

Colliding Worlds: Supplier Warranty Provision and Warranty Cost Identification/Sharing

Gordon Housworth

SupplierCo was stymied in their attempt to find cause for high warranty charges binned to their brake calipers. During a Warranty Solution Workshop involving the OEM customer service division, it was discovered that the caliper was, indeed, high quality. However, investigations by team members led to the discovery that the service manual indicated the wrong wrench size and torque for servicing brakes thereby stripping out the fastener and requiring complete replacement of the caliper.

SupplierCo had 100% inspection in place before shipping their remote key fob to TierOneCo to have the radio frequency married to the transmitter. Again TierOneCo was inspecting 100%. Yet, warranty charges were overwhelming. During a Warranty Solution Workshop involving the OEM Assembly Plant manufacturing engineers, it was discovered that the assembly plant had never understood that the transmitter and fobs had been "married" before assembly. During assembly process transmitters and fobs were separated and mismatched at the end of the line. Without the proper knowledge and without end of line inspection, remote key entry systems were shipped to dealerships. Dealers found fobs inoperable and were re-programming or replacing them (causing the warranty cost). In addition, the same team found that re-programming required under 30 seconds of labor and the service time labor standard for the operation was stated as "one hour".

Because of inadequate service instructions, horn complaints were being serviced by replacing the air bag and clock spring in the steering column assembly. VendorCo, maker of the air bag, participated in a Warranty Solutions Workshop and discovered that an improved diagnostic policy would reduce greatly the inordinate warranty costs associated to their part.

Collision course

Warranty provision and warranty cost identification are challenging our most agile businesses, driven by America's rising desire for a purchase guarantee, a court of last resort, and a safeguard against any and all defects in service delivery and products.

Guarantees, warranties, extended warranties, and service protections have mushroomed as a marketing tool for competitive advantage. Warranties have

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become the “purchase bridge” customers seek when previous experience has left them wanting or when the offered product or service is high-risk or high-priced.

Warranty costs continue to escalate, even as manufacturers make better products, causing suppliers at all levels to ask, “I have zero defects, so why am I receiving warranty charges?”

- Is the problem that suppliers are focusing only on the piece part and the part’s design and employing remedial “part-centric” root cause analysis?
- Is a substantial share of warranty costs incurred because of the warranty process itself? This process involves steps that are complicated, spanning multiple suppliers in manufacture, assembly, delivery, distribution, and service *en route* to the end user.

While these questions remain unanswered rising customer expectations drive marketing divisions to offer greater warranty protections for lengthier periods of coverage.

Increased consumer expectations

Warranties are now a “way of life.” Consumers expect their purchases whether service, clothing, medical supplies, research or their automobiles to carry attractive warranties. When buying a new car today, the consumer is really purchasing the car plus a service contract (and customers don’t mind because they can finance it along with the car). Warranty has become important both as a competitive tool and as a quality assurance to the buyer:

Consider the increased expectations of the 1990s consumer:

1. Service: Customers don’t “want” service, but if their product must be serviced they have rising expectations for frequency, time, ease of access, and cost (none at all or minimal).
2. Quality: Customers expect their product to be defect free and “feel” perfect.
3. New product features: Customers don’t want less in their next purchase -- they want more for the same sticker price
4. Longer warranty protection: As recently as 1990, automakers offered one-year/12,000-mile coverage. Today’s owner is protected for at least the first three years or 36,000 miles. Luxury models have pushed that to four years/50,000 miles and to five years/50,000 miles for safety items within the vehicle.
5. Less money: Consumers now have better, quicker, and more up-to-date information with which to find the most cost effective products and services. The information age now offers the consumer ready analysis of competitors’ pricing.

The popularity of warranties and guarantees underscores the importance that customers place on this protection. A guarantee for products or services is an effective way to improve customer satisfaction. Is there a problem? Yes, the true costs of warranty in products of complex systems (autos to airline traffic safety systems) and/or complex distribution and service systems (such as autos, transportation, and electronics) are proving to be enormous and intractable for the OEMs (Original Equipment Manufacturers).

