

# RETROFIT CONNECTIVITY DONGLE

**Business Meets Innovation – 2020**

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# MARKET OVERVIEW

# Retrofit Diagnostic Dongle Connectivity Market Overview

It is estimated that there are over **1.2 billion** motor vehicles in use worldwide. By 2023, connected car shipments are expected to hit **76 million units**. The rising number of automobiles and trucks on the world's streets requires more intelligent forms of urban transport than the conventional ones, and today's smart cities are providing the smart infrastructure that is needed for the implementation of connected car programs. (cit. Statista)

## In The Fast Lane: The Connected Car

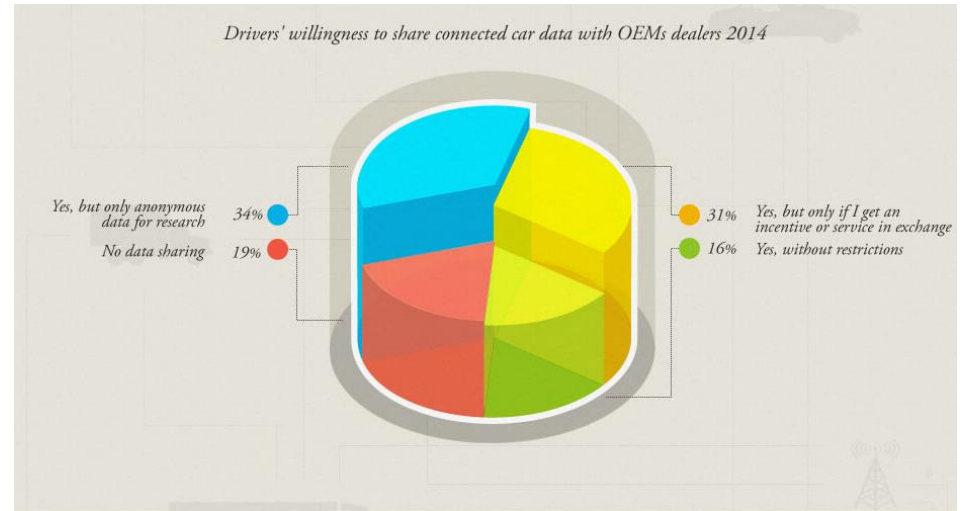
Estimated worldwide Connected Car revenue (in billion U.S. dollars)



@StatistaCharts Source: Statista Digital Market Outlook

statista

## Drivers' willingness to share connected car data with OEMs dealers 2014



Sources: Oliver Wyman, M2M Now, Booz & Company, IHS Automotive Center of Automotive Management, Capgemini, GSMA

statista

# Retrofit Diagnostic Dongle

## Today Investments

- OEMs, at the moment, are developing their proprietary connectivity solutions including Connectivity Unity in the vehicles to be able to enable solution like: **Flashing Over the Air, Remote Diagnostic, Remote Monitoring, Fleet Management , Predictive Maintenance** etc.
- The proprietary OEM solution are struggle to meet all the customer requirements (cit. Roland Berger)
- Several connected services are offered only for premium vehicle models and in 2020 there are still new Cars in production without any connectivity unit on-board.
- This means that there is a large part of vehicles already sold and circulating that will not benefit of any connectivity services.

## Proposed SOLUTION:

*Develop a Retrofit Connectivity Dongle that could enable the Automotive OEMs to connect already the circulating vehicles that are not equipped with any connectivity unit*



# *Why OEMs should be interested in a Retrofit Connectivity Dongle solution?*

# Retrofit Diagnostic Dongle

## OEMs problem: Recall Campaign

### IEC COMPONENT DEFECTS

(NON-SOFTWARE RELATED)



Repair are conducted at dealer

The financial exposure of OEMs and supplier is directly linked to the cost of materials, handling costs, labour and number of vehicle involved

