



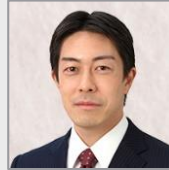









# STRATEGY UPDATE

FEBRUARY 17, 2020  
HIDETOSHI SHIBATA  
PRESIDENT AND CEO  
RENESAS ELECTRONICS CORPORATION

# PRESENTER INTRODUCTION

Corporate	Automotive Solution Business Unit ("ABU")			IoT and Infrastructure Business Unit ("IIBU")	
	ABU Business Strategy	Digital	Analog & Power		
<p><b>Hidetoshi Shibata</b> Representative Director, President and CEO</p> 	<p><b>Shuhei Shinkai</b> SVP / CFO</p> 	<p><b>Shingo Yamamoto</b> EVP / GM</p> 	<p><b>Takeshi Kataoka</b> Deputy GM</p> 	<p><b>Tomomitsu Maoka</b> SVP / Deputy GM / Chairman (RECH)</p> 	<p><b>Sailesh Chittipeddi</b> EVP / GM / President (REA)</p> 
<ul style="list-style-type: none"> <li>■ Innovation Network Corporation of Japan (EMD)</li> <li>■ Merrill Lynch (MD, Global Private Equity)</li> <li>■ MKS Partners (Partner)</li> <li>■ Central Japan Railway Company</li> </ul> 	<ul style="list-style-type: none"> <li>■ Innovation Network Corporation of Japan (VP, Investment Group)</li> <li>■ Anderson Mori &amp; Tomotsune</li> </ul> 	<ul style="list-style-type: none"> <li>■ Nissan Motor (Regional SVP, Representative Director of Nissan Korea)</li> <li>■ Calsonic Kansei (CIO, EVP, Chairman &amp; CEO of Calsonic Kansei Americas)</li> <li>■ GE Capital (Japan Integration Leader)</li> <li>■ GE Fleet Services</li> </ul> 	<ul style="list-style-type: none"> <li>■ Renesas Mobile</li> <li>■ Renesas Technology</li> <li>■ Hitachi</li> </ul> 	<ul style="list-style-type: none"> <li>■ Lenovo Japan (Strategy Director, Commercial Operations Director)</li> <li>■ Infineon Technologies Japan (Senior Manager of Japan Regional Strategy, Head of Industrial and Multi Market Regional Center)</li> <li>■ A.T. Kearney</li> </ul> 	<ul style="list-style-type: none"> <li>■ IDT (EVP of Global Operations, CTO)</li> <li>■ Conexant Systems (President, CEO, COO, co-President, EVP for Operations, CTO)</li> <li>■ AT&amp;T Bell Labs</li> </ul> 

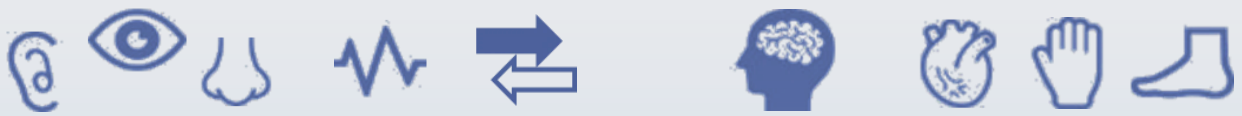
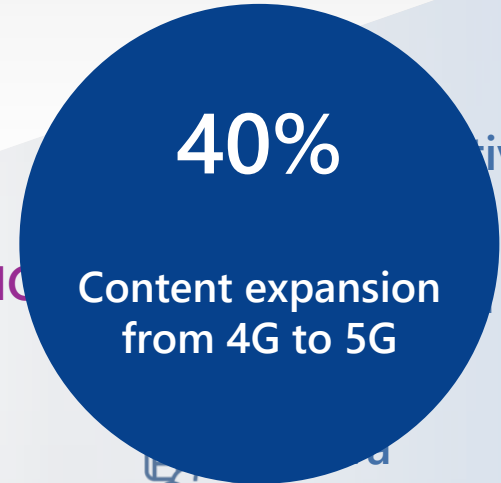
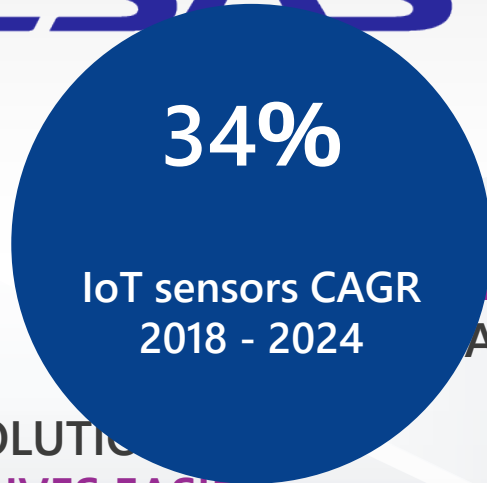
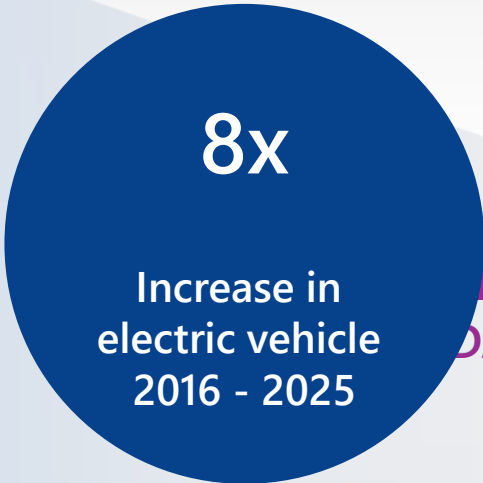
RECH: Renesas Electronics (China) / REA: Renesas Electronics America / EVP: Executive Vice President / SVP: Senior Vice President / VP: Vice President  
EMD: Executive Managing Director / MD: Managing Director / GM: General Manager

# IN A WORLD SWITCHED ON...



Source: 8x increase in electric vehicles by 2025 by Strategy Analytics, 20% ADAS semi market long-term growth rate by Market and Markets  
34% long-term IoT sensors growth by Market Research Engine, 40% 4G -> 5G by Piper Jaffray

# IN A WORLD SWITCHED ON...



Sense → Move / Store → Compute → Actuate



Source: 8x increase in electric vehicles by 2025 by Strategy Analytics, 20% ADAS semi market long-term growth rate by Market and Markets  
34% long-term IoT sensors growth by Market Research Engine, 40% 4G -> 5G by Piper Jaffray

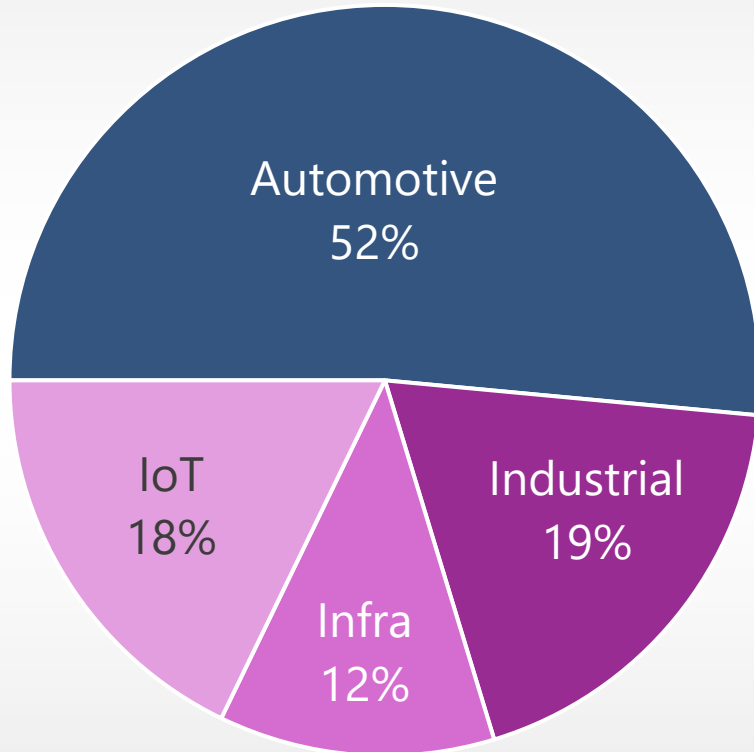
# IN A WORLD SWITCHED ON...







