventive maintenance schedule adherence rate
- Maintenance and repair backlog: number of vehicles awaiting service as a percentage of average number of vehicles serviced per day

# Sample Performance Measures

**Vehicle maintenance (cont.)**

- Downtime rate: percentage of vehicles out of service for repair as a percentage of total vehicles in the fleet (by vehicle and mission type)
- In-house cost per transaction as a percentage commercial transaction cost (by transaction type)
- Maintenance and repair cost per vehicle equivalent unit per year
- Avoidable cost per in-house maintenance technician labor hour as a percentage of local commercial shop labor rates
- Maintenance technician productivity rate: hours charged to work orders as a percentage of pay hours (by maintenance technician, work crew, shift, shop)
- Maintenance technician efficiency rate: average time to complete a specific service as a percentage of recognized service completion time (ditto)
- Comeback rate: percentage of completed repairs returned to shop for rework (ditto)

**Parts management**

- Parts order fill rate: percentage of orders filled from stock
- Parts order fill time
- Inventory turnover rate

# Sample Performance Measures

**Parts management (cont.)**

- Inventory utilization rate: percentage of inventory lines used in last 12 months

**Vehicle replacement**

- Average life-to-date usage (miles or hours) by vehicle type
- Average age
- Average de facto replacement cycle as a percentage of recommended cycle
- Average annual replacement expenditure amount as a percentage of average annual replacement cost
- Replacement backlog as a percentage of total current fleet replacement cost

**Staffing**

- Maintenance technician to supervisor ratio
- Maintenance technician to parts technician ratio
- Ratio of administrative and managerial personnel to direct service personnel
- Ratio of vehicles to fleet management personnel

# Sample Performance Measures

**Miscellaneous**

- Average order to delivery time (weeks) for new vehicles
- Average days to sale for used vehicles
- Average road call response time (minutes) or percentage of road calls responded to within X minutes
- Average subrogation recovery time (weeks)
- Average subrogation recovery amount as a percentage of accident repair cost amount
- Average call center call answer time and hold time
- Monthly per-vehicle maintenance management fee

# Final Thoughts, Tips and Real-life Examples

# Example: Metric Reporting Standards

1. Celebrate success
2. Identify opportunities & issues for improvement
3. Create Action Plan


***Closed loop process***

# Metrics Scorecards – Keeping Score

| | 12 | 1 |
|---|---|---|
| Week beginning | | 1/20/2014 |
| Month | | January-14 |
| Weeks since kickoff | | 108 |
| Site Number | | 3845 |
| Site Name | | Tucson |

Copy metrics scorecard

Print metrics scorecard

| | Metric | Baseline | End goal | Current goal | Current week | Previous week | Rolling 4 wk avg. | YTD avg. (since One Fleet launch) |
|---|---|---|---|---|---|---|---|---|
| Weekly Metrics | Down trucks | 6 | 4 | 4 | 4 | 3 | 3 | 4 |
| | Road Calls (ROs) | 14 | | 5 | 3 | 4 | 8 | 9 |
| | Road Calls (hours) | 17 | | | 6 | 6 | 11 | 15 |
| | Door traffic (ROs) | 9 | 0 | 0 | 0 | 1 | 1 | 5 |
| | Door traffic (hours) | 9.1 | 0 | 0 | 0 | 0 | 0 | 3 |
| | Downtime | 0.00% | 0.50% | 0.50% | 0.24% | 0.24% | 0.43% | 0.82% |
| | PMs within 20 hours | 100% | 100% | 100% | 100% | 100% | 100% | 96% |
| | First time VCR quality | 19% | 100% | 100% | 100% | 99% | 100% | 90% |
| | SRT Hit Rate | | 90% | 90% | 91% | 86% | 89% | 62% |
| | Productivity | 0% | 90% | 99% | 103% | 96% | 99% | 69% |
| | Total # of Backlog Items | 0 | 20 | 20 | 26 | 28 | 28 | 80 |
| | Total # of Backlog Hours | 0 | 0 | 0 | 206 | 231 | 221 | 152 |
| | Total Backlog Dollars | 0 | 0 | 0 | 36,775 | 42,175 | 39,525 | 6,390 |
| | Repairs within 15 day window | 100% | 100% | 100% | 84% | 86% | 86% | 63% |
| | % Scheduled | 20% | 60% | 60% | 56% | 60% | 56% | 47% |
| | QCIs passed | | 85% | 85% | 100% | 100% | 75% | 78% |
| | QCIs given | | 6 | 6 | 4 | 3 | 3 | 5 |

