A White Paper by Primasys

on

Warranty Management

Without a Collaborative Platform, Will the Focus on Detection-to-Correction Deliver Everything It Should?

By Rob Pritchard

This White Paper looks at how feature-rich Business Intelligence tools have made a major impact on warranty management, but asks whether there is still more to come. It argues that there remains a great deal of improvement that can be achieved in reducing the overall time it takes from determining a defect in a product's design or manufacturing process to deciding and applying the corrective action. BI tools' focus on reporting the detection of an underperforming part, supplier or dealer is one thing, but what is the next frontier? Need they expand their remit to incorporate collaborative tools to manage initiatives alongside reporting functionality to ensure the quickest possible resolution?

Automotive manufacturers have rushed to embrace Business Intelligence in the warranty domain, with the most notable areas of importance and focus being:

- Trend analysis and exception reporting
- reducing the Detection-to-Correction (DtC) cycle
- identifying and controlling high-cost, low customer-satisfaction dealers.

For years, warranty was regarded merely as a necessary evil, a cost of doing business, with much of the focus being on reducing the transaction cost and increasing the speed with which claims could be received, assessed for completeness and correctness, and paid. The capability of analytical and BI systems has increased enormously over the past decade and moved well beyond these early limitations, when the systems were put in place more as claims data repositories to store knowledge held by experts, rather than to provide expert software capable of really insightful analysis themselves. Analytics was not entirely an afterthought, but the data lag often meant that analytics was performed so retrospectively that it could make only a limited contribution to prevent further costs entering the warranty value chain in the first place.

The traditional approach was to have an analyst sitting in a corner of the warranty department and manually analysing the hell out of the data provided, armed with years of experience and some hastily-acquired Excel know-how. Now the software is the expert, with applications able to plough through vast tracts of warranty data, searching for patterns and trends. More recently, there have been major improvements in the sophistication of quality analytics and trend and exception analysis, driven by better understanding and adoption of the importance of ontology and probability-based modelling and by borrowing of advanced actuarial analytics techniques from other industries such as insurance.

Business Intelligence tools have improved the *Detection* element of the equation enormously.

With manufacturers stung by the realisation that it could take them up to 200 days to instigate a production fix from the time that the concern first entered the chain via an inbound warranty claim, the concept of the DtC cycle has come to the fore as perhaps THE key metric, and quite rightly so.

Data entry and capture has switched to near-real-time, with organisations moving to eradicate the latency in the defect reporting process. Using BI tools, they have introduced faster and more reliable reporting of warranty and quality data, aligning themselves in order to receive and process that information more quickly in order to 'feed' the engineering teams with pointers as to where and why the most serious defects were occurring. Reporting became the absolute minimum capability, with the systems themselves now not only raising alerts based on those patterns and trends that key metrics have gone astray, but also able to inference possible root causes. Most major OEMs have physically co-located their warranty departments and engineering teams, but many key participants in the process remain separate.

Suppliers have taken on far more responsibility for the end product, in terms of design, development, supply and fit, and this has also extended to cost and responsibility when quality issues arise. With sophisticated chargeback mechanisms now in place amongst the OEMs, they are as eager to identify and resolve problems as soon as a repair is conducted in the dealership, and with just as great a stake in preventing them from happening at all.

However, we are left with the impression that despite the vast investments on this enhanced ability to detect problems faster, there remains a great deal of improvement that can be achieved in reducing the overall time it takes from determining a defect in a product's design or manufacturing process to deciding and applying the corrective action. Why is that? Is all the effort and money that has gone in recent times into reducing the DTC cycle still focused in the wrong place?

Analysts[1] and vendors quite rightly pointed towards three key industry processes:

- Building a closed loop quality system
- Extending detection to correction processes outside the four walls of manufacturing
- Extend quality circles to products in the field

All these processes however have a common element that is not particularly well catered for in current BI applications, and that can be inferred from the terminology used – Closed Loops, Circles, processes running through Extended Enterprises – and that element is **Collaboration**. But what support is given by the IT solutions and applications?

Has the ability to agree and effect the required *Correction* moved at the same pace however?

The industry has been united in its view that for general warranty cost management and reduction, tight collaboration over a sustained period at low cost and administrative overhead is key; Logically also, the earlier that functions and teams can work together, the greater the impact they can have in reducing warranty costs by identifying, managing and implementing the necessary remedy.

[1] AMR Research

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Yet IT platforms and applications that bring genuine advances in the ability of the extended enterprise to collaborate in real time are still lacking, and in large organisations in particular, siloed functions still exist within service organisations like Field Service, Parts, Technical Training, Warranty etc. There are several overlaps between functions and sub-functions, which are manifested in the same metrics being gathered and reported by different entities at different points in time.