Source: 8x increase in electric vehicles by 2025 by Strategy Analytics, 20% ADAS semi market long-term growth rate by Market and Markets  
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# PORTFOLIO ALIGNED WITH HIGH-GROWTH END MARKETS









2019 Revenue by end market



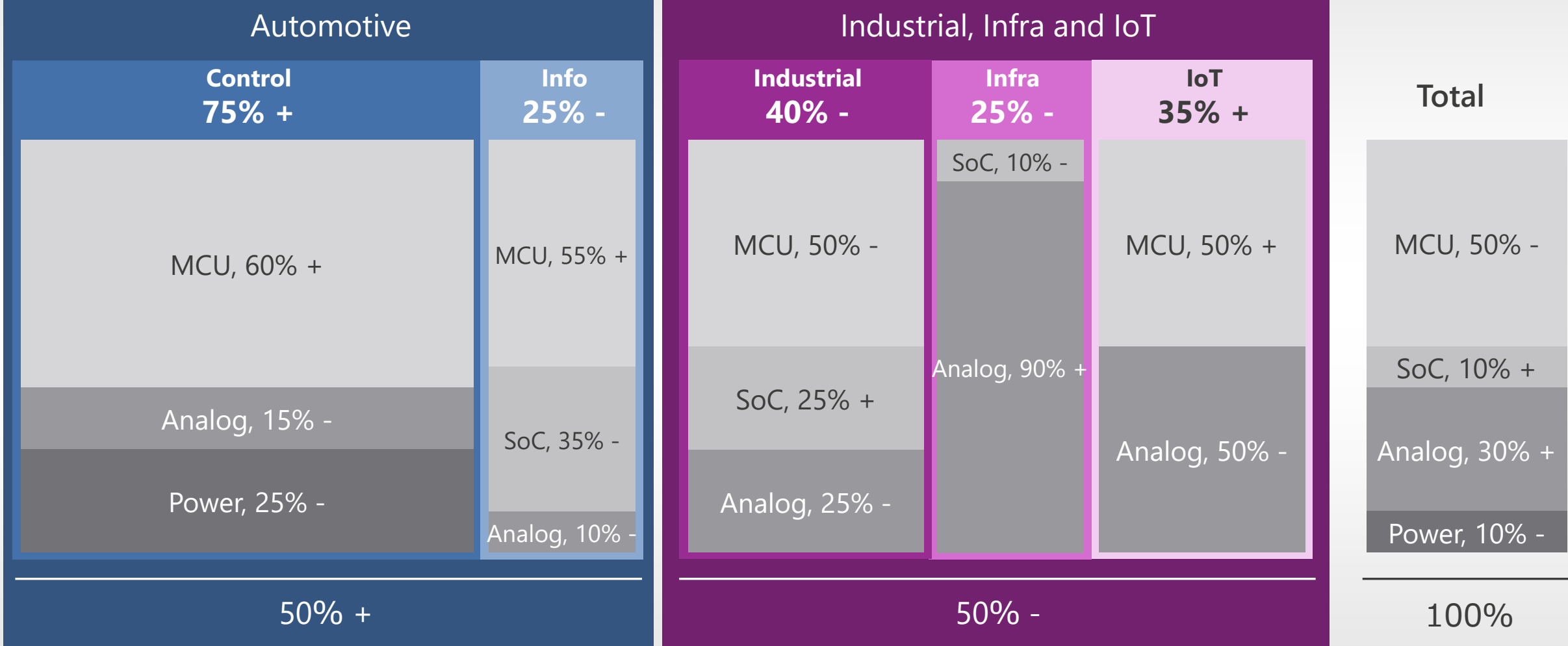
 Automotive	<ul style="list-style-type: none"><li>■ No.1 automotive MCU supplier</li><li>■ Most advanced geometry combined with MONOS technology</li><li>■ Functional safety and security</li></ul>
 Industrial	<ul style="list-style-type: none"><li>■ Leading MCU and SoC supplier</li><li>■ Rich and extensive technology offering such as multi-protocol connectivity, time sensitive networking ("TSN") and real-time processing</li><li>■ Strong relationship with leading customers of the world</li></ul>
 Infra	<ul style="list-style-type: none"><li>■ No.1 memory interface supplier</li><li>■ Tight engagement with hyperscalers and memory suppliers</li><li>■ Technology leader in RF for 5G and massive MIMO</li></ul>
 IoT	<ul style="list-style-type: none"><li>■ Leading provider of both proprietary and ARM MCUs</li><li>■ Wide variety of technology offering such as SOTB, e-AI, security etc.</li><li>■ Strategic collaboration with distributors</li></ul>

Source: Renesas management accounting, pro-forma basis

# WHAT WE DO

		Product portfolio			
					
Focus verticals		Sense	Move / Store	Compute	Actuate
	Auto	<ul style="list-style-type: none"> <li>■ Sensor (optical, flow, humidity, gas, CO<sub>2</sub>, temperature, thermopile)</li> </ul>	<ul style="list-style-type: none"> <li>■ Timing</li> <li>■ Optical</li> <li>■ Memory interface</li> </ul>	<ul style="list-style-type: none"> <li>■ ADAS/AD platform</li> <li>■ Gateway</li> <li>■ DRP / e-AI</li> </ul>	<ul style="list-style-type: none"> <li>■ Motor solution</li> <li>■ OIS servo-controller</li> </ul>
	Industrial	<ul style="list-style-type: none"> <li>■ Sensor signal conditioner ("SSC")</li> </ul>	<ul style="list-style-type: none"> <li>■ High bandwidth memory ("HBM")</li> <li>■ NVDIMM</li> </ul>	<ul style="list-style-type: none"> <li>■ MCU</li> <li>■ MPU</li> <li>■ SoC</li> </ul>	<ul style="list-style-type: none"> <li>■ PMIC</li> <li>■ BMIC</li> <li>■ SOTB</li> </ul>
	Infra		<ul style="list-style-type: none"> <li>■ BLE 5.0</li> <li>■ NB IoT</li> </ul>		<ul style="list-style-type: none"> <li>■ Low Iq</li> <li>■ Wireless power</li> </ul>
	IoT		<ul style="list-style-type: none"> <li>■ 6LoWPAN</li> <li>■ RF, RF for 5G</li> </ul>		<ul style="list-style-type: none"> <li>■ IGBT / MOSFET</li> </ul>

# 2019 REVENUE COMPOSITION



Source: Renesas management accounting, pro-forma basis



# OUR VISION, MISSION AND VALUE



**OUR VISION**  
RENEASAS CREATES  
LEADING SEMICONDUCTOR  
SOLUTIONS THAT SPARK  
INNOVATION FOR A  
CONNECTED WORLD,  
BUILDING A TRUSTED BRAND  
WE CAN BE PROUD OF.


**RENEASAS**  
BIG IDEAS FOR EVERY SPACE



**OUR MISSIONS**

1. **DRIVE** PROGRESS TOWARD A SAFER, HEALTHIER, GREENER, AND SMARTER WORLD.
2. **DELIVER** CREATIVE SEMICONDUCTOR SOLUTIONS AND SUPPORT THAT MEET AND EXCEED CUSTOMER EXPECTATIONS.
3. **STRENGTHEN** OUR OFFERING TO CUSTOMERS IN FOCUS SEGMENTS THROUGH STRATEGIC PARTNERSHIPS, ALLIANCES AND ACQUISITIONS.
4. **DEVELOP** A GLOBAL CULTURE THAT ENCOURAGES OPEN COMMUNICATION, COLLABORATION, AND RESPECT FOR DIVERSITY.
5. **SEEK** CONTINUOUS IMPROVEMENT IN EVERYTHING WE DO.

