‘Right to Repair’ Initiative Could Have Significant Impacts on the Connected Car Ecosystem

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Overview

Impacts

- Right-to-repair efforts are gaining ground in legislatures around the world as a means to permit customer choice, eliminate control by original manufacturers, limit product obsolescence and reduce waste.

- Manufacturers’ efforts to monetize connected vehicles could be altered by a right-to-repair ballot initiative passed in Massachusetts and other efforts related to this issue around the world.

- If manufacturers do not have a monopoly on vehicle access, independent repair shops, fleets and leasing companies may create competitive applications or services capabilities, but manufacturers argue this could lead to security, safety and privacy risks.

Recommendations

CIOs of automobile manufacturers and suppliers looking to transform in the automotive and transportation ecosystem must:

- Embrace the ecosystem approach to connected vehicles by creating a structured programmatic approach to onboarding developers and their applications to your marketplace where certification and conformance to state and federal regulations are important value propositions.

- Work with legislatures to outlaw the sales and marketing of software updates that create features and capabilities that do not conform to state and federal regulatory requirements.
Build a digital partner ecosystem by fostering a new developer community to work on applications that automakers and vehicle manufacturers do not have resources to support, such as niche service applications.

**Strategic Planning Assumption**

By 2025, all of Europe and half the U.S. states will have required automakers to give third parties direct access to the vehicle through telematics-based connections.

**Analysis**

Right-to-repair efforts globally are gaining strength as consumer advocates and politicians seek to ensure that owners of vehicles have the ability to maintain and alter their property outside of manufacturer-controlled environments. In particular, a new Massachusetts ballot initiative that passed with 75% approval, could have a significant impact. This initiative requires auto manufacturers to allow access to data for their 2022 and later model year cars. This data would no longer be exclusive to the automotive manufacturer, but enable third parties to access the data with the owner’s permission.

The issue may seem tangential to the role of the CIO, but it is really one of many facets of the data-driven future of transportation (see [The Future of Data-Driven Transportation Ecosystems](https://www.gartner.com/)).

Manufacturers are connecting to vehicles and using software-defined platforms that can be updated over time. This evolution in the product puts the experience of ownership and the development of new capabilities into the realm of IT.

The right-to-repair measure could have widespread and significant impacts inside and outside the automotive industry. The last time Massachusetts passed a right-to-repair law in 2012, it allowed users access to the data generated by their own vehicles and made the data available to repair shops. This change to the existing law requires that automakers make a direct interface available to the vehicle’s computers through a wireless network and not just diagnostic tools that can be plugged into the vehicle. This would circumvent automakers’ control over the information that vehicles send to and receive from other vehicles and potentially allow third parties to install new software into vehicles.

While it is intended for repairs, it is easy to see how this access could create a huge new array of software and applications for the vehicle that goes well beyond maintenance and repair. The current method to connect to vehicles and gather data without manufacturer-control is through the onboard diagnostic port (OBD-II), which was mandated in 1996 in the U.S. in order to gather emissions data. That portal eventually opened a floodgate of capabilities and spawned industries, such as usage-based insurance, which uses a dongle plugged into the port to gather driving information and send it wirelessly back to the insurer. If the ballot initiative is implemented, it will allow for direct access to a vehicle’s computers with the ability to send information back to the vehicle. This is an expansion of the OBD-II access with the added benefit of not needing a plug-in device to enable it. Manufacturers today make it difficult if not impossible to add software that is not created by the manufacturer or its affiliates.
Automakers have vigorously opposed the ballot initiative and have filed a lawsuit in Massachusetts to prevent the measure from being implemented.

**Impacts and Recommendations**

**Right-to-Repair Efforts Will Gain Ground Globally and Likely Require Manufacturers to Comply**

Dozens of U.S. states are considering bills that would guarantee owner rights to repair and modify their own vehicles and the EU also has taken up the issue as part of its effort to reduce the waste from obsolete electronics and other equipment.

In November, the European Parliament adopted a measure to create standard labeling and scoring about the repairability of items. In addition, the European Green Deal also lays out a plan to adopt significant new regulations around making electronics repairable and upgradable.

The right to repair equipment, electronics and vehicles has become a contentious issue between manufacturers and consumers over the past 10 years. It's not an accident. The rise of software-defined, computer-laden devices has changed the nature of things that are sold. Many of these devices are sold with end-user license agreements that prohibit devices from being used in a certain way. These license agreements began with computers, moved to smartphones and now include tractors and vehicles as well as medical devices and other equipment.

The idea behind it is that manufacturers are protecting their intellectual property and preventing people from stealing designs based on software, or altering the software or hardware in a way that could render the devices unsafe or even noncompliant with regulations. With the rise of connectivity in all of these devices, manufacturers can monitor when someone attempts to break these rules and can shut down the device or make it inoperable. It raises the question with the owner: do we actually own this device or vehicle or do we only have the right to use it?

John Deere, about a decade ago, began selling tractors that effectively required farmers to have their vehicles repaired by John Deere dealers or repairmen. Farmers, frustrated at their inability to repair their own vehicles, turned to unregulated market software to repair tractors and also began lobbying state legislatures as John Deere stepped in and disabled their tractors.

The practical effect of these user agreements is that owners are required to repair or modify their devices at manufacturer-approved facilities. In some cases, the manufacturer could decide it no longer supports the product and still not allow a third-party service provider to fix it or provide little support for repairs, then the device is effectively garbage.

