

FY2018 Results Briefing

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Performance by Region and by Segment

The forecast or projections set out in this presentation are based on the assumptions and beliefs of our management in light of the information available to it as of February 20, 2019. Changes in global, economic and business conditions could cause actual results to differ materially from these forecasts. All amounts are rounded to the nearest 100 million yen.

Consolidated Business Performance

- Increase in sales: Shipment volume increased due to an increase in the market share and the expansion of the market.
- Decrease in profit: Profit decreased due to the impact of rising raw material prices.

(Unit: 1 billion yen)

	Actual after adjustments for FY2017 ^{*2}	Plan for FY2018	Actual for FY2018	Plan for FY2019
Net sales	280.1	300.0	290.2 (3.6%)	300.0 (3.4%)
Operating profit	20.5	18.5	15.3 (-25.3%)	17.5 (14.1%)
Ordinary profit	21.3	18.5	15.5 (-27.3%)	18.0 (16.1%)
Profit ^{*1}	14.8	13.5	11.9 (-19.4%)	12.0 (0.8%)
ROE	6.8%	6.0%	5.4%	5.5%
Operating margin	7.3%	6.2%	5.3%	5.8%
Overseas sales ratio	44.2%	46.0%	46.4%	47.0%

Assumed indexes for plan

		2017 avg.	2018 avg.	2019 projections
Exchange rate	1 USD=	¥112.0	¥110.4	¥110.0
	1 EUR=	¥127.2	¥130.0	¥130.0
	1 RMB=	¥16.6	¥16.6	¥16.5

		2017 avg.	2018 avg.	2019 projections
Raw material	Naphtha	¥40,000/kL	¥51,075/kL	¥45,000/kL
	Rosin	\$1,810/t	\$1,838/t	\$1,800/t

*1: Net income attributable to owners of parent

*2: Actual value adjusting for the period between January and December for both Domestic and Overseas

*3: Results for FY2018 are recalculated, taking into account the consolidation of shares.

*4: Capital investment plan for FY2019 is based on order placements.

Dividend ^{*3} (full-year, yen)	FY2018	Plan for FY2019
	85	90

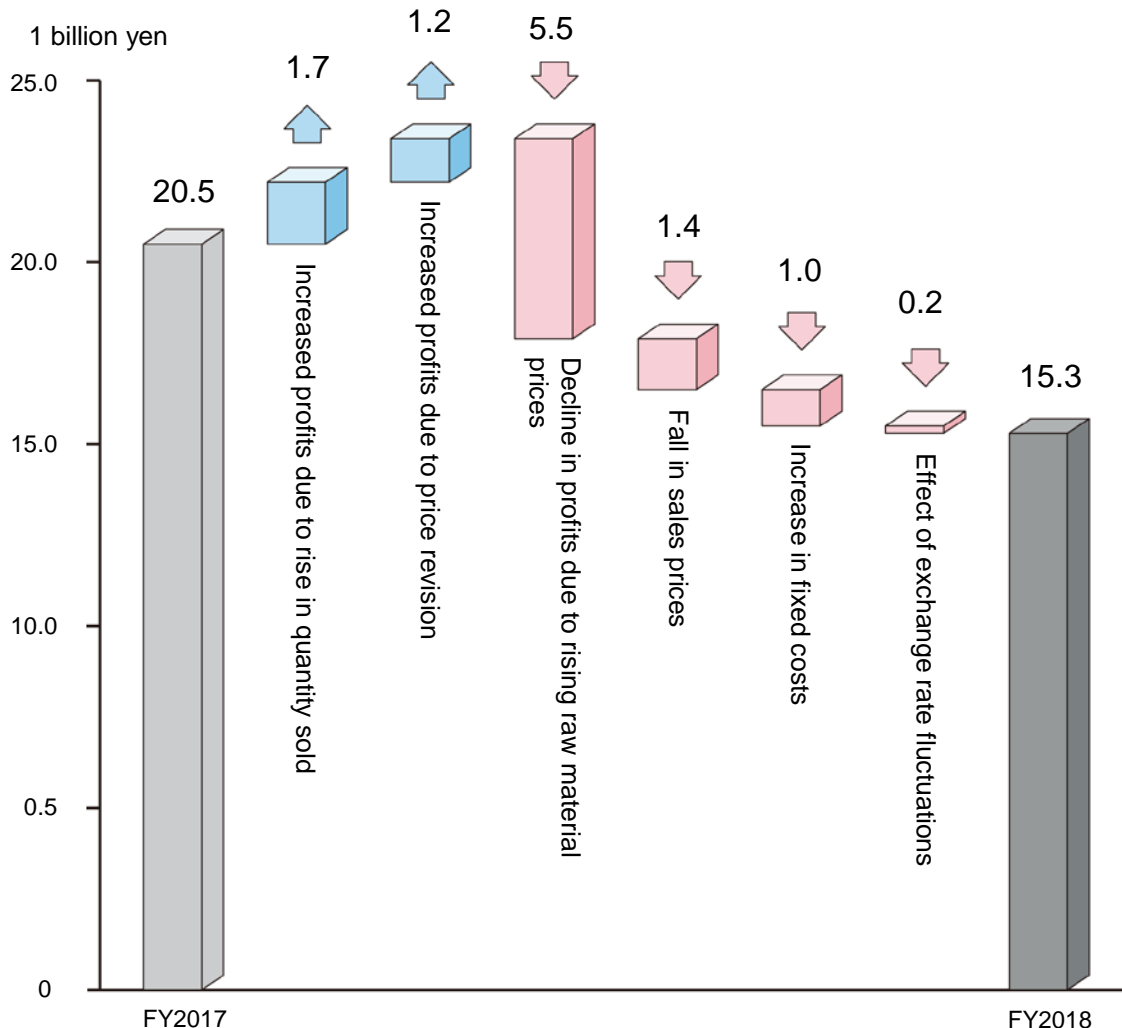
(Unit: 1 billion yen)	FY2018	Plan for FY2019
Capital Investment ^{*4}	9.8	22.0
Depreciation	10.0	10.0

