2016 Warranty Reduction Initiative Supplier Town Hall

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2/23/2016
Warranty Reduction Pilot Program

**Action**

Pilot conducted with 22 focused suppliers


<table>
<thead>
<tr>
<th>CQI – 14 OBJECTIVE</th>
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<tr>
<td>1. Promote advances in consumer satisfaction</td>
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<tr>
<td>2. Provide continuous warranty improvement</td>
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<td>3. Implement robust warranty management programs</td>
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Organizations shall use CQI-14: Automotive Warranty Management, 3rd Edition to integrate warranty into their quality management system.
History of CQI-14

CQI-14 Implementation into FCA US Practices

2006
- Developed consumer-centric warranty management

2010
- FCA US adopted CQI-14
- Developed to require no customer intervention

2015
- CQI-14 was revised to be more automotive focused
- Retitled - Automotive Warranty Management

2016
- Improve proactive warranty reduction actions
- Provide tools, training and support

*5 vehicle manufacturers (FCA US, Ford, GM, Nissan, Toyota) & 17 suppliers developed the CQI-14 guideline published
CQI-14 Expectations

**Adopt SAWRP Practices**

- Supplier is responsible to provide a warranty champion

**Implement a CQI-14 Process**

- Self assess to CQI – 14 annually
- Requires monthly warranty report

**TS Audit Guidelines**

- Review warranty tools and data provided by FCA
- Management involvement & process owners established / metrics
- Rapid verification of claims
- An established warranty lessons learned data base
- Analysis tools for “No Trouble Found” data
Self Assessment Disconnect Identified in Pilot

_Suppliers incorrectly identified themselves on the CQI-14 self assessment_

The scoring method will be defined as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Definition</th>
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<tbody>
<tr>
<td>1</td>
<td>No warranty analysis capability</td>
</tr>
<tr>
<td>2</td>
<td>Limited capability and inconsistent application</td>
</tr>
<tr>
<td>3</td>
<td>Developed capability and consistent application; effectiveness not clearly measured.</td>
</tr>
<tr>
<td>4</td>
<td>Strong capability and consistent application; effectiveness clearly measured</td>
</tr>
<tr>
<td>5</td>
<td><strong>Fully compliant with AIAG warranty analysis - Benchmark level process.</strong> Robust capability and constant application; measurements linked to KPIs.</td>
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</table>
Recognizable claim distribution identified from pilot program

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>SMI – Supplier Manufacturing Issue</td>
<td>11%</td>
</tr>
<tr>
<td>DSG – Part Design Issue</td>
<td>11%</td>
</tr>
<tr>
<td>DPA – FCA Plant Assembly Issue</td>
<td>11%</td>
</tr>
<tr>
<td>NSR – No Supplier Response</td>
<td>10%</td>
</tr>
<tr>
<td>GIMS or Transmittals/eCIMS</td>
<td>1%</td>
</tr>
</tbody>
</table>
2015 Warranty Reduction Pilot Program

Pilot Findings

Suppliers we identified as TS certified and CQI-14 compliant showed significant untapped warranty reduction opportunities

No Assignable Cause - Opportunity

- **ADC** – Adjoining Component or System Issue
- **NTF** – No Trouble Found
- **DDI** – FCA Dealer Issue

67% of Claims Remain Unaddressed
Top 100 Supplier Manufacturing Locations

Highest Contributing Supplier Associated Claims

2016 Initiative: Concentrate on the few, significant contributors
Top 100 Supplier Contribution - Claims

All 2015 Supplier Associated Claims

These suppliers are the largest claim contributors and have the biggest impact on warranty

- **Top 100 Identified Supplier Locations**: 56%
- **All Suppliers Less Than Top 100**: 44%
Top 100 Supplier Contribution – Cost

All 2015 Supplier Associated Cost

- **All Suppliers Less Than Top 100**: 45%
- **Top 100 Identified Supplier Locations**: 55%
76 supplier responsible PRIs were issued last year
Top 100 suppliers accounted for 54 of them
Top 100 supplier locations identified as top warranty contributors consecutively over the past three years.
FCA US Improvements

