

## The Pace of Change – Experts Discuss The Impact of Automotive Technology on VSCs

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**Industry experts, Steve Amos, Tim Brugh, Mike Cescon, Matt Croak, George Krnich, Rick Kurtz, John Luckett, Kelly Price and Tony Wanderon take a hard look at advancing automotive technology and how the VSC business is adapting to the changes**

**By: Jennifer Nebrich**

It was only a century ago that Henry Ford revolutionized the way automobiles were produced by utilizing the latest technology of the assembly line to produce his Model T. Since then, technology in the automotive industry has continued to advance by leaps and bounds. Electronic features, once only seen in high-end vehicles, are rapidly becoming commonplace. The number of cars with factory-installed telematics is expected to increase from less than 10% in 2010 to 62% in 2016 according to ABI Research. McKinsey Global Institute says by 2015, the automobile industry will be the second largest data producer in *any* industry.



So how is the ever-growing technological innovation in automobiles impacting Vehicle Service Contracts (VSCs) and what are providers doing to keep up with the fast paced changes? Steve Amos, president and CEO, Gulf States Financial Services (GSFS), says that in the last decade, the risk associated with VSCs has come full circle. "A decade ago we were looking more at high frequencies of small, low cost parts that could be installed and replaced in a short amount of time. In the last ten years, the quality has really improved but the technology in cars has exploded. So now, when we look at how we price everything, it's more from a low frequency claim basis with a high severity – because electronics are very expensive to replace when they do break."

### **Then & Now – Advances and Borrowed Technology**

Tony Wanderon, CEO, National Auto Care (NAC), says that with any technology, the price is usually high when it first comes out but decreases with time. "The benefit to us down the road is that even though today, the pricing might be high, in a few years from now, we would expect the cost to come down substantially, which puts you in a better position to some degree – as long as your frequencies are not much higher and you model your pricing based on some reduction."

Mike Cescon, executive vice president, Old Republic Insured Automotive Services (ORIAS), noted that they have not seen a high frequency rate in failures of electronic components. Things such as touch

screens, displays, reverse cameras or satellite radios with navigation capabilities have been fairly stable and they have not seen high loss ratios on those components – and they track all information monthly. He also expects that electronics that are pricey today will not be so in the future.

“Automobile design is continuously improving and new technologies often come with a high price tag. However, as new technologies become more widely used, the component pricing levels off. With forty years of experience providing mechanical and electrical coverage on vehicles, Old Republic has the expertise and experience to adapt to changing component pricing.”

“If you think about cars ten or twenty years ago, most of us could work on them. Now, unless you have specialized computers, you can’t.” says Amos. As recently as five or six years ago, Amos says GSFS’s service contracts had a surcharge for technology items. “That had been part of our contract coverage for five or six years. You would buy your contract and you could elect to pay a little bit more for it to cover some of the upgraded electronics.” Now, the electronics have become so commonplace, Amos says they have eliminated the surcharge and built the coverage into their pricing.

All the experts we spoke with agreed most of the technology we see in vehicles today has been out in the public domain for quite some time. Tim Brugh, president, AAGI, summed up the general consensus saying, “I haven’t seen anybody come out with technology designed specifically for the auto industry that hasn’t already been developed somewhere else.”

With so much automotive technology “borrowed” from other industries, most of the kinks have already been worked out of it. Since it is a known quantity, underwriters can reasonably approximate loss ratios. The back up camera, which will soon be mandatory in all vehicles, is a perfect example. Similar cameras have been used in security for some time now. Current models are reliable and the cost to replace has decreased over the years.

To keep up with the evolving technology in vehicles as it becomes more widespread, many service contracts are offered with varying levels of coverage – allowing the consumer to decide how much coverage to opt for. “The new technologies that were only available on luxury vehicles are now available on less expensive, compact and subcompact models,” says Cescon, “Service contracts with named component coverage may not include new electronic parts if the technology did not exist when the plan was designed. Old Republic’s Total Vehicle Protection Program has four levels of coverage to assure the customer has their desired level of coverage. The Supreme Plan covers all original equipment except specifically excluded items. On the Supreme Plan, new technology automatically receives coverage.”

John Lockett, senior vice president, sales & marketing, Resource Automotive, which is part of The Warranty Group, globally underwrites policies beyond just automotive. The Warranty Group is heavily invested in research and development (R&D). He pointed out some advantages of using cross-divisional actuarial data. “Much of the electronic technologies that are in vehicles today are the same technologies we have been underwriting in our consumer electronics division. We have the actuarial experience on TVs, smart cell phones, Bluetooth and other crossover technologies that are showing up on vehicles. We are able to harness and take advantage of the actuarial data we have and apply it to the automotive segment. We know the data and can forecast what the claim severity and frequencies are going to be. I think we do a really good job of keeping pace with it and updating coverage as technologies cross over and advance.”