FY2018 Operating Profit and Analysis of Factors Behind YoY Difference

FY2017	20.5 billion yen
FY2018	15.3 billion yen

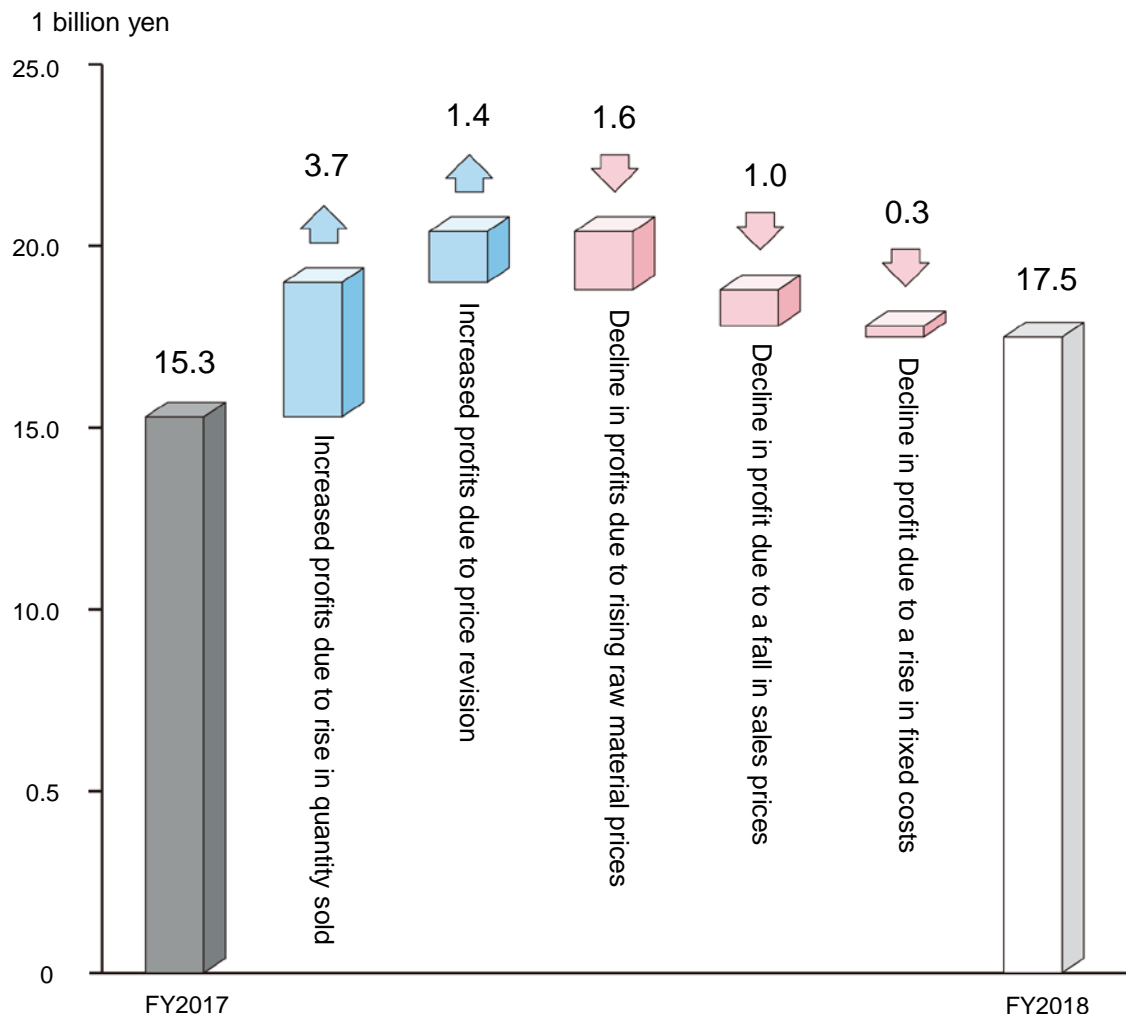
Remarks

- Increased profits due to rise in quantity sold (positive impact of 1.7 billion yen)
 Including the effect of high performance products: 100 million yen.
 The shipment volume increased for display materials, coating materials, adhesives, gravure inks and inkjet inks, etc.
- Increased profits due to price revision (positive impact of 1.2 billion yen)
 Japan: 500 million yen, Overseas: 700 million yen
- Decline in profits due to rising raw material prices (negative impact of 5.5 billion yen)
 Japan: -3.3 billion yen, Overseas: -2.2 billion yen
- Fall in sales prices (negative impact of 1.4 billion yen)
 Unit price fell in some products including color filter pastes.
- Increase in fixed costs (negative impact of 1.0 billion yen)
- Effect of exchange rate fluctuations (negative impact of 0.2 billion yen)



FY2018 Operating Profit and Analysis of Factors Behind YoY Difference

FY2017	15.3 billion yen
FY2018	17.5 billion yen
Remarks	
<ul style="list-style-type: none"> Increased profits due to rise in quantity sold (positive impact of 3.7 billion yen) In high performance products, the volume increase of color filter pastes, display materials, coating materials and adhesives is expected. Increased profits due to price revision (positive impact of 1.4 billion yen) Japan: 1.1 billion yen, Overseas: 0.3 billion yen Decline in profits due to rising raw material prices (negative impact of 1.6 billion yen) Japan: -1.2 billion yen, Overseas: -0.4 billion yen Decline in profit due to a fall in sales prices (negative impact of 1.0 billion yen) LCD and electronics-related products Decline in profit due to a rise in fixed costs (negative impact of 0.3 billion yen) 	