**RENEASAS**  
BIG IDEAS FOR EVERY SPACE



**VALUES FOR GROWTH**

- CUSTOMER CENTRICITY
- CREATIVITY & IMAGINATION
- TECHNOLOGY & EXPERTISE
- APPRECIATION OF DIVERSITY
- OWNERSHIP & INTEGRITY
- OPEN COMMUNICATION
- VALUE FOR LEADERSHIP

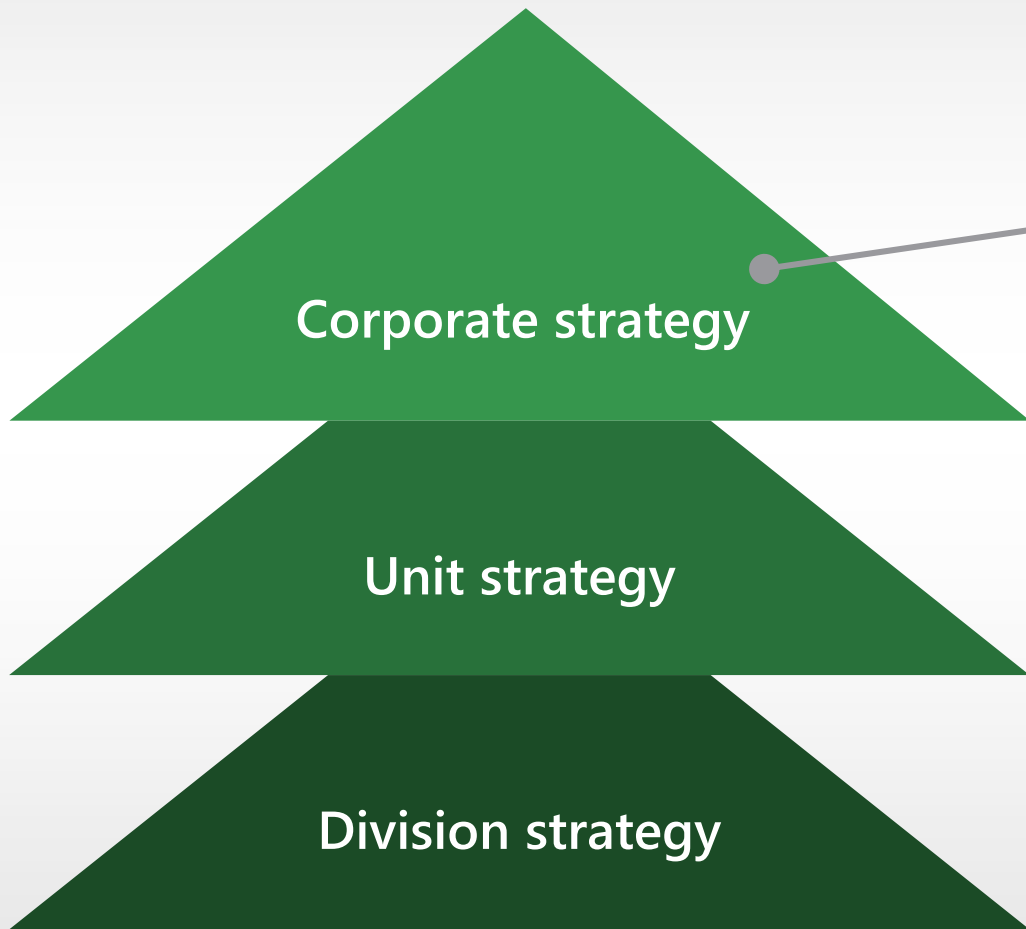
**RENEASAS**  
BIG IDEAS FOR EVERY SPACE

# MY CAUSE

To make our lives **easier** by complementing human capabilities



# CORPORATE STRATEGY – BALANCED GROWTH



Balanced growth through diversification

## Diversification:

- Product
- Market
- People

## Common thread:

- Reliability
- Stickiness
- Constant innovation



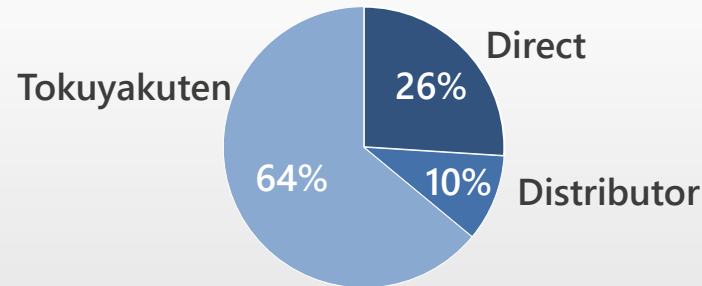
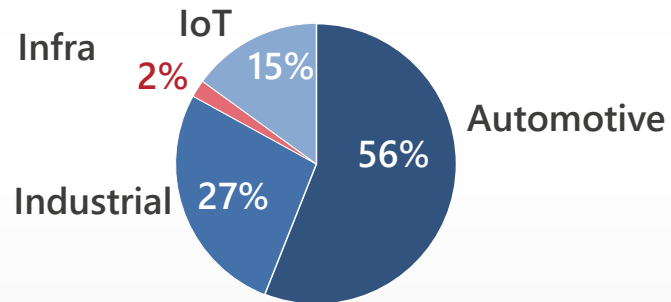
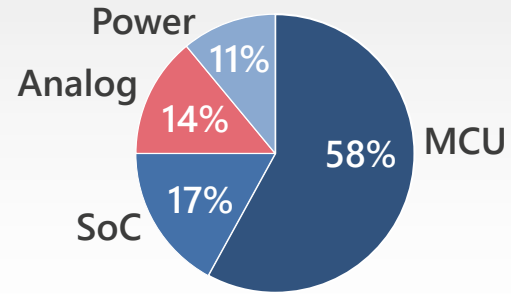
# DIVERSIFICATION

By Product

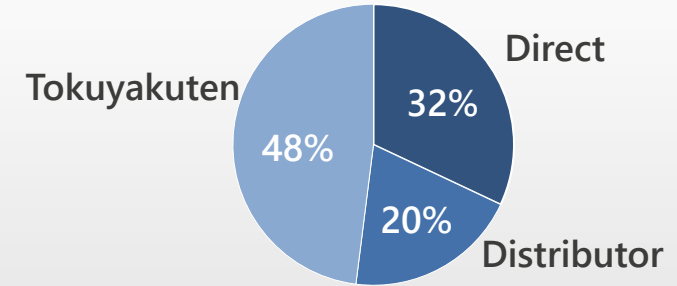
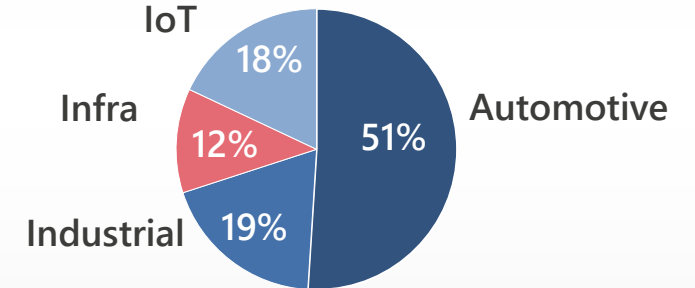
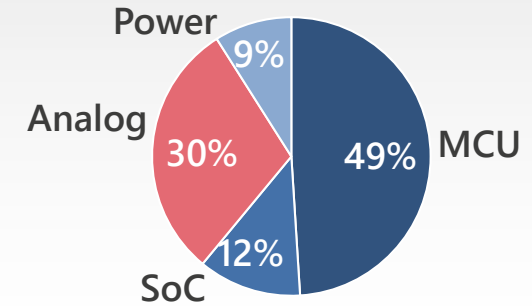
By End market

By Sales channel

Renesas (2016)



