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The auto industry's growing recall problem—and how to fix it



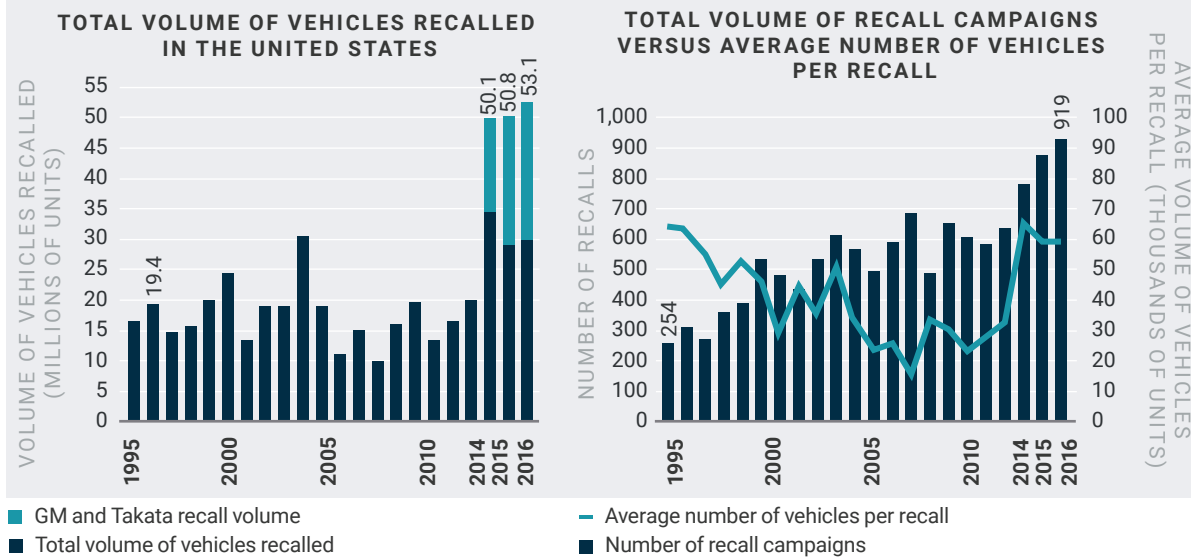
GM and Takata made the headlines in 2016 for all the wrong reasons. GM recalled a total of 23 million vehicles in the United States alone to remedy ignition switch issues, which cost GM a staggering \$4.1 billion. Replacing potentially defective airbags has cost Takata \$1 billion and cost Takata's OEM clients, such as Honda, billions more.

Those scandals overshadowed many less publicized recalls in 2016—about 300 in all, affecting an additional 30 million vehicles, or an incredible 20% of the US car parc (figure 1). That made 2016 a record year for recalls, measured both by the number of notices issued and the number of vehicles involved.

Most of the recalls involved faulty components or system integration errors. That highlights a growing trend: recalls to correct defects in electronic or electrical systems, which deliver many of the modern comfort and safety features that today's consumers demand, have grown 30% a year in recent years (figure 2). In 2016, one OEM recalled more than 300,000 vehicles to fix problems with their infotainment audio units, another recalled 100,000 vehicles to replace faulty relays, and yet another recalled 80,000 vehicles to debug software.

These systems-based recalls usually affect 100% of the vehicle models in question, unlike manufacturing defects, which are confined to a single plant or region, and a narrow time window of manufacturing. Because most automotive OEMs have adopted global platforms, there is now far less local variation in vehicle content. As the number of vehicles using similar systems increases, so do the number of issues detected since the larger production volumes attract closer observation. As a result, recall notices are increasingly likely to involve not thousands but millions of vehicles.

FIGURE 1: THE SIZE OF THE GM–TAKATA CRISIS MASKS THE LONG-TERM RISE IN RECALL CAMPAIGNS



Source: National Highway Safety Administration, Press, Valukas report, AlixPartners Analysis

The spate of recalls is taking a heavy financial toll on OEMs and suppliers. For the year 2016, US-based OEMs and suppliers reported paying approximately \$11.8 billion in claims, and recorded \$10.3 billion of warranty and recall accruals. The frequency that suppliers are named in recall notices has doubled since 2013, and their share of total recall costs has tripled from 5% to 7%¹ to 15% to 20%. Best-in-class supplier companies target approximately 1% for annual recall and warranty costs combined. The costs of reputational damage are harder to quantify, but they are considerable as well.