Improve Internal to Better Support External

2016 FCA Tool Kit
Enhanced focus on warranty reduction and development for continuous improvement
Our Tools

Improve Internal to Better Support External

PLAYBOOK

• Practical tools that supplement the CQI-14 manual
• Resources used to better equip SQEs in identifying and resolving warranty issues
Changing the “Not Me” Mindset

Playbook Tools - Problem Resolution

NTF
No Trouble Found

NTF
Needs Team Focus
Changing the “Not Me” Mindset

Playbook Tools – No Trouble Found (NTF)

- Needs Team Focus
- Understand relationship between customer complaint & claim
- Warranty claim trend analysis
- Return VIN analysis
- Verify plant receiving/storage/assembly processes
- Use a system approach
- Digital pictures in DPA reports
- Set Quality Narrative Analyzer (QNA) alerts
Changing the “Not Me” Mindset

Playbook Tools – FCA Dealer Issue (DDI)

- Diagnostics part review
- FCA supported dealer calls & visits
- Initiate star cases
- Create GPOP\$s
- Digital pictures in DPA reports
- Verify appropriate TSBs in DealerConnect
- Set QNA alerts
Changing the “Not Me” Mindset

Playbook Tools – Adjoining Component/System Issue (ADC)

- Conduct vehicle reviews
- Engage suppliers in group QEC reviews
- Verify appropriate TSBs in DealerConnect
- Establish adjoining component & system interaction
- Verify plant receiving/storage/assembly processes
- Digital pictures in DPA reports
FCA US provided resources to help better identify warranty details.

- Early Warning Tracking (EWT)
- Field Early Warning (FEW)
- QNA Subscriptions
- Part Retention
- Repair Pre-Authorization
- LOP Restriction
- QEC Field Engineers

Coming in 2016:
- WiTECH2
- WiADVISOR
- SQDF

Initial Support

Final Support

Parts Restriction
Our Tools

Improve Internal to Better Support External

EDUCATION

- Sharing lessons learned & best practice forums
- Reviewing examples and practicing read across
- Providing in-depth warranty training
CQI-14 Supplier Pilot Examples

Doug Crichton, FCA US Supplier Quality
Erwin Delacruz, Valeo Thermal Systems
Valeo – JS Combo Cooler Example

Issue Description

• Warranty claim data showed an infant mortality claim (5 miles on a vehicle)
• Preliminary analysis by Valeo identified numerous leak points

Team Approach

Analysis showed penetration on the top of the tubes through from the outside in
• Chemical analysis shows presence of chlorine (Sodium Hypochlorate) all over the TOP surfaces of the condenser and at leak points
• Cause of leak identified is accelerated corrosion due to Sodium Hypochlorate
• No sources of concentrated Sodium Hypochlorate were found inside Valeo

TOP in vehicle position

Outside top of tube

Inside of tube

Leak
Valeo – JS Combo Cooler Example

Root Cause

- Valeo worked with the dealer to get photos of underbody components that exhibited accelerated corrosion
- Investigations led by FCA US identified the cause as insufficient controls to the volume and frequency of Sodium Hypochlorate that was added to treat the water in the FCA Assembly Plant’s in-line water test booth

Next Actions

- FCA cleaned the water storage system and updated the process to ensure the recycled water remains free of any harmful additives
CQI-14 Supplier Pilot Examples

Courtney Heinrich, FCA US Supplier Quality
Michael Breda, MAHLE-Behr
MAHLE-Behr – HVAC Blower Motor Noise Example

**Issue Description**

WK/WD front HVAC assembly blower motor noise NTF reduction

- Previous permanent corrective action improved 4 kHz noise (implementation of foam noise dampener)
- Additional 65 claims remained (30 claims with narrative data)
- Analyzed claims – resulted in dominant category of “noisy”

**Team Approach**

1\(^{\text{st}}\) level analysis – Results: NTF
- Powered motors from 3V-12V & listened for noise beyond ambient level

2\(^{\text{nd}}\) level analysis – Results: NTF
- Tier 2 supplier tested motors to an overall dBA level and passed to specification

