

# AUTOMOTIVE STRATEGY

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RENESAS ELECTRONICS CORPORATION

# FINANCIALS

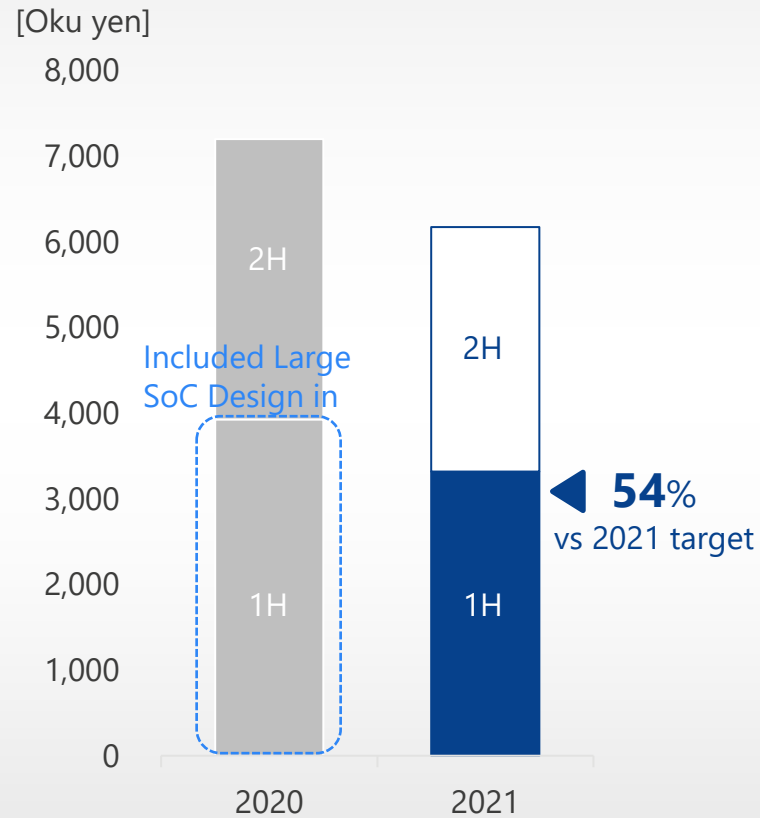
	2019 Adjusted*1	2020 Adjusted*1	Long-term target*1 (Dialog included)			
			Industrial, Infra and IoT	Automotive	Total	
Revenue	6,204 oku-yen	6,357 oku-yen	➤	Grow @SAM++	Grow @SAM	Grow @SAM+
Gross margin	43%*2	48%*2	➤	≈60%	≈45%	50-55%
Operating margin	12%	19%	➤	30-35%	20-25%	25-30%

\*1: FX 1USD=100yen, 1EUR=120yen. Continuing business only

\*2: After reclassification (part of SG&A reclassified to CoGs and R&D)

