

POWERFUL SOLUTIONS

For maximum F&I profitability

The Surprising Downside to Keeping All of Those Creature Comforts AND Safety Features More Affordable

Anyone who has been in the Automobile business for any length of time has overheard a Guest state, "I don't want all those gadgets in my new car, it's more stuff to go wrong!"

The situation presenting itself, *here*, is unfortunate on two counts. First, high-tech is unavoidable, even for the Guest who doesn't want a lot of onboard electronics and is purchasing a very "basic" content vehicle. Our Federal Government has long since determined that even though some folks are purchasing basic transportation, these vehicles must still come equipped with many (if not all) of the same safety features as a loaded vehicle. And these safety systems are *quite* complex. Second, this Guest is correct. The more content a vehicle has, the more things that must work correctly for trouble-free operation. It's no secret that today's vehicles have a *lot* more standard and available content than those of the past. And for folks who are looking for a "loaded" trim level, standard and optional features raise the content stakes far higher!

We've *all* had experience with failed electronics. Many of the common causes for failures include well-understood issues related to summer-time heat, the vibration of bad roads, and the moisture created by humidity and rain (remember, though, be careful not to forget that if the part is exposed to a high enough concentration of water, leading to corrosion, this is not covered). These influences can all lead to internal shorts to the components. Less well-known causes of failures can occur because of poor-quality soldering work, leading to electromigration, causing breakage to the soldering joint. The usage of lead-free solder presents additional issues. Tin whiskers may occur. These may wear away the joint or break off, bridging points while making inadvertent contact, causing additional shorts. Even dust and insects can wreak havoc to electronics!

The bottom line is with complexity comes challenges to keeping things operating properly. This is common knowledge. The first part of the following is also well-known to those of us in the business...

Automobile manufacturers have long outsourced many of the components they use to build automobiles. From seats, to air-conditioning compressors, to *many* of the small electronic components, and much more. A particular automobile manufacturer may source components from 150 (or more) different component manufacturers. This saves cost! The automaker can "bid" these different component manufacturers against one another, to procure the parts cheaper, and may rely on components built in regions where labor costs are lower. The automaker pays for the hardware AND the embedded software contained in these parts.



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Partnership + Performance = Profit

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The Surprising Downside to Keeping All of Those Creature Comforts AND Safety Features More Affordable (continued)

NOW, *below* is the *little-known* area where problems crop up with the high-tech features...

It is the job of the automaker to ensure ALL these parts and components, sourced from 150 or more different manufacturers, *talk to each other*. Much of the software used in these systems is proprietary to the manufacturer of said system. In other words, the automaker may only become aware there is a conflict between the embedded software of different systems *after* a problem arises! Then, to complicate matters further, when proprietary software is involved, the automaker must request permission to modify said software to help address the problem. When many millions of lines of code have been written to make a modern automobile do what it does correctly, and a problem arises, if the language isn't universal between the parts... they *won't* talk to each other. It isn't hard to imagine how quickly this can lead to misdiagnosis of faults and improper error codes being thrown, confounding the best efforts to correct the problem. This issue has become so profound, some of the automakers are preparing to *insource* electronic architecture, and others are almost certain to follow. This is something the automakers haven't done before.

What does this mean for our Guests?

Naturally, with all things new there will be a learning curve. The reliability quotient of these newly developed parts and components will only be realized with the passage of time. Parts costs are certain to increase, more than they have already, due to the loss of the cost-saving nature of outsourcing, where these parts are concerned. Clearly, these considerations create a lot of additional uncertainty in a market already rife with so much turmoil. These matters, as well as many others, create a very opaque view to the future regarding vehicle operating expenses.

Let's share some of this insight with our Guests so that they may make more *well-informed* decisions. As always, the shelter our Guests enjoy via our Top-Shelf VSC's is *substantial*!

Think about it.

Good luck and good selling!

