

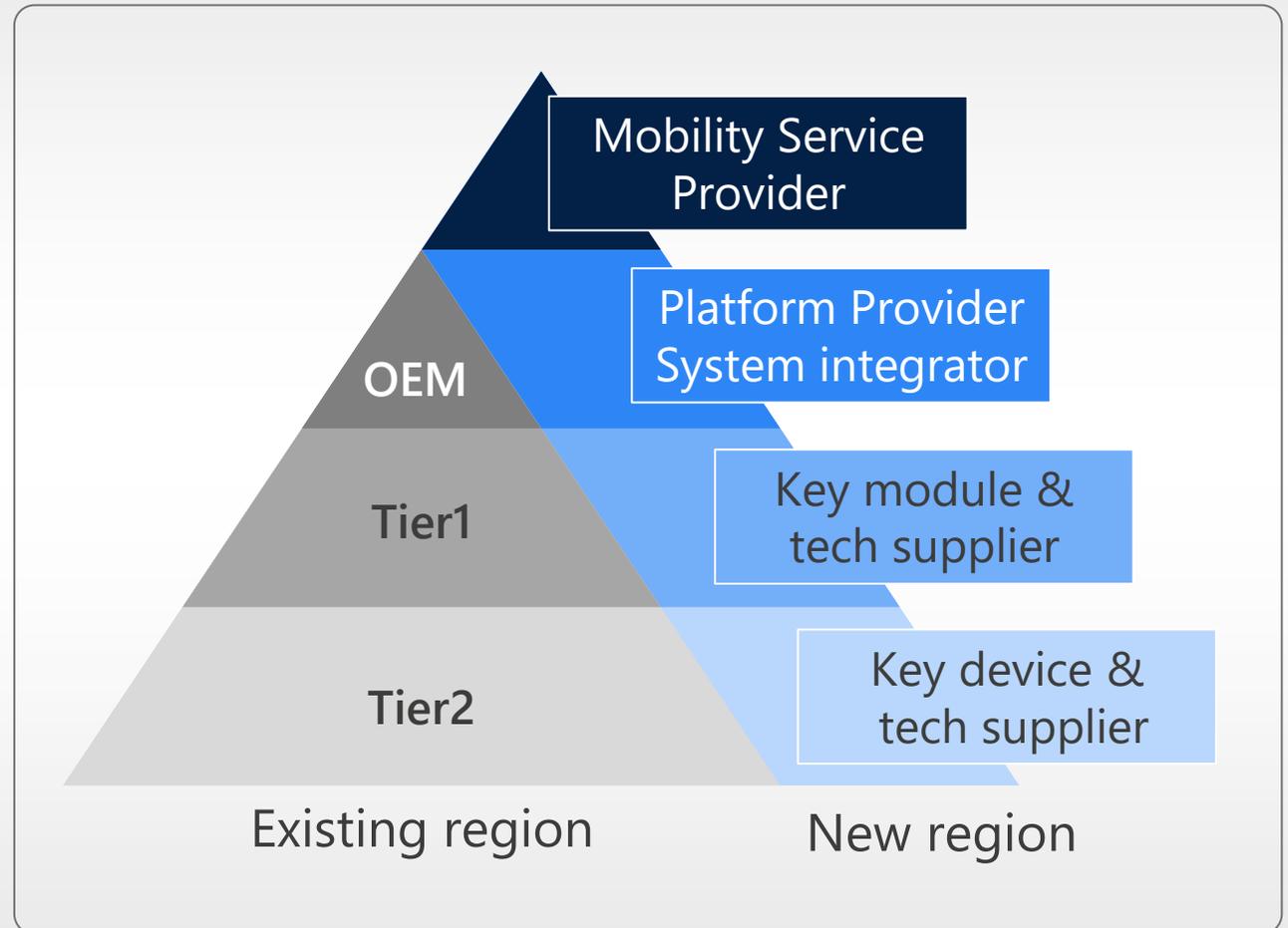
ABU STRATEGY UPDATE

AUGUST 6, 2020
AUTOMOTIVE BUSINESS SOLUTION UNIT
RENESAS ELECTRONICS CORPORATION

KEY DRIVERS FOR INDUSTRY TRANSFORMATION

Face increasing competition for the survival of the fittest

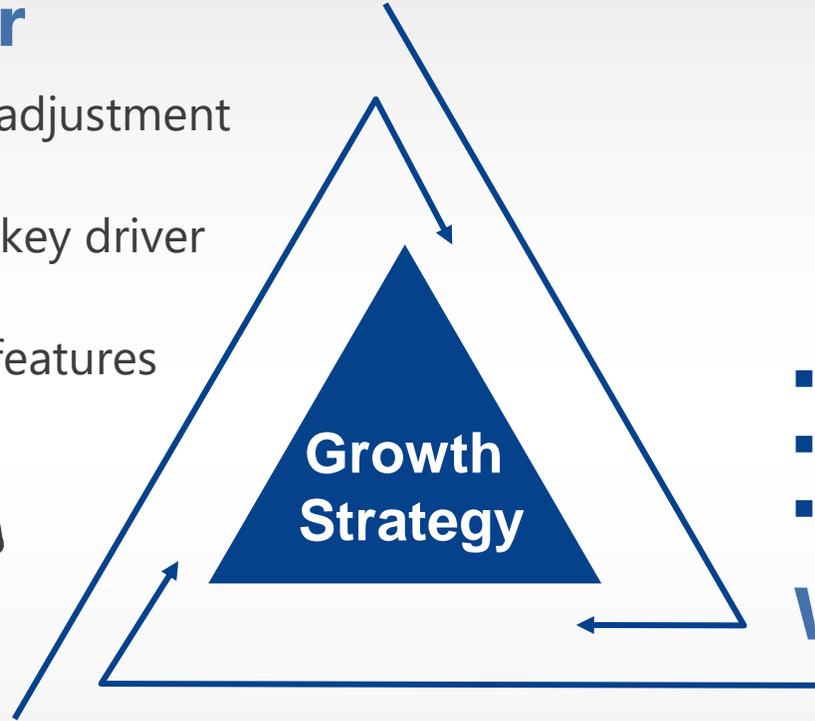
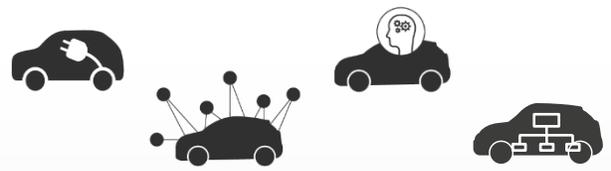
- De-coupling from geopolitical landscape and post COVID-19 supply chain localization reconfigures the industry eco-system
- Semi new entrants and tech platformers are changing landscape of competition and value chain



GROWTH STRATEGY – UNCHANGED, STEADY PROGRESS

Market growth driver

- Delay of TAM growth caused by adjustment for pandemic impact
- CASE + E/E architecture remains key driver after COVID-19
- More focus on driver-appealing features



