

# AUTOMOTIVE STRATEGY

MARCH 3, 2021  
AUTOMOTIVE BUSINESS SOLUTION UNIT  
RENESAS ELECTRONICS CORPORATION

# AUTOMOTIVE MARKET

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# COVID-19 IMPACT – AUTOMOTIVE MARKET TREND

Pre COVID-19



**C**onnected



**A**utomated



**S**hared & Services



**E**lectrified

# COVID-19 IMPACT – AUTOMOTIVE MARKET TREND

## Pre COVID-19


 **C**onnected

 **A**utomated

 **S**hared & Services

 **E**lectrified

## Post COVID-19

 **P**ersonalized

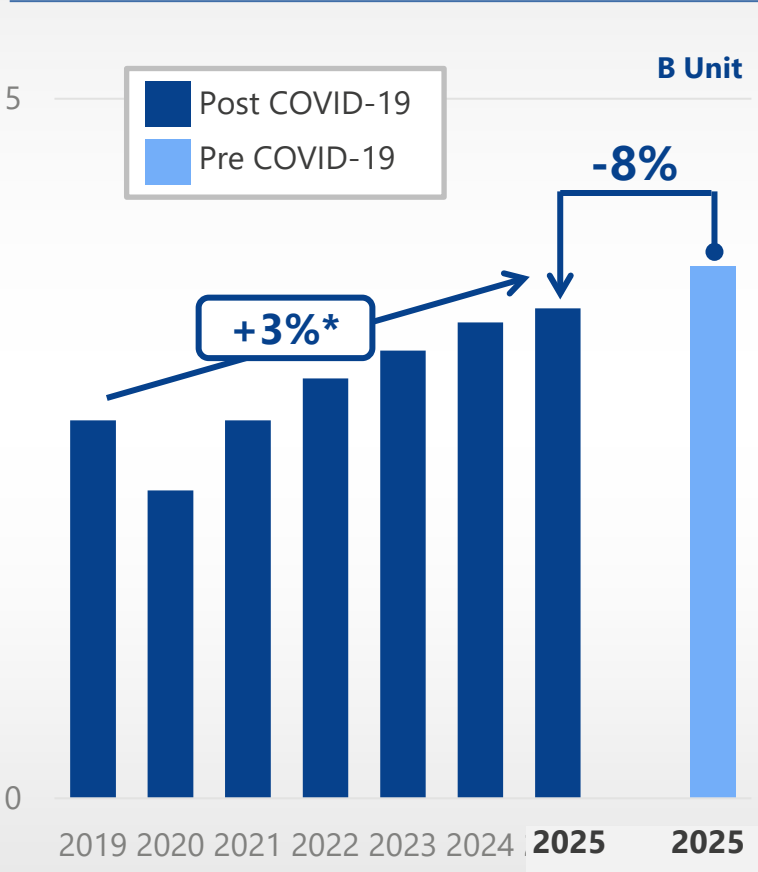
 **A**utomated

 **C**onnected

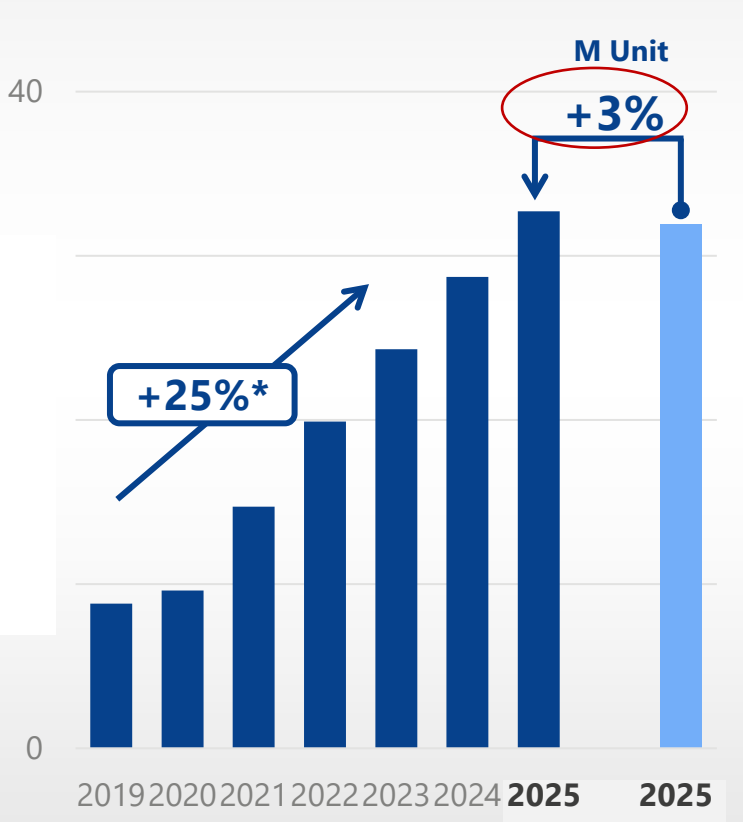
 **E**lectrified

# COVID-19 IMPACT – SYSTEM DEMAND

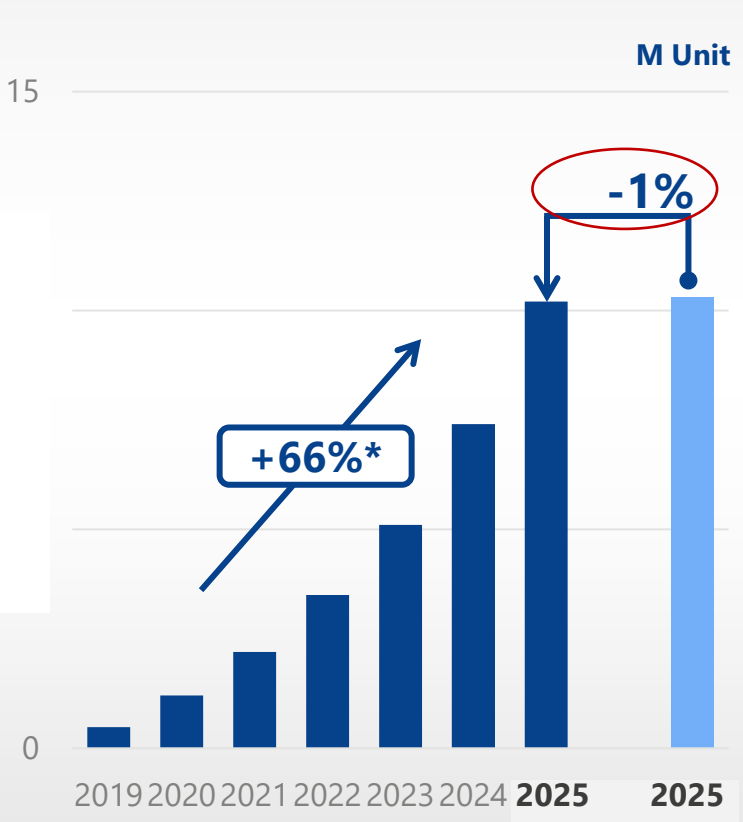
## Overall System demand



## Electric HEV/EV vehicle demand



## Autonomous ADAS DCU demand

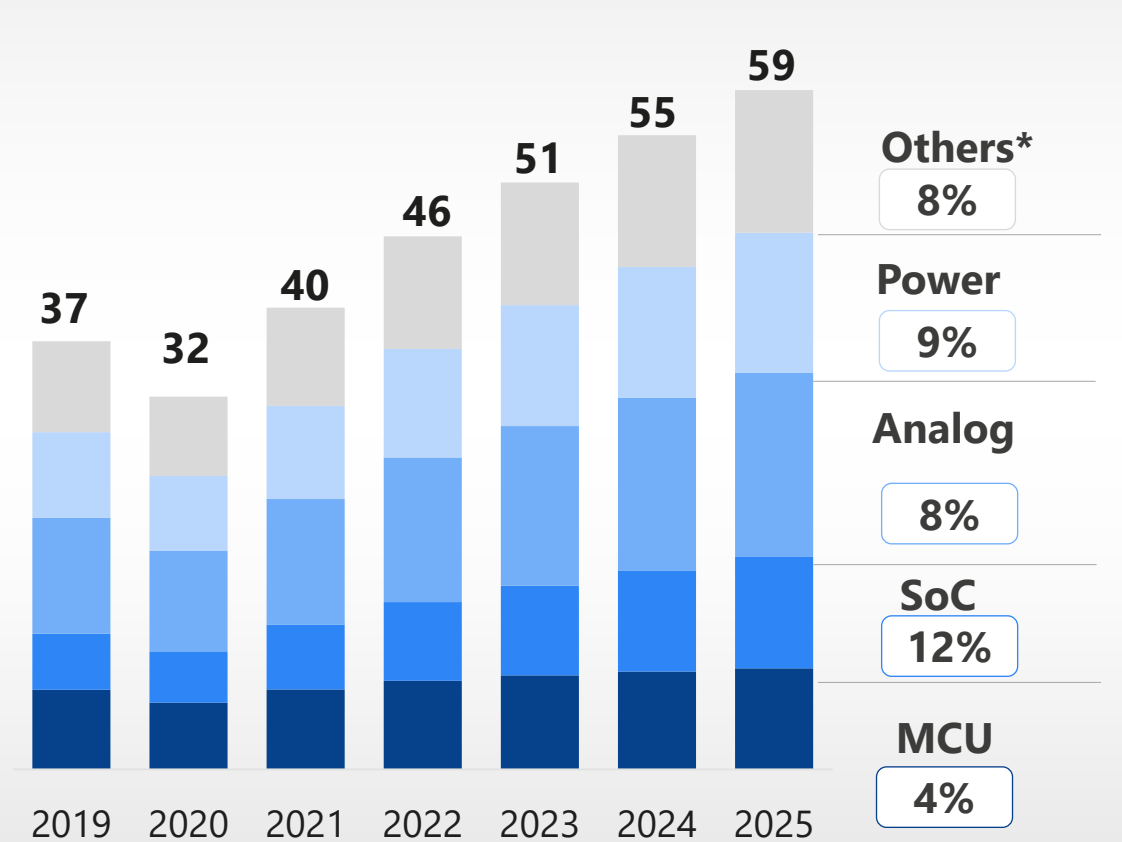
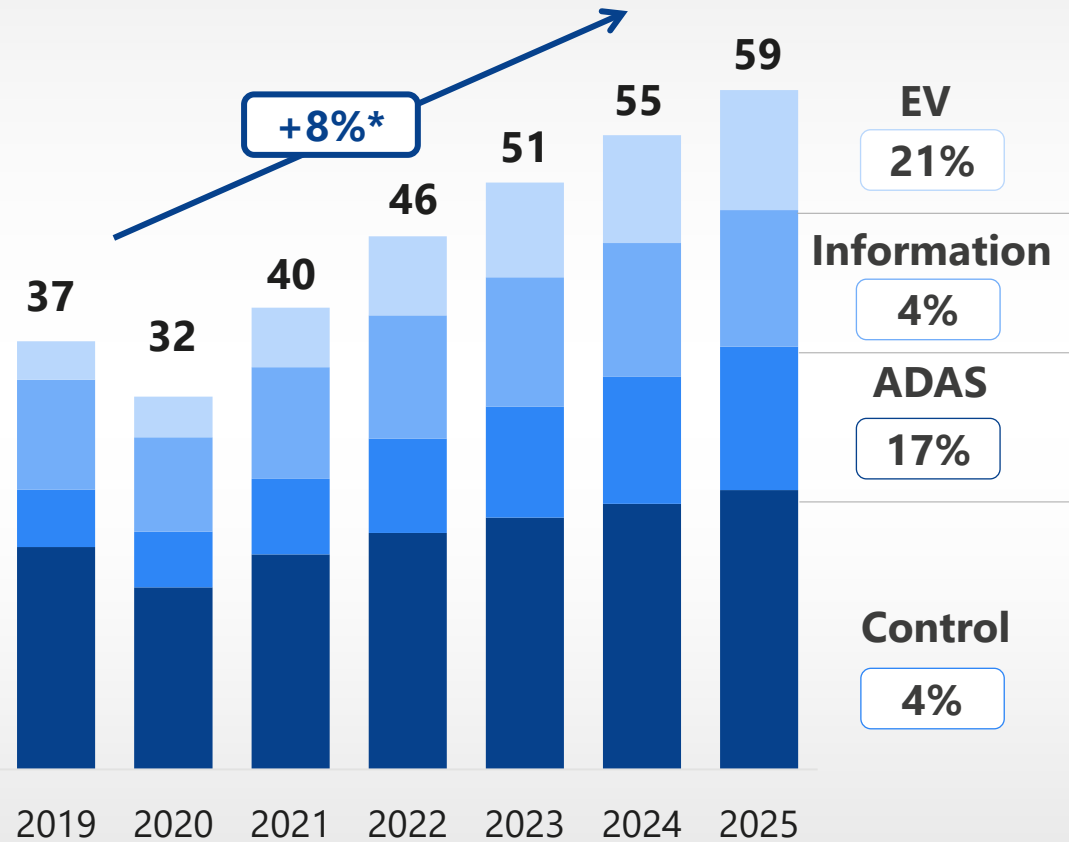