A LACK OF URGENCY EVEN AS COSTS CLIMB

Despite the mounting expenses and bad press, OEMs and their suppliers remain preoccupied with cost reductions and innovations. Judging by the steady climb in quality issues and customer complaints since 2013, most have continued to underinvest in quality. There’s little evidence that OEMs are moving aggressively to address these issues—in fact, most of them can’t (or at least don’t) quantify for investors how much quality shortfalls are costing them. But unless they move quickly and methodically to meet these challenges, they risk incurring lasting damage.

In some cases, that damage is already done. Consider two recent examples:

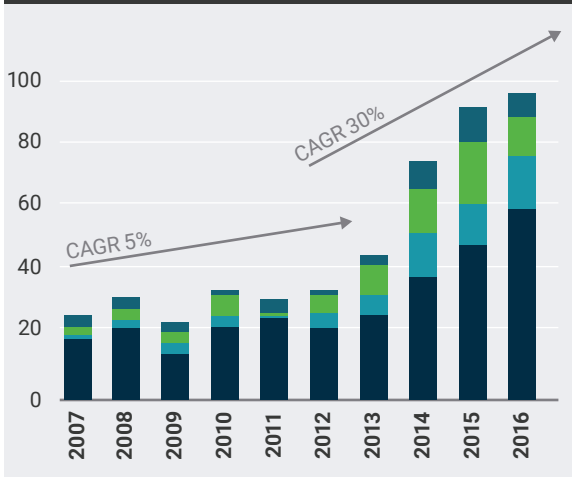
In October 2017, Nissan suspended production of cars in its home market after learning from government regulators that some technicians who performed

vehicle safety inspections were not qualified to do them. Although the OEM pledged to correct the lapse, a follow-up investigation revealed that unqualified inspectors were still performing safety checks at three plants. Nissan now says it will re-inspect 34,000 cars produced between September 20 and October 18, 2017. Some 4,000 have already been sold, and Nissan may have to recall them even though no faulty parts have been found. All told, the faulty inspections will force Nissan to recall nearly 1.2 million cars sold in Japan.

October 2017 also brought word that Kobe Steel, a leading Asian manufacturer of metals that supplies several OEMs, had faked quality data at four of its plants. The company had passed off aluminum, steel powder, and copper tubing as meeting OEM specification for years—even though the material was substandard. Those kinds of practices had become ingrained in the company culture so much so that managers had codified specific process instructions for falsifying data, in effect creating a cheating manual. Some plant foremen and even quality control managers knew about the data manipulation, as this was unlikely the work of some rogue quality inspectors, according to multiple news agencies. Moreover, customers promptly replied to inquiries that no product failures have been traced to this, so the company likely concluded that the product quality was sufficient.

¹ National Highway Traffic Safety Administration recall data.

FIGURE 2: SINCE 2013, ELECTRONICS-RELATED RECALLS HAVE GROWN SIX TIMES FASTER THAN IN PRIOR YEARS



■ Integrated Electrical Components ■ Software remedy
■ Software defect ■ Software integration

CAGR—compound annual growth rate

Source: National Highway Safety Administration recall data

What accounts for those incidents and for the overall escalation in recalls in recent years? In some cases, companies have established metrics and incentives that prioritize sales volume, customer satisfaction, and profit over quality. In others, companies have failed to perform objective root cause analyses after quality lapses and recall events, or have made only halfhearted attempts to address them. More broadly, quality functions have been starved of funding and talent since the financial crisis. At that time, many OEMs and suppliers slashed investments and headcounts in their quality functions by 30% to 50%, based on our research. Furthermore, funding and staffing levels were not restored in the intervening years, even as the automotive sector has returned to robust financial health.

HOW LEADING AUTO SUPPLIERS ARE BOOSTING QUALITY

The spiraling reputational and financial costs of quality failures, however, have finally spurred some companies to action. They have launched a wide range of initiatives, from small-scale mitigation projects to full-scale transformations. Those going the transformation route typically work with untainted outside experts to revamp key performance indicators to motivate more quality-sensitive behavior, refresh

quality leadership, and escalate critical procedure monitoring. Companies are also analyzing data and conducting interviews to identify where in the company or its supply chain quality risks are highest, determine the cost and financial benefits of addressing them, and assemble teams.