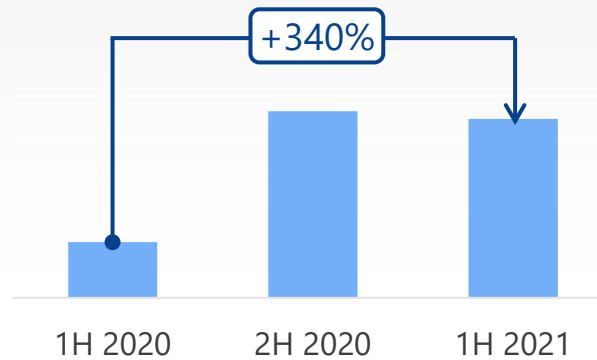
# NEAR TERM PROGRESS – DESIGN-IN

## Overall progress



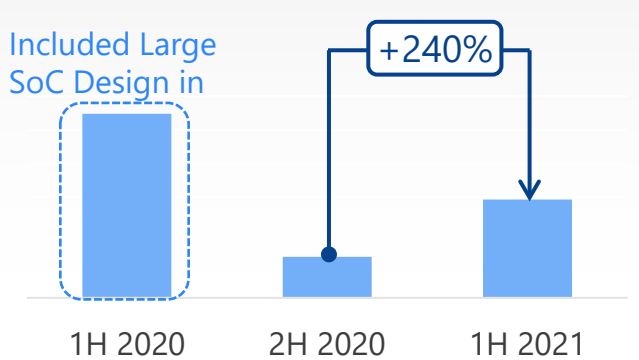
## Segment trend

### Analog & Power

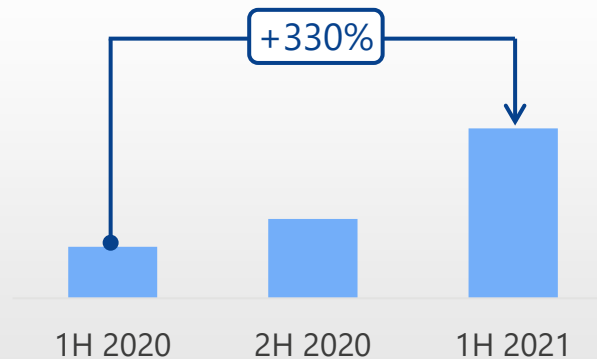


### ADAS/xEV/Gateway

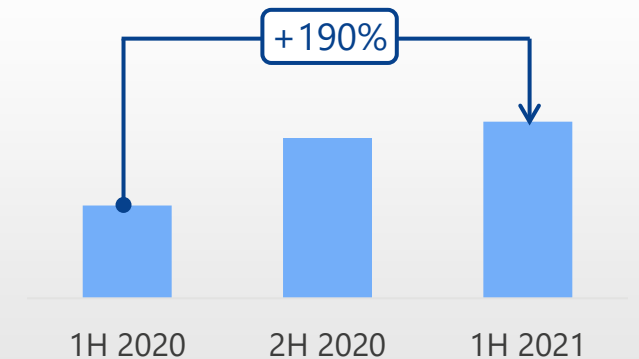
Included Large SoC Design in



### Emerging customer

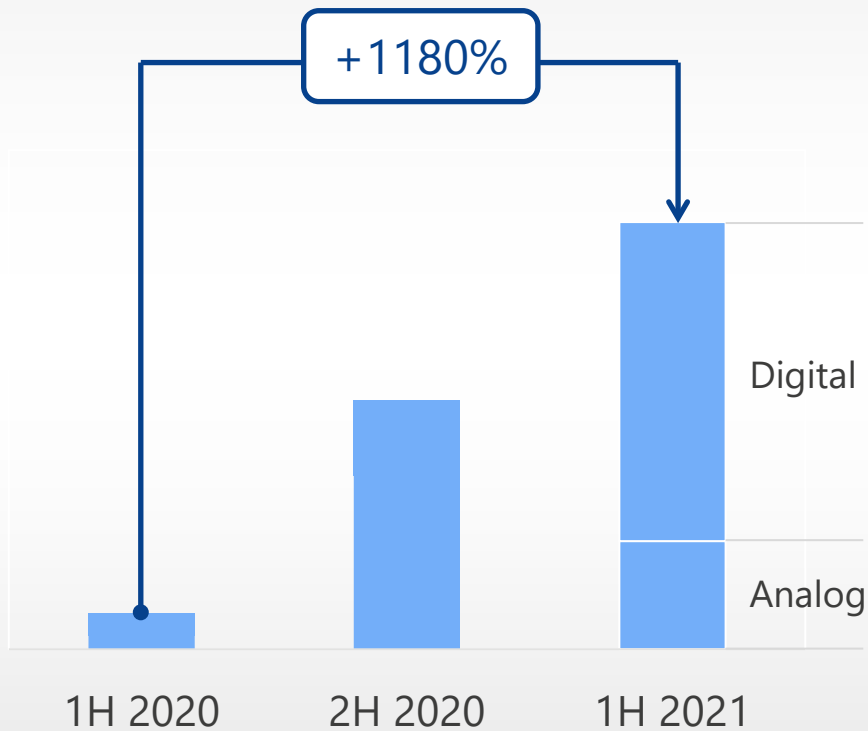


### Middle size Design in (Under 100oku)



# NEAR TERM PROGRESS – WINNING COMBO

## Design in trend



## Design in record in 1H 2021

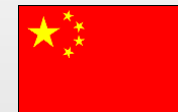
### ADAS

- Front camera(R-Car & PMIC) for premium Germany OEM & Korean Tier1



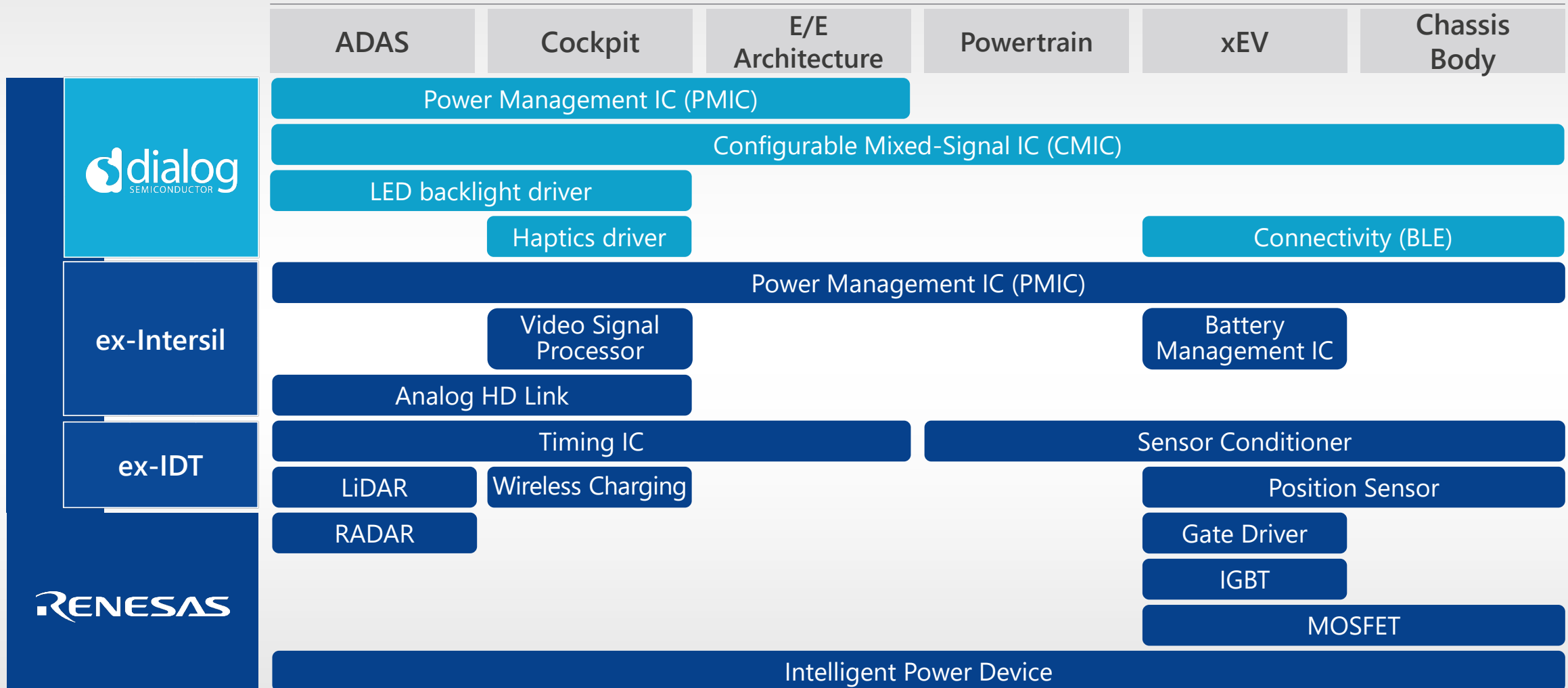
### xEV

- Battery Management System(MCU RH850 & BMIC) for Chinese Tier1



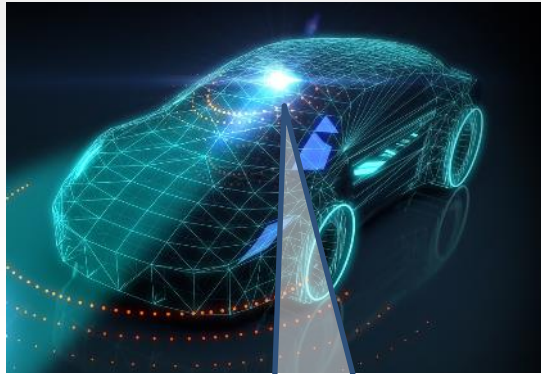
# DIALOG SYNERGY - EXPANDING PRODUCT PORTFOLIO