Source: Strategy Analytics data

# COVID-19 IMPACT – SEMICONDUCTOR DEMAND

Semiconductor demand by application Unit : B\$

Semiconductor demand by product Unit : B\$



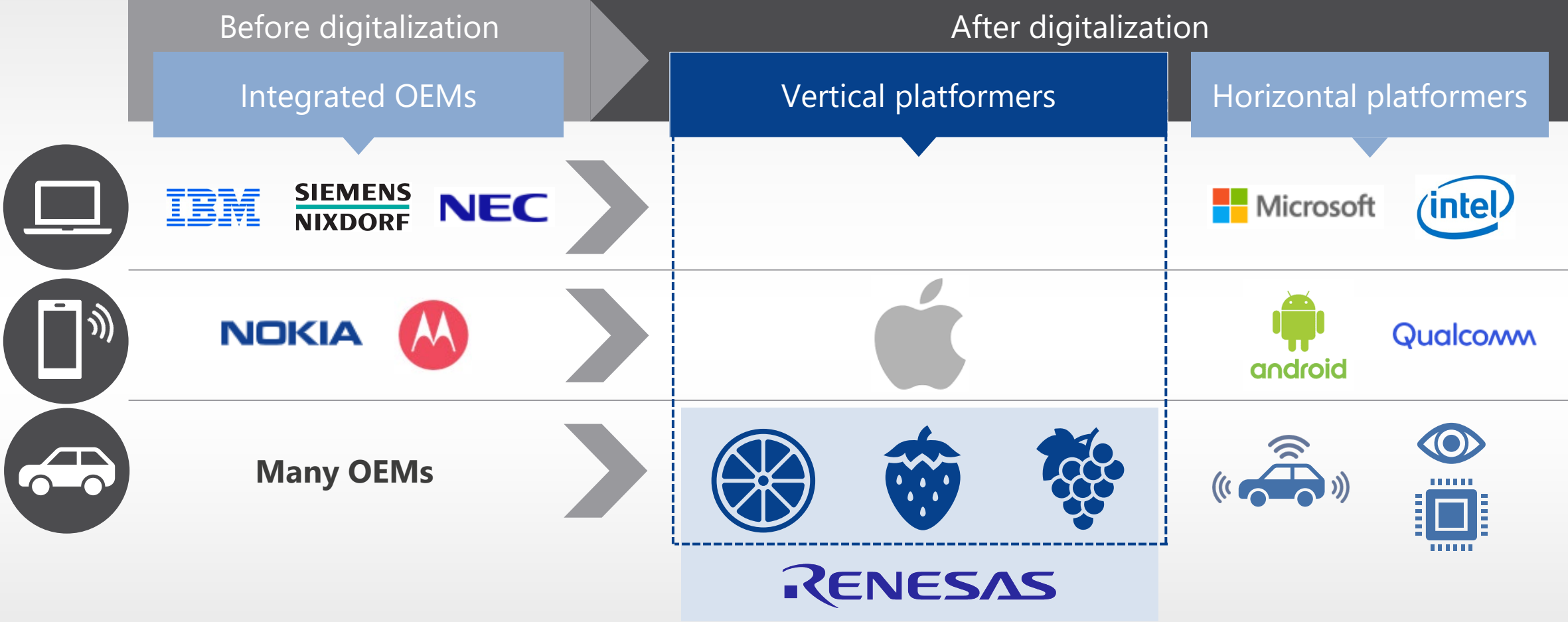
Source: Strategy Analytics data

