Pioneering “Leading-edge IoT”, with eSOL’s Unique OS Platform

eSOL Co., Ltd. 2020 Second Quarter Results

August 2020 by eSOL Co., Ltd.
(listed on the First Section of the Tokyo Stock Exchange: 4420)

1. Overview of the Company

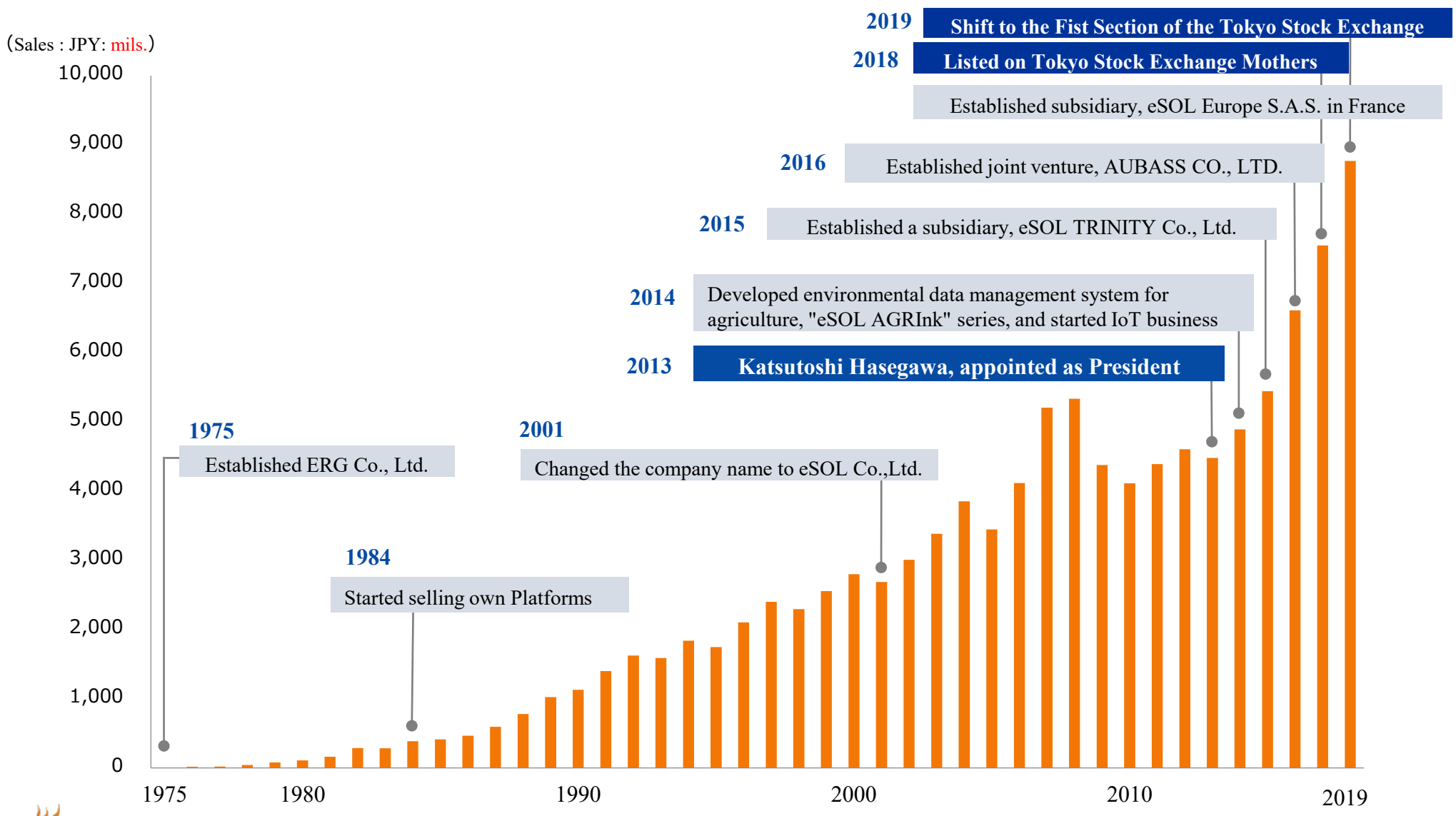
eSOL SPIRIT

Overview

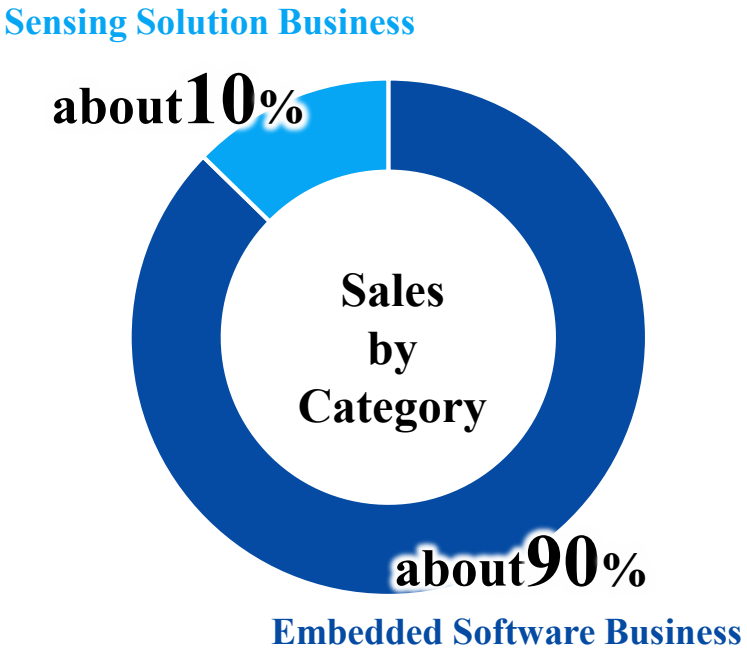
Name	eSOL Co., Ltd.
Foundation	May 1975
Representative	President: Katsutoshi Hasegawa
Business	● R&D, manufacturing and sale of software and hardware which are applicable to computers and computer peripherals. ● Undertaking development of software and hardware, which are applicable to computers and computer peripherals, and professional service. ● Consulting service.
Paid-in capital	1,041 million yen
Employees	485 employees as of June 30, 2020 with consolidated base
Group Companies	eSOL TRINITY Co., Ltd（Consolidated subsidiary） est. Mar. 2015 AUBASS CO., LTD. （Equity method affiliate） est. Apr. 2016 eSOL Europe S.A.S.（Consolidated subsidiary） est. Mar. 2018

History

eSOL has been achieving sustainable growth in fluctuating software industry.



Business Overview



Embedded Software Business

- Development and sale of RTOS (real-time operating system)
- Undertaking engineering service for embedded software.
- Consultancy related to the development of embedded software
- Sale of tools for the development of embedded software
- Education to engineers developing embedded software

Sensing Solution Business

【Logistics related business】

- Automotive printer for issuing dedicated slips
- Ordinary temperature handy terminal
- Development and sale of strong environmental resistance handy terminal and sales-support software

【Sensor network business】

- Proposal of sensor network system

What is Embedded Software?