## Application Domains



# DIALOG SYNERGY - WINNING COMBOS

Smart Camera



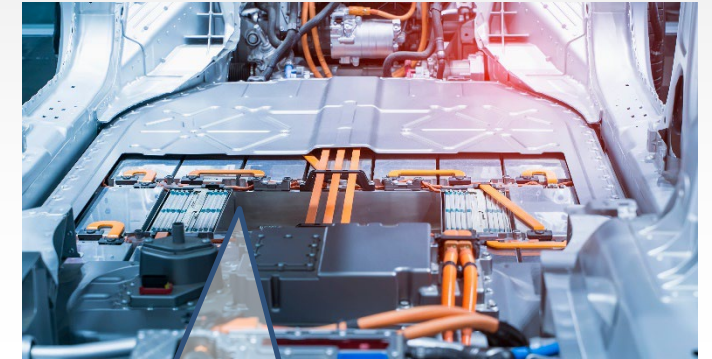
Vehicle Computing, IVI



Tire Pressure Monitoring System



Wireless Battery Management System



R-Car SoC  
+ Dialog PMIC

R-Car SoC  
+ Dialog PMIC

Dialog  
Haptics driver  
LED driver

Dialog  
BLE

Multi-cell wireless BMS      1-cell wireless BMS

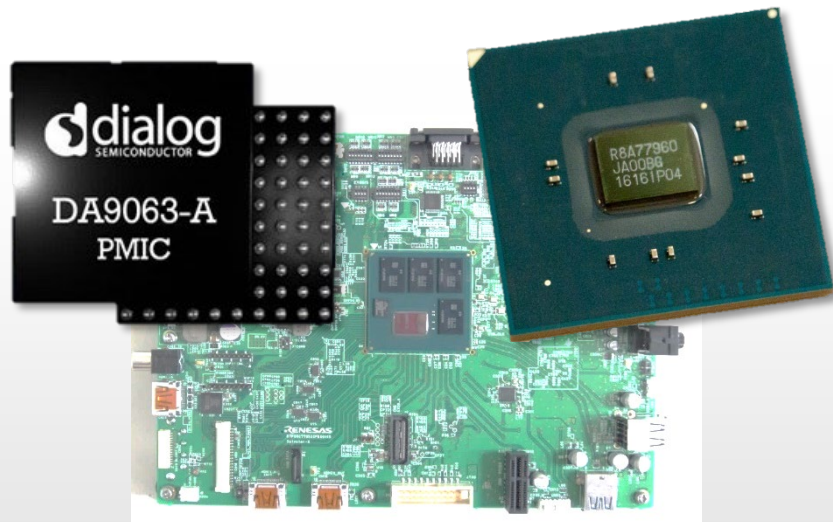
Proof-of-Concept in our lab

BMIC + MCU + Dialog BLE

# DIALOG SYNERGY - X-SALE OPPORTUNITIES / 2 EXAMPLES

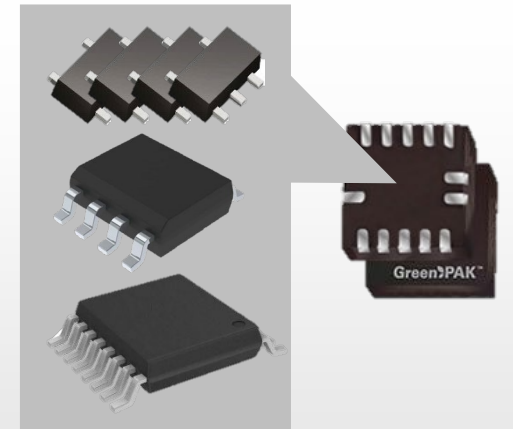
## PMIC for Renesas R-Car SoC

- Scalability and flexibility advantages while distributing heat dissipation in elevated temperature environments.
- Proven combination with R-Car starter kits. The starter kits are available for the user.
- AEC-Q100 qualified devices



## Dialog GreenPAK(CMIC) solutions

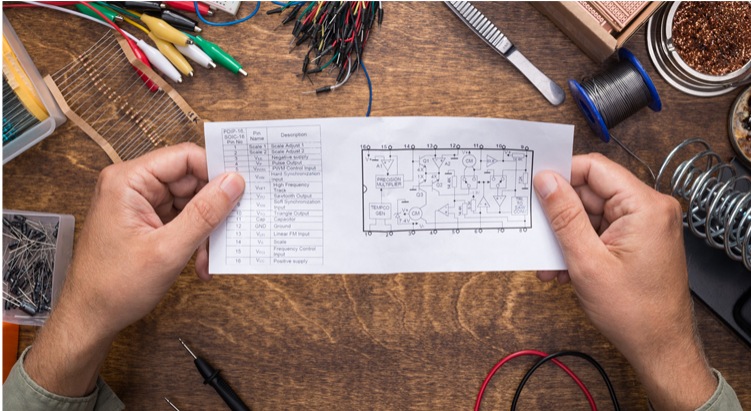
- A wide variety of mixed-signal functions can be designed within a very small, low power single integrated circuit.
- Renesas & Dialog engineers propose how GreenPAK can reduce the BOM in the board design.
- AEC-Q100 qualified devices