# RENESAS DIRECTION & SOLUTION

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# LIVE AND LET LIVE

## AUTOMOTIVE SOC STRATEGY



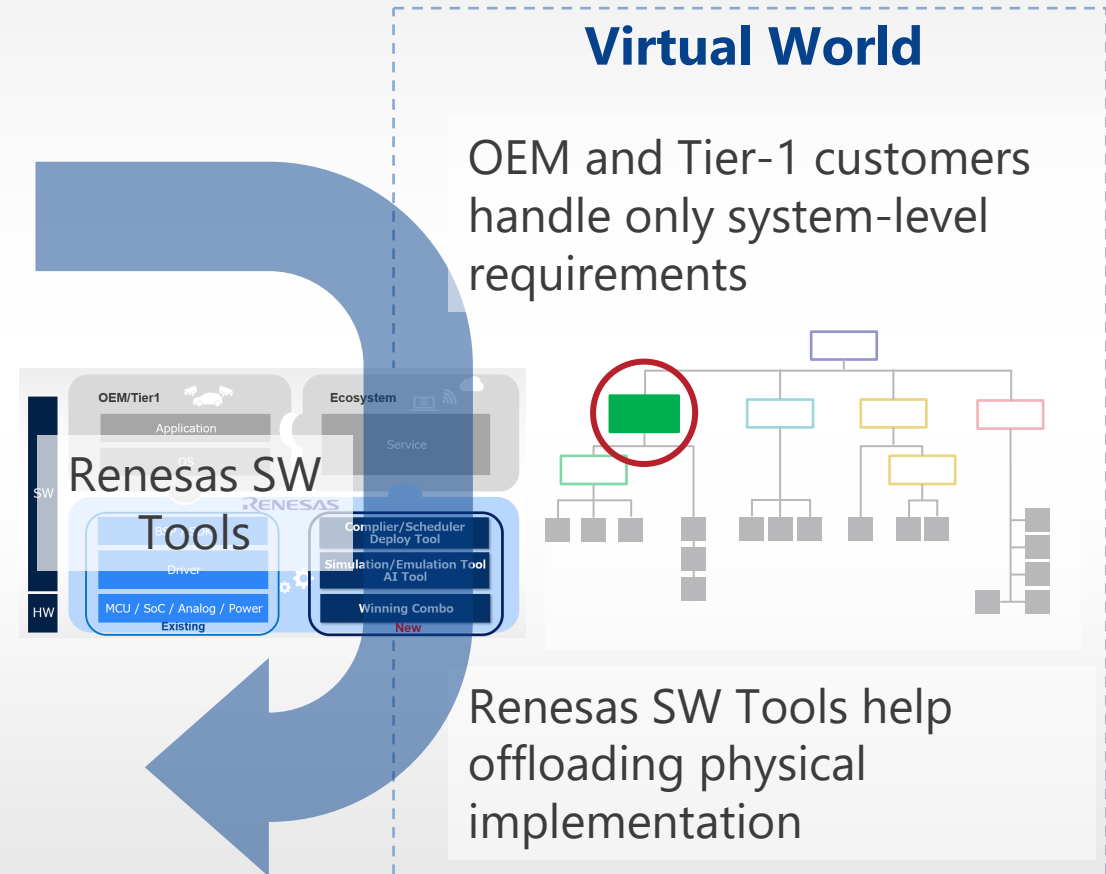
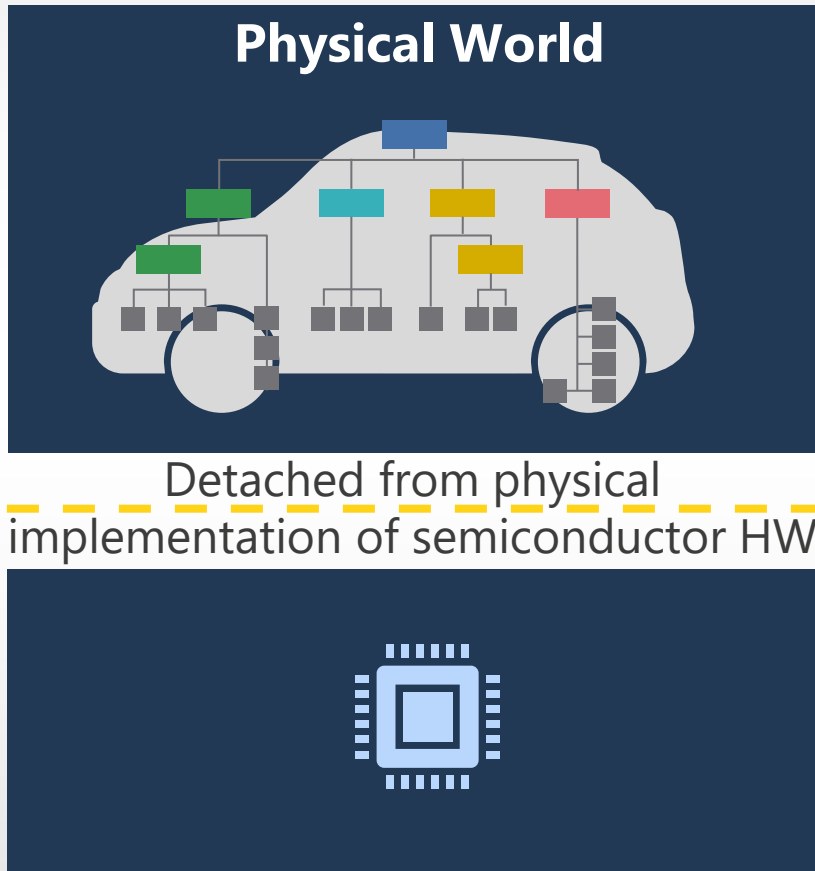
Help establish integrated platformers