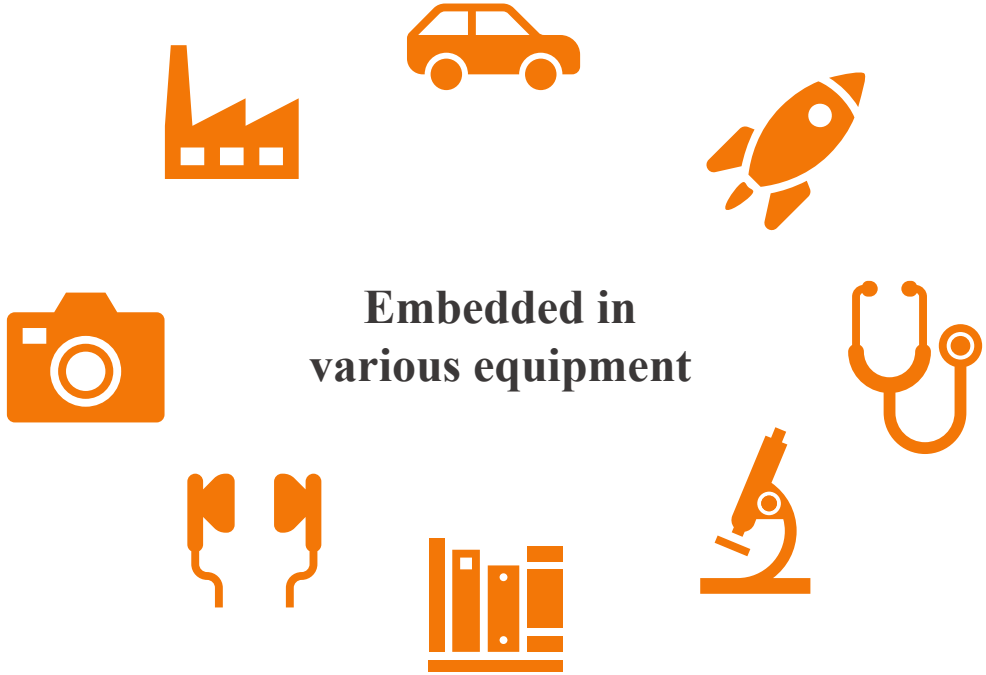
Embedded Software is the software that is embedded in **various equipment around us such as vehicles** but except so called “Computer” e.g. PC, servers , and supercomputers, and controls such equipment. The market is expanding nowadays because many pieces of equipment are increasingly computerized.

so called “Computer”

Used for emails, word processors, data storing, and data processing

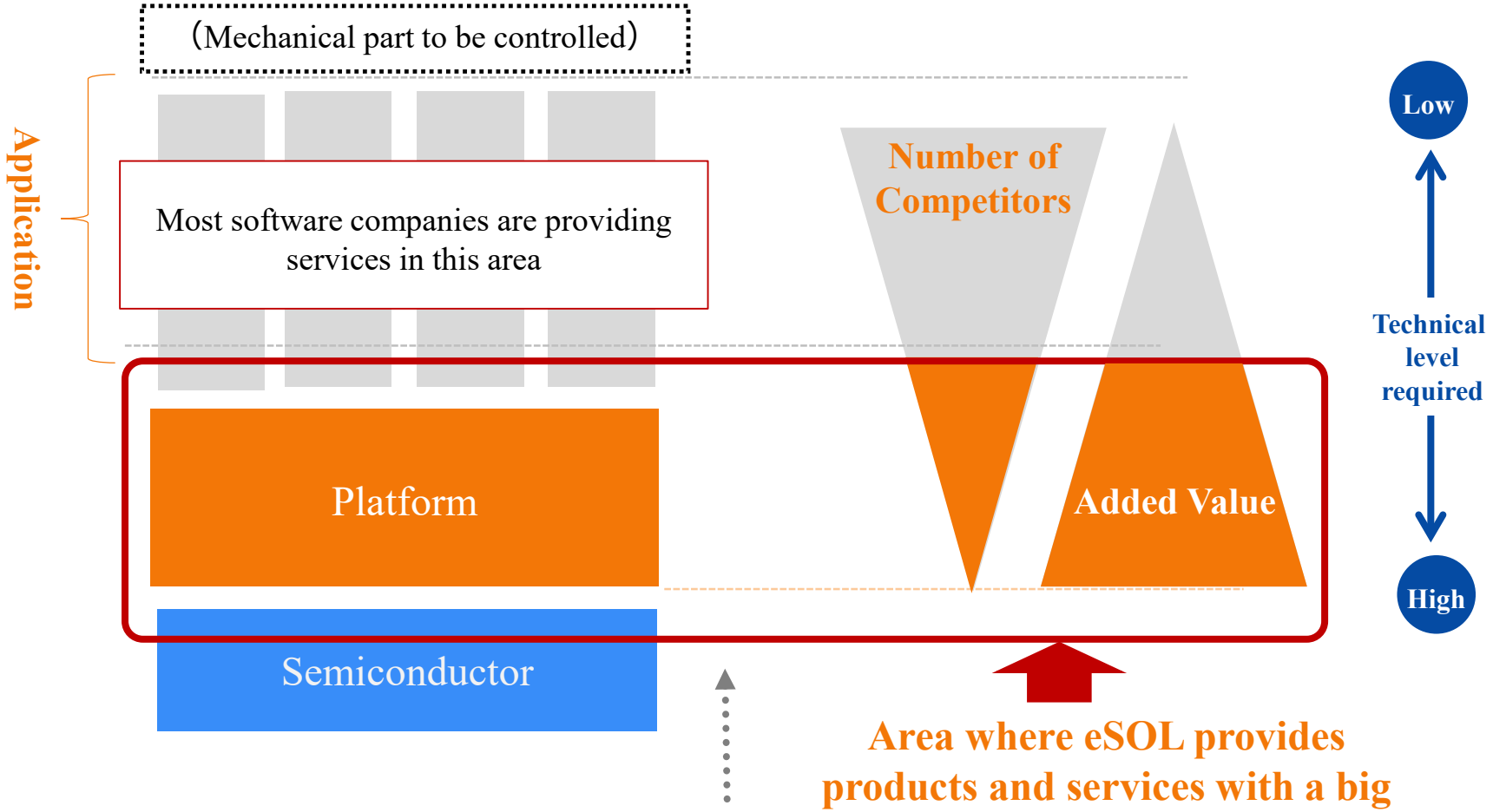
Embedded Software

Used for controlling electronic devices with embedded software. Equipped in almost everything around us..



Industry Structure of Embedded Software

Very few companies can develop leading-edge platform in the world.



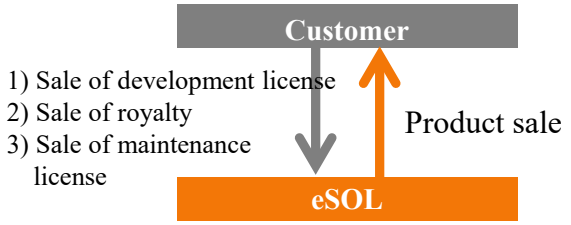
- **Highly value-added business with a big barrier to enter.**
- **Very few companies have unique OS.**

eSOL's Embedded Software Business

Established well-balanced revenue structure with highly profitable "Embedded Software Products" and fairly stable "Engineering Service"

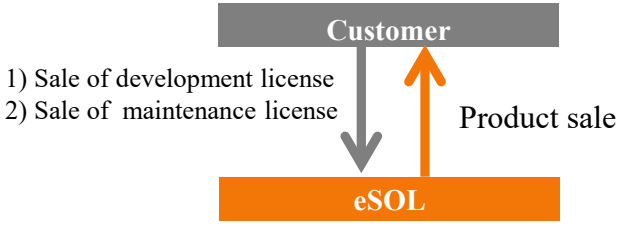
Embedded Software Products

Development / sale of RTOS (real-time operating system)