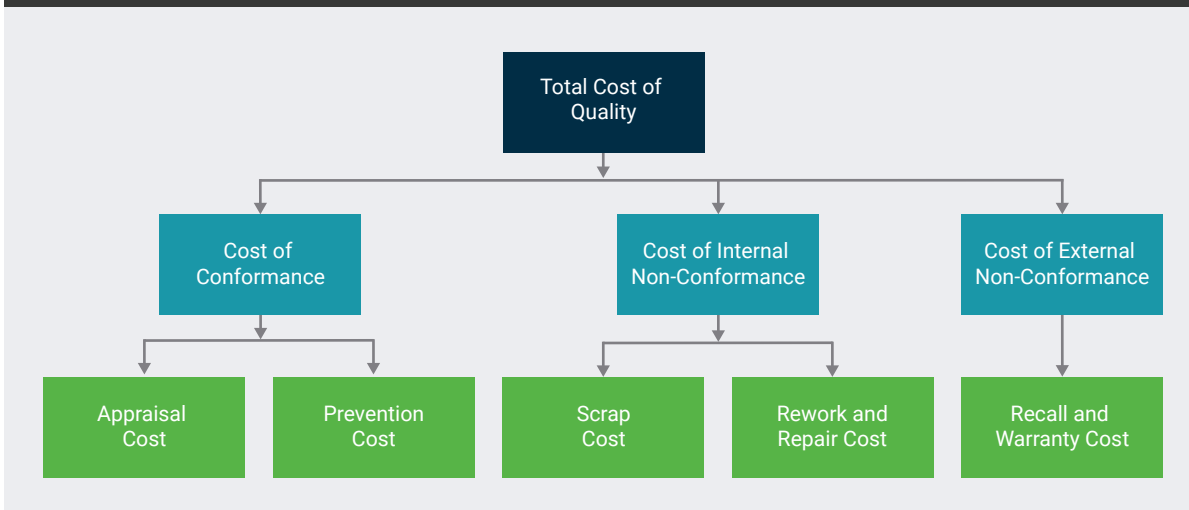
Companies are also updating and reinforcing advanced product quality planning (APQP). Those critical processes are typically led by quality, engineering, and manufacturing with support from sales and marketing, finance, and program management. APQP teams, in theory, focus on every vehicle component, sub-system, and system, and are responsible for determining what to make, how to make it, where and how to source components, and how much autonomy suppliers have over component design and manufacturing.

As they undertake these transformations, many companies are learning that they don't have a handle on the cost of quality and, as a result, have difficulty prioritizing emerging issues before vehicles or components reach the marketplace. So, the hidden and contingent cost of poor quality can lead to inaction since the cost/benefit of the solution appears to be a weak business case.

Drawing on our years of experience in this sector, we recommend determining the total cost of quality by calculating the cost of conformance, the cost of internal non-conformance (that is, the cost of identifying and addressing quality problems before vehicles or components reach the market) and the cost of external non-conformance (that is, warranty and recall costs). Once they've determined the total cost of quality, companies can see the true value in addressing each quality issue, which usually generates significant cost improvements.

Some companies are also becoming more proficient at identifying and eliminating the root causes of quality failures. Led by senior management, these efforts signal to the organization that reducing the risk of non-conformance is a top priority. Leading companies have become extremely effective at defining problems, implementing immediate corrective actions to insulate the customer, defining root causes, following up with permanent corrective actions, and verifying the effectiveness of their efforts.

FIGURE 3: BREAKDOWN OF COSTS



These leading companies have aggressively found top talent for their quality functions, which have been struggling to perform effectively as production volumes expanded beyond pre-crisis levels. But many find it difficult to attract new degreed engineering talent to their quality organizations. Many potential candidates may find other industries and career paths more appealing and would feel reluctant to work in a function that other parts of the organization view as meddlesome and not the heart of the company.

The cost of underinvestment in quality is finally becoming apparent to the automotive industry—and its investors. Yet despite concerted action by a handful of leading OEMs and suppliers, most of the sector has yet to embark on the transformations necessary to decrease recalls and cost of quality. Companies would serve themselves, their customers, and their shareholders well to move aggressively and address their quality issues now. If they fail to act, they risk becoming the next company to make headlines for all the wrong reasons. **A**

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