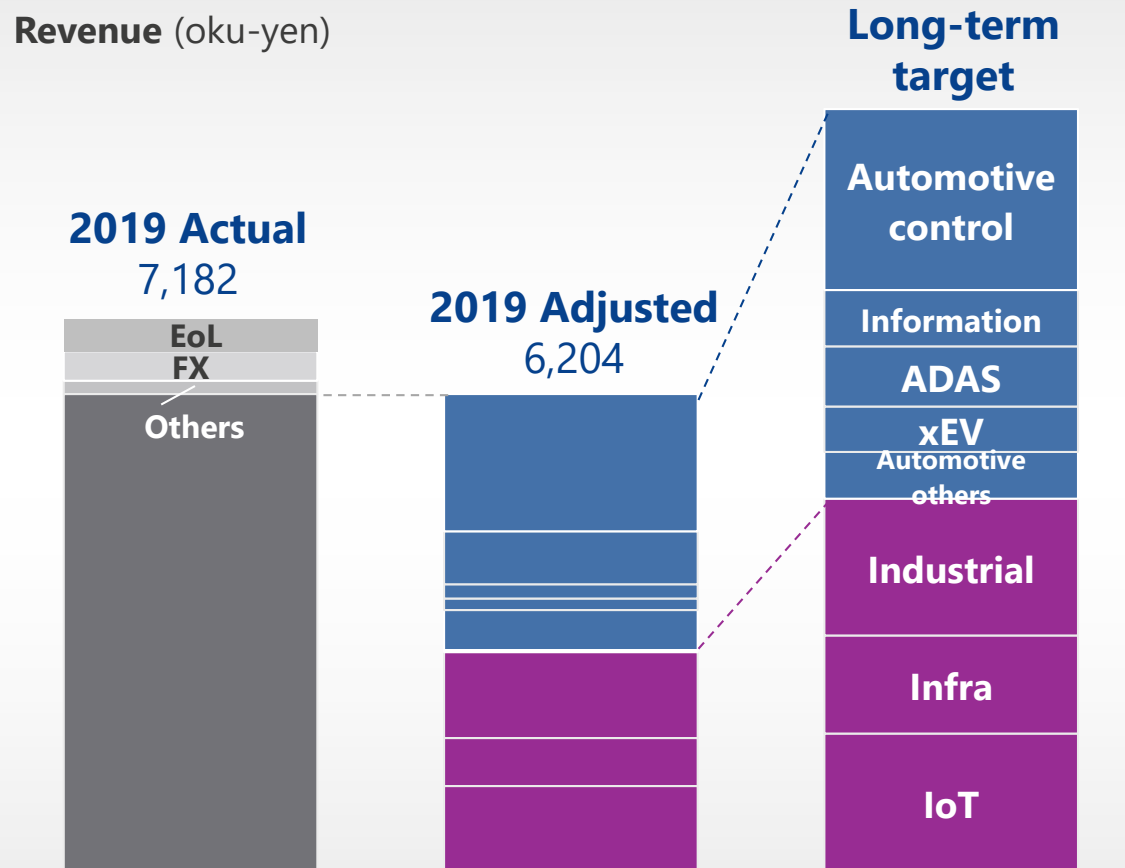
Renesas+Intersil+IDT (2019)



Source: Renesas management accounting, Pro-forma basis  
Tokuyakuten: Selected sales distributors for Japanese customers

# GROWTH PLAN

Revenue (oku-yen)



	Long-term Renesas CAGR	Long-term Market (SAM) CAGR
<b>Renesas</b>	<b>+</b>	<b>7%*</b>
<b>Automotive</b>	<b>≡</b>	<b>8%**</b>
Automotive control	<b>≡</b>	4%
Information	<b>—</b>	4%
ADAS	<b>++</b>	17%
xEV	<b>+</b>	18%
<b>Industrial, Infra and IoT</b>	<b>+</b>	<b>7%***</b>
Industrial	<b>+</b>	7%
Infra	<b>++</b>	5%
IoT	<b>≡</b>	8%

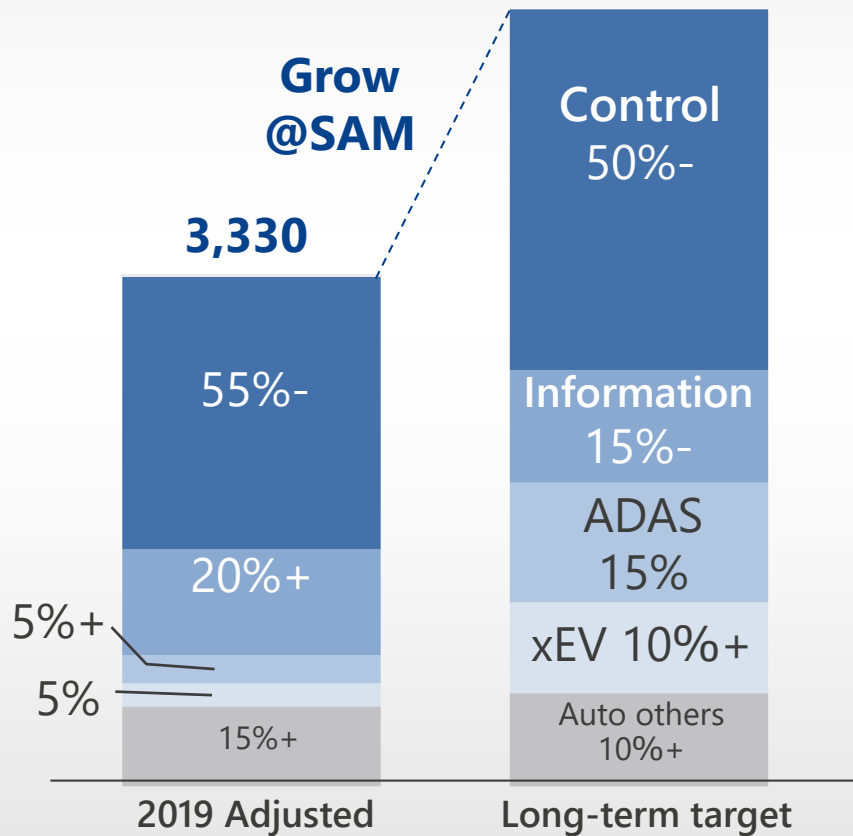
FX for 2019 Actual: 1USD=109yen, 1EUR=123yen, FX for 2019 Adjusted and Long-term target: 1USD=100yen, 1EUR=120yen

\* Renesas estimate. \*\* Source: Strategy Analytics automotive semiconductor demand forecast by business segment in December 2019.

\*\*\* Source: 2019-2023 chart created by Renesas based on Gartner Research, Semiconductor Forecast Database, Worldwide, 4Q19 Update, Ben Lee et al., 24 December 2019. After 2024, Renesas estimate

# AUTOMOTIVE

Revenue (oku-yen)



## Growth Driver



- Continued electronic content growth
- Electric / electronic architecture evolution



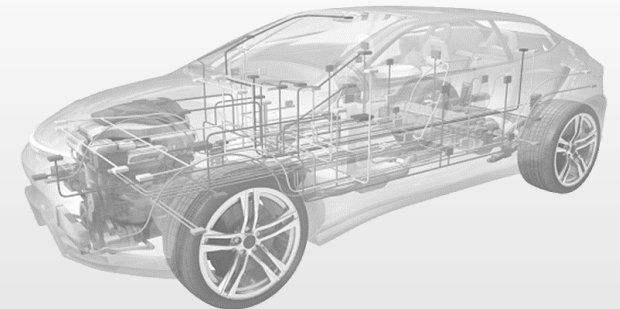
- ADAS / AD progress



- New regulations calling for more xEVs

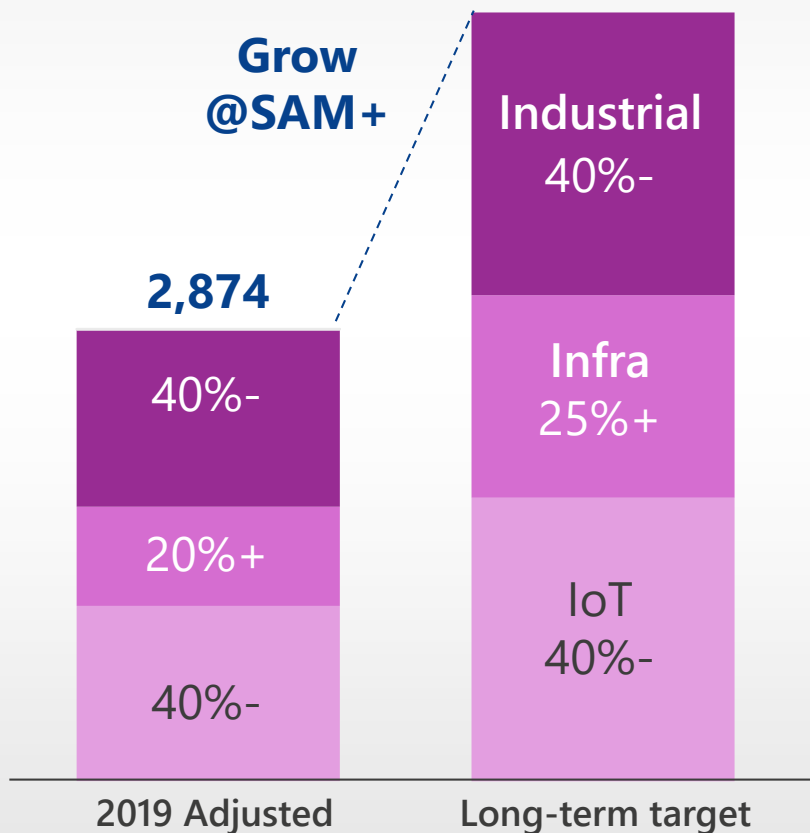
## How We Win

- Scalable product offering to streamline E/E architecture
- ADAS / AD product offering expansion to full spectrum
- Winning combo solutions by leveraging digital footprint to deliver more analog and power products