Impact of rising raw material prices in FY2018

Expected impact of rising prices of raw materials	Effect of price revisions
5.5 billion yen	1.2 billion yen
<ul style="list-style-type: none"> ■ Solvent (ethyl acetate, MEK, etc.) ■ Pigment intermediates ■ Titanium oxide ■ Photoinitiators ■ Monomer (acrylic acid ester, etc.) ■ Urethane raw materials (isocyanate) 	<ul style="list-style-type: none"> ■ Pigments ■ Colorants ■ Adhesives ■ Resins ■ Coatings ■ Gravure inks and others

Impact of rising raw material prices and countermeasures in FY2019

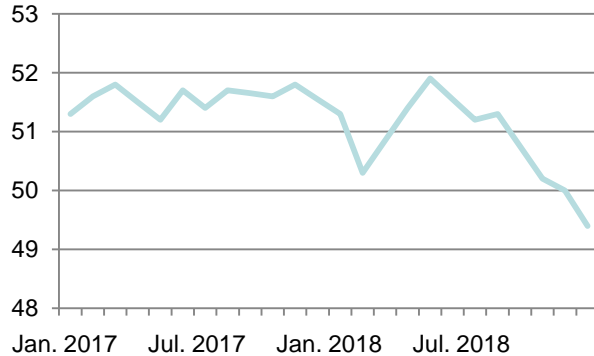
Expected impact of rising prices of raw materials	Effect of price revisions	Effect of cost reduction
1.6 billion yen	1.4 billion yen	1.0 billion yen
<ul style="list-style-type: none"> ■ Naphtha prices → Solvent, monomer, etc. * Impact on purchase prices of raw materials will emerge three to six months later. ■ Environmental regulations in China → Pigment intermediates, titanium oxide, etc. * Prices remain high, upward trend overall. 	<ul style="list-style-type: none"> ■ Prices are revised in offset inks, in addition to the above products where price revision was promoted in FY2018. 	<ul style="list-style-type: none"> ■ Improvement in the self-manufacture rate of resins for ink ■ Expanded adoption of a new production method ■ Promotion of structural reforms such as the redevelopment of domestic sales and logistics bases

Common Company-wide Issues

Changes in the Market

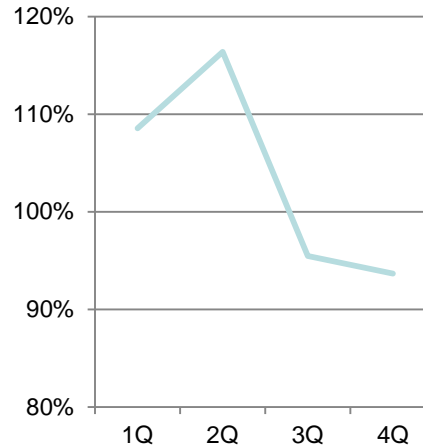
Deceleration of the market in China

Manufacturing PMI



Source: Yahoo Finance

Company's actual sales in China (YoY)