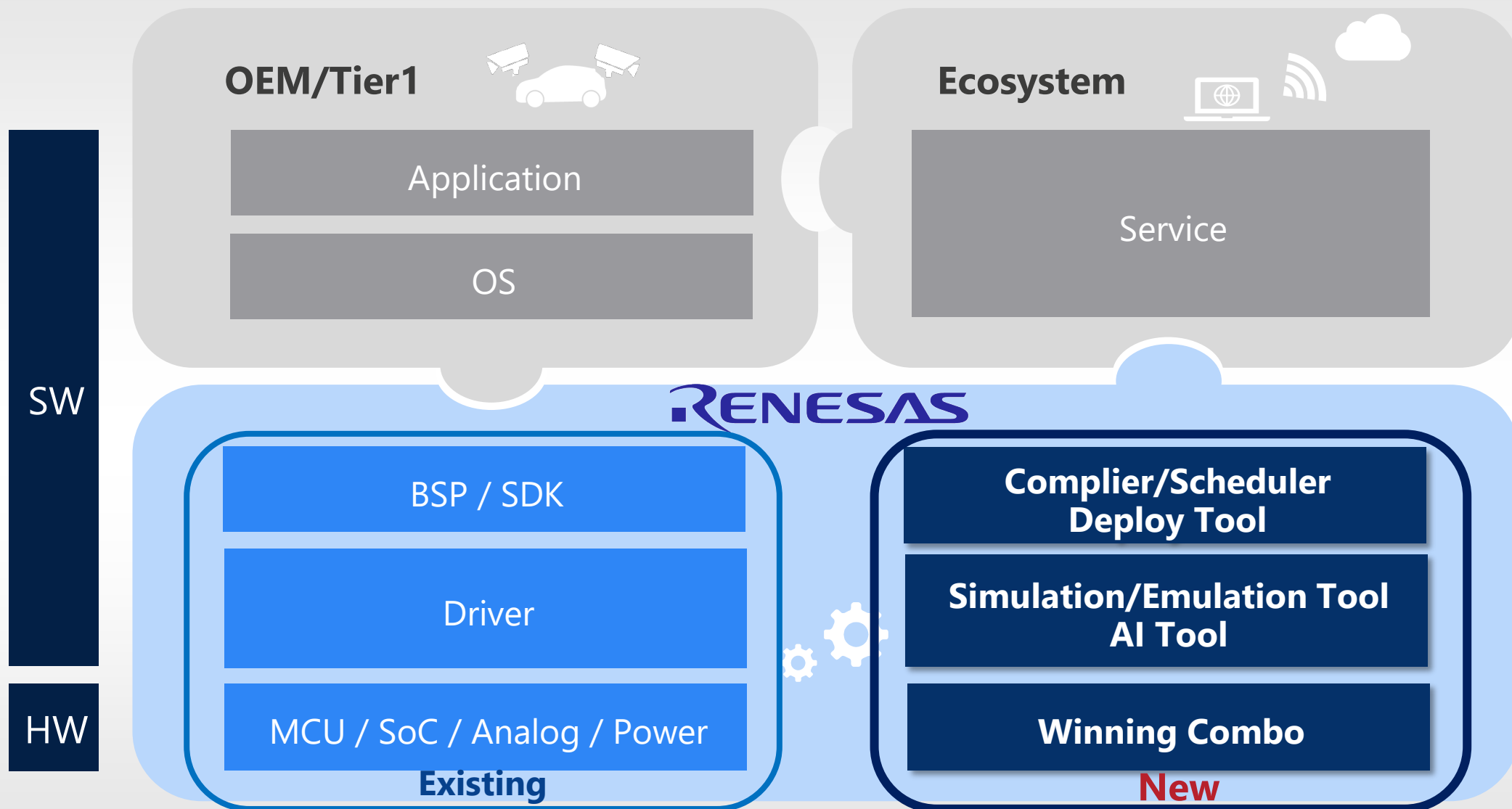
# ENGAGEMENT MODEL WITH VERTICAL PLATFORMERS