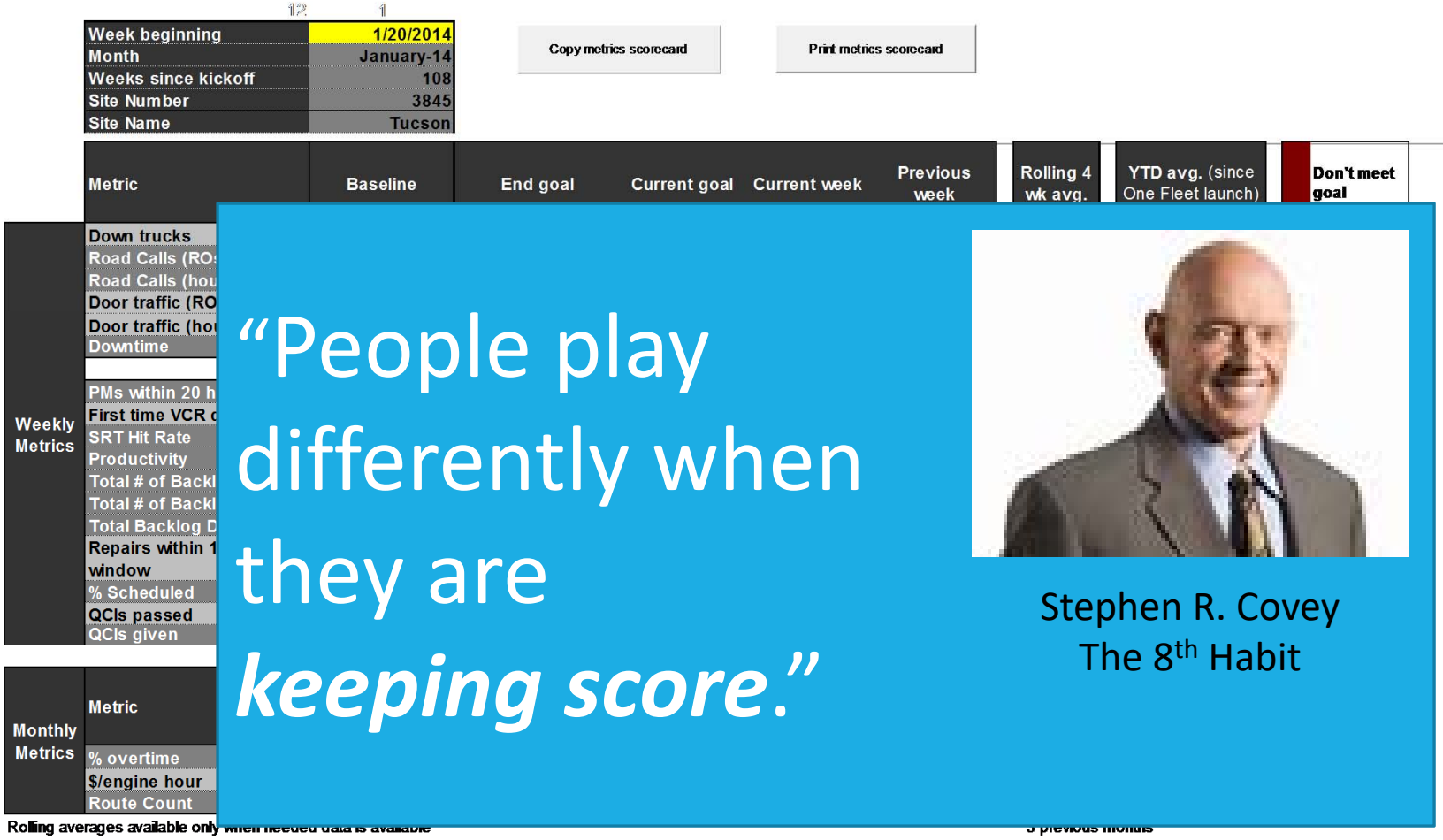
| | Metric | Baseline | End goal | December-13 goal | December-13 metrics | November-13 metrics | Rolling 3 mo. avg.* | YTD avg. (since One Fleet launch) |
|---|---|---|---|---|---|---|---|---|
| Monthly Metrics | % overtime | 16% | 10% | 10% | 16% | 20% | 18% | - |
| | $/engine hour | $13.88 | | $15.55 | $16.05 | $15.48 | $15.24 | - |
| | Route Count | | | | 47 | 47 | 48 | - |

