



### Whitepaper

Calm Not Chaos Could Be Your Response to Recall Management



## Synopsis:

Vehicle Recalls have become routine in the recent times. Millions of units in operation have been recalled in an instant due to potential driver safety issues or non-compliance to federal safety regulations. The extent of problems and response strategy varies significantly depending on whether it is limited to a single OEM or widespread when multiple OEMs use the same supplier, for example: airbags. Irrespective, it sends all involved into a tizzy. As consumers receive notifications to schedule service appointments to fix their vehicles, there is a lot that goes on behind the scenes. From the time that product quality issues are discovered to ensuring each impacted unit is serviced and compliant, it is an enormous task supported by meticulous planning and lot of unplanned effort and cost.

The cycle times are largely subjective and the response borders on chaos, in part due to lack of adequate systems being in place. Existing legacy IT systems, designed as point solutions to support selling and servicing vehicles, have been extended to support recall responses in pockets. Advanced technology interventions, providing multi-fold benefits can help reduce the cycle times for each of the Recall lifecycle phases and bring in contingencies that allow OEMs some breathing space to plan and execute recall campaigns effectively and reduce future instances. While product quality issues will continue to exist and not directly in scope of this paper, the response strategy and reduction of cycle time using advanced technologies will remain in scope. Aided by technology that can turn Vision to Reality, we will look at shifting the response story from Reactive to Proactive and move from Physical to Digital.



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## 1. The Recall Economy

Vehicle recalls in the United States have grown consistently in the last two decades with recalls concerning safety as the predominant reason (~71% in 2015). In the last 5 years, on an average 50 million units were recalled, while in 2013, more cars were recalled than sold. As globalization and standardization of components rise, so does the risk of a multinational recall, putting undue stress on the automotive supply chain. With Connected Vehicle Platforms installed in most of the new vehicles, software related recalls have seen an uptick.



Recalls are unanticipated costs but have significant impact to the P&L, such as directs costs associated with defect identification, customer outreach and remediation and indirect costs such as litigation, fines, loss in sales, and stock value. But the dent that this creates in customer confidence and brand value erosion is harder to recover from.

Managing the customer experience during this time becomes even more critical. Customers could be more forgiving if their vehicles are fixed in a timely, frictionless manner once the recall is publicly announced. Shifting the story to a predictive, proactive, and digital one becomes essential.



# 2. Traditional Shortfalls during Recall Lifecycle

From the time potential issues are discovered to the time that all units are serviced, automotive OEMs hold the central role in orchestrating each phase of the lifecycle. Close collaboration with dealers, suppliers, customers/owners, marketing, and government agencies is required to manage the situation.



Fig: Recall Lifecycle Stages\* and their relative complexities

The completion rates of a Vehicle recall campaign takes a serious hit as the uncertainties keep compounding along with the vehicle age. So, there is a need to quickly identify and classify new emerging issues as potential recall scenarios and put together a response plan in collaboration with the dealers, suppliers, and other channel partners to resolve the problem.

<sup>\*</sup>Recall Lifecycle Stages can be broadly classified into six stages as follows: Discovery and Identification involves observing emerging trends to identify Product Quality Issues. Impact Assessment involves identifying the product configurations impacted. Identifying the fix, includes working closely with suppliers or internal departments to fix and test product issues. Response Plan involves identifying near firm demand, supplier coordination for supply and customer data for outreach. Launch Recall Campaigns includes the actual public announcements and outreach process. Campaign Management and Closure includes actual servicing, monitoring and closure of the Campaign.



### **Recall completion rates – Categorized by vehicle age**



Let's look at some of the key contributors towards complexities and extended timelines.

Phase		O Discovery & Identification		Response Plan	Cam	apaign Management & Closure
Challenges	•	Discovery driven by periodic assessment of repair orders and major incidents SMEs with deep domain expertise, experience with a given OEM and analytical skills to detect issues in its nascency Surfacing insights from scanned documents/videos, complaints in colloquial terms vs. error codes Complexities in rolling up issues by models, geolocation, and conditions	•	<ul> <li>Near firm demand Confirmation: Impacted number of vehicles, service parts bundles, fleet owners and customers by location and service dealerships, and dealer inventory capacity.</li> <li>Supply Planning: <ul> <li>Supplier capacity, contingency and logistics planning.</li> <li>Readiness to meet service demand and campaign launch</li> </ul> </li> </ul>	<ul> <li>E a</li> <li>T c</li> <li>C a</li> <li>n</li> <li>T c</li> <li>f;</li> <li>si</li> </ul>	insuring customer convenience ind satisfaction iracking every unit to service ampaign closure Consistent replenishment ind reverse supply chain nanagement this step takes longer when ustomer information is incorrect, ailures on dealers' part to mark ervice closure, etc.



## 3. Building Predictions to Control Customer Experience

While each recall is potentially a new and unique problem, the typical resolution timelines are protracted due to the traditional methods. Sophistication of vehicles have far outpaced the inefficiencies of the backend systems that support day-to-day operations. More often than not, these backend systems were designed as point solutions to handle 90% of the daily operations and prove inadequate in supporting exceptions that recall demands.

Data sources in the public domain show that the recalls of the recent times have cost OEMs upwards of USD 2 Bn. While product quality issues will remain inevitable, can modernization of backend systems to adopt Cloud, AI/ML, NLP, connected, data and analytics etc. help in realizing efficiencies?