Current applications do support *sharing*, insofar as they allow multiple groups to access reports and information, but is that sufficient in itself? Effective visibility is fundamental, but not also having effective *control* results in impaired service delivery, poor service performance and far greater costs than would otherwise have been necessary.

All the market-leading tools allow information to be gathered, processed, disseminated, and reported back in a meaningful and consistent manner. But what after that? The big question is how effectively that information is utilised towards the ultimate aim – the action taken to resolve the root cause as quickly as possible.

The action to resolve a concern requires individuals and units to be able to form up quickly into teams to work together using the same information, at the same time. It requires visibility across a team, or teams, of distinct, measurable progress. It requires the metrics that triggered the alert to be methodologically revisited, so that it can be reported back to management and to the initiator that the corrective action has been successful.

Management and Resolution of Specific Concern-related Spikes

The impetus towards enhanced collaboration becomes far more acute where the concern is a high profile, high warranty cost spike, or even a concern that requires an urgent field service campaign, although major OEMs generally do have separate systems specifically for the latter. In both, a lack of real-time data-sharing, alerting and collaboration can otherwise cost valuable time. The ability of the enterprise to mobilise and notify a team drawn from multiple functions is critical. The extended team must be able to act in rapid response to a single event, based on a comprehensive, unified set of data. All too often in such circumstances time is wasted whilst different teams, from different business units and/or suppliers and companies perform their own analyses in the hope that they will find that the root cause is not their fault.

And the results of this? Units and individuals are still focused on batting responsibility back rather than working as a team to find the true cause, meaning:

- development of a complete understanding is held back,
- levels of "Trouble Not Identified" remain high, and
- the 'spike' extends to a major concern sustained over a longer period of time, with increased detrimental consequences for customer satisfaction, cost, reputation, and inter- and intra-company relationships.

The cost implications of continuing to produce vehicles that will require a warranty repair, or worse, a costly corrective action in the field later should be sufficient incentive alone for the earliest possible resolution. Warranty and service engineering mangers should be alerted to any cost spike or event occurrence as soon as the repair is conducted, and ideally even sooner, at the repair pre-validation stage, if systems permit.

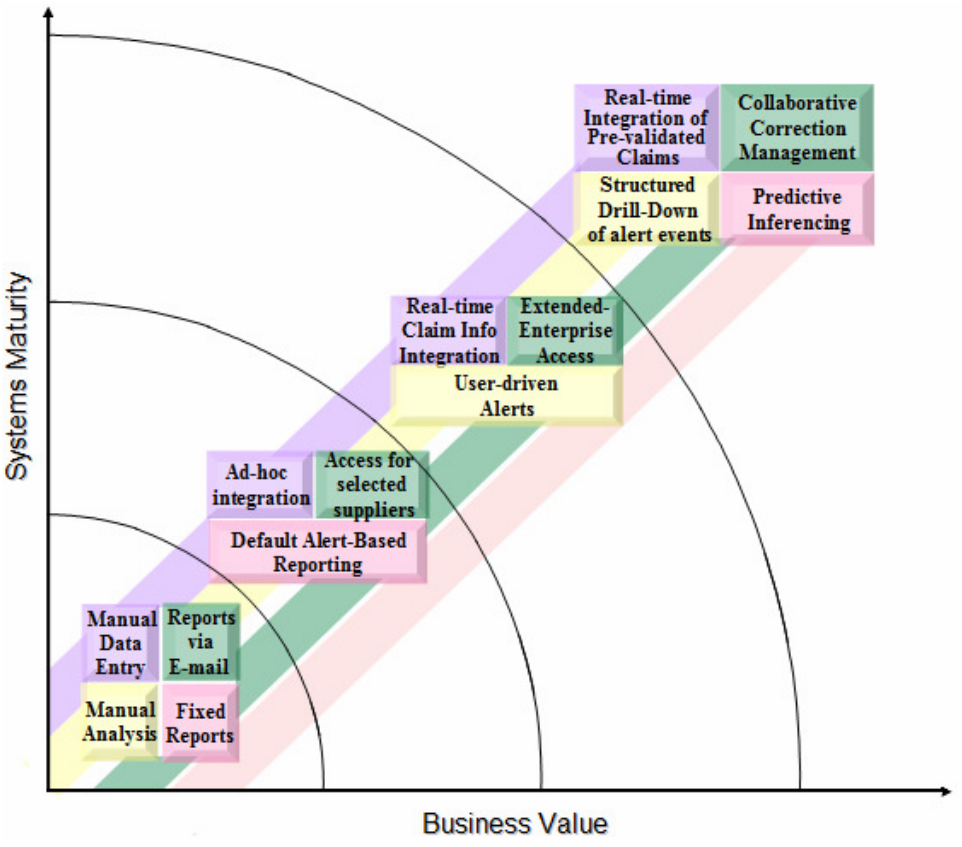
This holds true all the more should this indicate a failure with potentially more far-reaching consequences such as might require a campaign. In most automotive enterprises a field service campaign team will manage the administration and prepare documentation and recommendations, before escalating to a field service campaign committee that will be pulled together as soon as possible after an alert has been raised; however, the task alone of getting