| |
|---|
| Don't meet goal |
| ≤10% of goal |
| Meet goal |

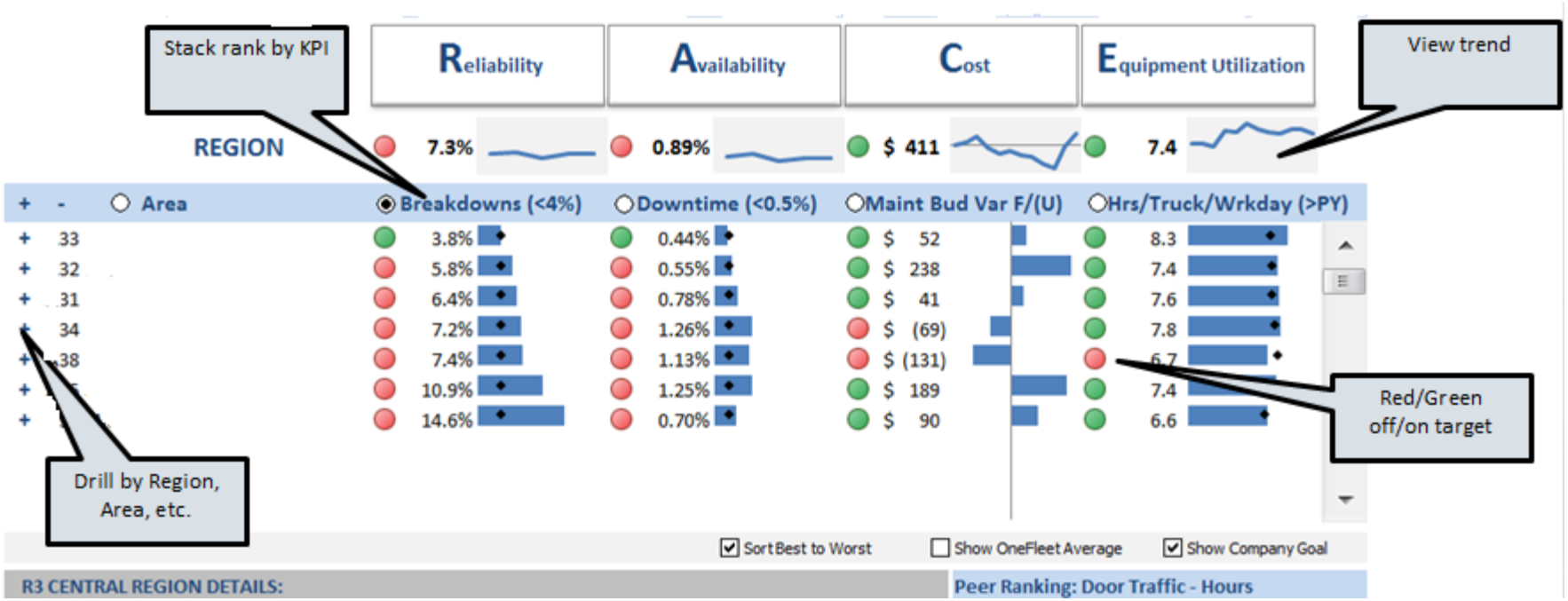
Rolling averages available only when needed data is available