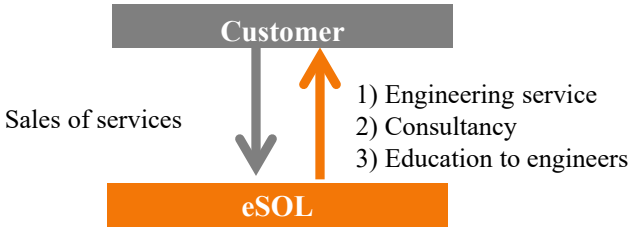


Excellent earnings without depending on the number of engineers

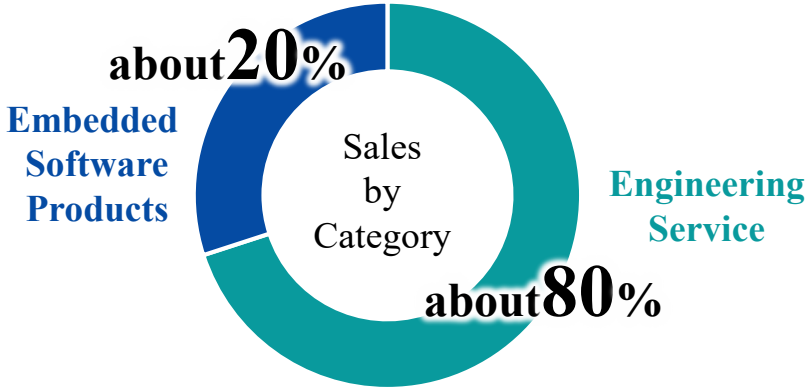
Development/sale of Development Support Tools