this meeting into executives' and engineering managers' diaries can add several days of delay. Then there are subsequent meetings and correspondences with the suppliers and sub-suppliers. All of which adds to the number of days or weeks in which further units roll off the production line carrying defects, or make their way through the outbound supply chain and into the field where owner notification programmes, dealer handling allowances and additional goodwill will add hugely to the cost.

Even where the process is relatively slick it remains a process, often manually managed, often not automatically controlled and monitored - and therefore subject to major fluctuations.

The ability to communicate, to initiate actions and to collaborate with all the partners involved in order to manage those initiatives through to a rapid conclusion is therefore paramount. The entire team must be able to receive, review and act on, the same data at the same time. Yet it remains the exception that suppliers are permitted access to data contained within OEM quality management systems about their own supplied components and modules – even where the OEM is using a BI application which would support this. Exchange of information is conducted through the same channels as has always been the case – phone and e-mail – and whilst mobile telecoms and Blackberry have enabled some greater immediacy, the BI systems reporting the relevant supporting information fall well short of offering a dedicated platform supporting the management of collaborative team-based initiatives. The default process remains that data is manipulated into the right format within the OEM system, and mailed across to the component supplier.

There has been a shift in Business intelligence systems from reactive to proactive, as systems have become web-based. Future high-value frontier systems will move still closer to supporting the alerting of concern items in real time, probability-based inferencing of root cause, and the instigation of collaborative-based corrective actions and initiatives.



The Development of Business Intelligence priorities in the warranty domain over time.

In summary then, the areas of focus to overcome existing limitations and ensure the quickest possible resolution of warranty concerns will be:

Integration: the ability to integrate with the numerous applications involved in warranty management is critical, providing a reliable, single source of truth. Integration of information can be ad-hoc, but will be more valuable the quicker it enters the system. This could potentially even incorporate pre-validation claim data, giving all partners in the warranty chain the opportunity to influence claims entering the system and contribute their understanding of the repair validity and best fix right down to a claim-by-claim basis.

Analytics: analytics will improve still further, with broader integration of data from suppliers, as well as OEM field data, providing greater accuracy and relevancy of alerts. The various partners and users should be able to access a customised KPI dashboard and receive relevant alerts. Additionally, users should be able to drill down, slice and dice, perform scenario-based analysis, and apply modelling and optimisation functions on the KPIs.

Corrective Action support: Organisations must facilitate the ability to initiate actions based on the generated insights. This also supports both a structured drill-down to do a root cause analysis of failures and non-performing KPIs. The aim would be that an application, when identifying a concern or spike, would show not only the historical cost and repair counts, but also would show exactly *who is responsible, what is being done, and in what timeframe*, to address it.

Collaboration: The critical element, and one which is both an aim and an enabler, as it addresses the challenges arising out of organisation silos, geographical spread and non-uniformity of data. It is often the case that enterprises fail to take counter measures successfully and effect improvements because their goals and concerns are not communicated effectively and in a timely manner to the right participants. A collaborative application should allow teams to be formed, supporting the launch and ongoing management of initiatives with responsibility and accountability clearly and unequivocally appointed, all within a single application and platform. It should direct all team members towards a single source of truth about the nature and extent of the concern, the progress of the detection, the progress towards the correction and the effectiveness of the subsequently introduced fix.

Rob Pritchard *is director and owner at Primasys Ltd (www.primasys.co.uk), and a regular contributor of keynote speeches and though-leadership White Papers on the automotive industry. He has 20 years of industry experience in the fields of automotive warranty, aftermarket, technical service information and dealer systems. He has worked as a consultant and programme manager in a variety of blue-chip automotive OEMs, Tier 1s and retailers across the UK and Europe, and holds an MBA from Henley Management College.*

He can be reached at robpritchard@primasys.co.uk