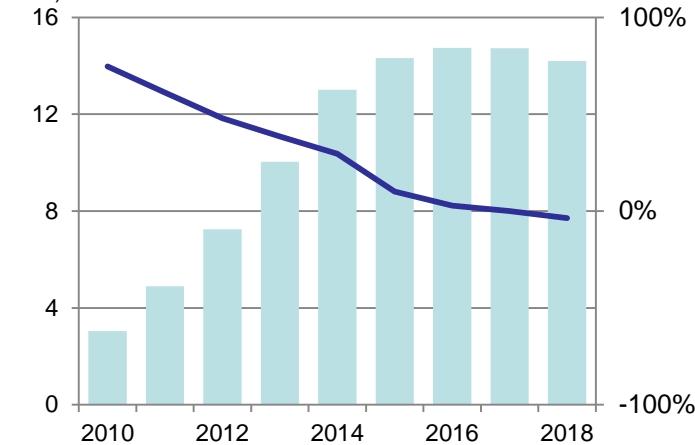
Sales remained strong in the first half, but fell below the previous year's level in the second half.

* Sales of offset inks that easily reflect the local economy: Declined 5.7% annually.

- Promotion of rationalization
Tianjin's liquid ink production was integrated into Shanghai's site.
- Sales expansion
The share of display materials expanded in the market in China.
- Business expansion in new areas
Myanmar and Turkey, etc.

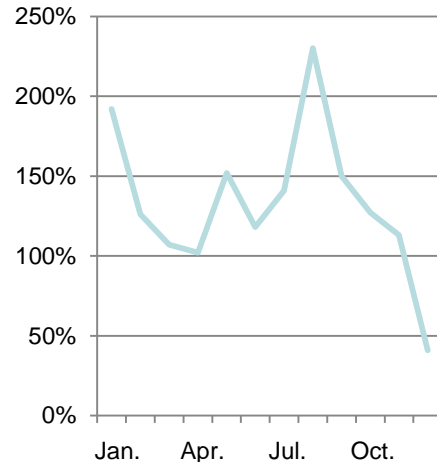
Deceleration of the smartphone market

(100 units) Trends in global smartphone shipments



Source: IDC

Company's actual sales of major materials for smartphones (YoY)



Smartphone shipments slowed, which had an impact mainly in polymer-related businesses in the fourth quarter.

* Company sales of major materials for smartphones in December: Declined 59% year on year.

- Promoted the development of high value-added products such as those compatible with 5G.

	2018		2019
	Initial plan	Actual	Plan
Strategic investment (human resources, technologies and businesses)	5.0	0.2	6.0
Capital investment	16.0	9.8	22.0
Information investment	1.0	0.9	0.5
Total	22.0	10.9	28.5

(Unit: 1 billion yen)

■ Major capital investment

Actual for FY2018	Plan for FY2019
<ul style="list-style-type: none"> ■ Japan: Laminating adhesives-related ■ Europe: Functional inks-related ■ Southeast Asia: Establishment of base in Myanmar ■ China: Relocation of Jiangmen Plant 	<ul style="list-style-type: none"> ■ Japan: Laminating adhesives ■ Japan: Healthcare-related ■ Europe: Functional inks-related ■ Central and South America: New plant in Mexico ■ China: Relocation of Jiangmen Plant

■ Contents of gap with the plan for FY2018

Capital investment: Postponement of expansion of bases in Turkey and Mexico

Strategic investment: Cancellation or postponement of various alliances and M&A

Consider strategic investment of an estimated 13 billion yen by 2020, including investments not made in FY2018.

Make active investments in human resources, technologies and businesses that will lead to the creation of new businesses.

Performance by Segment

(Unit: 1 billion yen)

	Actual after adjustments for FY2017		Actual for FY2018		Increase/decrease (%)		Full year plan for FY2019	
	Net sales	Operating profit	Net sales	Operating profit	Net sales	Operating profit	Net sales	Operating profit
Colorants and Functional Materials	71.9	6.5	74.7	5.4	3.9	-17.3	78.0	6.0
Polymers and Coatings	63.5	7.9	66.1	6.0	4.1	-23.3	70.0	7.0
Packaging Materials	63.5	2.4	68.0	1.5	7.2	-38.4	73.0	2.5
Printing and Information	80.5	2.6	79.4	0.9	-1.4	-63.8	78.5	1.6
Others, Adjustment	0.7	1.1	2.0	1.5	-	-	0.5	0.4
Consolidated	280.1	20.5	290.2	15.3	3.6	-25.3	300.0	17.5

- **Colorants and Functional Materials:** New adoption of display materials made progress in China.
- **Polymers and Coatings:** Sales mainly for electronics grew significantly.
- **Packaging Materials:** Volume increased due to the expansion of packaging demand and sales.
- **Printing and Information:** Shipments of functional inks, including UV inks, increased while demand continued to decline.
- **Common issues across the Company:** Rising raw material prices had a significant impact.