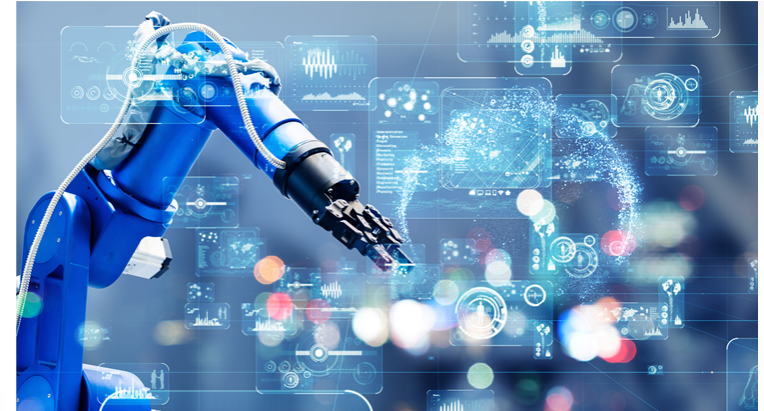
# DIALOG SYNERGY - A&P MODERNIZED

## Existing Renesas methodology



- Designed individually
- Depended on craftsmanship

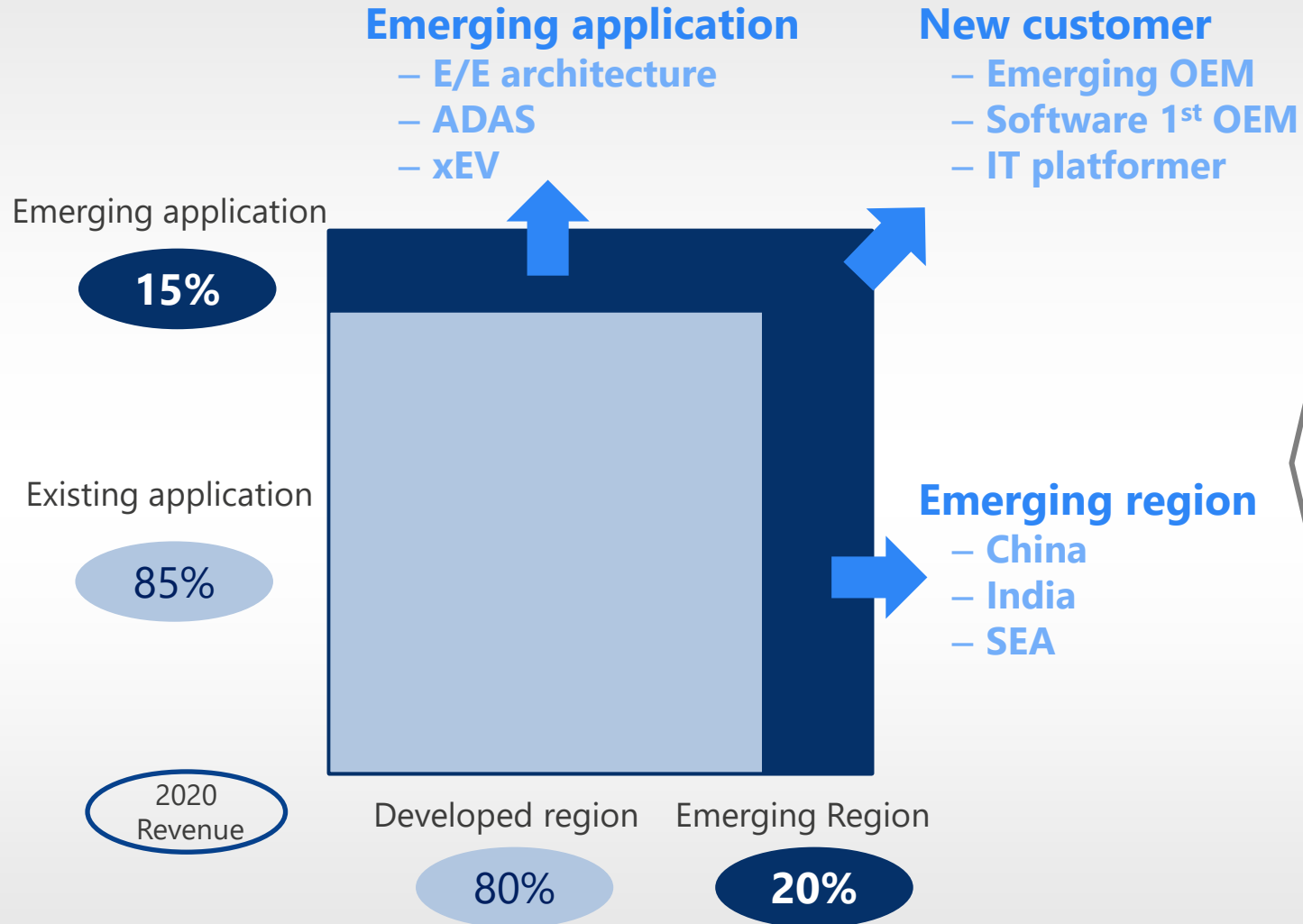
## Introducing Dialog methodology



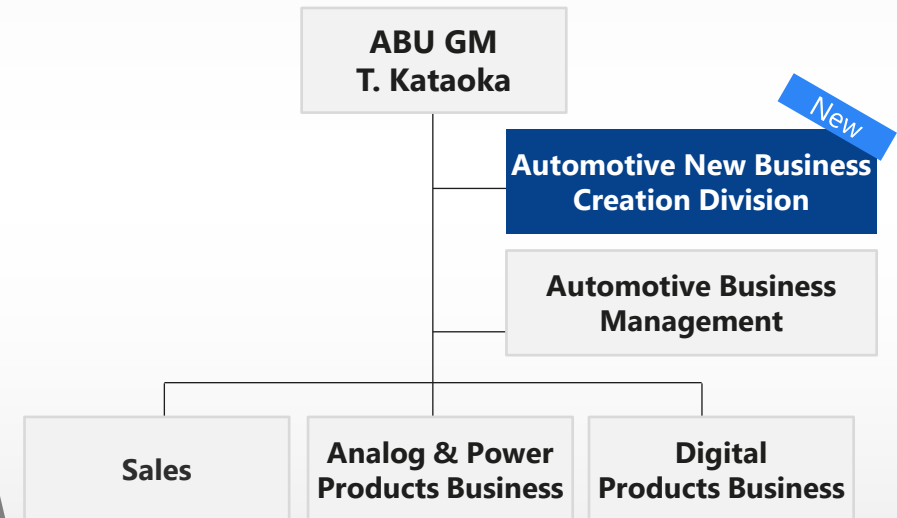
- Standardized design methodology
- Standard and common IP
- State of art EDA