Renesas simulation tools help to free OEMs/Tier-1s from physical constraints

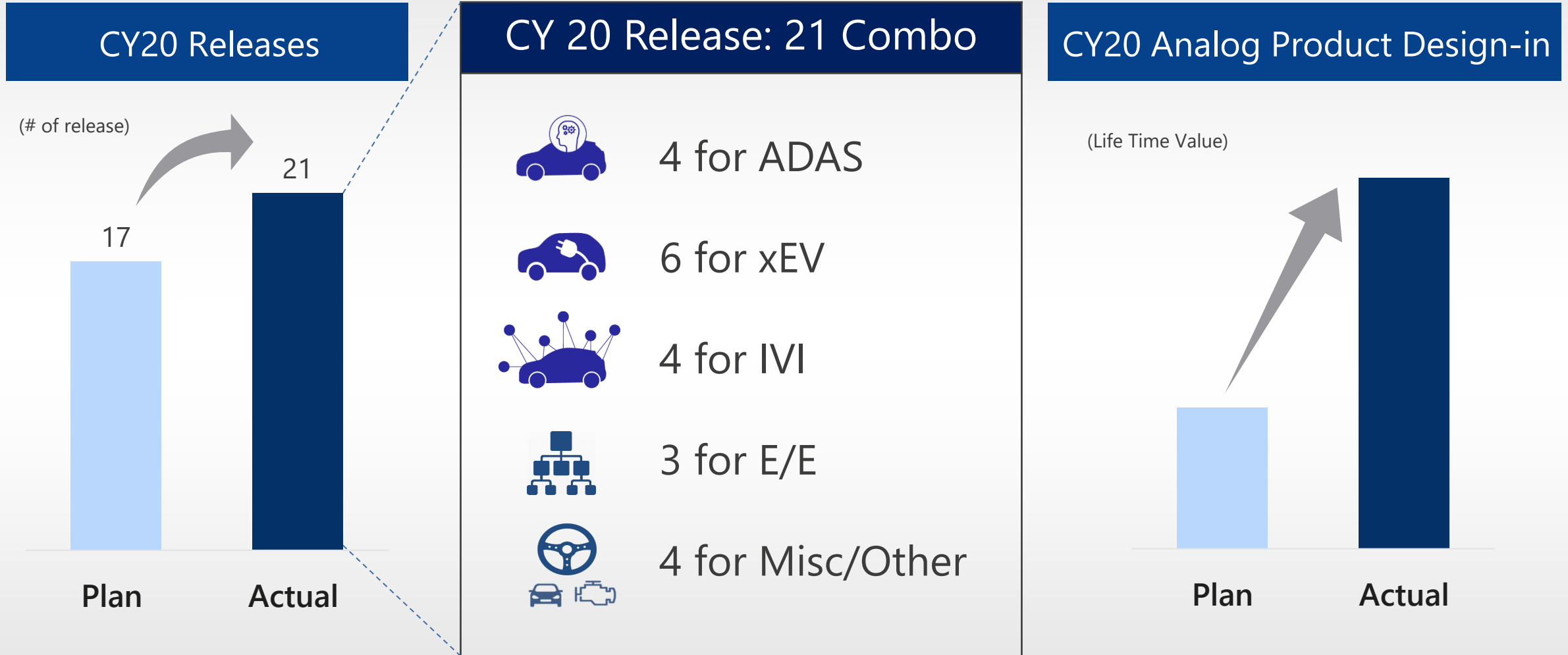
OEM  
Tier-1



# SOLUTION FOR POST COVID-19 – SOFTWARE PLATFORM FOR SERVICE



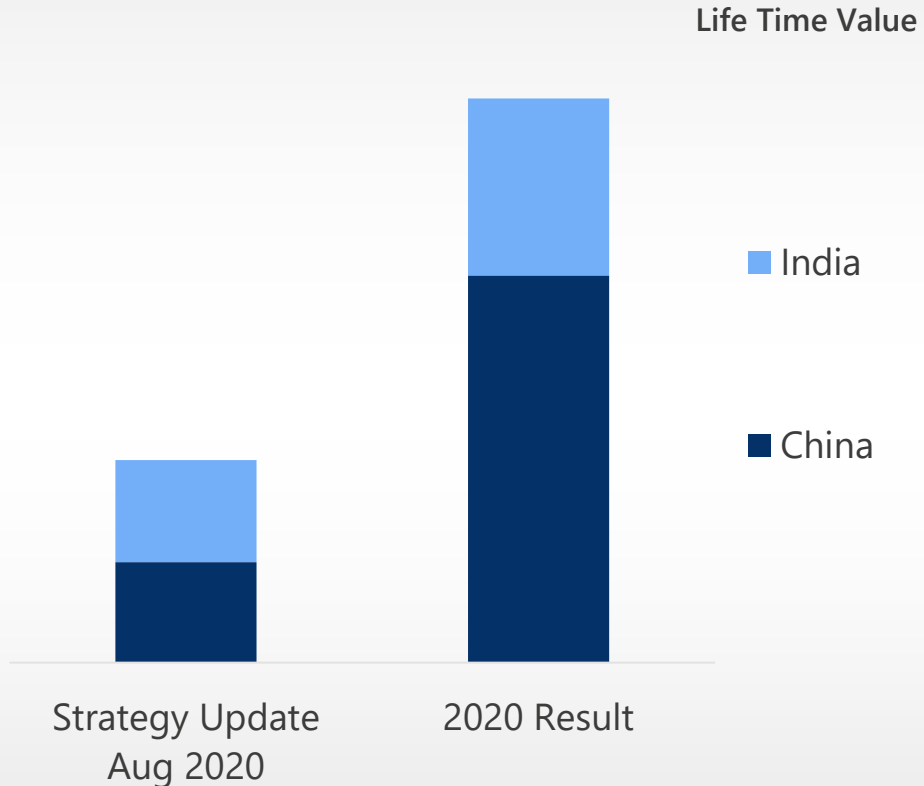
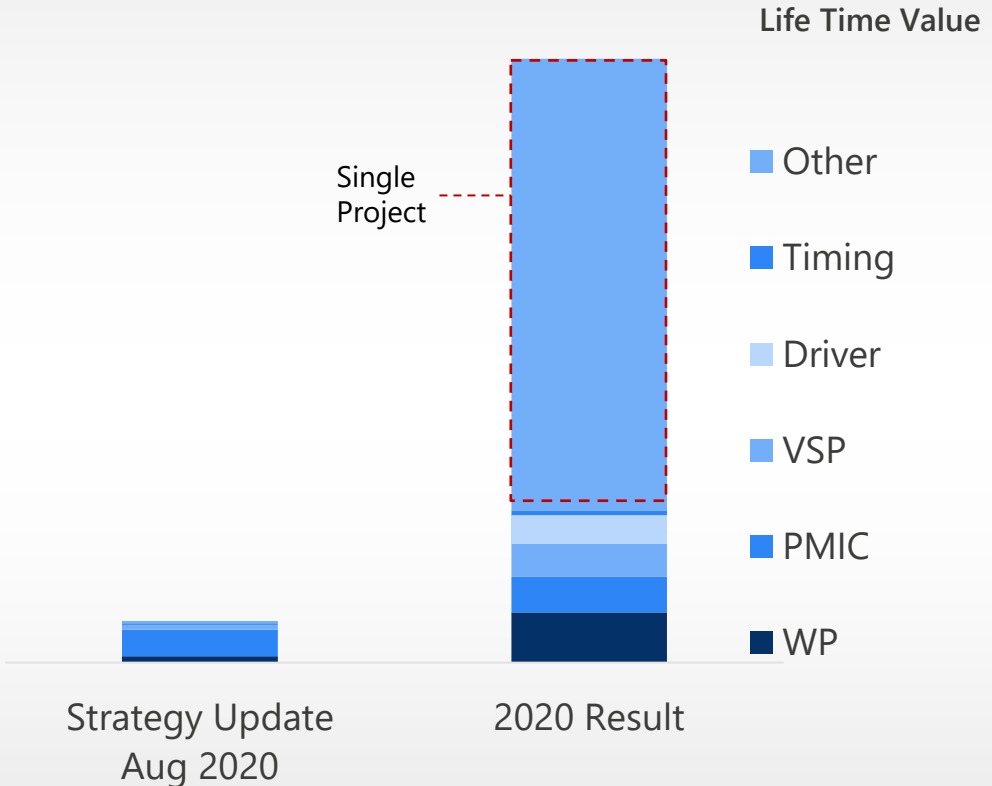
# TRACK RECORD – WINNING COMBO