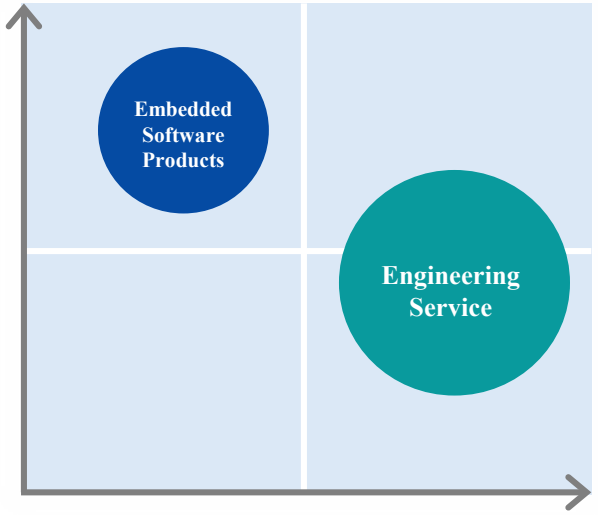


Engineering Services



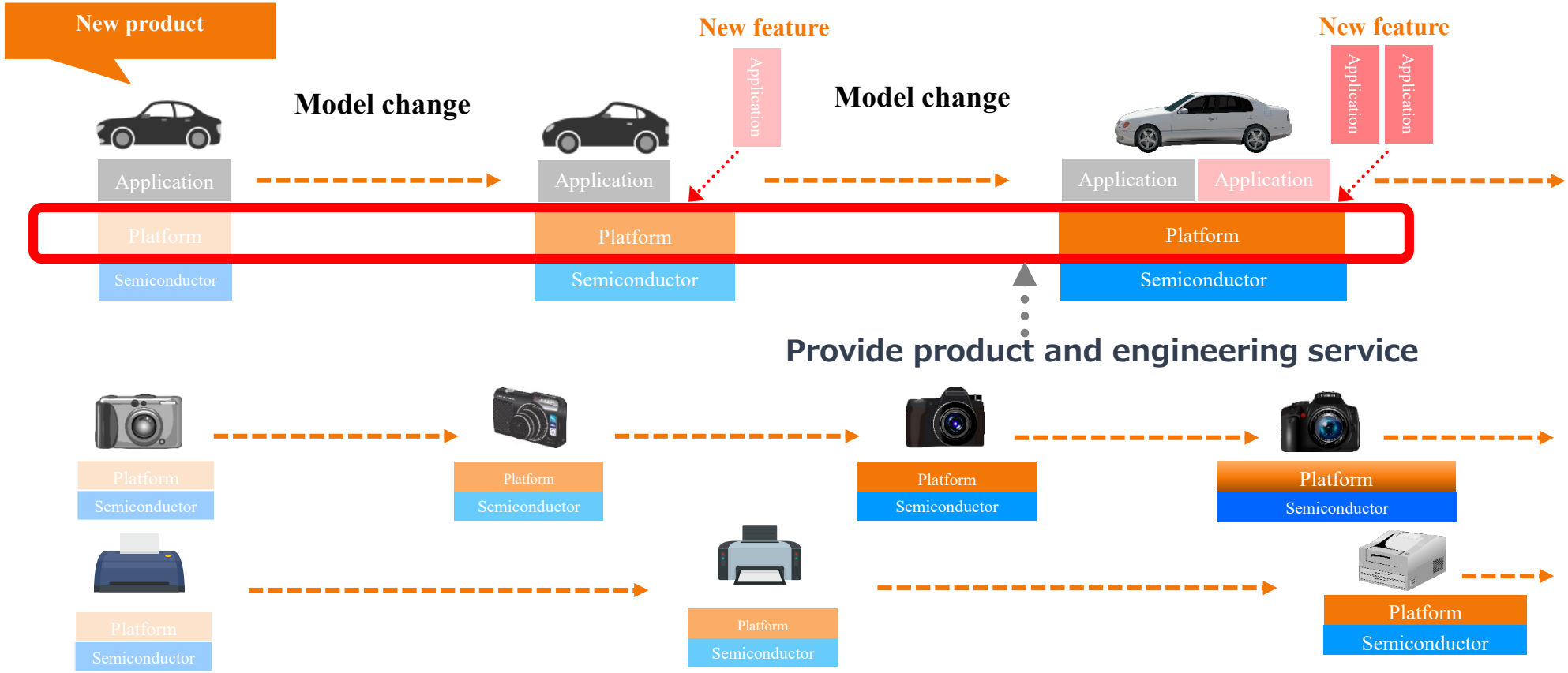
eSOL's primary source of revenue





Stability of eSOL's Embedded Software Business

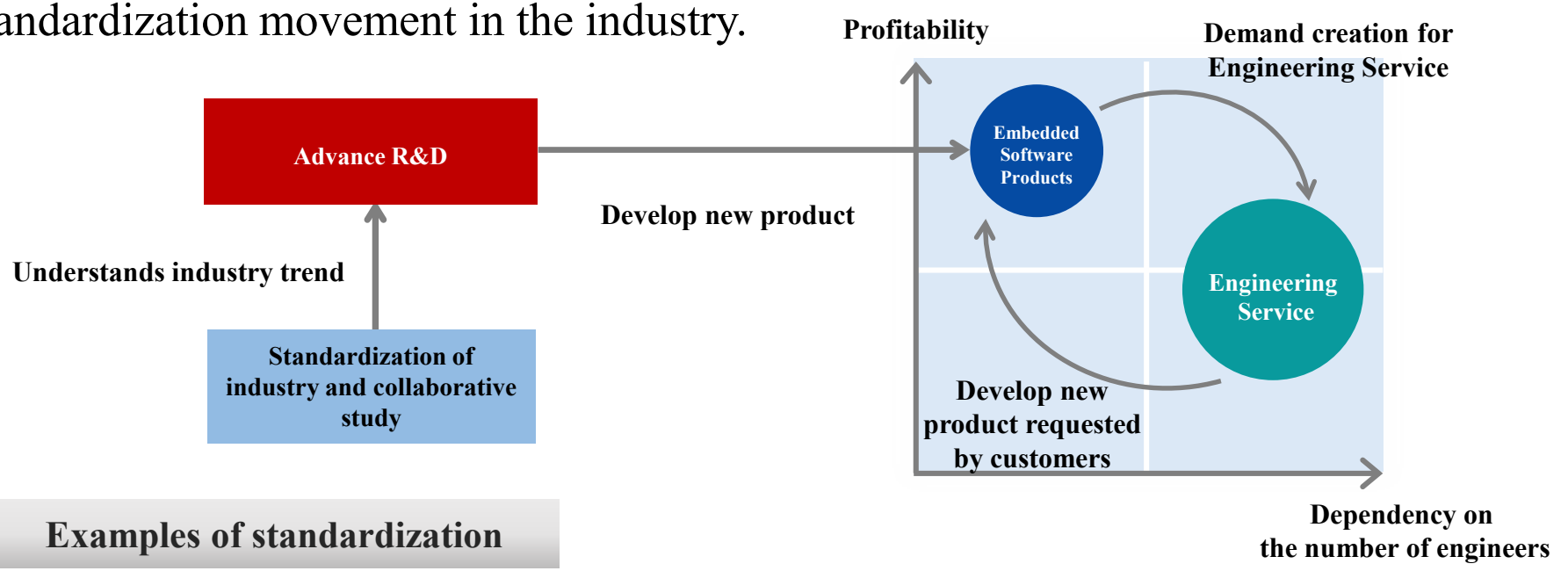
Embedded Software Business is stock business.
Continued repurchase demand for Platform.



Periodical repurchase demand from various customers across industries

Feature of Embedded Software Business

eSOL has expanded its business through successful synergy between Embedded Software Products and Engineering Service. Developed leading-edge products along the way of standardization movement in the industry.



Examples of standardization

AUTOSAR is the global development partnership established in 2003 that aims to standardize basic specifications of software used in automotive industry and consists of more than 200 membership companies/organizations such as automobile manufacturer and automotive components manufacturers.

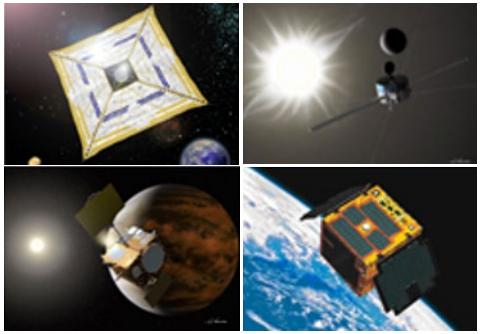
IEEE is the global institute of electrical and electronic engineering established in 1963 having its Head Quarter in the United States, where eSOL is in charge of the chair of SHIM working group which is the sectional committee of computer.

Industries Where eSOL's Embedded Software is Introduced

Our Embedded Software has been introduced across industries. Moreover, the market and importance of this is growing year by year along with IoT becoming familiar.

Automotive devices

Aerospace

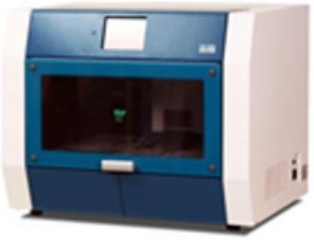


Consumer devices

Industrial equipment

Audio equipment

Physics and chemistry devices



Diverse needs lie in such as research and academic use

Sensing Solution Business Products

By using our programming expertise, we do product planning/manufacturing guidance/ sale of hardware.

Logistics related business

Automotive printer for issuing designated slips

POS handy terminal system

Dedicated terminal holder for forklift

Strong environmental resistance technology with years of expertise

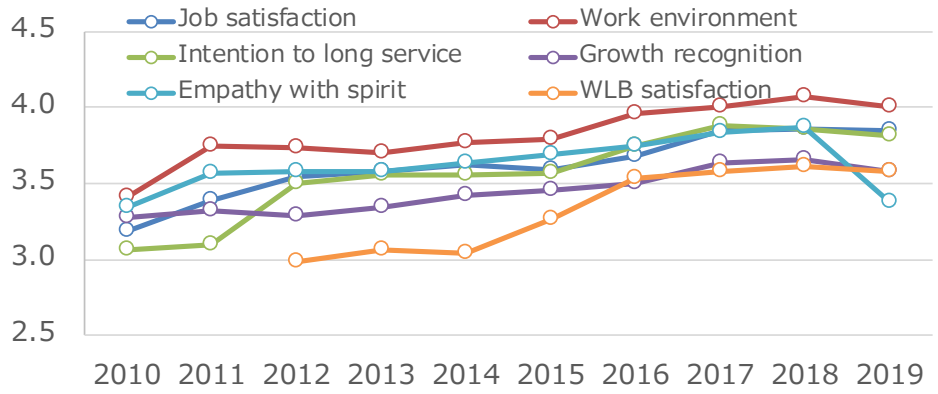
Sensor network business

Farm management system, disaster prevention system etc.

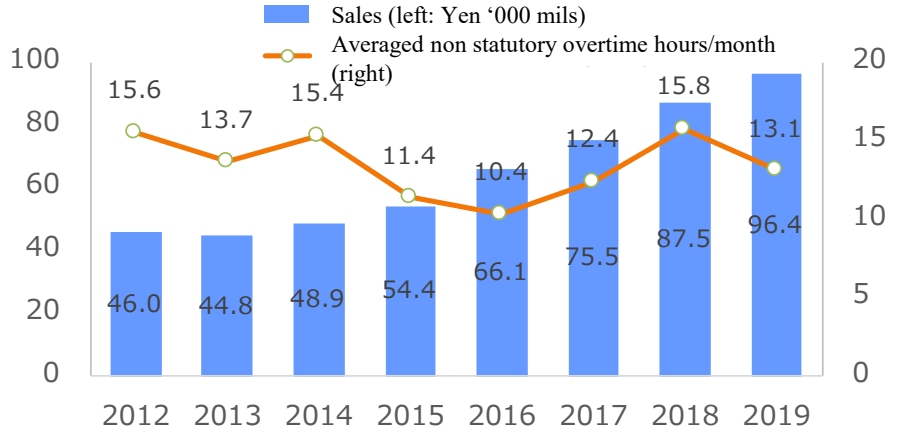
Fair Degree of Employees' Satisfaction

eSOL has implemented "Reform of Working Practice" since 2012, much earlier than other industries, and engineers' motivation have improved.

Awareness survey of engineers (5 out of 5)

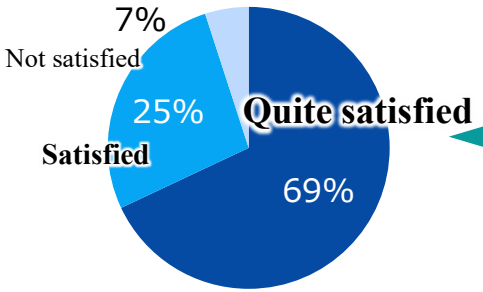


Sales vs "Reform of Working Practice"



In the past 8 years, non-statutory overtime hours have remained almost the same level, while sales has grown twofold.