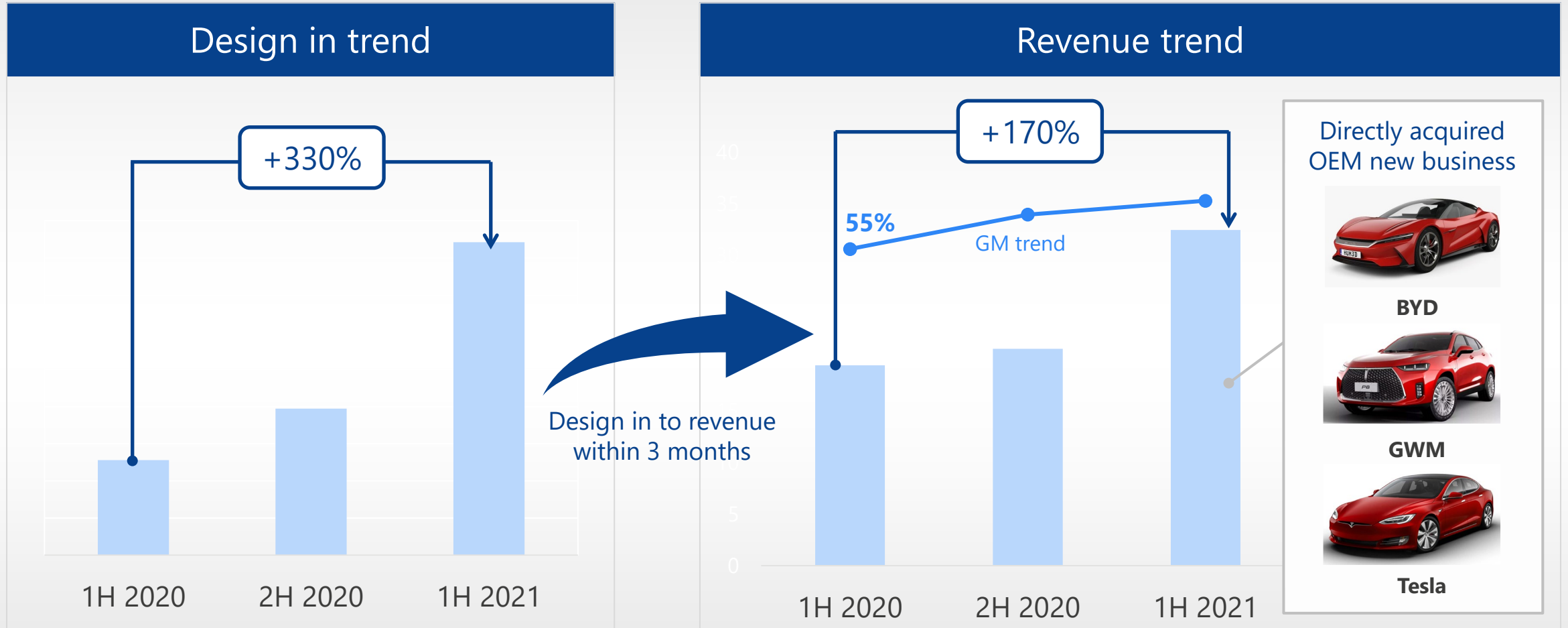
# NEW BUSINESS GROWTH



- Established the dedicated organization from July for new business growth
- Operate with start-up mindset, more agile business process and incentive scheme