Do not involve software defects or software remedies

Involve the inspection, repair or replacement of failed component



### SOFTWARE-BASED COMPONENT DEFECTS

Maybe conducted remotely

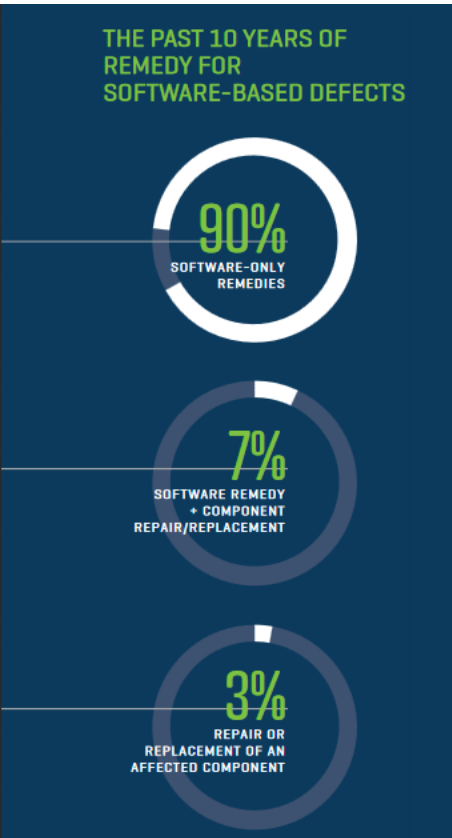
Cost are significantly influenced by the costs associated to the development of the fix

Involve software defects or software remedies

May be remediated by a combination of component replacement and/or an update of the software affecting the defective component

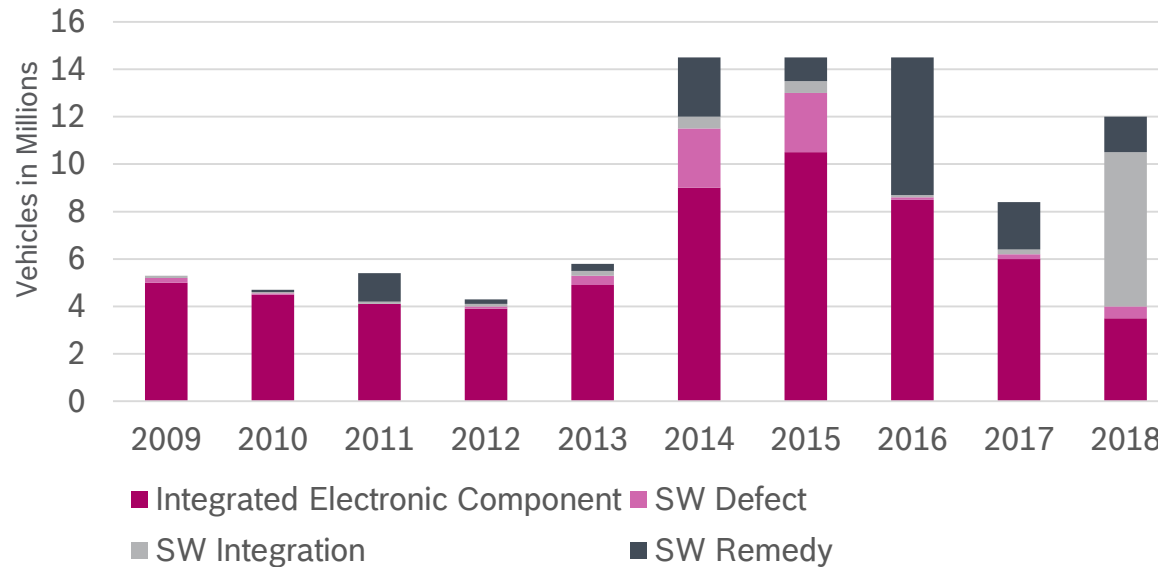
# Retrofit Diagnostic Dongle

## Vehicle Software Recall in Numbers



...the number of vehicles involved in software related recalls in U.S. in 2018 was **three times that of any prior year...**

Vehicle affected by electronic Components by Years



In 2018:

**8m**  
**VEHICLES**  
**in the U.S.**

Were affected by software-based defects

# Retrofit Diagnostic Dongle Flashing Over the Air



*FOTA allows for a **remote update of the vehicle's ECUs** and integrates into existing architectures.*