# INDUSTRIAL, INFRA AND IoT

Revenue (oku-yen)



## Growth Driver



- Robotics applications
- Human-machine interaction
- Realtime synchronization



- 5G
- Datacenter and cloud
- Faster memory access



- > 1 trillion connected devices
- Endpoint computing
- Wireless charge adoption

## How We Win

- Differentiated and scalable product offerings
- Winning combos
- Strategic collaborations with technology, cloud and channel partners
- Deeper and broader go-to-market

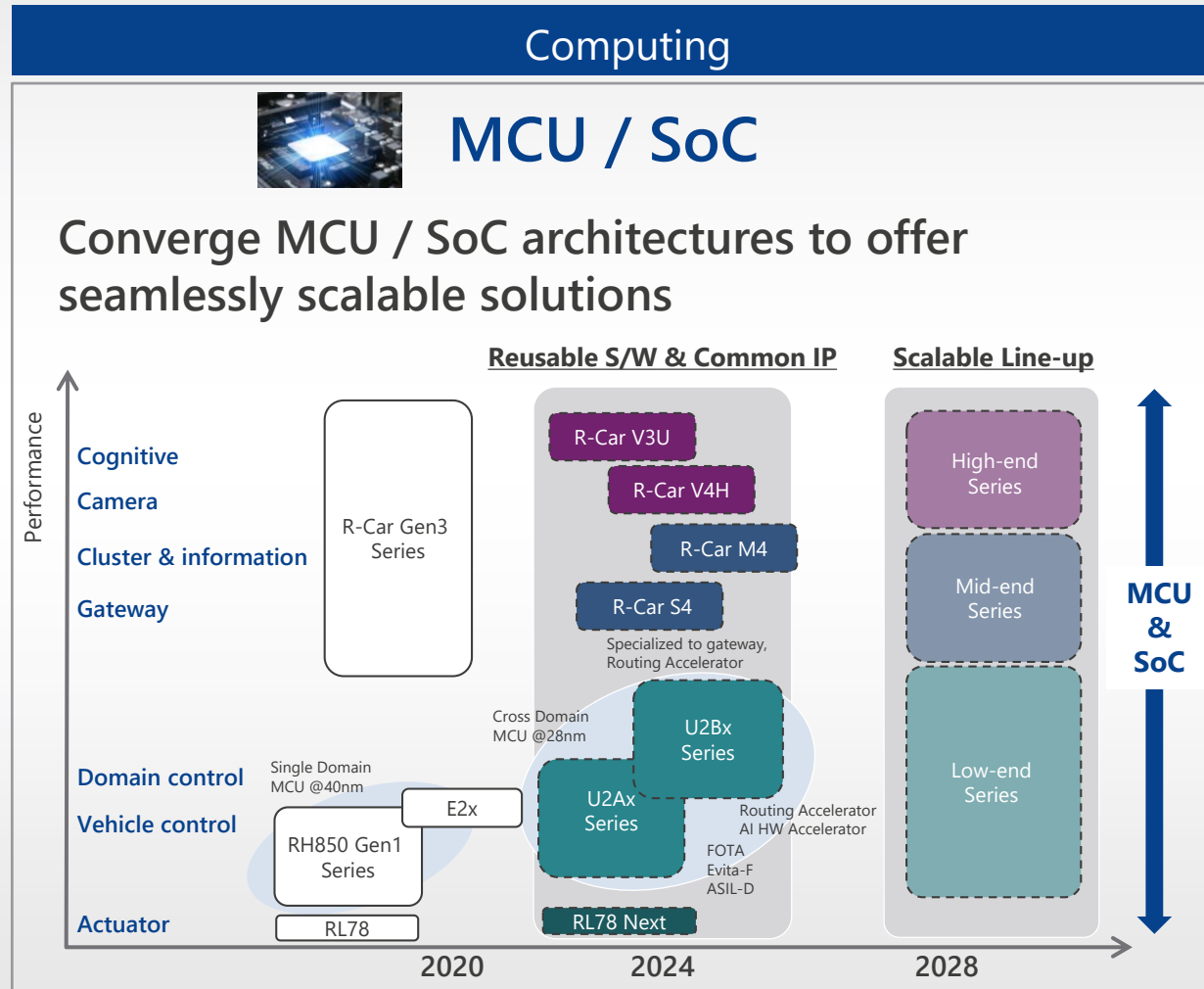


# ILLUSTRATIVE SCENARIOS FOR WINNING


	Automotive	Industrial	Infra	IoT
MCUs				RA Cloud connection
SoCs	ADAS / AD Scalability	MPUs		
Analog & Mixed Signal	xEV & ADAS / AD solutions	Human-Machine Interface ("HMI")	5G Data center	Winning combos
Power Discretes				