Braking technology, assisted cruise, back up cameras, lane change warning signals, and heads up displays are already features in many cars today. Amos says most of these have been covered by VSCs for quite some time now and are not a concern because the cost has already been built into VSCs. "In the future, we are looking at cars that will drive themselves. That's a whole new world. We have had hybrid technology for ten years now and it does well. ...So what's the next electronic gadget going to be?" As a part time racing instructor, Amos says some race cars now have rear view cameras instead of rear view mirrors. Often, the technology in high-end race cars eventually carries over into mainstream vehicles. "Tesla is looking into replacing the passenger side mirror with a camera view but are they being held up by some safety issues. So what DO you do if the camera [that replaced a mirror] breaks," asks Amos, "You gotta see behind you!"

Hybrids entrance into the car market forced developers to come up with or perfect technology that is now being implemented in non-hybrid vehicles. Things like stop-start (also referred to as idle-stop technology) – a system that causes a vehicle's engine to shut off when the driver stops and seamlessly restart when the driver either removes their foot from the brake or presses the gas pedal – wouldn't be possible without hybrids requiring advances in batteries, starters, alternators, etc. The technology that was refined in the production of hybrids is now being used in other vehicles.

Rick Kurtz, senior vice president of distribution, Protective Asset Division, pointed out the importance of looking beyond hybrids to other efforts being made to make vehicles fuel-efficient. "We are seeing plenty of changes to the combustion engine that also affect service contracts."

Kelly Price, president, National Automotive Experts, says that hybrids have had virtually no effect on VSCs, since the manufacturers have liability for the most expensive parts and offer longer warranties – typically seven years/100,000 miles. After the manufacturer's warranty expires, they will write VSCs for hybrids, but they are usually classified in a higher class and priced accordingly.

## **The Role of Regulations and OEMs**

Increasing government legislation requiring more safety-assist technology in new vehicles also plays a role in the pace of change. Many manufactures, wanting to stay ahead of these regulations, are already utilizing much of the available technology in new vehicles. Back up cameras won't be required in new vehicles until 2018 but are already standard or optional features in two-thirds of the 50 top selling vehicles in the US today, reports the Alliance of Automobile Manufacturers.

Vehicle2Vehicle technology, commonly referred to as V2V, is being looked at by manufacturers as well as the Research and Innovative Technology (RITA) division of the US Department of Transportation as one of the next automotive technologies that will be required in all vehicles. V2V communications allows a vehicle to have a 360-degree awareness of the position of other vehicles and to detect nearby hazards, calculate risk and warn drivers. Because V2V can be implemented using non-vehicle-based technologies already present in most vehicles, we may be seeing V2V deployment much sooner than if it required Original Equipment Manufacturer (OEM) embedded systems. The aftermarket component could even be adapted for cell phones, allowing a person's phone to communicate with nearby vehicles, warning them if the individual in possession of the phone is crossing a street. RITA's website says the wireless exchange of data between vehicles with V2V communications will "enable active safety systems that can assist drivers in preventing 76% of the crashes on the roadway."

“Clearly, state and federal regulation is a big issue for us right now.” says Wanderon, “In addition, with the pace of change today being so rapid with new technology, we all have to come up with a better way to measure what that risk will be in the future to properly and adequately reserve.” He notes that justifying what your rates will be to account for the new technology is tough when you do not have data to predict it. “The only way we as an industry have predicted loss ratios is by having a lot of historical data. Without that, it is really just a guess. As much as an actuary or a company would like to say that it’s a science – it’s an educated guess.”

Price agreed. “We don’t have any idea what [all the new technology] is going to do to loss ratios. Most of the new technology hasn’t been out long enough to know how it’s going to impact losses. I feel like we are all just guessing at this point. Lane changing sensors and other newer advanced features, for example, may or may not ever fail or become an issue. They haven’t been on enough cars, with enough frequency to truly know. So right now, we are just watching our losses and trying to track our components at a more defined level to make sure if there’s something going awry, it is not buried inside of a larger component group.”

Kurtz voiced another concern the industry faces, as manufacturers try to keep up with government regulations. “One current challenge is that the auto industry has seen the reliability of vehicles decline because manufactures are rushing new technology to market to meet the pressure from regulations and consumers.”

Some reported that OEMs are being less open with their research on the new technology being implemented in vehicles. Wanderon says that it can be challenging to plan for the future when you do not have information about what is going to be coming out in vehicles in the future. “Internally, OEMs seem to be sharing a lot more information between departments as service contracts are a bigger part of their revenue. The OEMs have always kept their information on losses to themselves for the most part and as such, they should have some advantage in determining new loss trends. On our side, the risk comes in after the manufacturer’s warranty expires and we have very little relevant information during that period.” With the speed that we are seeing new technology in vehicles, to some degree, providers are being reactive. He recommends being conservative in pricing. “When you price your program for yesterday’s technology and something new, more expensive or more complex comes out six months later, you can’t go back and re-price.”