Are you satisfied with working in eSOL ?
(July 2019 inquiry)



Engineers' comments

- **I joined eSOL wishing to develop unique OS.**
- **I feel myself motivated as my skill improves day by day.**

Average length of service
10.7 years
(+1.6 years from 2012)

Annual paid leave consumed
81.4%
(+11.1pt from 2012)

Topics

eSOL has been enhancing the quality of Work Life Balance as one of the company's strategy, to be more specific, supporting male employees so that they can take child-care leave easily. Recently, Work Life Balance Co. and **Forbes**JAPAN have jointly issued the special article — "All male employees should take child-care leave". In the article, Mr. Hasegawa, President has been featured as one of the managers "encouraging employees to take child-care leave". We are very happy if you would have an interest.

https://forbesjapan.com/articles/detail/31248

2. How Our Business Going On

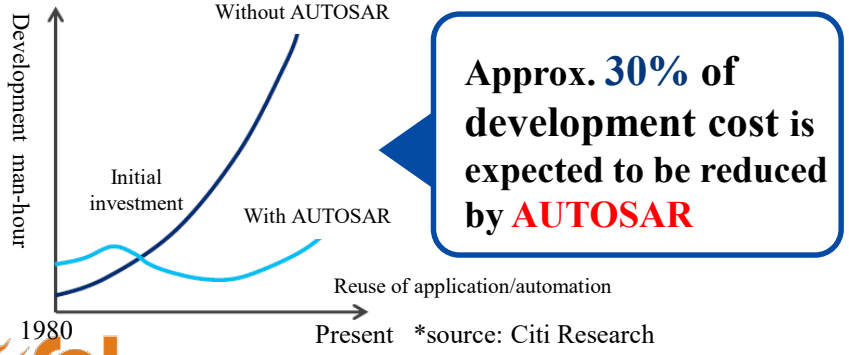
Prospective Strategy: Promising Driver lies in Automotive Industry

eSOL has worked for "AUTOSAR", the global development partnership organized in automotive industry, as "Premium Partner" since 2016.

What's AUTOSAR ? https://www.autosar.org/

- **Global development partnership of the automotive industry** organized in July 2003.
- Consists of more than 200 membership companies/organizations such as automotive manufacturers and automotive components manufacturers.
- Aiming to realize effective development of software and ensure security measures through standardizing basic specifications of onboard software.
- AUTOSAR's specifications have already been introduced into mass-produced vehicles in Europe, also being introduced across other regions including Japan .

Image of development cost reduction by AUTOSAR



Approx. 30% of development cost is expected to be reduced by AUTOSAR

Outline of AUTOSAR hierarchy

Core Partners/ Strategic Partners	・Top level Partners ・From Japan Core Partners 1 company Strategic Partners 1 company
Premium Partners	・Only Core and Premium Partners can design AUTOSAR's specification. ・As Premium Partner, eSOL designs specification.
Associate Partners	・Most Japanese companies refer to AUTOSAR's specification as Associate Partners.

Press Release

Embedded systems specialist eSOL accelerates growth of its European activities

Paris and Tokyo, January 30, 2020 – eSOL, a leading global specialist in embedded systems and IoT business, has set about implementing a major expansion plan in Europe. The company, which was formed in Japan in 1975, has around 450 employees worldwide. eSOL has been achieving continuous annual growth and profit since its inception and is looking to become equally successful in global markets, building on the recent establishment of its eSOL Europe subsidiary near Paris, France in March 2018.

Supplying a host of global blue-chip OEMs with embedded software technology tools, RTOS (Real-Time Operating Systems), middleware and engineering services, eSOL has enjoyed success responding to the market need for increasingly comprehensive solutions in all project phases, from design and development to production and maintenance. eSOL's offer of total engineering solutions, combined with sophisticated technologies, unique ideas and highly skilled engineering teams, have earned the company a solid reputation in embedded systems and real-time software platforms across many different sectors and a multitude of applications.

"As customers strive to accelerate time-to-market, increase product quality, optimize return on investment and hit peak time-to-volume targets, eSOL's skills, experience and innovation are key drivers to customer success," explains Bob Ueyama, Executive Vice-President at eSOL. "It's important for a company like eSOL to seek new markets and increase its activities globally. This is why we are seeking expansion and greater market penetration in Europe and elsewhere."

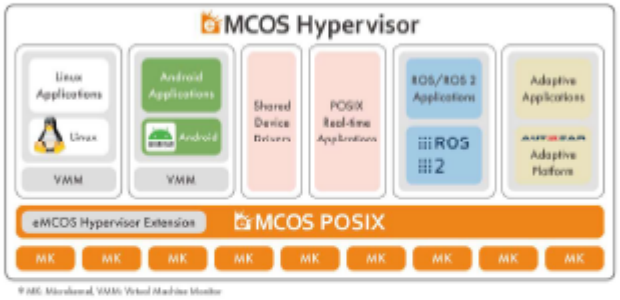
Listed on the Tokyo Stock Exchange, eSOL has pledged to continue innovating and evolving, so it can to be of ever-greater value to its customers and markets. Already one of Japan's premier engineering groups, the company is targeting Europe as a region with enormous potential.

Rolland Dudemaine, Vice President at eSOL Europe, says: "We have a multi-faceted approach to growing our presence in Europe. Firstly, we will take on more engineering personnel in Europe and hire staff in Germany to expand our local development capabilities and support to partners, for example. In turn, this will help us increase our business development activities and provide closer customer support in key vertical markets including automotive and industrial equipment."

eSOL has the required product portfolio, strategic partnerships and engineering resources in place, having built its track record primarily in the embedded software industry, as Laurent Mares, VP Sales, EMEAI and Americas, explains: "We excel in the creation of high-reliability and high-performance RTOSes, development environments, and several types of middleware used in numerous embedded systems, from digital consumer products [including digital cameras] to automotive computer devices [including ADAS and autonomous driving] and industrial IoT systems [including edge computing]. In fact, our high-performance and scalable software platform, which is centred upon our unique and patented multi-kernel RTOS technology, is deployed in over 100 million embedded devices globally."

eMCOS® Hypervisor by eSOL: new virtualization function to eMCOS scalable RTOS

Paris and Tokyo, April 21, 2020 – eSOL, a leading global specialist in embedded software systems, announced the immediate availability of its eMCOS® Hypervisor, a ground-breaking embedded virtualization function for the company's eMCOS scalable real-time operating system (RTOS). eMCOS Hypervisor facilitates the integration of both robust real-time applications on RTOS and feature-rich applications on general-purpose OS – running concurrently on a single hardware platform. Full time and space isolation is provided for each mixed-criticality system.



◇

In terms of architecture, the addition of virtualization to the eMCOS RTOS brings even greater flexibility in mixed-criticality system configuration, making it possible to incorporate general-purpose operating systems like Linux or Android without compromising real-time capabilities and safety.