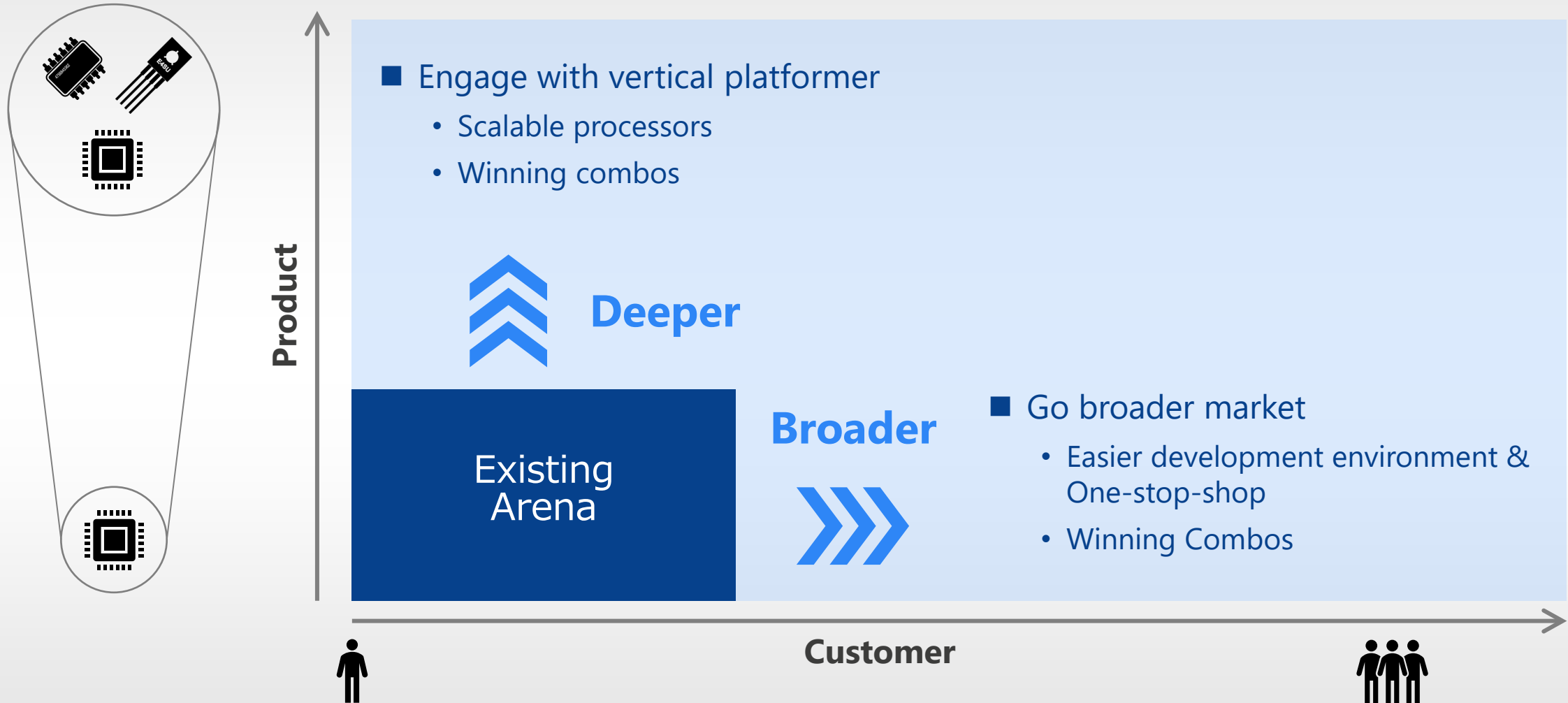


# DESIGN IN GROWTH – NEW BUSINESS\*1 CREATION