# HOW WE WIN – AUTOMOTIVE 1

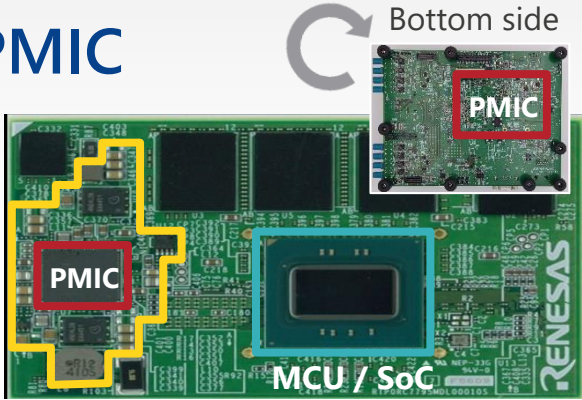


**Power / Battery management**




**PMIC**

PMICs fully calibrated to our MCUs and SoCs



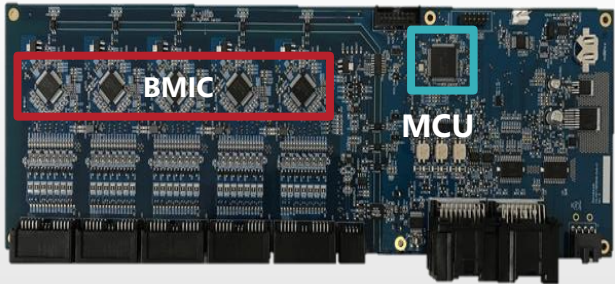
Bottom side

**MCU / SoC**



**BMIC**

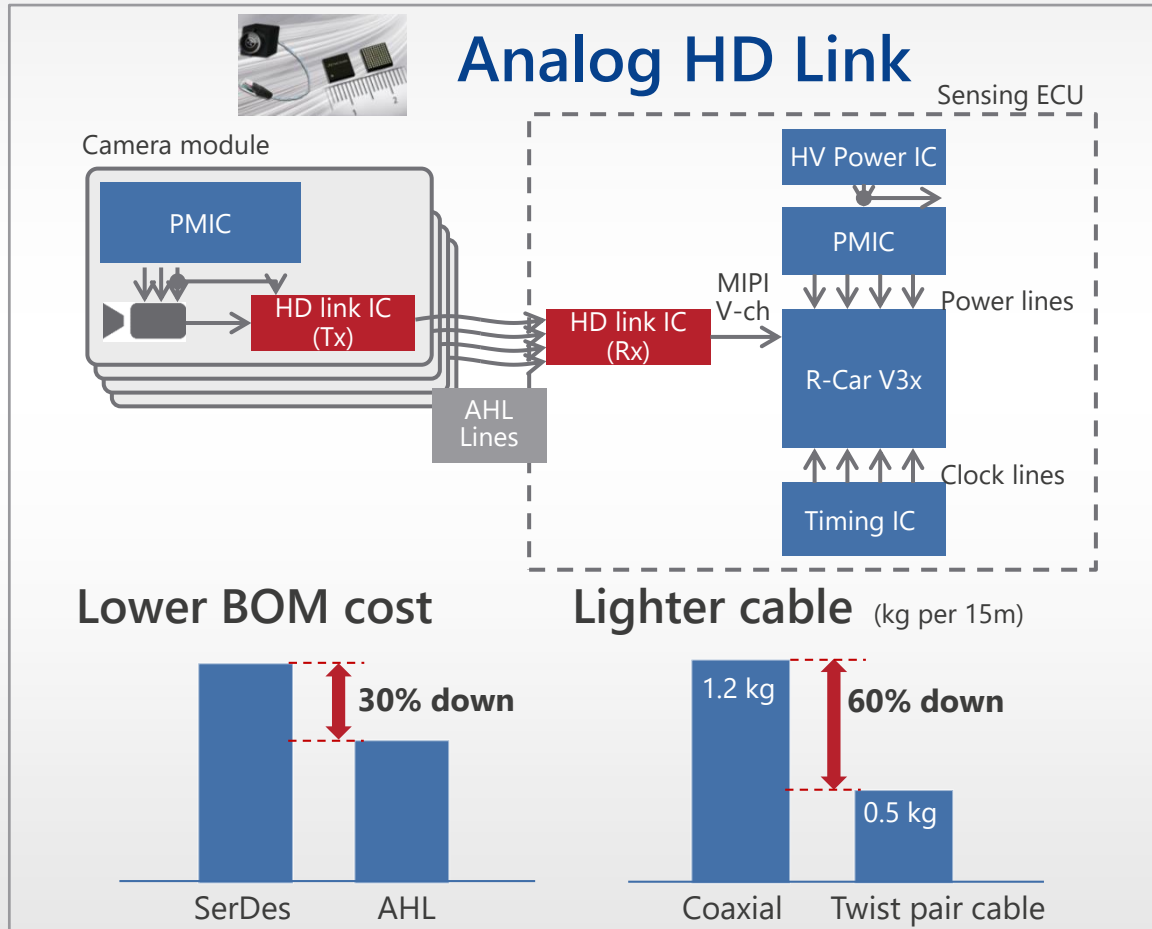
BMS solutions of supreme accuracy and long life



**MCU**

# HOW WE WIN – AUTOMOTIVE 2

## Camera / Video interface



## Sensing



Radar / Lidar



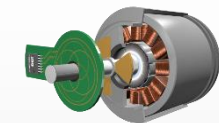
Strategic partnerships

**STERADIANSEMI**

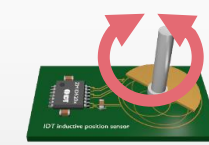
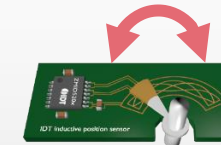
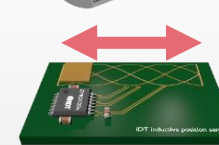
**LeddarTech®**

Ultra low noise, 4D

Solid state, high resolution



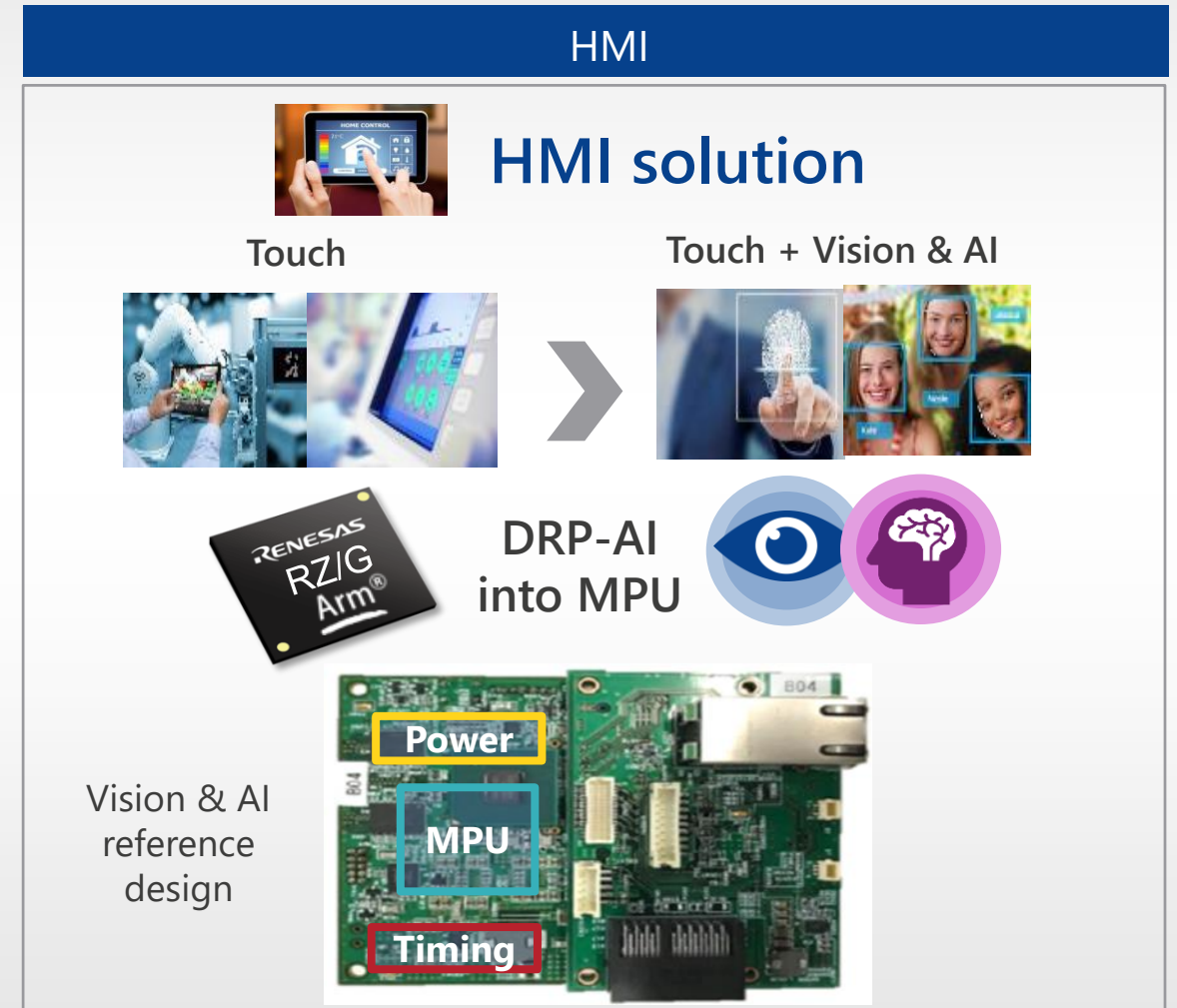
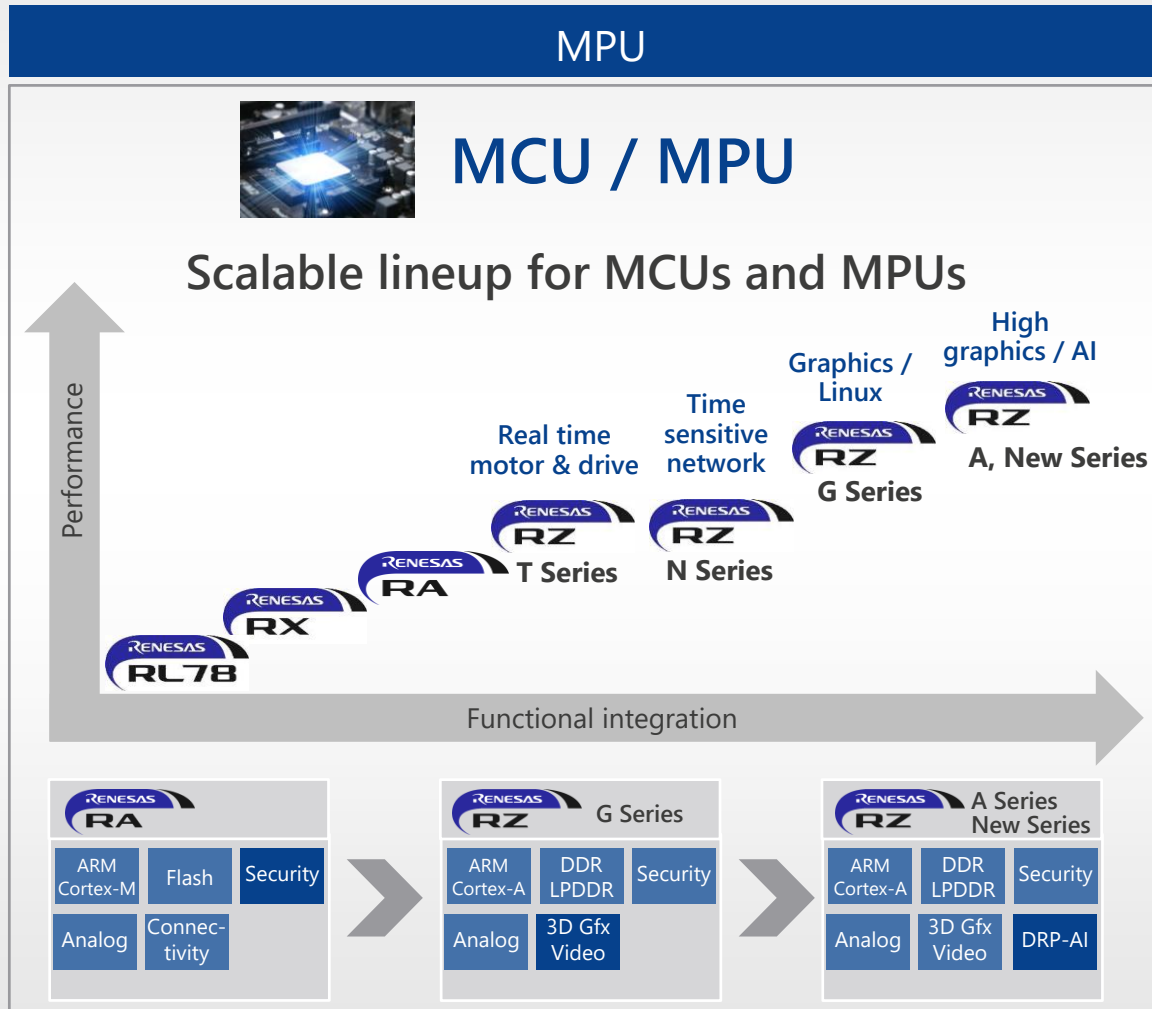
## Position Sensor