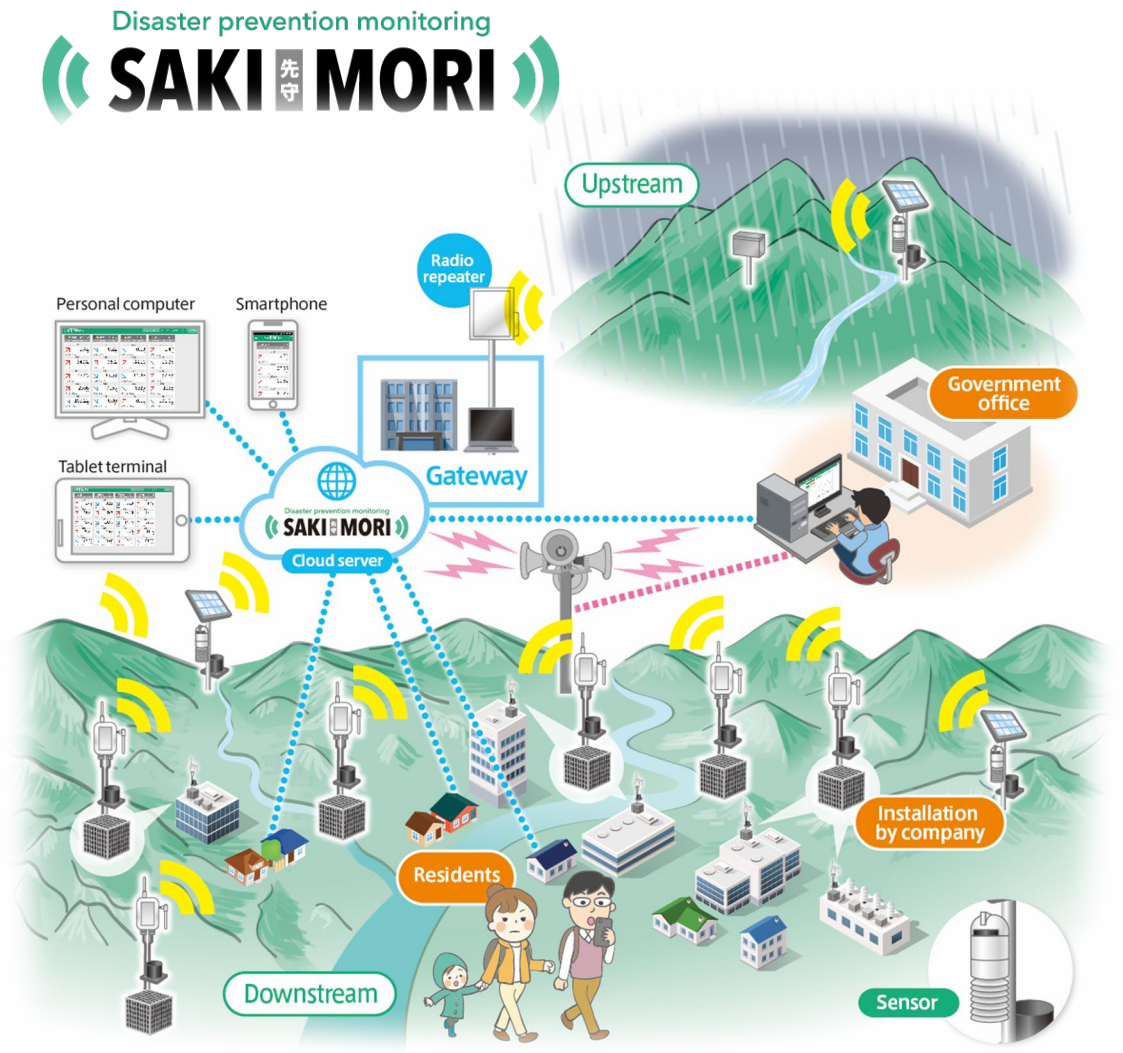
Among many notable advantages, users can leverage eMCOS's advanced scheduling capabilities. As eMCOS Hypervisor is implemented by incorporating a mechanism for virtualization into eMCOS POSIX, users can enjoy scheduling features such as load-balancing and time separation, on the same hardware platform as a guest OS.

A further major benefit is the ease of customization relating to the boot sequence of a general-purpose OS. As guest operating systems are started as eMCOS POSIX processes, the boot sequence can be implemented simply as a process start, and is easily customized as sequential start-up and multi-core parallel start-up. The deployment of multiple guest operating systems is performed in a coordinated, optionally load-balanced manner, without impacting the determinism of real-time or safety functions.

Also appealing to users will be the easy porting of drivers. Linux standard Virtio drivers are supported, making it easy to port Linux guests. In addition, drivers that are tightly coupled to the SoC can be ported with ease because the Virtual Machine Monitor (VMM) can filter or passthrough hardware accesses.

Another important point is the robustness of eMCOS Hypervisor against malfunctions and malicious software. The system is designed to minimize and optimize the virtualization

Sensing Solution Business: Disaster Preventive System



SUSTAINABLE DEVELOPMENT GOALS
世界を変えるための17の目標

Risk management supporting business continuity
BCP

Contribution to local society as key corporation
CSR

Our Efforts

Disaster preventive system can:

achieve business continuity through protecting safety/life of employees and safety of machine and equipment in advance; and

protect safety of local people.

Sensing Solution Business: Solar electricity storage equipment

Solar Cubicle

Cubic type solar electricity storage equipment

Locations to be used

- Municipal disaster evacuation sites
- Emergency power supply at construction sites
- Schools, hospitals and factories
- Mountain trails, agricultural land and farms
- Rivers, debris dams, etc.

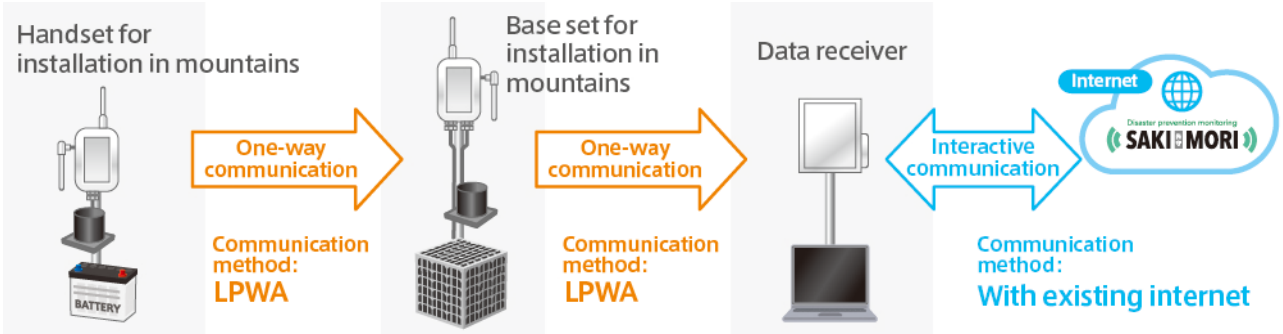
Product features

- Power can be supplied to machine and tools where electricity is not supplied. The accurate status of the equipment can be checked at once.
- Solar power generation eliminates the need for gasoline and other fuels.
- Structure is designed to store supplies in an emergency.
- Prepares AC outlets as an emergency power box
- SOS transmission in an emergency (optional, to be featured)

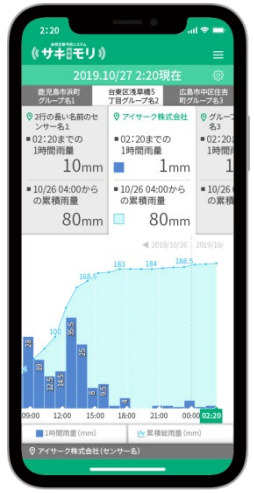
Installation

- Easy to install. Can start using just after the installation.
- Easy to move. Can be installed only for a limited period of time.
- Special work is not required

An example of using AGRInk Sensor with Solar Cubicle



Monitoring with special application in smart phones



3. eSOL reports FY2020 2Q Results

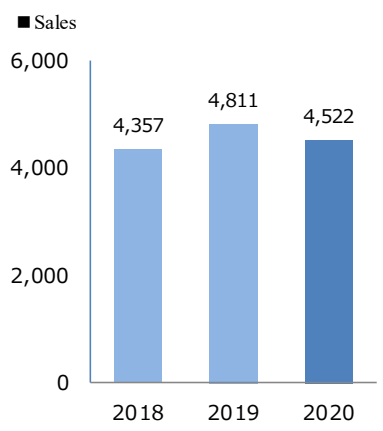
FY 2020 Q2 Results - Summary

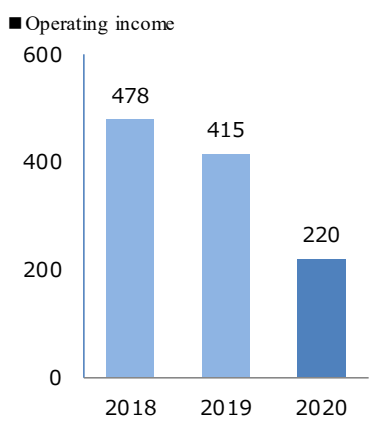
Summary of results

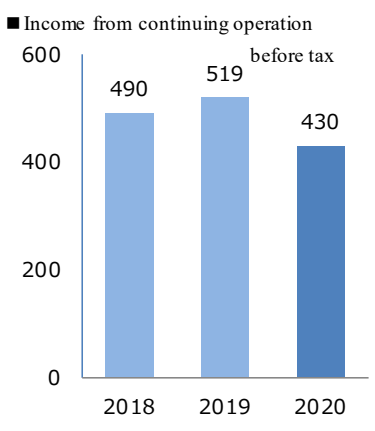
Sales and earnings declined year-on-year primarily due to the increase in R&D scalable RTOS, while the revenue from NEDO* project was allocated to other income.