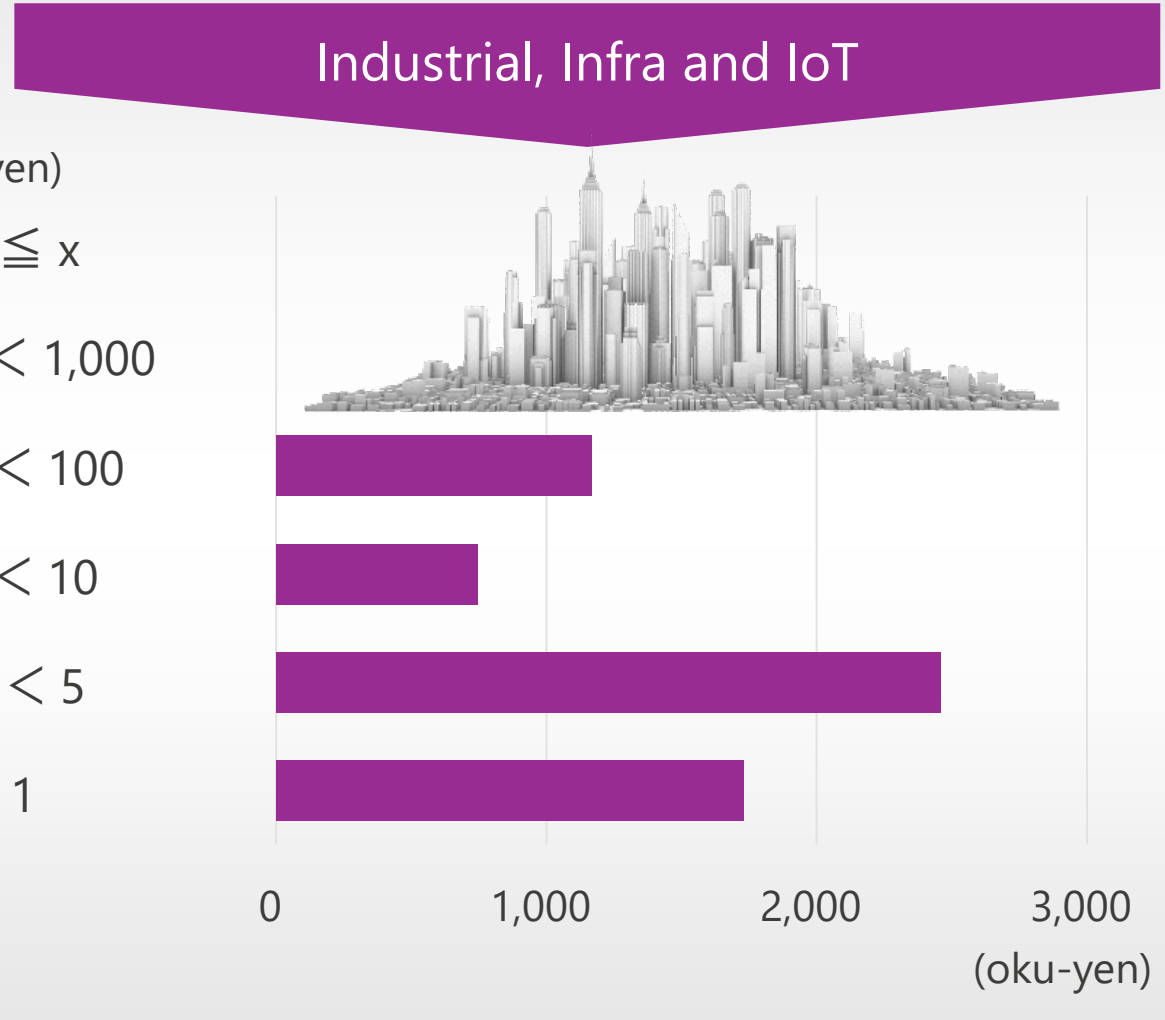
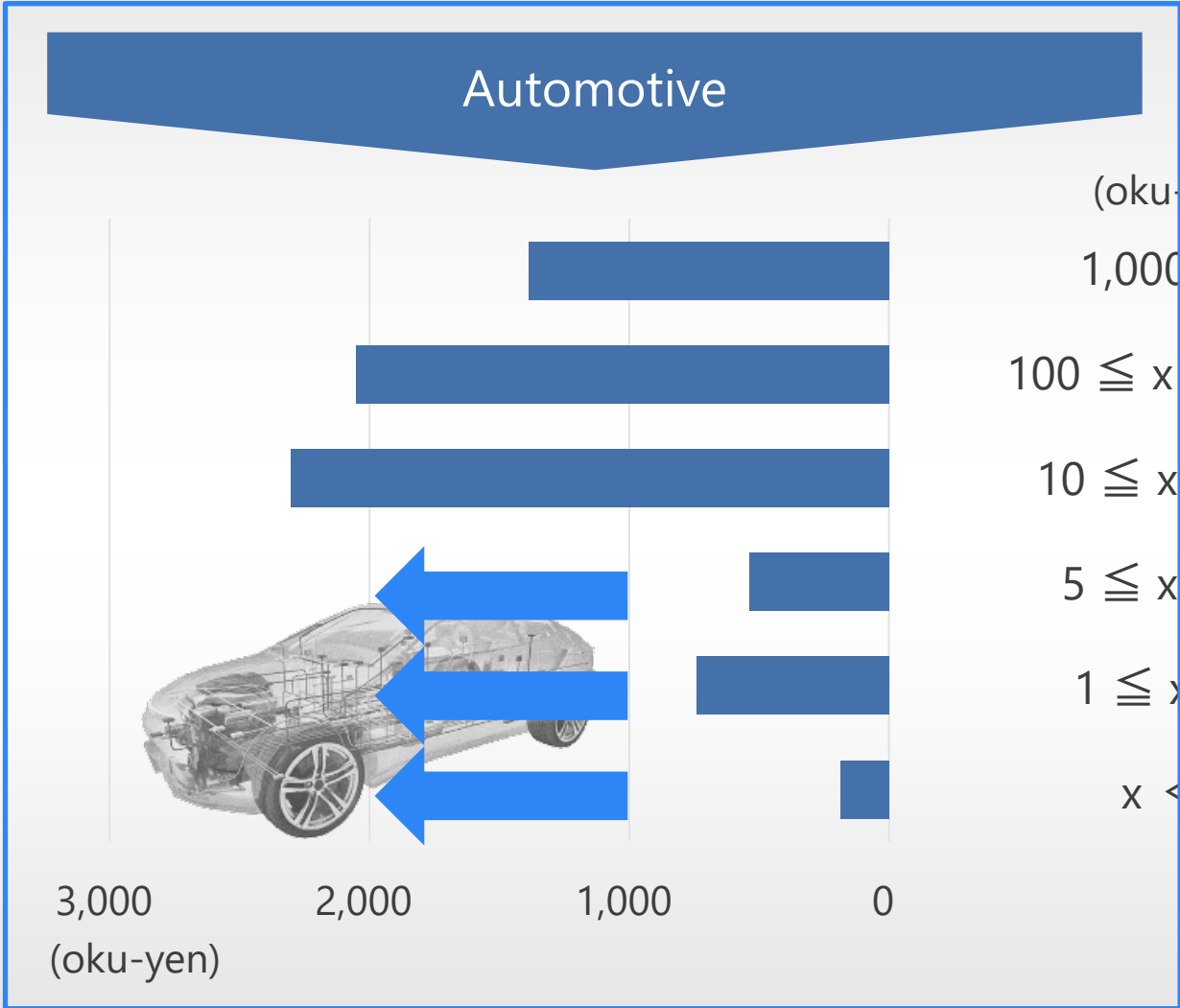