Let us take a look at the needs of three lifecycle stages that have long cycles times and a perceived lack of control or dependency with larger ecosystems, and the technology interventions that can shift the response from Reactive to Proactive one.

Discovery
and
Identification

- Reduce SME dependency and human bias in problem determination
- > Real-time situation awareness
- Proactive testing to determine status quo on quality
- > Always on monitoring on structured data Repair Orders; Major Incidents etc.
- NLP and text analytics to accelerate complaint processing and determine errors
- > Supplier and history data analytics for potential issues
- > Pattern identification for Early Warnings
- > Social Media listening for customer complaints and decipher location specific patterns

Response Plan

- Quick customer identification for outreach
- Demand-Supply analytics to determine distribution patterns
- Contingency and Wave planning

- > Blockchain-based integrations to detect customer ownership trail
- > AI/ML for efficient customer data unification
- > Historic, Sales, and Customer data analytics for demand volume determination
- > Predictive analytics for Supply and logistic scenario simulation
- > Analytics for Wave planning

Campaign Management and Closure

- Real-time inventory consumption and service monitoring
- Regulate supply distribution based on consumption, demand, and wave planning
- Planning and monitoring Loaned resources
- Real-time, omni-channel options for customers service appointment, convenience vehicle bookings and service tracking
- > Real-time integrations for dealer inventory monitoring
- Plan vs. Actual closure dashboards to identify timely course correction and cost reduction
- Real-time service closure tracking and compliance reporting



#### Benefits that Advanced Technologies can drive

It goes without saying, that right data foundation is a basic hygiene to get tangible results from advanced technology implementations. Once past the step of building enterprise data solutions, some of the projected benefits are as follows:

- Harnessing insights from existing and past data.
- Connecting previously disconnected processes can help with early detection, contingency, and capacity planning.
- Interventions such as AI/ML, NLP, predictive analytics, real-time monitoring can help realize unforeseen gains in lead time to respond.
- Lead time, in turn, helps with better planning and cost savings such as keeps viable inventories in circulation for longer at dealer/distributor.
- Connected and mobile solutions that shift communication from physical to digital, elevates the brand experience for customers at times of distress, and potential negative publicity in the media.
- Assumed at 5% cost savings on the base spend of USD 2 Bn, the benefits could account to a USD 100 Mn.

#### Platforms of the future

- A predictive analytics system that identifies new emerging issues, potentially builds correlation to customer complaints and quickly narrows down the problem by parts, region, supplier, models etc. in the Discovery and Identification Phase.
- Customer Data Platforms for current customer information and blockchain-based systems to trace used/pre-owned customers.
- Analytics and simulations console on enterprise supply chain, inventory, and sales systems can drive efficiencies in demand forecasting and wave planning with suppliers.
- Connected systems that orchestrate between marketing systems, dealer systems, and service apps can help drive the customer experience. Among OEMs that have gone digital, these systems have to work seamlessly, should a recall come their way.







# 4. Recall Management Solutions in the time of OTA

While increasing sophistication of the in-vehicle technologies has led to increased instances of safety issues, technology innovations such as Over the Air (OTA) deployments have helped circumvent the need for full-scale supply chain mobilization and closure of issues in a quick and efficient way. Detecting and identifying problems early, leveraging big data, real-time, and connected technologies will become ever so important.

Innovations such as electric powertrains may result in reduced number of parts reducing the number of potential failure points. Albeit to a lesser extent, the need to closely collaborate with your supplier landscape and mobilizing the Response Plan will continue to remain relevant.

## 5. Conclusion

- Recalls costs upwards of USD 2 Bn. These are unplanned efforts and costs, that impact satisfaction levels with customers, dealers, and distributors.
- Unless handled swiftly, recalls can dent the Brand's reputation, market position and wipe out loyalties quickly.
- Cycle times at most recall lifecycle phases are large due to inadequate systems.
- Existing legacy IT systems are not geared to support special handling that recall demands.
- Improving data quality can help harness insights from existing and past data.
- Connecting previously disconnected processes and implementing new age technology solutions can help with organizations with early detection, contingency, and capacity planning.
- Advanced technology interventions help realize unforeseen lead time gains and cost savings.

Ability to get ahead of problem and plan ahead will help realize "Calm" and reduce "Chaos" in response to Recall.



## **About the Authors**



#### **Deepthi Bhat**

Senior Industry Principal with Manufacturing Customer Success Team, has 17 years of rich experience and expertise in IT solution consulting and implementation. She has worked extensively in automotive and retail space and specializes in digital transformation at the convergence of the two. She is invested in applying automation, analytics, and data driven decision-making to improve businesses outcomes, creating new value and customer experience particularly enabled by CDP. Her interests include digital innovation, efficiencies driven by automation enabled by AI/ML and NLP, and implementing Agile at scale.



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Senior Consultant from our Digital Consulting practice has over seven years of rich domain experience delivering growth consulting projects to Global Automotive OEMs. His Digital transformation projects involve new age technologies like Industry 4.0, AI/ML driven automated decisioning and envisioning workflows that are intuitive and efficient. He is also adept in value realization and helps extract and translate benefits from DTX projects into quantifiable changes in the balance sheet. His interests involve crafting insightful stories, backed by sound data analysis that can drive better decision-making.

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