- More \$ Content
 - System value
 - Short TAT
 - Emerging Player & Market
- 

Winning combo

Scalability

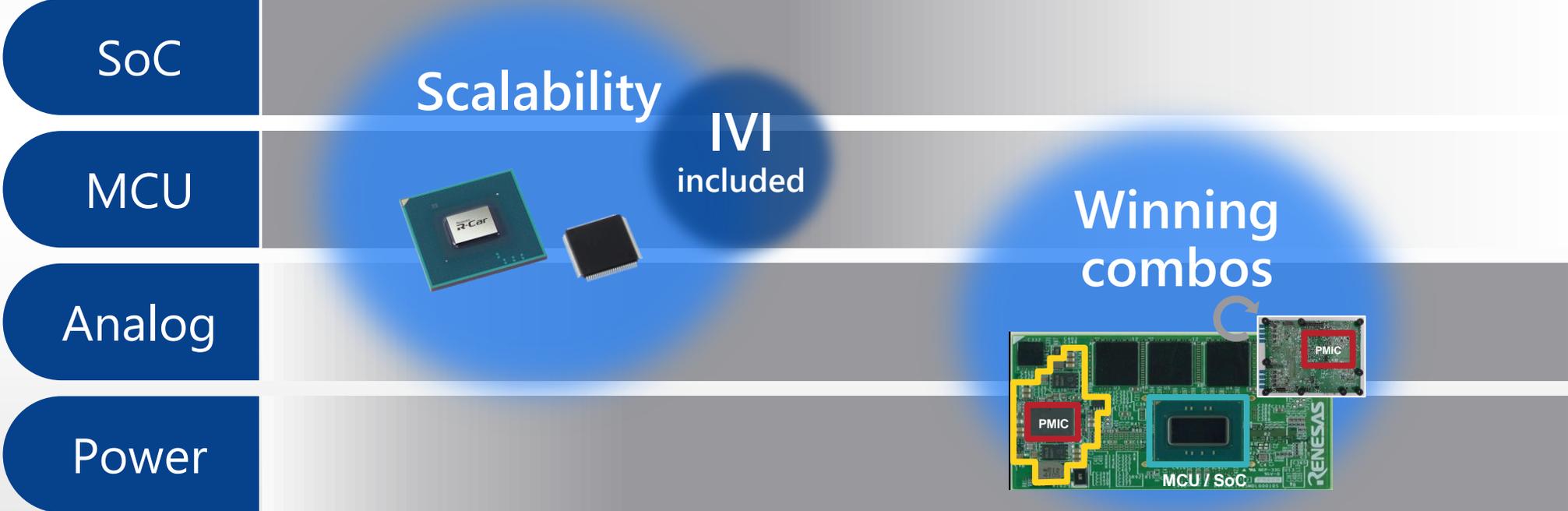
- More focus on incumbent vertical platformer OEMs