Summary of Performance by Segment (Colorants and Functional Materials)

(Unit: 1 billion yen)

Summary of Performance	Actual after adjustments for FY2017	Plan for FY2018	Actual for FY2018	Increase/decrease (%)	Plan for FY2019
Sales	71.9	77.5	74.7	3.9	78.0
Operating profit	6.5	6.1	5.4	-17.3	6.0
Key Product Sales Targets		Plan for FY2018	Actual for FY2018		Plan for FY2019
Media materials		22.5	20.4		21.5
Functional dispersants		1.2	1.5		2.0

	Major issues for FY2018	Summary FY2018
Chemicals	<p>Decrease in sales and increase in profit</p> <ul style="list-style-type: none"> ● Development and sales of new pigments for digital printing and coating ● Stronger development of carbon dispersants for LiB and their overseas development 	<ul style="list-style-type: none"> ● Sales of pigments remained weak due to the sluggish performance of the printing field and the impact of rising raw material prices. ● Some of new high-dispersion pigments for IJ application and coating application were achieved. ● Achievement of sales for battery manufacturers in China will come into sight in 2019.
Display materials	<p>Increase in sales and increase in profit</p> <ul style="list-style-type: none"> ● Acquisition of new customers in China ● Sales expansion of resist inks for image sensors 	<ul style="list-style-type: none"> ● Sales remained strong partly due to actual sales at panel manufacturers in China. ● The technical development system of materials for sensors has been put in place.
Colorants	<p>Increase in sales and decrease in profit</p> <ul style="list-style-type: none"> ● Development of healthcare and medical colorants ● Sales expansion of high design/functional colorants through the enhanced lineup 	<ul style="list-style-type: none"> ● Profits declined due to the impact of rising raw material prices. ● In medical-related fields, the development of specific wavelength blocking materials was the focused, and customers began evaluating them. ● Liquid colorants were well received by large customers, and their adoption came into view. The supply of functional colorants began in CNT-related fields.

Summary of Performance by Segment (Colorants and Functional Materials)

Major issues for FY2019

- Chemicals
 - Response to rising raw material prices and declining demand for offset printing
 - Improvement in profitability due to the integration of products and price adjustment, differentiation product strategy, and sales expansion to the target growth markets.
 - Improvement in the results of functional dispersants, particularly carbon dispersants for LiB
- Display materials
 - Expansion of the market share of resist inks for LCD and OLED due to higher definition (higher brightness, wider color gamut) and stronger competitiveness
 - Improvement in results of resist inks for image sensors (mobile application, in-vehicle application, etc.)
- Colorants
 - Improvement in business profitability and development into new markets and new fields
 - Expansion of the share of existing markets, an improvement in the results of high performance products and the expansion of overseas businesses through global cooperation and strengthened sales activities.

Medium-term themes

1. Expansion of areas of functional dispersants using surface treatment technology and dispersion processing technology
→ Electronics, mobility, medical and agriculture areas, etc.

Development example 1: Carbon black-insulation material	Development example 2: Super smooth surface treatment
Compatible with the thinning of materials and the densification of carbon Application examples: Coverlay (electronic substrate), EL panel partitions, etc.	Higher functionality for a variety of industrial materials Application examples: New coating for magnetic recording materials, dispersion for laminated glass interlayer film, metal dispersion for inductors, etc.

2. Expansion of sensor-related businesses
 - Develop them into a pillar of the display materials business following resist inks for LCD.
3. Change of the earnings structure for the pigments business and the colorants business
 - Earning new revenues through the optimization of the supply chain and the development of new products and new fields, and development into the global market

Summary of Performance by Segment (Polymers and Coatings)

(Unit: 1 billion yen)

Summary of Performance	Actual after adjustments for FY2017	Plan for FY2018	Actual for FY2018	Increase/decrease (%)	Plan for FY2019
Sales	63.5	68.0	66.1	4.1	70.0
Operating profit	7.9	7.1	6.0	-23.3	7.0
Key Product Sales Targets		Plan for FY2018	Actual for FY2018		Plan for FY2019
Electronic/optical products		10.5	13.5		14.6

		Major issues for FY2018	Summary FY2018
Coating materials	Increase in sales and increase in profit	<ul style="list-style-type: none"> Expansion of electronics materials, leveraging coating and processing technologies 	<ul style="list-style-type: none"> Sales expansion of conductive adhesive sheets for smartphones and displays grew in both the domestic and overseas markets. Large marking film projects were achieved in Japan.
Adhesives	Increase in sales and decrease in profit	<ul style="list-style-type: none"> Further expansion of overseas areas 	<ul style="list-style-type: none"> Adhesives for electronics grew favorably Laminated adhesives for lithium-ion batteries grew. Rising raw material prices had an impact.
Paint resin	Decrease in sales and decrease in profit	<ul style="list-style-type: none"> Enhancement of eco-friendly product line Sales expansion of high value-added products 	<ul style="list-style-type: none"> In can coatings, sales of eco-friendly products remained strong in the US market. Sales of can coatings were weak due to sluggish demand for coffee cans in Japan. Sales of high value-added resins were firm in the first half, but grew at a sluggish pace in the second half.