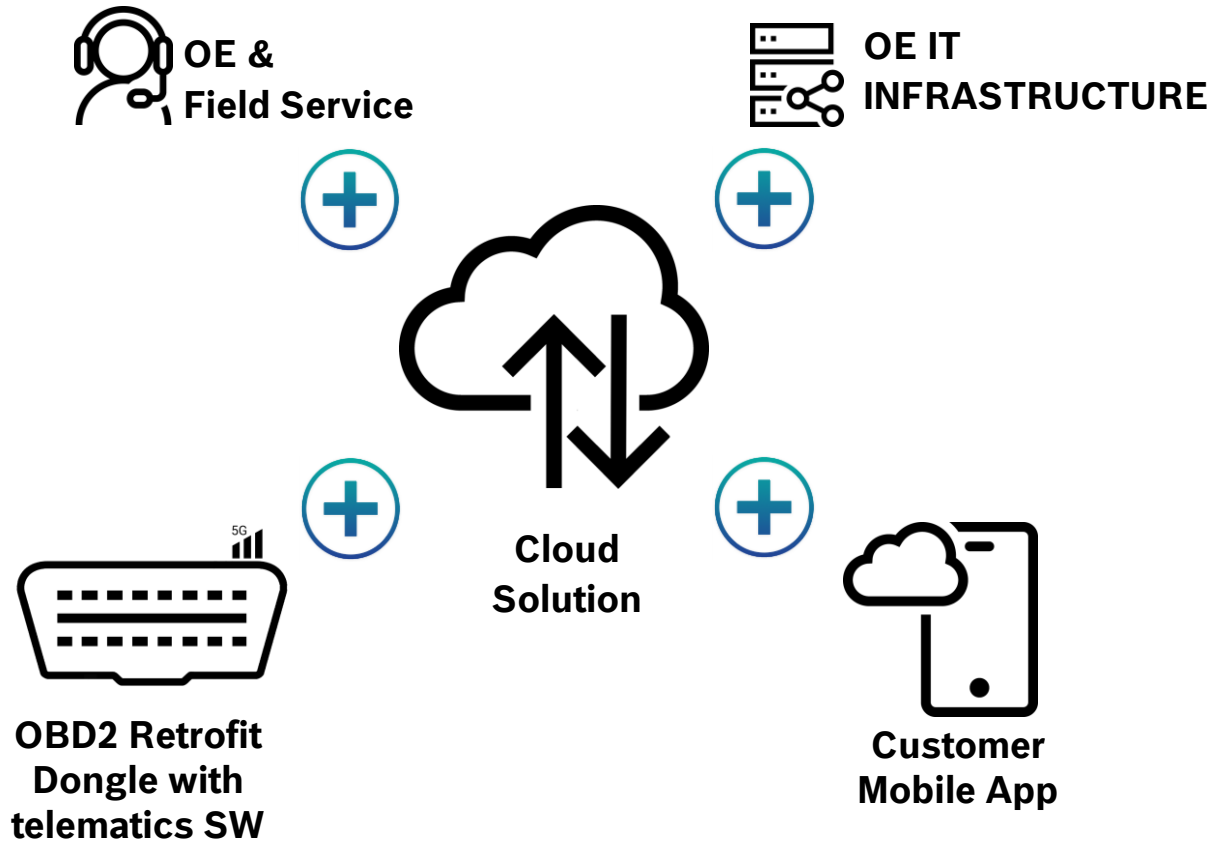
*FOTA could **reduce the costs of Software Recall Campaigns***



# SOLUTION DETAILS

# Retrofit Diagnostic Dongle

## Solution: Retrofit Diagnostic Dongle



### OB2 Dongle HW (Start-Up Focus):

- Easy to be plugged
- Low cost power
- 4G/5G connected
- High secure against cyberattack
- Support for pre-data processing
- Support for Data Logging
- High reliable

### OB2 Dongle SW (Bosch + Start-Up):

- Possibility to integrate existing Bosch Diagnostic Runtime
- Need to be integrated with OEM ecosystem to enable ECU access