* 3 previous months

# Metrics Scorecards – Keeping Score



# Dashboards – Critical few vs. Trivial Many



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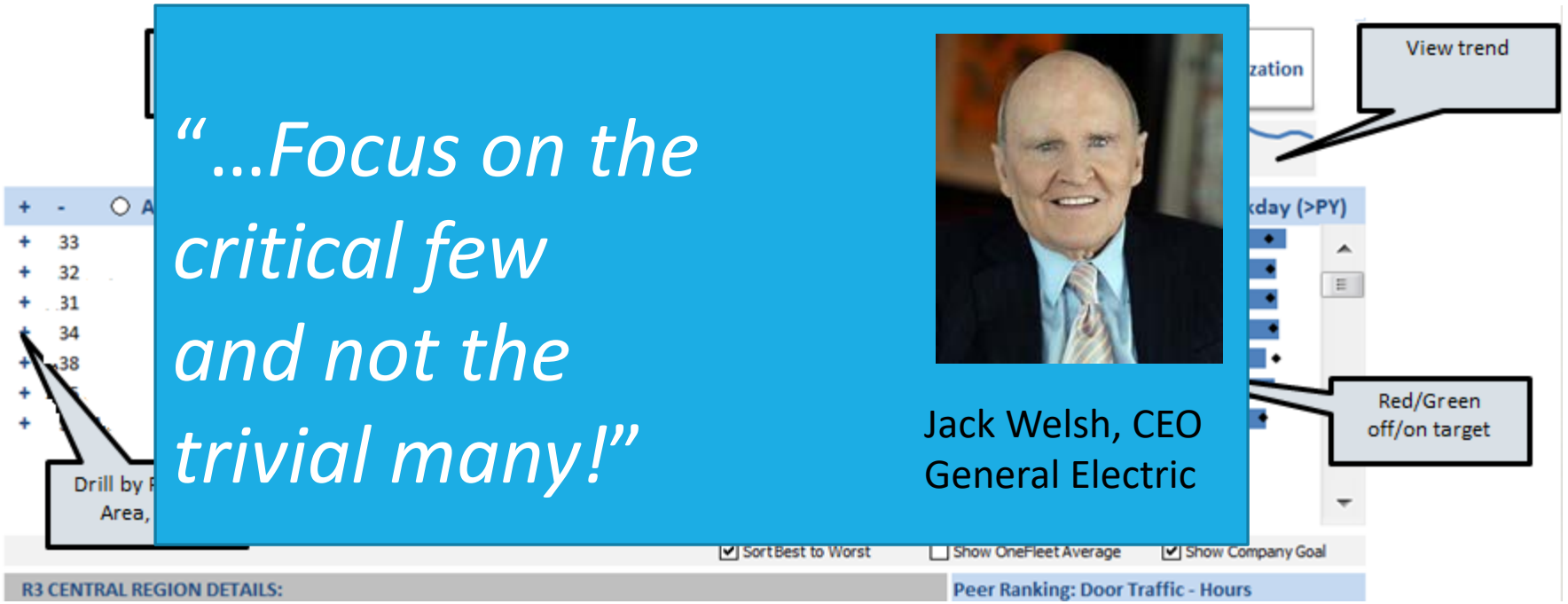
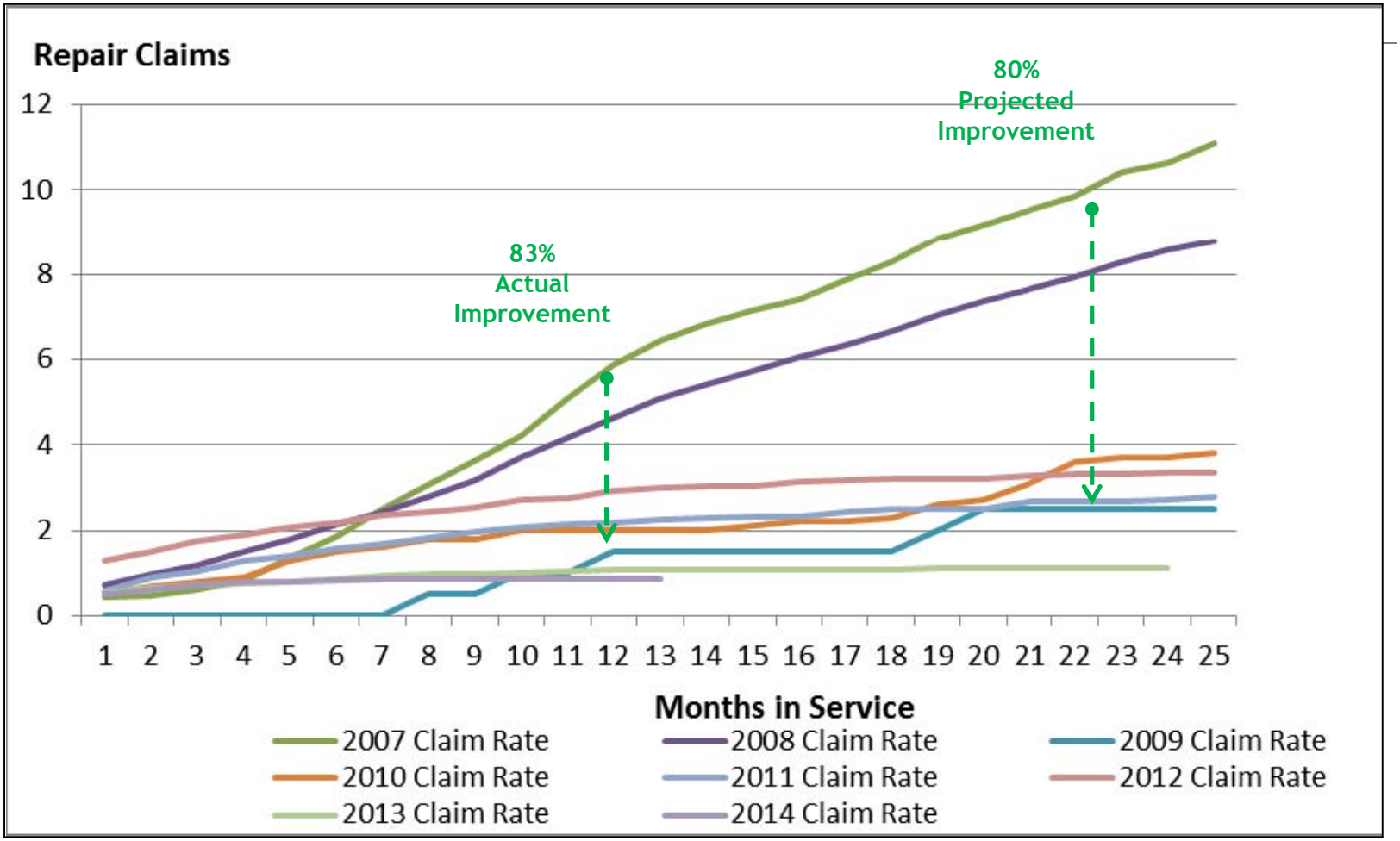


# Trend Analysis: Mack (truck) Reliability Improvement



# Model for Goal Setting and Continuous Improvement


**Sample Goal:**

*"By 2014 end, 80% of maintenance spend will have started the Shop Optimization Initiative saving $3.8 million strengthening operational durability, employee engagement and morale."*

*"If you can't measure it, then you can't manage it!"*

# Questions

# MERCURY ASSOCIATES, INC.

*"Specializing in the science of fleet management"*

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