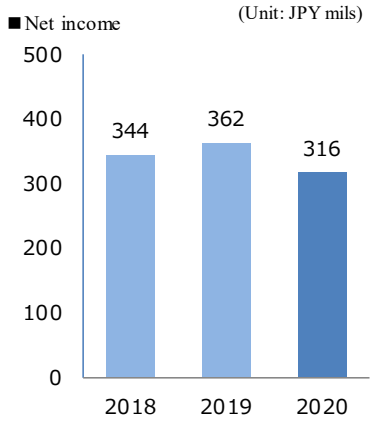
(Unit: JPY mils)

	FY 2019 Q2	FY 2020 Q2	YoY	Forecast	Progress
Sales	4,811	**4,522**	▲6.0%	4,973	90.9%
Operating income	415	**220**	▲46.9%	200	109.8%
Income from continuing operation before tax	519	**430**	▲17.1%	399	107.8%
Net income	362	**316**	▲12.6%	295	107.0%









*New Energy and Industrial Technology Development Organization

FY 2020 Q2 Results - Summary

Results by segment - summary

(Unit: JPY mils)

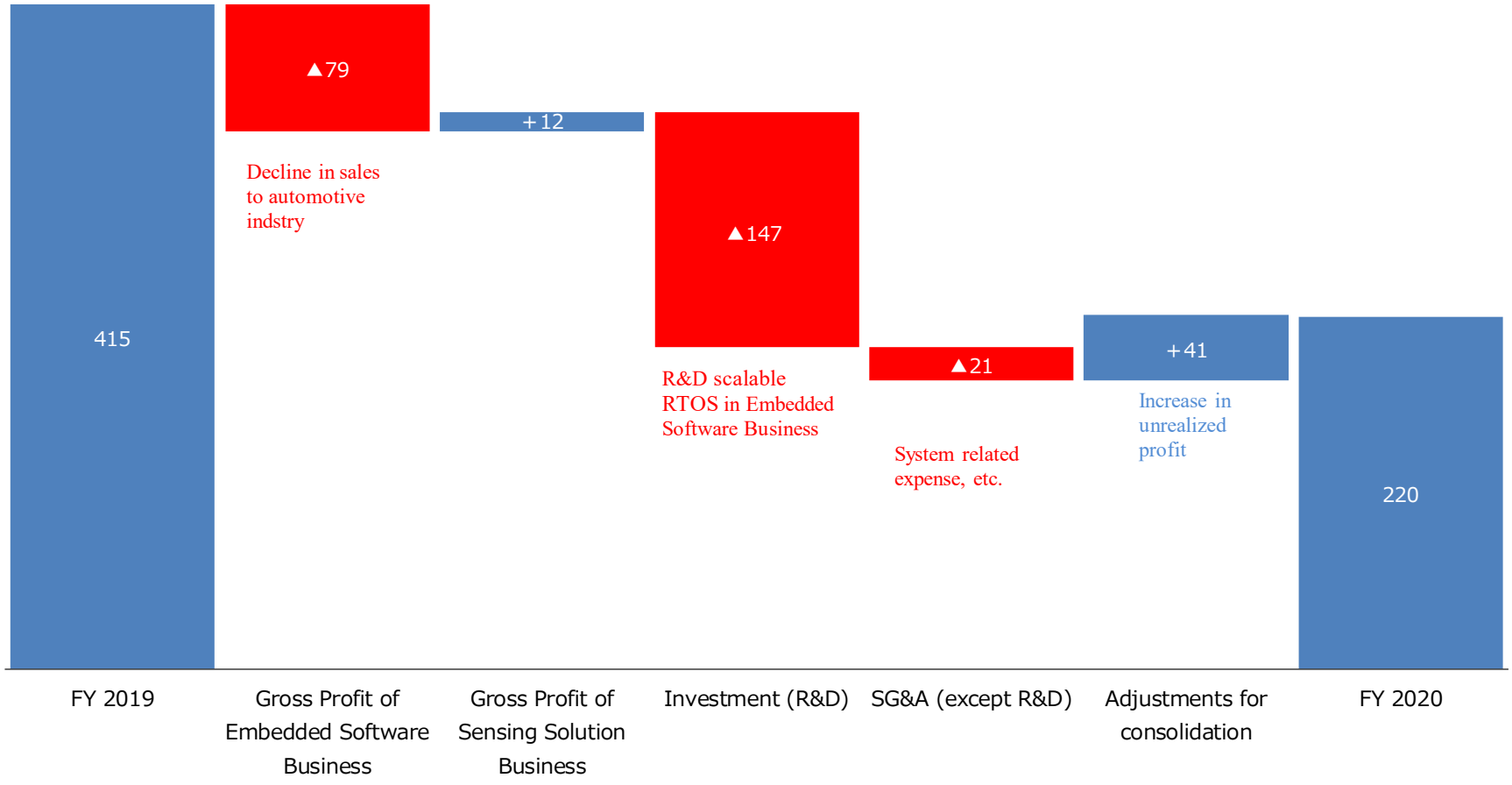
By Segement			FY 2019 Q2	FY 2020 Q2	Variance fron 2019
Sales			4,811	**4,522**	▲6.0%
	Embedded Software Business		4,526	**4,174**	▲7.8%
		Embedded Software Products	918	**864**	▲5.9%
		Engineering Services	3,607	**3,309**	▲8.3%
	Sensing Solution Buiness		310	**336**	+8.2%
	Adjustments for consolidation		▲25	**12**	—
Gross Profit			1,497	**1,471**	▲1.7%
	Embedded Software Business		1,407	**1,327**	▲5.7%
	Sensing Solution Buiness		112	**125**	+11.0%
	Adjustments for consolidation		▲22	**18**	—
Operating Income			415	**220**	▲46.9%
	Embedded Software Business		458	**201**	▲56.1%
	Sensing Solution Buiness		▲20	**0**	—
	Adjustments for consolidation		▲22	**18**	—

Embedded Software Business: Earnings declined mainly due to lagging sales to automotive industry.
Sensing Solution Business: Earnings rose mainly due to the growth in sales of in-house handy terminals.