## **Viruses and Hacking**

As computers have become more integrated in vehicles, the potential for an automobile’s computer systems to become infected with a virus or maliciously hacked and tampered with has been raising concerns for a while. A group of professors from ETH Zurich, the Swiss Federal Institute of Technology, recently tested keyless entry in ten vehicle models from eight carmakers. In a short time, they were able to break in and drive the vehicles away. Motor Trend ran an article entitled, *Forget Ziebart or Scotchguard. Your New Car Needs McAfee or Norton Protection*. The UK’s Daily Mail newspaper reported that over half of the car thefts in London last year were carried out using inexpensive, high-tech gadgets to obtain access and steal newer vehicles that possessed on-board computer systems – which is almost every new car out there today.

Researchers from universities across the country have proven that hacking into vehicles’ computer systems is not only possible, but can be done with readily available equipment and cheap or free

software. They have accomplished stopping engines, disabling and engaging brakes, hacking into tire pressure systems, locking and unlocking doors, toggling headlights on and off and much more.

"We found that basically anything under computer control in a car is vulnerable to malicious attack," computer scientist Stephen Checkoway told the Montreal Gazette in an article about car-hacking. "This includes the brakes, engine, lights, radio, wipers and electronic display. If a computer controls it, it can be controlled by an attacker."

In an article entitled, *Hacker Attack on Your Car's Computer Could be Lethal*, Stuart McClure, an expert on automobile security and former worldwide chief technology officer at Intel's McAfee unit – a division tasked with protecting vehicle electronics systems and onboard computers – says there is "tons of opportunity for an attack on car systems."

These and the abundance of similar news articles raise the question of how, or even *if*, damage from a virus or hacker would be covered on a VSC. And if so, at what cost?

Brugh describes the possibility of automotive software viruses as one of his biggest fears. "I would think that anything that has a computer, has the potential to have some kind of virus. To me, that is a lot scarier than the components breaking down. What DOES happen if a virus does get in a vehicle's computer? Does it shut the whole car down? Or is it just something that could make a part of the vehicle not work properly. With OnStar and all the Bluetooth technology, the capacity is there for somebody to hack into your car, shut off the engine, cut off your breaks, those kind of things. ...It's almost like a form of vandalism. But it is certainly possible." Brugh expects that manufacturers will start including safeguards similar to what you see in a home computer into vehicles' electronic control models (ECM) and the main computers but says so far, he says he has heard little about it.

In an article on Norton's website, John Luludis, president and co-founder of Superior Tech Solutions, an IT provider and a former car industry tech executive, explained that cars are no longer closed systems because of the increasing presence of wireless systems. "Once you have connection to vehicles, you have an entry point for people to try to access. The only thing standing in their way now is a standardized piece of software. It's a concern we need to address."

Amos thinks a virus would likely be a reprogramming issue that would be fairly easily to remedy. "If you took your car to the dealer and said, 'Hey, I've got a virus. My GPS is not working.' I think they would be able to take the virus off the system and reinstall the appropriate software."

All the experts we spoke with, however, say that a situation like this has yet to come across their radar. No claims of this nature have been filed and while they are somewhat concerned about the possibility, none reported having been involved with any occurrences in the U.S. at this point.

When and if it does happen, it has yet to be determined if the damage caused by a virus or hack would be covered on a VSC. If someone commits vandalism and damages your car with a hammer, that would be covered under your auto policy. But if a hacker disables your vehicle, is that vandalism or a mechanical failure? "I don't know," says Wanderon, "It would depend on what the policy's language states but I don't feel like that would be a mechanical breakdown. From a legal perspective, I would think that the cause could be viewed on an individual basis as vandalism – but what if it was to hundreds or thousands of vehicles at the same time? Many of the policy provisions in the industry

say, 'act of terrorism.' Could it be looked at as terrorism? I think this is a big issue that all of us need to think about from now on."

## Looking forward

It's really not *what's* out there technology-wise, says Amos, because there is a LOT out there and it's been around a lot longer than people realize. What *has* changed is that more of it is being put in cars; so more buyers are getting it. As time passes, the number of vehicles with high-tech items will quickly become more widespread. Amos says the onus to evaluate and make determinations about the impact of new systems in vehicles lies with risk and underwriting departments. "We've got a very, very high quality risk and underwriting department here at GSFS. Their primary focus is monitoring and managing and looking into the future at what changes are coming along and they are extremely good at it."