3\(^{\text{rd}}\) Additional analysis - Results: 12\(^{\text{th}}\) order noise detected in all motors
- MAHLE-Behr tested motors in NVH lab and reviewed sound profile
MAHLE-Behr – HVAC Blower Motor Noise Example

Root Cause

12th order noise is inherent of the blower motor design and is noticeable under lower levels of cabin noise

QNA: December 2015

Next Actions

• Investigate adding a rib to the bottom of the HVAC housing to dampen noise
• Investigate isomount motor design
• Brushless motor design being implemented for new design programs
• Continue with improvements in testing motors from Blower Motor Task Force

Example sound profile
Thank You to Our Supplier Partners

Partnership is our Biggest Opportunity

Diligence | Teamwork | Accountability
Our Tools

Improve Internal to Better Support External

TARGETS

• Setting aggressive warranty reduction targets
• Focusing on the significant claim contributing suppliers
Supplier Associated Warranty Reduction Program

Warranty Reduction by Conditions (C/1000)

- Warranty targets by local commodity code (LCC)
- Remains fixed for 12 months

- Targets for each Supplier Manufacturing Location Code (SMLC) that supplies that particular commodity (LCC)
  - Targets based on the “So Equipped” divisor

- Warranty target set regardless of responsibility
  - Warranty performance is measured by the replacement part for the identified failed component
SAWRP Target Setting Methodology

Warranty Reduction by Conditions (C/1000)

- Relative performance within commodity compared to best of the past two years
- Average within a commodity (without worst offending supplier) and applying the corporate warranty improvement factor

Suppliers within a Commodity

- Worst Supplier
- Best of past 2 years
- Best Supplier
- Average (incl. worst supplier)
- Average (less worst Supplier)
- Average (less improvement factor)

Debit
Credit
Attacking Claims = Attacking C/1000

Target the Numerator $\rightarrow$ Claims

- $C/1000 = \text{Claims/1000 on specific vehicles}$
- Risks of using 3 MIS C/1000 data
  - Time lag of data
  - Not detecting spills until too late
  - Normalized vehicle count hides high impact customer opportunity

Reduce Claims $=\quad$ Reduce C/1000
2016 Warranty Claim Reduction Goal

Goal Summary

- Each SMLC is provided an individual warranty reduction goal
- Each supplier location was provided a percentage reduction:
  - Modified by accounting for mix of new products and known spills

2015 Total Warranty Score CLAIM BASED

REDUCE BY 30%*

- Supplier Quality Engineers are being provided aggressive targets
- Providing warranty tools and additional support

*Additional measures may be applied depending on current or planned business
Our Tools

Improve Internal to Better Support External

SUPPORT

• Identified support from leadership company wide

• Collaborating efforts from Purchasing, Supplier Quality, Manufacturing and Engineering
FCA US Executive Sponsor Role

Executive Sponsor Responsibilities

• Conduct a review at supplier location during 2016
• Attend top parent supplier meetings with FCA US leadership
• Attend monthly Supplier Quality team performance reviews
• Assist with removing roadblocks

Overview of Goal Envelope

• 2015 MY Cost and Condition Count Totals
• FCA US Contacts & Executive Sponsor
• 2015 Top 100 Rank
• 2016 Warranty Reduction Target
Supplier Expectations

Frequency of Warranty Tool Use

- **DAILY** - Early Warranty Tracking (EWT) & Quality Narrative Analyzer (QNA)
- **MONTHLY** - Warranty Information System (WIS)
- **AS REQUIRED** - Global Claims System (GCS) & analyze & solve NTF/ADC/DDI

CQI-14 CSR Updates

- More in-depth TS audit
- Self assessment completed with FCA US support

Lessons Learned

- Facilitate lessons learned and warranty read across for future AQP
- Visit the parts return center for part analysis
- Follow up with Quality Engineering Center (QEC)
Warranty is a Team Sport

• Communicate proactively
• Transparency between FCA US and supplier partners
• Collaborate and resolve all reasons for warranty
• Deeper investigation and read across
• Embrace a culture of continuous improvement
• Treat every claim as a significant event

PUT THE CUSTOMER FIRST
EVERY PART | EVERY PROCESS | EVERY TIME