BIDIMENSIONAL APPROACH

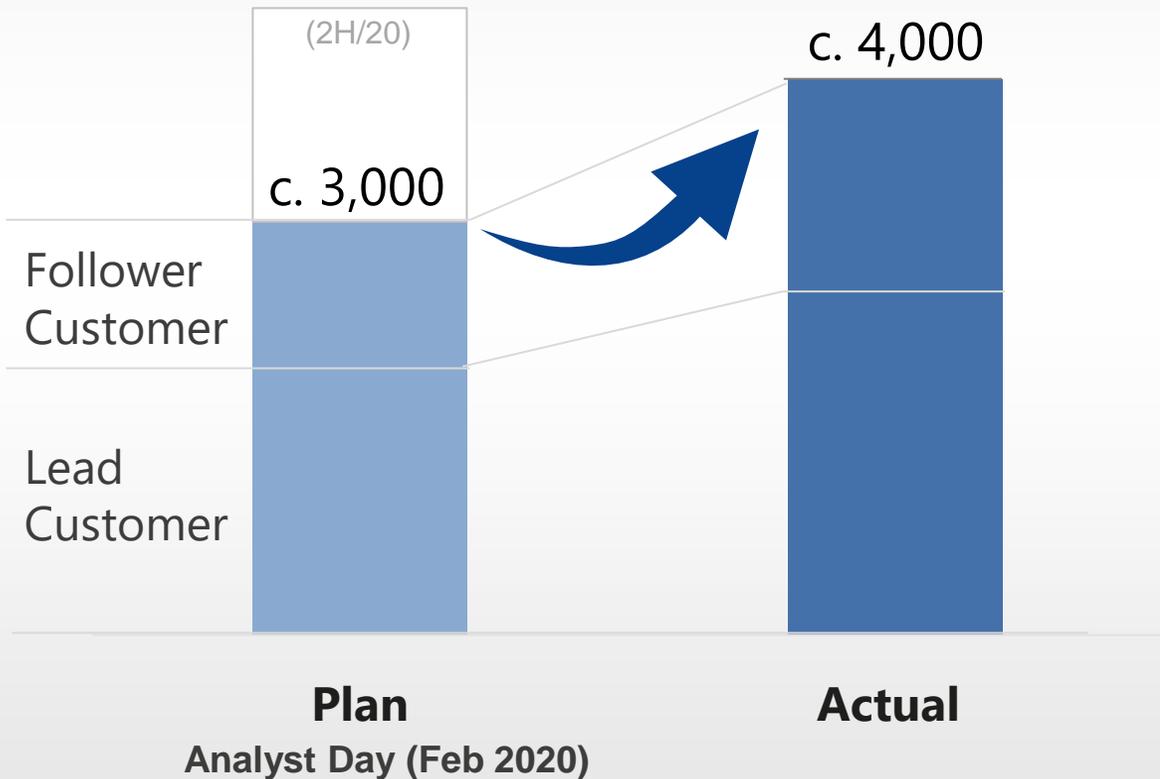
AUTOMOTIVE STRATEGY

← Customer technology integration →



OVERALL DESIGN-IN PROGRESS

1H/20 Design in



1H/20 Major Design in

ADAS/AD front camera
> \$1 billion

Handful of
sizable opportunities in funnel



ASP TREND - RENESAS VS SAM

Renesas vs SAM

SoC		High value-added new generation products launch for ADAS
MCU		Shift from legacy products to high value-added products
Analog		New product/project launch offset by specific products launch delay
Power		Shift from legacy category to growing high value-added products (e.g. IGBT for xEV)

DIVERSIFICATION OF CASE+E/E

CASE +E/E

Service Vehicle



- Unmanned and full autonomous
- More adoption of xEV platform
- Focus on "transportation" value
- Ex: Waymo One, DuTaxi, DeliRO,

Owner Vehicle



- User-centric ADAS with integrated system architecture to support driver
- Focus on "comfort" value
- Ex: MBUX, vw.OS, Arene

Renesas Offering

INTRODUCTION: WIRELESS POWER FOR AUTOMOTIVE IN-CABIN

Portable Power Ecosystem



Charge Smartphone everywhere
Charge Accessories anywhere

Leading the Charge

- Top Global Customers
- Shipped > 500M Devices
- Around 100M Transmitters



Automotive Fitness

- Turnkey Ref Design
- Very low EMI



High Efficiency

- > 75% end-to-end
- As fast as wired
- Cool operation temperature

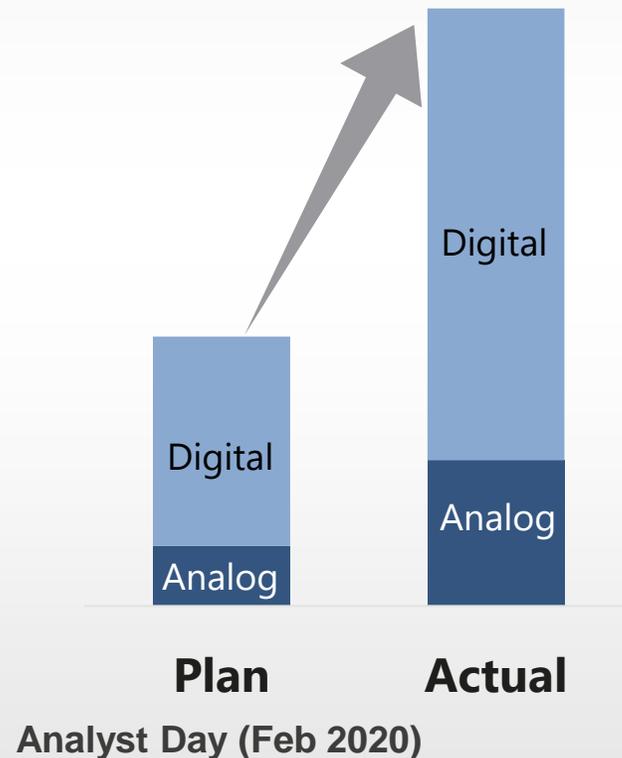


WINNING COMBO – TRACK RECORD

1H/20 Releases



1H/20 Design-in



Winning combo for inverter

- EV/HEV inverter for Great Wall Motor & major India OEM
- Winning combo (MCU RH850 & PMIC) and SOP in 2021



REINFORCEMENT OF ANALOG PROMOTION

Established analog focused frontline support



- Newly hired Sales and FAEs globally for analog support
- Established global analog promotion team to organize all analog Sales and FAE