"Predicting the future is a tough thing," says Kurtz, "However, in our business you have to find a balance between projecting future trends and evaluating past events. I can tell you one thing is for certain – the volume and complexity of technology going into vehicles is only going to increase. Consumers are demanding, really expecting, more technology. Manufacturers have no choice but to give it to them. Those of us providing protection plans are going to have to seize this as an opportunity."

Price recalled a situation a few years ago where a car's computer system said the transmission was failing. It failed and the transmission was replaced. Then the new one failed and it was replaced again. When the third one failed, it was discovered that the computer was actually telling the car that it had more miles on it than it really did, causing the transmission to operate improperly. The original transmission really had nothing wrong with it – the problem was the vehicle's computer was in conflict with the transmission. In the end, the factory ended up covering it and the vehicle's computer had to be replaced. "That situation tells you that it is no longer just putting a couple of wires together to make a part work again, like it used to be. You are relying on several different pieces of equipment to make an engine, transmission or other part to function properly. I am sure we are headed for more situations like this in the future."

Keeping a close watch is key according to Brugh. AAGI evaluates how technology is developing in vehicles on a quarterly basis, looking at things such as how often touch screens, GPS or retractable mirrors are breaking. So far, he reports that electronic items are not breaking down on a more frequent basis than any other part that they would protect. "The good thing about the technology is, not everything is automatically being put on all cars. With only half of the cars being sold through new franchises being new cars, the other half are used cars. So it gives you some time to look at everything and determine if we need to increase our price by whatever the factor is. ...It is not the sort of thing where we have felt we needed to go out and re-price our programs because we really don't know what the new technology is going to do."

The advances in automotive technology and design have created a need for appearance care service contract products in addition to mechanical service contracts. As vehicle design evolves, cars are becoming lighter weight and components are not always cheaper and easier to maintain. Matt Croak, president, Wise F&I explained, "Vehicle bodies no longer have side moldings; the side panels are now flat, taller, more streamlined and use thinner lightweight material which leads to more frequent dents and dings. The wheels on today's vehicles are no longer steel wheels with hubcaps; Alloy wheels are

everywhere and this modern look of the vehicles is enhanced by lower profile tires, allowing the wheels to suffer cosmetic damage easily. These changes and others in vehicle design have driven us to develop new appearance care service contracts to better meet the needs of consumers.”

There are many advances in vehicle technology that are not as obvious. Mike Cescon, executive vice president, Old Republic Insured Automotive Services, Inc. (ORIAS) pointed out, “Visible new electronic equipment is exciting and receives lots of attention and discussion. We should not overlook that there are many additional technical advancements, which are invisible to the driver but have the same impact on mechanical and electrical coverage as the more exciting technologies. The cost of the technical advancements to internal components impacts service contract pricing.”

Right now, most providers say they feel confident with their pricing models and the available data. Amos noted that while electronic parts are quite expensive to replace, they are very high quality parts that don’t break as much as you might suspect they would. He says the real challenge for providers has yet to come. “Our real pricing challenge is going to be down the road when you have these vehicles that are eight to ten years old, with over 100,000 miles. That’s when we will really find out how good we are at pricing.”

Having a global presence and knowing what technology is out there worldwide may prove to be a big help with predicting loss ratios in the future. Lucket says, “The Warranty Group’s global footprint gives us an advantage on all the technology automotive manufacturers are bringing to the forefront – we have our finger on the pulse of it. We may see technologies that are common in Europe and Asia that we are just now seeing in the states. Being global, we will already have the underwriting experience on these technologies, so that when they show up in U.S. vehicles, we already have a good feel for them.”

Brugh imagines the future will bring a need for specialized adjustors who have a better understanding of the technology and how it works. “I would venture to say we are going to have to make some changes, we just don’t know what those changes are yet.” says Brugh, “Do we know enough about them? No, we don’t. We are going to have to really get our people up to speed on technology because it is becoming more and more prevalent – It’s in every car out there.”

“One thing that we know for sure,” says Croak, “is that innovation in vehicle technology and design is not going to stop, and we don’t want it to. Warranty companies will have to continue offering benefits for consumers that truly give peace of mind relative to their vehicle ownership. The provider has the responsibility to make certain that the consumer’s needs are met and to do this, they have to stay on top of the advances in technology.”

“We just have to learn how to adapt to some degree,” added Wanderon, “If not, then where do we go?”

At the end of the day, Amos chalks it up to all being a part of the insurance business – measuring the risk and making sure you have the appropriate pricing for the appropriate risk. “Dealers and customers expect all components to be covered and it is our job to make sure we have appropriate coverage and pricing because consumers are demanding it. It’s a challenge,” says Amos, “but it’s what makes the business exciting.”

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