- No magnet
- No resolver-to-digital converter ("RDC")
- Fewer number of wires


➔ **1/10 thinner**  
**1/100 lighter**

# HOW WE WIN – INDUSTRIAL




# HOW WE WIN – INFRA AND IoT

## Infra

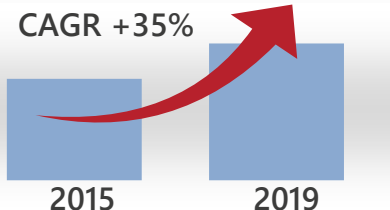


### 5G




**Revenue for RF (4G & 5G)**

CAGR +35%



2015      2019

- Fastest entry to market with
- ✓ RF ICs for massive MIMO
- ✓ Beamformer ICs for mm Wave phased array antennas

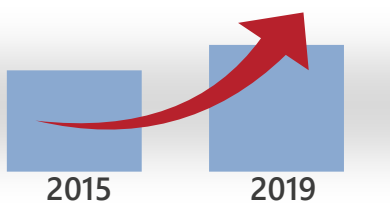


## Data center






MIP competitive landscape

**Revenue for Data center**

CAGR +25%




2015      2019


DDR	DDR2	DDR3	DDR4	DDR5
7	10	5	3	3
				

## IoT

### Arm MCU




**Security for IoT**




System Security by ARM

### Connectivity




Bluetooth® Low Energy




Telink

**NB IoT**




A Sony Group Company



### Low pin count



25pin WFLGA    24pin HWQFN    20pin LSSOP



### Cloud partnership

# RESULT-ORIENTED, PRAGMATIC APPROACH

Delivering results



Achievable target



Make or buy



Clearer accountability

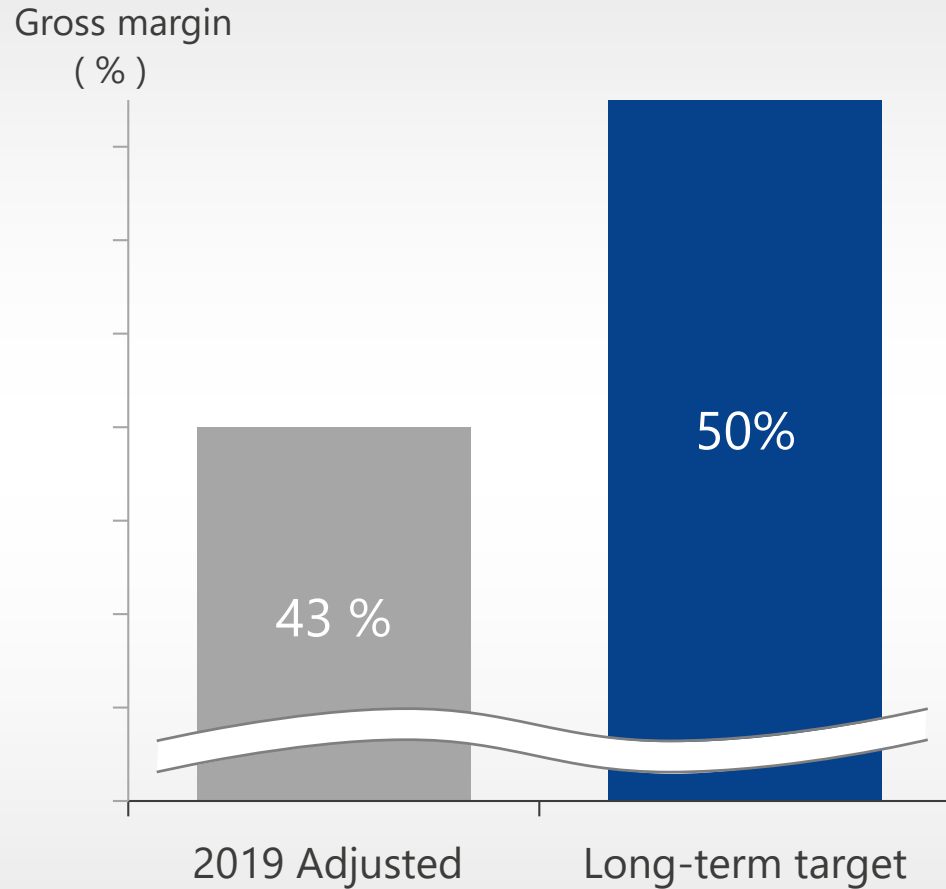
# TARGET FINANCIAL MODEL

	2019 Actual	2019 Adjusted*	Long-term target*		
			Automotive	Industrial, Infra and IoT	Total
<b>Revenue</b>	7,182 oku-yen	<b>6,204</b> oku-yen	<b>Grow</b> <b>@SAM</b>	<b>Grow</b> <b>@SAM+</b>	<b>Grow</b> <b>@SAM+</b>
<b>Gross margin</b>	44%	<b>43%**</b>	<b>40-45%</b>	<b>55-60%</b>	<b>50%</b>
<b>Operating margin</b>	13%	<b>12%</b>	<b>10-15%</b>	<b>25-30%</b>	<b>20%+</b>