Summary of Performance by Segment (Polymers and Coatings)

Major issues for FY2019

- Coating materials
 - Sales expansion activities of products for the electronics/ optical markets (anti-noise products/OLED peripheral materials, etc.)
 - Activities to propose our specifications for the 5G (high-speed communication) market
- Adhesives
 - Enhancement of overseas SCM of eco-friendly adhesive compounds for polarization plates
 - Sales expansion of adhesives and primer coatings in the environment and energy fields.
- Paint resin
 - Sales expansion of eco-friendly coatings
 - Development of new resins for the electronics market
 - Expansion of energy-related resins

Medium-term themes

1. Commercialization of electronics and packaging/ industrial materials as strategic markets.
 - ✓ Proposal activities focusing on the environment and CSR
 - ✓ Acceleration of the development of products for 5G/IoT/new mobility and EV markets

Development example: Electromagnetic wave shield materials compatible with 5G

Promote the development and sales expansion of products that accommodate high frequency ranges, in addition to electromagnetic wave shield materials that have been developed.

2. Enhancement of medical science products
 - ✓ Building of a new pipeline of patches in two areas of generic and a new route of administration
 - ✓ Sales expansion and overseas development (mainly in the Chinese market) for medical adhesives (including high permeability types)
 - ✓ Development of materials for medical equipment and testing equipment (coating materials and processed goods, etc.)
3. Enhancement of global SCM
 - ✓ Building of a global quality assurance system
 - ✓ Expansion of production bases in North America, India, Turkey and Asia



Summary of Performance and Segment (Packaging Materials)

(Unit: 1 billion yen)

Summary of Performance	Actual after adjustments for FY2017	Plan for FY2018	Actual for FY2018	Increase/decrease (%)	Plan for FY2019
Sales	63.5	70.0	68.0	7.2	73.0
Operating profit	2.4	2.3	1.5	-38.4	2.5
Key Product Sales Targets		Plan for FY2018	Actual for FY2018		Plan for FY2019
Overseas liquid inks		30.0	28.2		31.5

		Major issues for FY2018	Summary FY2018
Flexible packaging materials	Increase in sales and decrease in profit	<ul style="list-style-type: none"> ● Expansion of eco-friendly product line ● Building of a system to boost production capacity in Japan ● Stronger promotion on a global scale 	<ul style="list-style-type: none"> ● Domestic demand for gravure inks remained firm. While sales expansion of environmentally-conscious products such as biomass inks was promoted, rising raw material prices had an impact. ● Growth in middle-grade inks continued in Southeast Asia and China.
Construction materials	Increase in sales and decrease in profit	<ul style="list-style-type: none"> ● Promotion of the development of functional coating materials 	<ul style="list-style-type: none"> ● Sales expansion of a variety of topcoats for construction materials made progress.
Cardboard	Decrease in sales and decrease in profit	<ul style="list-style-type: none"> ● Comprehensive cost reductions through the reexamination of production bases and production methods 	<ul style="list-style-type: none"> ● New sales and cost reduction made progress, but the declining volume due to a fall in color printing had a significant impact.

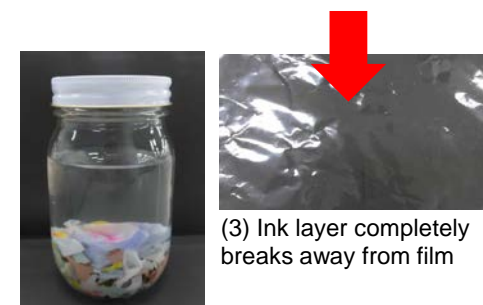
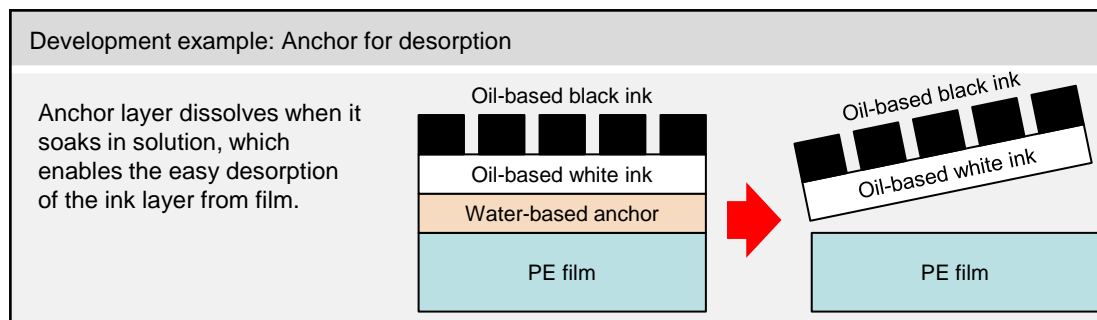
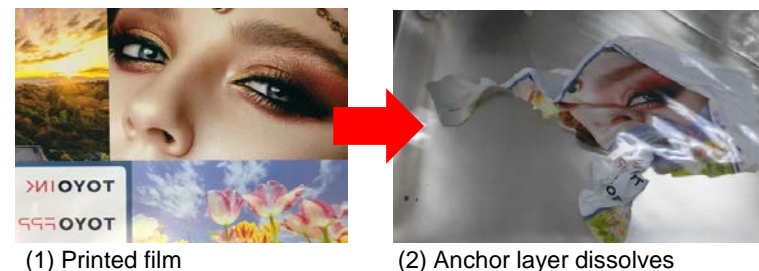
Summary of Performance by Segment (Packaging Materials)