# 2020 D-IN RESULT OF WINNING COMBO: ANALOG SPECIFIC

## By Analog Product

## For Emerging Countries



Accelerated Growth and Diversified Product Portfolio

Good Acceptance from the Emerging Markets

# RENESAS EV STRATEGY

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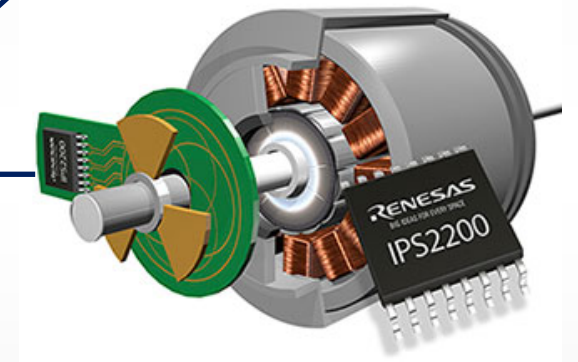
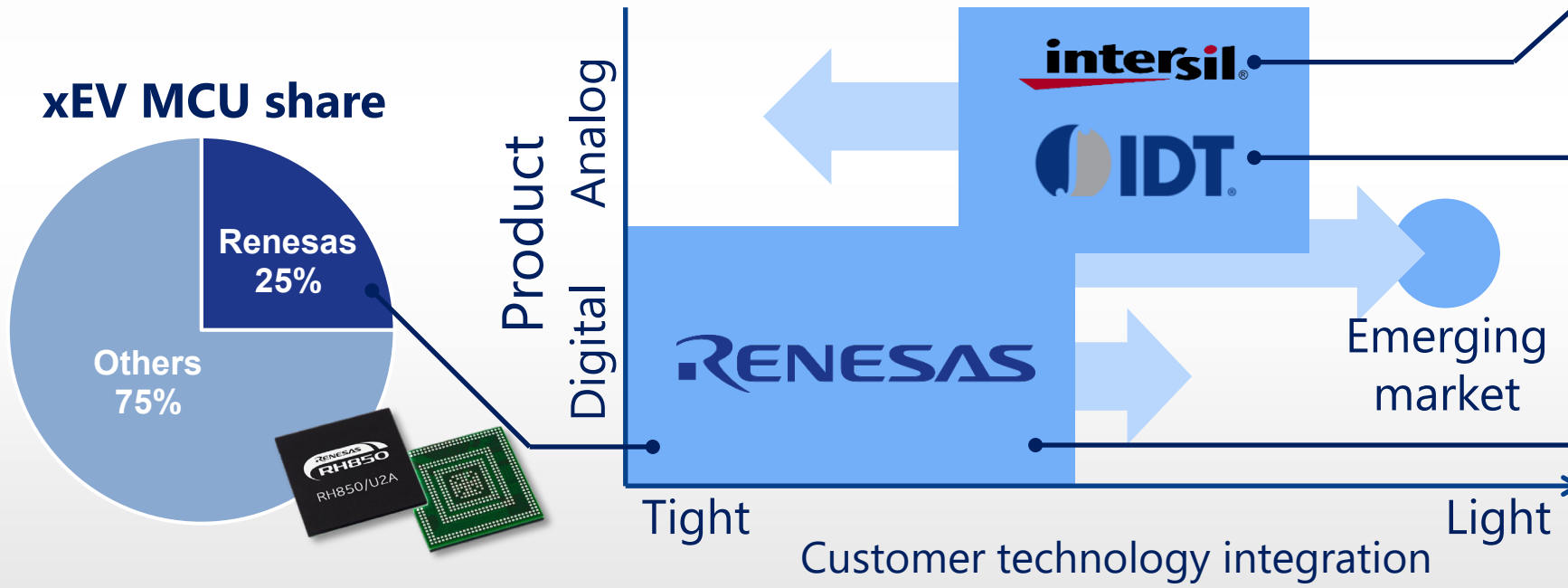
# xEV STRATEGY

## Existing assets

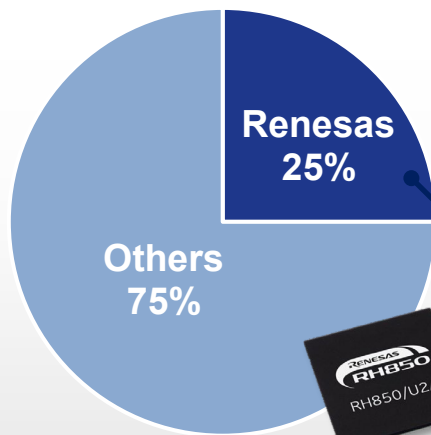
- MCU market share, integrated RDC
- Engagement with major xEV makers
- IGBT & MOSFET

## New assets

- Inductive Position Sensor
- Sensor Signal Conditioner
- Battery Management IC



### xEV MCU share



Source: Strategy Analytics, 2019 RDC: Resolver-to-Digital Converter

# IMPROVING OUR PENETRATION IN GROWING xEV MARKET

## Overall market\*

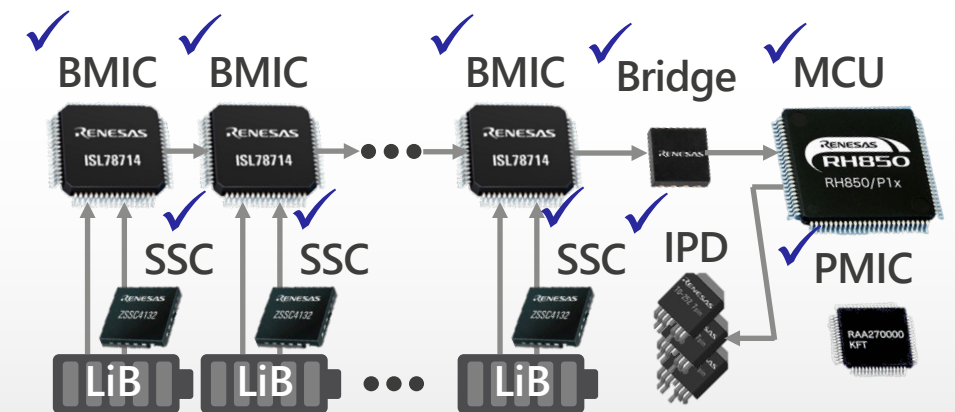
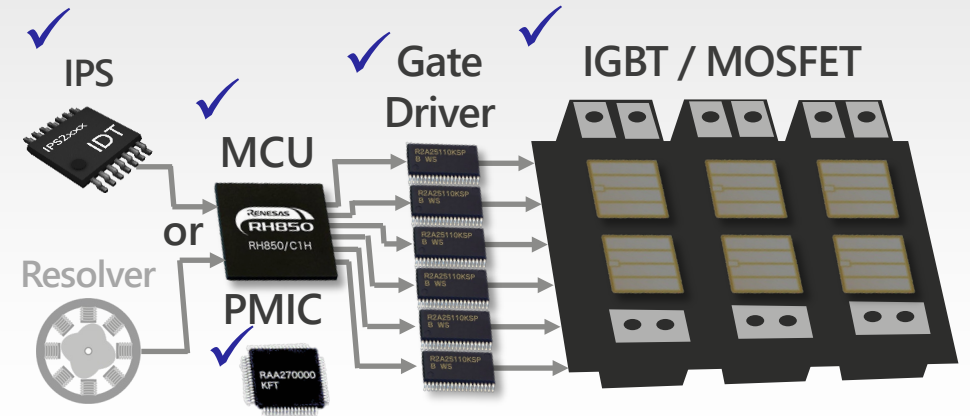
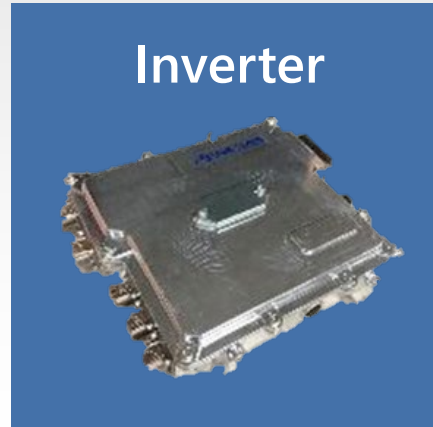
- Semi TAM=\$7.5B in 2025
- CAGR=21% (2019 – 2025)