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

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

# MARGIN EXPANSION

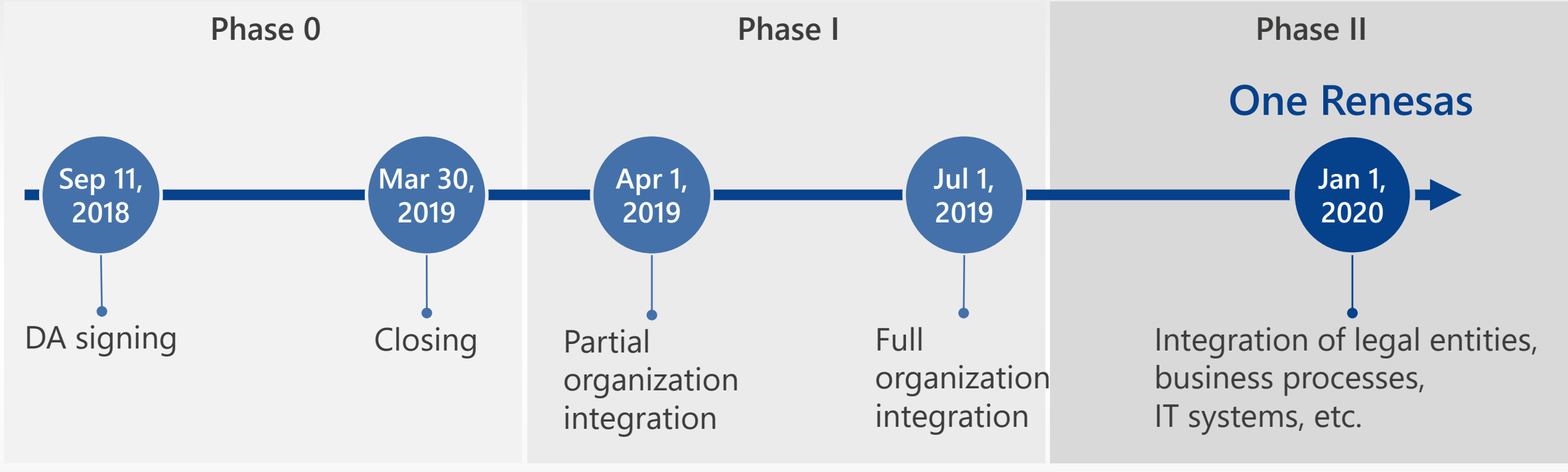


## Key Contributors

-  Depreciation scale down
-  Structural reform
-  Product mix improvement
-  Volume increase

\* FX for 2019 Adjusted and Long-term target: 1USD=100yen, 1EUR=120yen, continuing business only

# IDT INTEGRATION



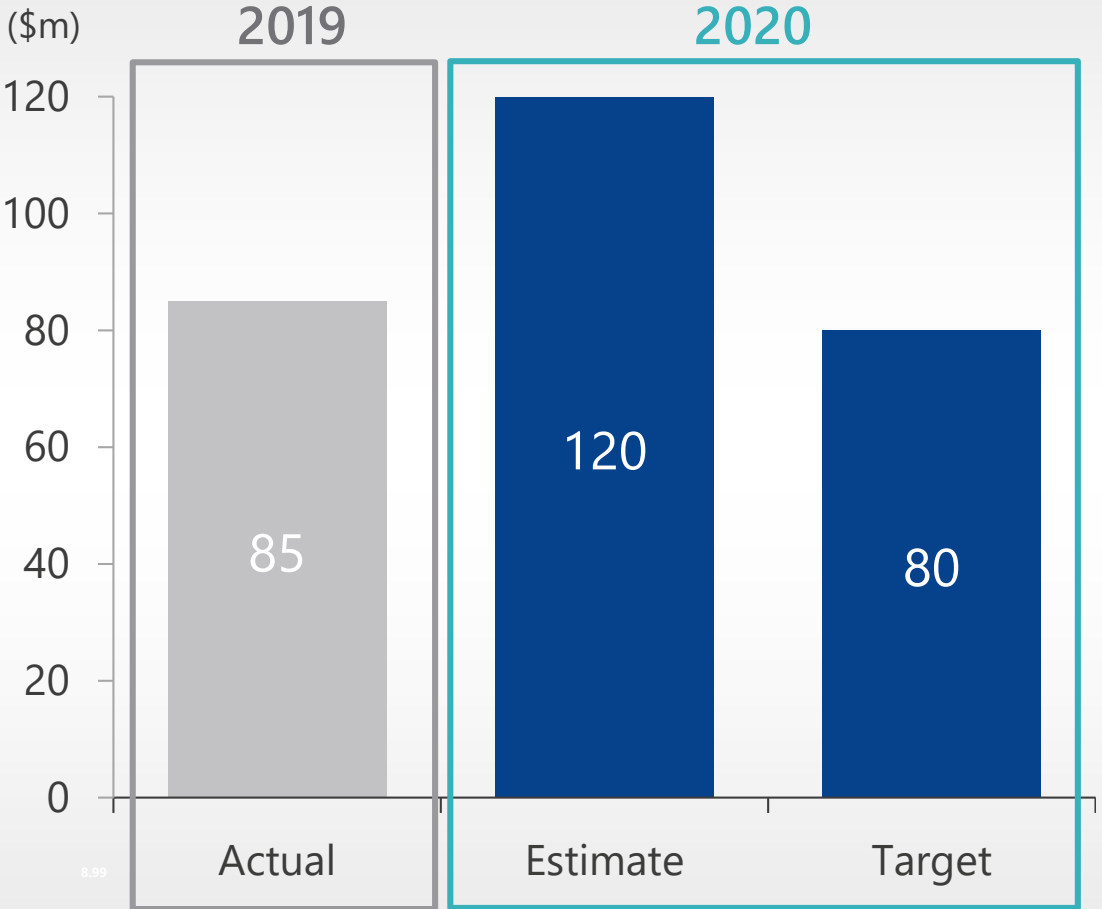
2 business units ✓

Integration of 6 sites ✓

Former IDT now part of Renesas Electronics America ✓



# SAVINGS



## Key Contributors

-  Patent and design tools
-  Organization and operation
-  Procurement
-  Distribution margin

As of January 24<sup>th</sup>, 2020  
 Gross savings on an annual run rate basis, in \$m

# REVENUE SYNERGIES

	Strategy	Solution	2019 Actual
<b>Deeper</b>	Boost sales per customer	Winning combinations	LTV of \$ 129m
<b>Broader</b>	Win new customers	New customer acquisition	11,802 new customers

# 100+ WINNING COMBOS WITHIN 1 YEAR OF ACQUISITION



## Automotive

- Electric vehicle charger
- Automotive infotainment and dashboard

4 solutions



## Industrial

- Carbon monoxide detector
- Edge computing for security system
- High-voltage motor drive

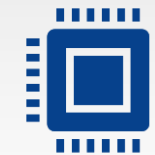
27 solutions



## Infra

- Cellular base station
- Fleet tracking
- Enterprise server

17 solutions



## FPGA designs

- Xilinx Versal ACAP power and timing
- Xilinx Spartan 7 power

10 solutions



## Fitness and healthcare

- Blood glucose meter
- Pulse oximeter
- Electronic drug delivery system

10 solutions



## Home appliance

- Cordless vacuum cleaner
- Smart IoT air purifier

25 solutions



## Gaming and entertainment

- Solar battery charger
- Soundbar with Bluetooth streaming

3 solutions



## Others

- E-bike system
- Robotics solution for image processing

5 solutions

[Explore 100+ comprehensive Winning Combination solutions](#)

As of January 24<sup>th</sup>, 2020

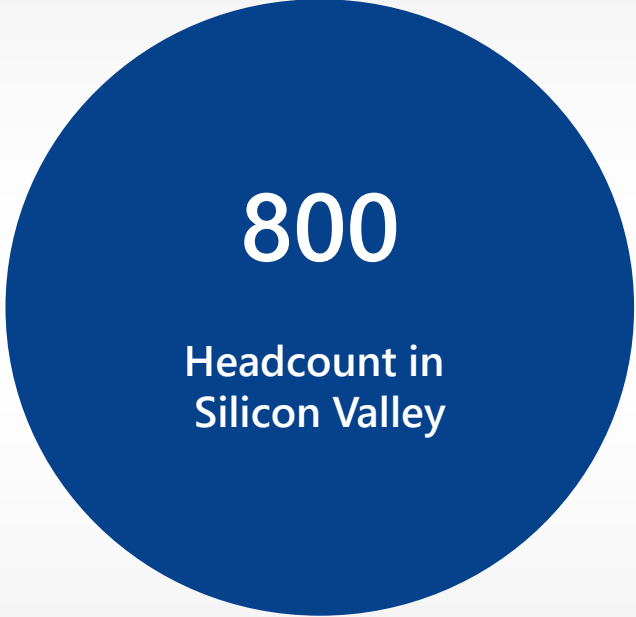
# CULTURAL FUSION



Diverse team



Financial discipline



Entrepreneurial mindset

# SUMMARY

Well positioned portfolio



To address high growth market



With emphasis on delivering results



*... to make our lives easier*



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