Major issues for FY2019

- | | |
|------------------------------|--|
| Flexible packaging materials | <ul style="list-style-type: none"> ● The domestic packaging market is expected to remain firm in 2019. The market is expanding partly due to the entrance of new customers of flexographic inks for flexible packaging. Sales expansion of the biomass product line and the water-based product line will be promoted. ● Overseas, products that were developed and tailored to area needs will be launched in the market. In addition, sales expansion of flexographic inks will be promoted mainly in Europe and Asia. |
| Construction materials | <ul style="list-style-type: none"> ● Sales expansion of film inks and topcoats for renovation demand and sales expansion of exterior application inks and coating materials will be promoted in Japan and overseas, respectively. |
| Cardboard | <ul style="list-style-type: none"> ● Cardboard processing is expected to be firm, but demand for multicolor printing will decline. Sales expansion into undeveloped markets will be promoted and the biomass product line will be launched in the market. |

Medium-term themes

1. Establishment of the global SCM system of resins/inks
 - ✓ Response to increasing demand and BCP through the increased number of production bases of resins.
 - ✓ Development of new products and reduction of investment costs through the production process innovation for resins.
2. Acceleration of development of environmental products
 - ✓ Development of eco-friendly inks for construction materials
 - ✓ Development of the EB (electron beam) curing product line for flexible packaging
 - ✓ Response to movements of recycling plastic packaging materials



Summary of Performance and Segment (Printing and Information)

(Unit: 1 billion yen)

Summary of Performance	Actual after adjustments for FY2017	Plan for FY2018	Actual for FY2018	Increase/decrease (%)	Plan for FY2019
Sales	80.5	82.5	79.4	-1.4	78.5
Operating profit	2.6	1.8	0.9	-63.8	1.6
Key Product Sales Targets		Plan for FY2018	Actual for FY2018		Plan for FY2019
Functional inks		32.5	31.3		35.0

		Major issues for FY2018	Summary FY2018
Offset inks	Decrease in sales and decrease in profit	<ul style="list-style-type: none"> Redevelopment of production bases and logistics sites Production expansion in India and Brazil and business expansion into peripheral countries 	<ul style="list-style-type: none"> In Japan, production bases were consolidated and external alliance was promoted. In logistics, alliance continued to be considered. While sales of new products expanded, rising raw material prices put pressure on profit. Overseas, market conditions were stagnant. With tightened environmental regulations in China, the segment promoted the optimization of SCM to expand sales of products and improve profit in India and Brazil, but rising raw material prices weighed on these efforts.
Functional inks	Increase in sales and decrease in profit	<ul style="list-style-type: none"> Stronger development of new customers in cooperation with printing machine manufacturers Acceleration of global marketing 	<ul style="list-style-type: none"> Sales expansion of the functional ink line was promoted in cooperation with printing machine manufacturers. In UV, sales expansion for paper containers was promoted in Japan, Central and South America and China. In IJ, sales expansion in commercial printing and development for packaging were promoted. Rising raw material prices had a significant impact and put pressure on profit.

Summary of Performance by Segment (Printing and Information)

Major issues for FY2019

- Offset inks
 - The printing and graphic communications market is expected to shrink both in Japan and overseas due to the effect of digitalization. The segment aims to secure profit by improving sales efficiency, promoting external alliance and global optimum SCM and revising prices.
- Functional inks
 - The segment will increase profit by promoting the development of UV and inkjet into the packaging market in respond to digitalization and environmental consciousness.
 - ✓ Sales expansion of the inkjet product line to various digital printing markets.
 - ✓ Expansion of the UV product line for the paper container market.


Medium-term themes

Expansion of the functional ink product line

Inkjet inks: Proposal of functions and image quality

Development example: Inkjet materials for flexible packaging

High image quality and high-speed printability have been achieved in a wide range of printing base materials, such as flexible packaging films, by combining inkjet inks excelling in color reproducibility with optimized functional anchor materials.