FY 2020 Q2 Results - Summary

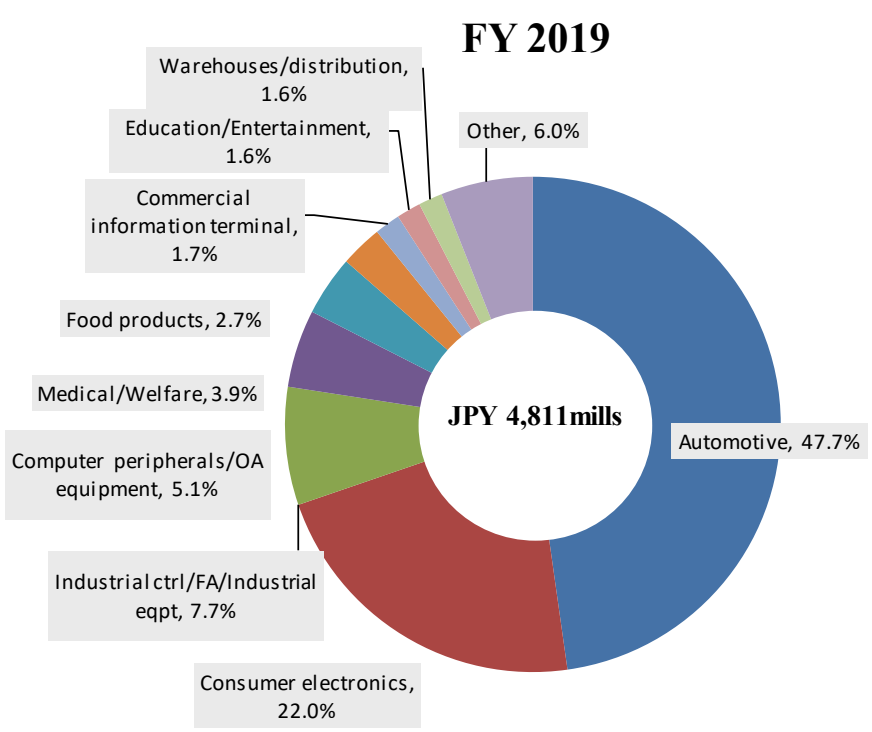
Walk of Operating Income (Year-on-Year)

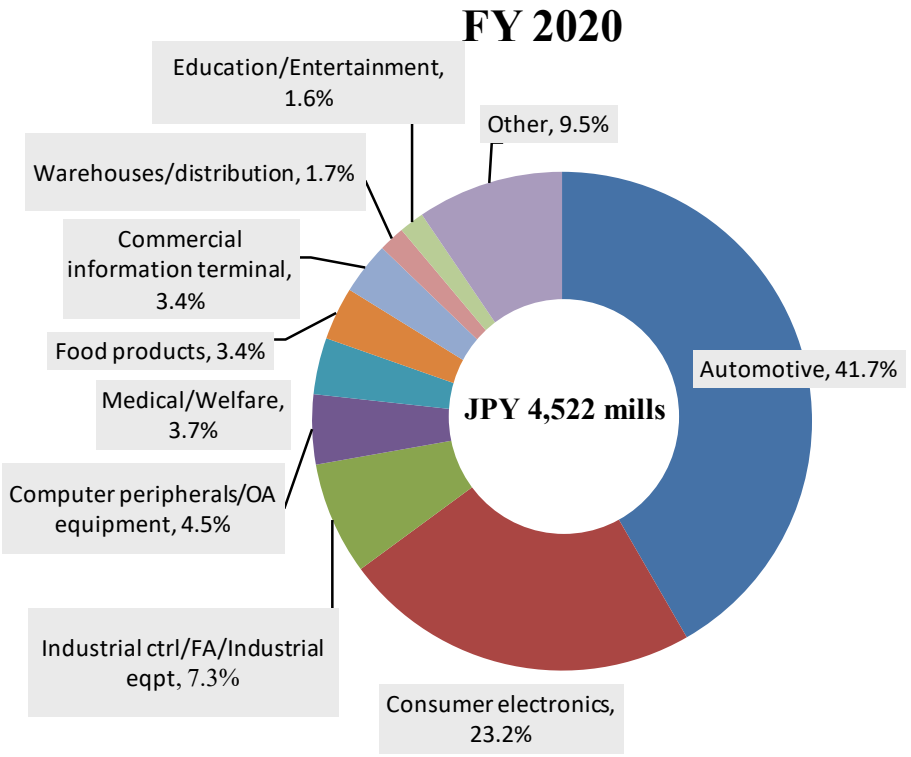
(Unit: JPY mills)



FY 2020 Q2 Results - Summary

Sales by segments of customers





* a part of sector categorization has been changed from this quarter.

FY 2020 Q2 Results - Summary

R&D investment — speed the investment up heading for the global market.

■ Basic policy for R&D investment

Approx. 10% of sales revenue is continuously invested in R&D and revision up.

■ Policy for the current FY

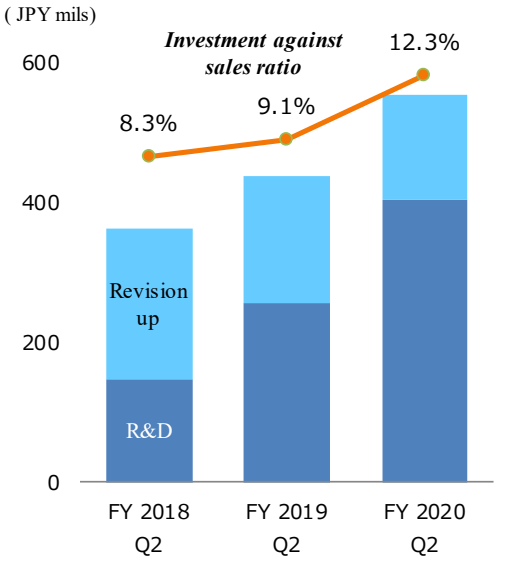
The whole group, including overseas affiliates, accelerates R&D investment scalable RTOS with a view to targeting automotive industry where computerization has been progressing.

■ Results

(Unit: JPY mils)

	FY 2019 Q2	FY 2020 Q2	YoY
Sales	4,811	**4,522**	▲6.0%
Investment in development	438	**554**	+26.5%
R&D	255	**402**	+57.5%
Revision up	182	**151**	▲17.0%
Investment against sales ratio	9.1%	**12.3%**	—

Revison up: investment to maintain the function of product



FY 2020 Plan 【Return to Shareholders】

eSOL would like to return profits to our shareholders in accordance with the following policies.

■ Dividend Policy

- Stable financial position
- Stable dividend payout ratio in line with business performance
- Investment for increasing corporate value thorough utilizing internal reserve (R&D investment , human resource development, etc.)

■ Amount of Dividend

	FY 2019	FY 2020
Dividend per share	*5.50yen	5.50yen
(iterim dividend included)	(0.00yen)	(1.50yen)

*memorial dividend of 1.50yen/share is included

FY 2020 Plan 【Revised Forecast for the Current FY】

■ The wake of COVID-19 outbreak is causing:

- Scale-down, cancellation or suspension of client's R&D project.
- Shrinkage in sales of embedded software products due to client's stagnated production.

■ Our R&D investment represented by scalable RTOS continues as scheduled.

(Unit: JPY mils)

	Initial Forecast on Feb. 14, 2020	Revised Forecast on Aug. 12, 2020	Amount incremental	Ratio incremental	FY2019 (Results)
Sales	10,539	8,654	▲1,884	▲17.9%	9,644
Operating income	598	224	▲374	▲62.6%	748
Income from continuing operation before tax	805	441	▲363	▲45.1%	867
Net income	591	320	▲271	▲45.8%	659

Notes on this material

Any statements contained in this document that are not historical facts are forward-looking statements based on publicly available information at the time of issuing this document, and therefore, will not guarantee such as the result of operation in the future.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations.

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Contact for information
eSOL Co.,Ltd.
President's office
e-mail : esol-ir@esol.co.jp
WEB : https://www.esol.com/