## Differentiators

- Performance MCU
- Accurate sensing: BMIC, IPS & SSC
- Low loss IGBT & MOSFET

## Solution for emerging market

- Easy-to-Start
- Winning Combinations



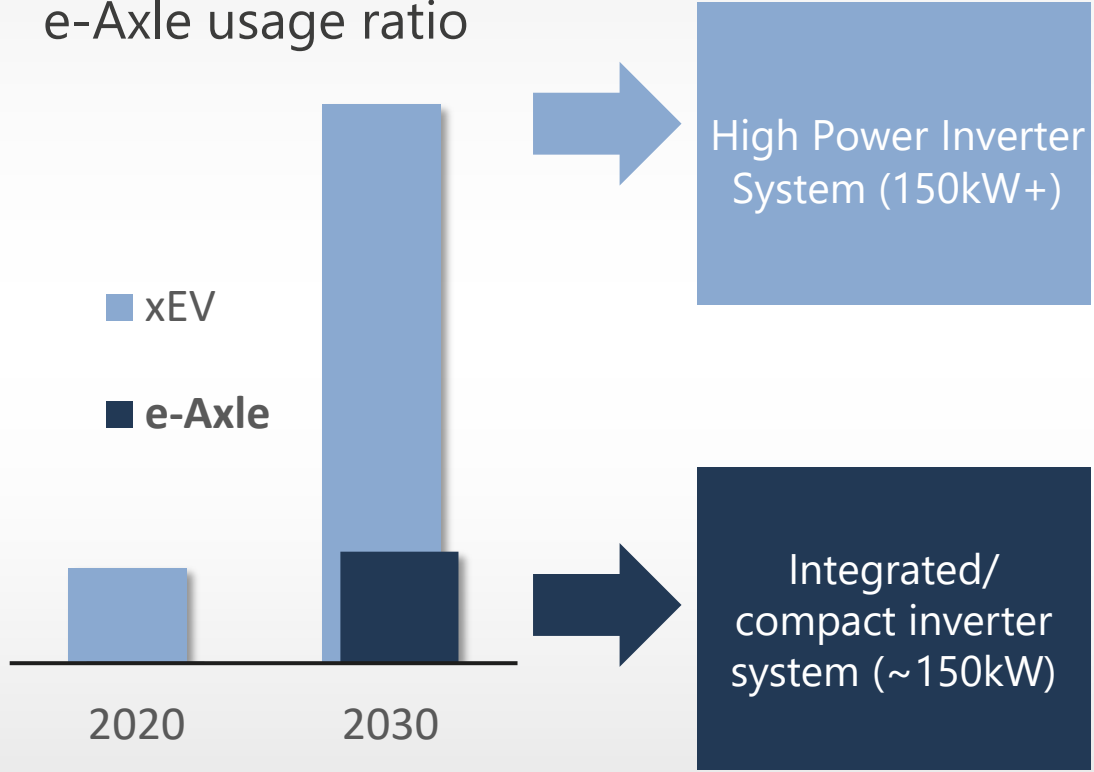
GDU: Gate Driver Unit  
 IPS: Inductive Position Sensor  
 SSC: Sensor Signal Conditioner  
 BMIC: Battery Management IC  
 PMIC: Power Management IC

\* Source: Strategy Analytics, 2021

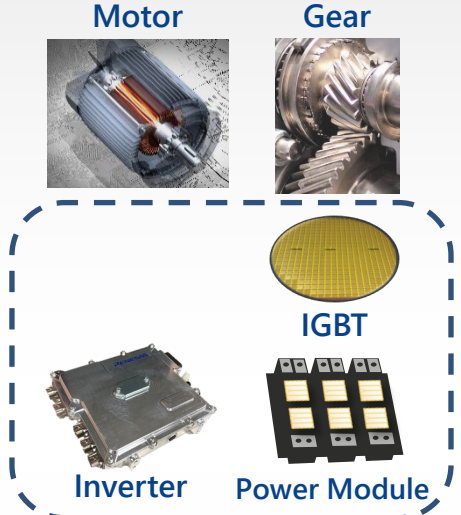
# CONTRIBUTION FOR ELECTRIFICATION (HIGH POWER, HIGH DENSITY)

Renesas provides solutions for different integration levels of xEV powertrain

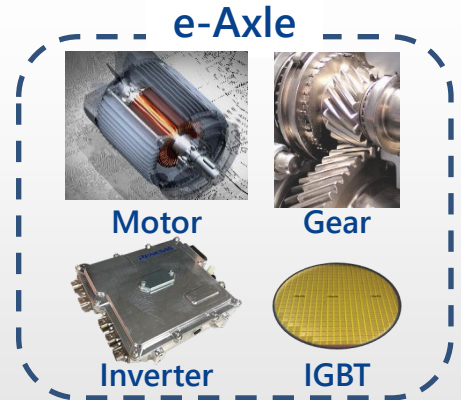
xEV Production Volume  
e-Axle usage ratio



- Inverters, Motors and Gears are **separately** designed for high power throughput
- Optimization at **module-level** is important → Collaboration with module makers



- e-Axle: High Integration Powertrain
- **Bare-Die level** performance is important to down-size the entire power train





[Renesas.com](https://www.renesas.com)