\*1: Business for emerging customer/region

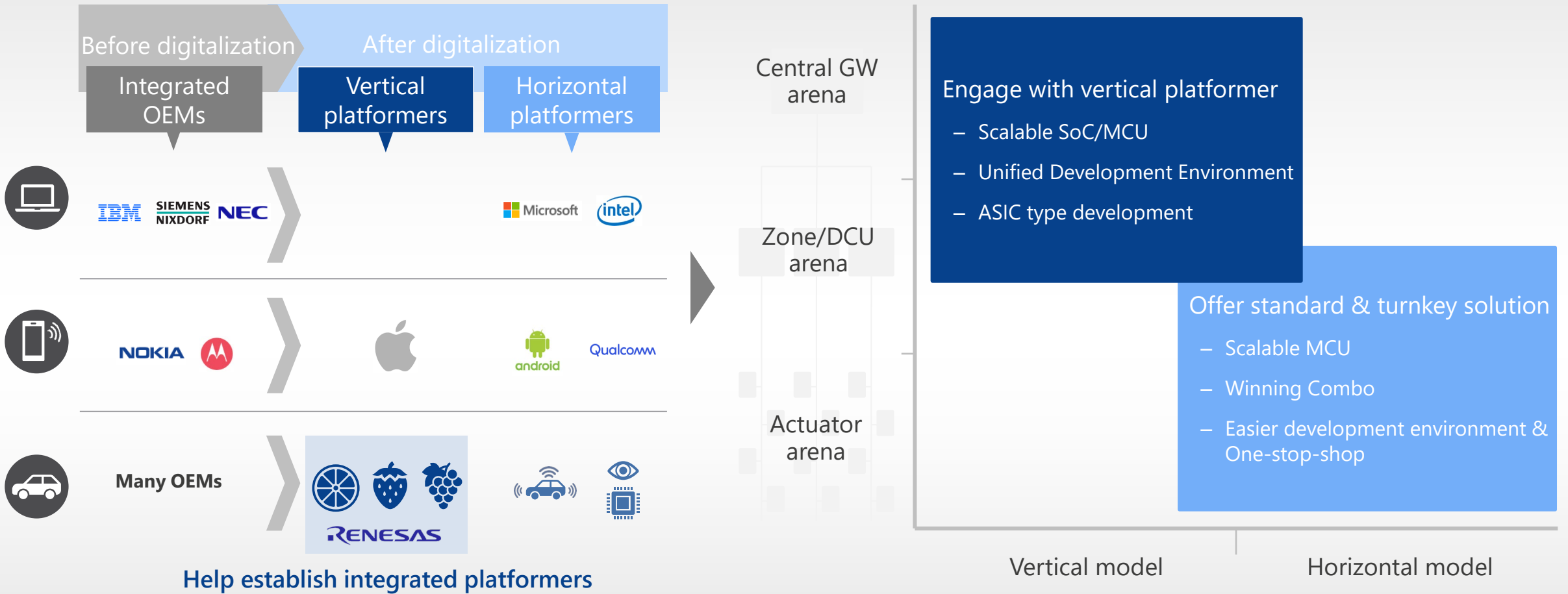
# DESIGN IN GROWTH –DEEPER & BROADER



# DESIGN IN GROWTH – QUALITY CHANGE



# E/E ARCHITECTURE STRATEGY



# XEV STRATEGY

Trend update

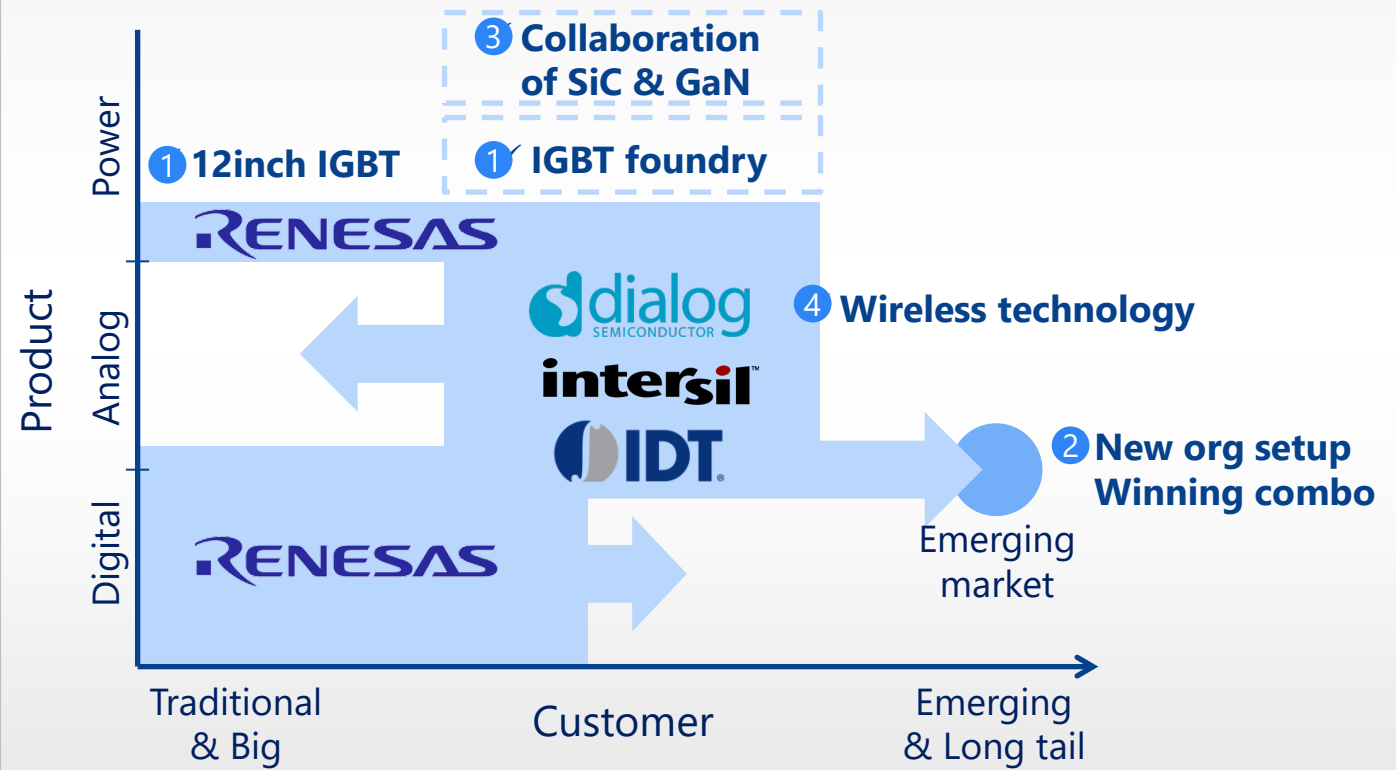
## Market trend

- 1 **Battery EV shift accelerating**
  - 10~20% CO<sub>2</sub> reduction by 48V is no longer sufficient. Shifting to higher voltage xEV.
- 2 **Emerging OEMs and new entrant**
  - No exit barrier from ICE, Speedy & low-cost culture. New entrant from other industries.

## Technology trend

- 3 **SiC and GaN adoption accelerating**
  - Technology is now ready to use
- 4 **Wireless BMS demand growing**
  - OEMs must seriously consider recycling ecosystem of huge quantity of battery.

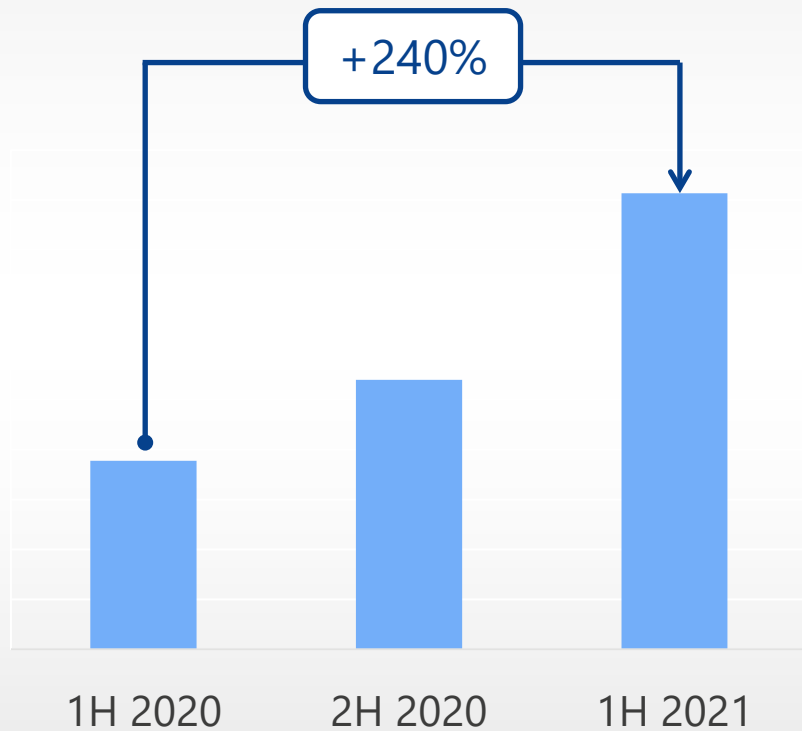
xEV strategy update





# XEV STRATEGY – BUSINESS PROGRESS

## Design in trend



## Design in record in 1H 2021

### Inverter

- e-Axle inverter IGBT for European Tier1
- Inverter MCU(28nm) for Japanese Tier1



### Battery management

- Battery management BMS & MCU for Chinese Tier1
- Battery management MCU for Chinese OEM



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