Table 1 provides examples of right-to-repair initiatives around the world and related features.
Table 1: A List of Right-to-Repair Initiatives Globally

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Year of Enforcement</th>
<th>Features of the Initiative</th>
<th>Industry Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circular Economy Action Plan</td>
<td>2020</td>
<td>This act aims to ensure that the resources used are kept in the EU economy for as long as possible, reducing the consumption of single-use products and increasing sustainability.</td>
<td>Electronics Manufacturing</td>
</tr>
<tr>
<td>France Repairability Index Act</td>
<td>2020</td>
<td>This act requires manufacturers and vendors of electronics to introduce a “repairability index,” informing consumers about the ease of repairing the product.</td>
<td>Electronics Manufacturing</td>
</tr>
<tr>
<td>Austria Right-to-Repair Act</td>
<td>2020</td>
<td>Under this act, the Austrian government slashed the VAT on small repairs of select electronic items in several Austrian federal states to incentive repairs rather than disposal.</td>
<td>Electronics Manufacturing</td>
</tr>
<tr>
<td>Sweden Right-to-Repair Act</td>
<td>2021</td>
<td>Under this act, people can get tax breaks for electronic appliance repairs done by technicians in their home.</td>
<td>Electronics Manufacturing</td>
</tr>
</tbody>
</table>

Source: Gartner (March 2021)

Recommendations:

- Embrace the ecosystem approach to connected vehicles by creating a structured programmatic approach to onboarding developers and their applications to your marketplace where certification and conformance to state and federal regulations are important value propositions.

- Investigate new monetization avenues, such as creating a store for upgrades that pass safety muster and allow your company to continue to support older vehicles.

Massachusetts’ Ballot Initiative Could Create New Service Ecosystems but Eliminate Manufacturer Control of Vehicle Data
If the ballot initiative becomes law in Massachusetts, it will create de facto national, and possibly international, requirement where vehicles can be accessed by repair and maintenance companies through a mobile application. The ballot initiative is being opposed in court by automakers. Manufacturers wouldn't be able to contain the change to the state because cars could be purchased there and then driven anywhere in the U.S. This would require manufacturers to design an interface that allows applications to be built to gather data directly from the car and to send commands back to the vehicle and even load software to it. In the context of being able to repair a vehicle or provide maintenance, this capability allows independent shops to have access to the same information and capability as a dealership affiliated with the manufacturer.

However, it also cuts out the manufacturer control entirely over information being gathered and potentially allows for unsafe software to be downloaded into the vehicle. John Deere has argued that altering the software in the tractors could remove safety features or eliminate pollution controls. In an automotive context, it's easy to see how software could be used to increase horsepower at the price of fuel efficiency and pollution controls. Indeed, the entire so-called "Dieselgate" episode for Volkswagen involving manipulation of software in diesel engines to pass regulatory muster shows how a third party might undo controls on a vehicle.

In addition, car companies have invested a lot of money and energy into building cloud-based APIs to allow third parties to connect to vehicle information and build applications (see The Extended Vehicle and Neutral Servers: The Access to Car Data Monetization).

Direct access to the vehicle interface would cut the automakers’ ability to monetize the application environment around the car and provide a way for virtually any company to gather data from vehicles that the companies currently control.

Still, the ballot initiative does not prescribe that vehicle owners must be able to access all data and change anything on the vehicle. The regulation to codify the ballot initiative could be created in a way to provide protection for the manufacturers. Furthermore, organizations like Neutral Vehicle Working Group, already have proposed a cybersafe architecture that would provide protections against some of the issues automakers are concerned about. In Europe, the automotive aftermarket distributors association FIGIEFA, has continuously lobbied for direct access to vehicles in that market, but so far the right-to-repair issue and data access issue have not been tied together in Europe as they have in the U.S.

Finally, a new offering proposed by AWS and BlackBerry, called BlackBerry IVY, would create a standard data system inside a vehicle that abstracts information and puts it in a format that could be usable by developers, but wouldn't contain proprietary information. Such a system could be implemented to give access safely.

Recommendations:

- Work with legislatures to outlaw the sales and marketing of software updates that create features and capabilities that do not conform to state and federal regulatory requirements.
A New System of Apps and Capabilities Could Expand Around Vehicles

The ability to connect to a car directly and gather data and send commands and new software to the vehicle without going through a manufacturer-controlled entity is likely to lead to an explosion of small, use-case-dependent applications.

One likely developer would be insurance companies, seeking to create usage-based insurance apps without needing a plug-in device, or any sort of tie-in with a specific carmaker. Other users could include large fleets, like leasing and rental car companies, and then dozens or hundreds of small, niche users. An example of how this might work is already visible with the company Smartcar. It has created an API technology that allows developers to build applications for vehicles so long as the owner of the vehicle is subscribing to the car company’s connected vehicle service. Peer-to-peer car rental company, Turo, uses Smartcar to allow people to open locked vehicles that people are renting through its mobile app. This capability circumvents the automaker.

A change to the interface in the vehicle to allow direct access to the vehicle’s data will only expand this type of capability, particularly if outside software companies can send a greater number of commands or change software on the vehicle.

Recommendations:

- Engage with groups like Neutral Vehicle or through applications like BlackBerry IVY to develop a methodology for creating both new content as well as a secure and safe way to gather information from vehicles.

- Build a digital partner ecosystem by fostering a new developer community to work on applications that automakers and vehicle manufacturers do not have resources to support, such as niche service applications.

- Set a schedule for discontinuing support of software functions or cloud-based services that could then be handed over to developers in the aftermarket, mimicking what is now done with hardware on vehicles.

Recommended by the Authors

Predicts 2021: Automotive and Smart Mobility

Toolkit: Assessing Your Digital Business Platform in Automotive and Smart Mobility

Guide to the Impact of 5G on Connected Vehicles

Guide Contract Management With the EaaS Customer Bill of Rights