Sharing the burden of warranty costs between OEMs and their suppliers

OEMs (Original Equipment Manufacturers) are turning to their supply chains to share the burden of overwhelming warranty costs. Asking suppliers to assume warranty costs is viewed as a logical extension of supplier responsibility for increased engineering and design responsibility.

Suppliers can benchmark "perfection" or their competing assemblers to reduce part-related costs (the "direct" costs of warranty). The problem arises in the "indirect," systemic, "open loops" in the warranty system. All too often suppliers are captive to the dysfunctions of the OEM warranty system. Many manufacturing operations account for warranty as a percentage of their manufacturing costs, completely failing to account for a catastrophic chargeback outside of the supplier's control. "Business as usual" may result in rising, unidentifiable, and frequent warranty costs.

"Birth to grave" solution cycle

What do warranty costs represent? - The undesirable and costly work of discovering and correcting errors. And, the most expensive time to catch a problem is after it has landed in the customer's hands. Despite industry's' best efforts, this cost represents an average 25% of sales in a manufacturing company, and 35% of operating budget in a service organization.

Costs are devilishly difficult to identify. The flow of value-added producers from "dirt to heaven," from commodities to consumer, is interrupted everywhere by process loopholes that defeat the task of predicting warranty costs and warranty exposure. True warranty exposure projections are frustrated by a quagmire of insufficient, wrong or misleading data, and poor data interpretation at multiple points in the total business structure.

Data problems need investigation of the "birth to grave" cycle of the part or system component in order to seek out problems existing outside of standard manufacturing and assembly issues. In addition, for many design and manufacturing issues, we discover corresponding service issues.

OEM-supplier teams repeatedly find that warranty claims are due to reasons other than defect in design and material. Teams must become aware of the immense cost of service labor associated to their parts. Investigating true costs forces corrections of previously unknown service distortions. Teams should be guided not only to seek out causes for warranty spending, but also to predict the effect on warranty costs when considering new components or features.

Background

The most expensive time to correct defects in design or process is after the vehicle has been delivered to the end user. These costs are both direct (cost of labor at dealer service, cost of dealer marked-up parts) and indirect in a devastating way (customer dissatisfaction)

Warranty claims rise from many causes:

- The part fails one or more of its designed functions
- The customer has wrong expectation for function of the part
- The design is successful but logistics or process are weakening its function causing failure
- Other systemic causes beyond engineering and manufacturing

But the potential warranty savings are enormous:

- Labor accounts for approximately 50% of total warranty costs
- Improved serviceability processes reduce basic vehicle warranty costs
- Direct cost reductions in part costs
- Extended Service Plan (ESP) warranty costs, often twice the basic vehicle warranty

Organizations should not take on a warranty reduction task without an understanding of the warranty process: the data collection system, claims processes and organizational entities that manage their part/component after it leaves the assembly plant.

Warranty solutions workshop

With one OEM the warranty problem appeared intractable, even as traditional problem solving and robust design tools greatly improved part quality and durability. We discovered that a combination of business, engineering, research, and negotiation skills would be needed to confront warranty in order to:

- Define the warranty costs/exposure of suppliers of systems and components
- Identify and reduce warranty costs using tools that reached beyond the Robust Design methods used at the component design level
- Predict warranty costs/exposure of next generation products
- Design better components and systems due to greater, holistic scope and needs definition

And

- Do it with current OEM-supplier teams in a workshop process. These workshops make use of available warranty information while overcoming rampant finger-pointing and “data distrust” in both organizations

Warranty teams must avoid the “Warranty Analysis Addiction”, move to verify data and act. Common causes account for 80+% of warranty dollars, with special causes assuming the balance. Common cause levels are built into a process and don’t change very frequently (so there is no need to analyze monthly).