Enhanced promotion support infrastructure

ISL78714 – LHON PACK MANAGER

- Up to 14 cell voltages
- Cell voltage measurement accuracy $\pm 2.0mV$
- **ASTL-C/D** coverage for cell voltage and temperature measurements
- 2 x GPIO and 4 x Temp Sensor Inputs
- Low power high security Daisy chain
 - Capacitor or transformer coupling
 - Support up to 420cells(x30)
- 64 lead TQFP package
- Production release 2Q/2019

BMS REFERENCE DESIGN – ISL78714 + RH850

- Complete evaluation platform
 - Setup and data logging via CAN and UART
 - Graphical user interface
 - Layout files (KiCad)
 - Low level drivers for RH850 peripherals and ISL78714
- Hardware reference manual
- Software reference manual
- Interface manual covers CAN, LIN and GLE

System Block Diagram

High voltage (pack) connectors Low voltage (chassis) connectors

- Developed promotion documents and training materials for analog
- Executed global training utilizing COVID-19 lockdown period

Enriched web contents

Related Videos

Renesas Automotive TechDays 2019
Take a glimpse of the Automotive TechDays 2019. A great chance for customers to interact with Renesas product experts and discover available digital and analog solutions.

Connected Gateway for Automotive
Discover Vehicle Computer 2, the complete evaluation platform that enables quick prototyping with Renesas' Digital and Analog chips and CERTIC software stack.

Over-The-Air Updates for Automotive
Find out how Renesas flash architecture software updates running. Save time maintenance.

Adding Entry Driver
Time of Flight (ToF) technology has become more popular thanks to its high performance, relative and easy to use. Renesas' new ToF sensor, the RFD5001, is a cost-effective, entry-level, accurate wide-range distance measurement.

Wireless In-cabin Charging for Automotive
Time of Flight (ToF) technology has become more popular thanks to its high performance, relative and easy to use. Renesas' new ToF sensor, the RFD5001, is a cost-effective, entry-level, accurate wide-range distance measurement.

Lidar System Solution
An SoC jointly developed by Renesas and Luster Tech is used for Luster Tech's Luster™. It is a 120-degree Field-of-View (FoV) that provides high-resolution detection of obstacles, systems and other capabilities in the vehicle vicinity and is used for use in combination with other sensors to ensure the safety and protection of the vehicle user (VOCU). Although the LQAS, with 30-degree FoV of view, was initially designed for ADAS and autonomous driving applications, the technology could also be used to enable social distancing management systems. Watch the video to learn more (Luster Tech).

Advanced Guided Vehicle System
Renesas safety controller MCU RH850F10 is used in the development of Automated Guided Vehicle (AGV) in the specific COVID-19 world of mobility. AGV are expected to be a solution to increase distancing in home facilities.

Integrated Cockpit Automotive
Save cost and design effort in functional safety with Renesas' scalable Hi-Car roadmap, providing a robust freedom of preference between the Cluster and Android systems.

Battery Management Solution For Electric Vehicles
Save time and cost with the use of the reference design containing both Battery Management IC (ISL78714) and ASL IC.

Integrated Cockpit Automotive
Save time and cost with the use of the reference design containing both Battery Management IC (ISL78714) and ASL IC.

LiDAR System Solution
With many restaurants and shops turning to delivery, the need for an efficient, fast-moving micro-robot is greater than ever. Renesas offers a complete robotic system solution with high reliability and innovative battery management and electronic blocks.

Hi-Car Protection System Solution
It is important to provide frequent ventilation, especially in cars and shared vehicles. Renesas offers an IP68-rated micro-robot that provides an effective range of CAN/RS485 and can use an array of analog and power devices for the use in response units.

- Increased Web content specialized for analog and its Winning Combo
- Added automotive solution to Renesas COVID-19 site (including Lidar)

SUMMARY

Post COVID-19

- Adjusted timeline of TAM growth
- De-coupling: geopolitical and supply chain decentralization
- Semi new entrants and tech platformers – new landscape

Growth strategy

- Bidimensional approach: Scalability and Winning combo
- More focus on platformer OEMs to leverage our strength
- More focus on driver-appealing features

Steady progress

- ASP growth by product mix shift
- D-in overachieve with large-scale win and follower expansion
- Winning combo release and success cases
- Analog promotion reinforcement

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