### Cloud Solution (Bosch + Start-Up):

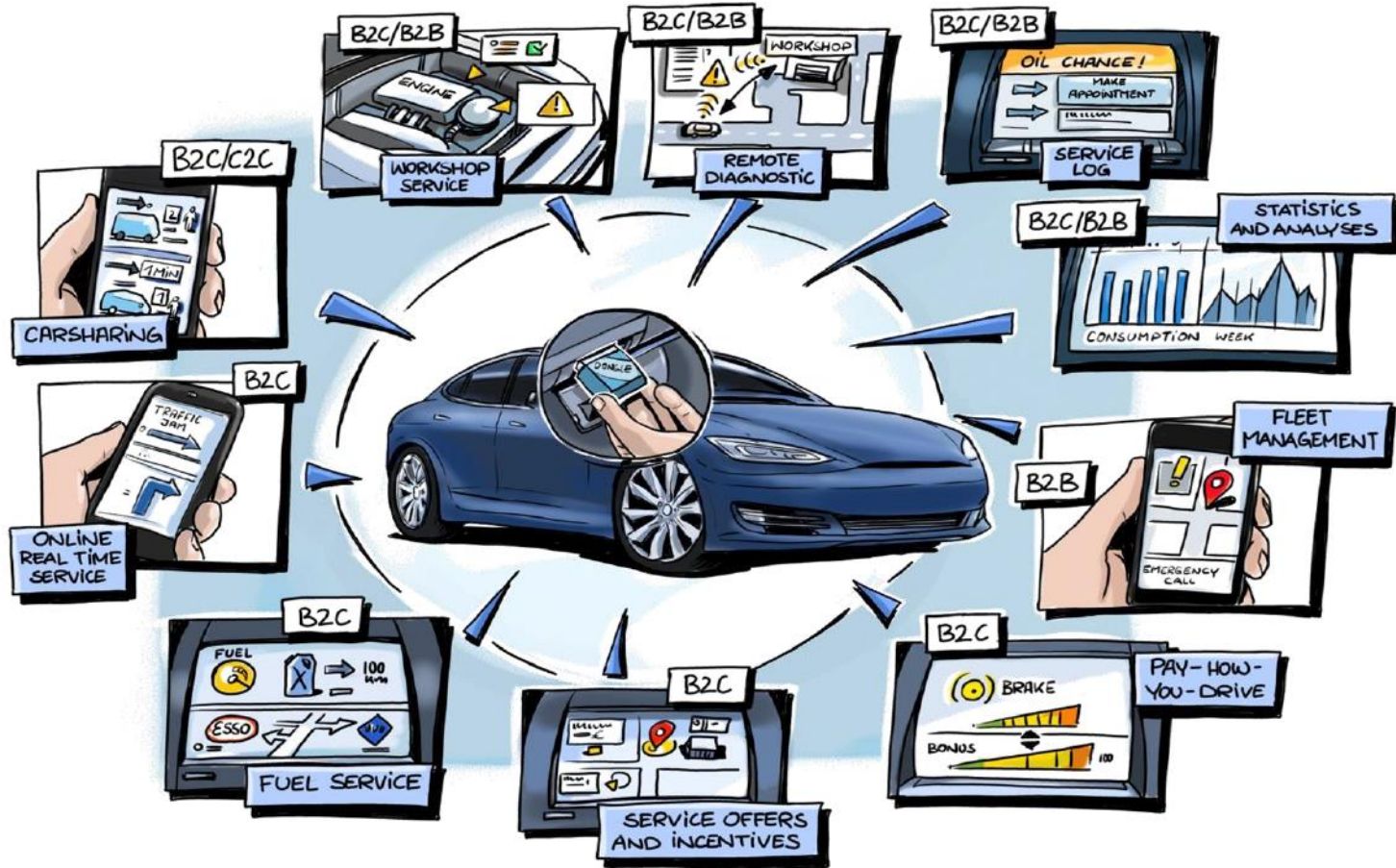
- Possibility to integrate with existing Bosch Cloud Solution (Vehicle Management Solution)

### Mobile App (Start-Up Focus):

- Used as interface to inform and guide the User during the service procedures
- Used by EOMs to provide additional services to the User (free or payed based on the Business model). This requires that the dongle is always connected to the OBD port and has permanent internet connection

# Retrofit Diagnostic Dongle

## Additional Use Cases



Slide Content: Roland Berger - Roland Berger\_Connected Car\_Final\_060916.pptx - <https://www.rolandberger.com/de/Publications/Connected-Car.html>

THANK YOU

 **BOSCH** Parkhaus