With the tools we have, we can look at data in the following ways: component, subsystem, system, and customer symptom.

The human dimension

The amount of trust in the supplier-OEM relationship is the influencing factor in warranty sharing agreements.

High stakes warranty solutions demand skills in mediation and dispute resolution equal to those needed for engineering and process discovery. Years of misinformation and distrust may have poisoned the well shared by an OEM and its suppliers. Genuine OEM-supplier partnering is not yet widespread -- and a potentially expensive, misunderstood and open-ended warranty exposure will not improve matters.

People interpret data according to their (unspoken) assumptions and the needs of their own organization. Indistinct, incomplete, or misleading data can be used as a weapon during negotiations. Thoughtful facilitation is a necessary part of an effective warranty solution effort.

Recommendations for suppliers

1. Know your OEM’s warranty policy (Better yet, help write it)

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Suppliers should be proactive in approaching their OEMs with regard to warranty implementation and warranty cost sharing. Getting in early offers the supplier an opportunity to guide policy guidelines, standards, and implementation.

2. Prepare for warranty sharing

Many discussions are necessary before an agreement is struck. For example, important ones to research immediately would be:

- Your OEMs' business systems: access to warranty data, claims criteria
- Exposure impact if desourced
- OEM-directed sourcing and its impact on your warranty performance
- Opportunity to change specifications in order to reduce your warranty costs
- Dealers charges vs. actual costs to implement claims.
- Warranty agreements already signed by companies you are looking to acquire

3. Examine the established service time labor standards if they exist

Your part may be easily serviced but packaged within the finished system in such a way that it bears an unusually high service charge when repaired or replaced

4. Determine the health of the OEM/dealer-franchisee relationship, and
5. Determine the health of the OEM/enduser relationship

Knowing the health of these relationships, coupled with the reality of the parent's warranty implementation, indicates the likelihood of the supplier being trapped as a "pawn" between the OEM's dealings with its distribution network and/or the OEM's response to competitive pressure.

6. Understand your policy implementation (execution)

Complete a warranty process FMEA (Failure Mode Effects Analysis) focusing on the policy execution in order to predict your exposure. Mate this to your Design/Process FMEA.

Involving your sub-suppliers in warranty responsibility

The early answer to sub-supplier warranty responsibility seems to be; "It depends." Do you want to share warranty costs, help drive supplier restructuring, or both? Much depends upon the maturity of your sub-suppliers, the health of your relationships, and your track record of successful long-term supplier negotiations.

Suppliers should proactively approach their sub-suppliers with regard to warranty implementation and warranty cost sharing, but just as the major automotive OEMs you must:

- Select your pilot suppliers carefully
- Look ahead to predict how the process is likely to break, and
- Plot your sharing implementation thoughtfully.

Your supply base will be watching your performance.

Suppliers are often in a better position to initiate change

They have more at stake, are better able to command their relatively smaller organizations, and can drive the change process through their warranty negotiations with their OEMs. External questioning via negotiation should force the OEM to grapple with nagging inadequacies in its warranty policy and in its implementation. Asking the right questions before forming an agreement will leave the supplier in a better position to minimize shared warranty costs and to define the optimal support structure and processes for administering it.

Warranty presents such a tricky, balancing act that it may have to be outsourced to warranty specialists. We are already watching certain industries outsource the warranty negotiation, policy development, and administration, as well as the services groups that provide it. New, nontraditional service providers are emerging to cap product warranty costs. Daewoo outflanked convention by planning a new car introduction into the US to be serviced through third-party operations such as Pep Boys and Jiffy Lube, operating on a flat-fee-per-car payout for warranty work. These service providers would receive a set fee per car sold, intended to cover all warranty work, rather than endure the open loop system of reimbursement common to conventional auto dealerships.

Have you been asked to share warranty costs? Are you ready to respond organizationally and financially? It is only a matter of time.