Dots do not blur
→ High image quality

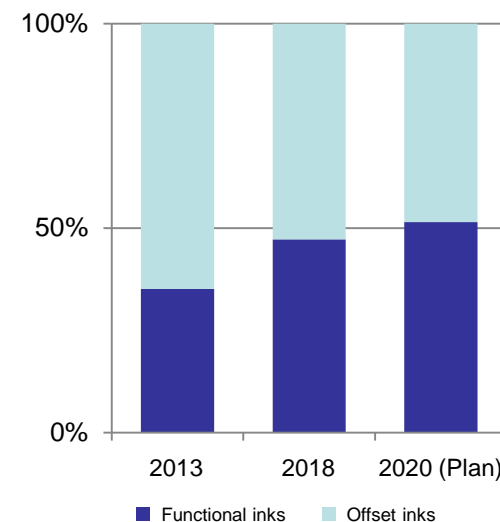
Metal decorative inks: Proposal for the environment and functions

- Expansion of overseas markets through the expansion of LED-UV inks and proposals packaged with interior coatings

UV inks:

- Market expansion due to the development of lineup of biomass products

Trends in sales ratios of offset inks and functional inks

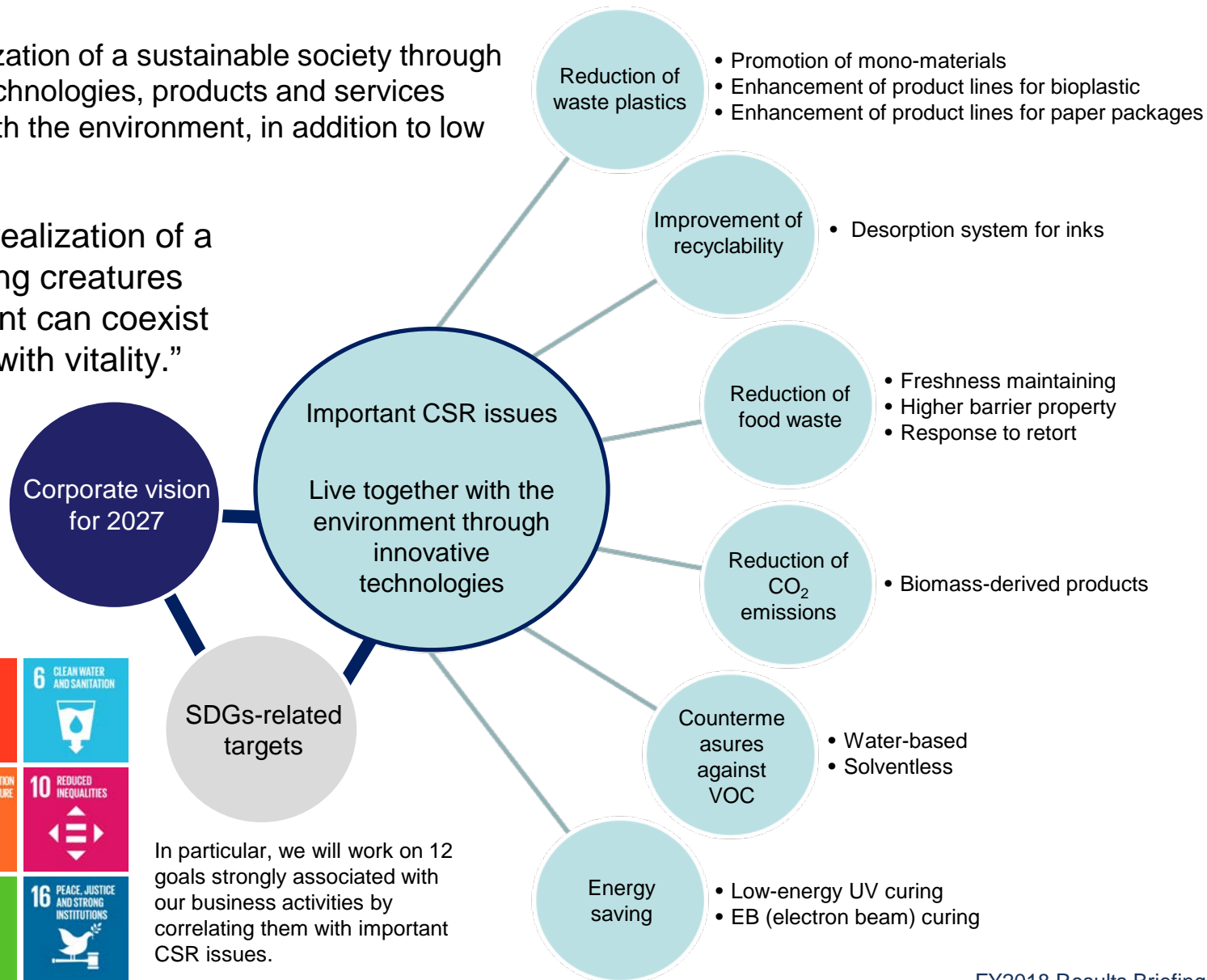


Social Contribution Activities as a Chemical Manufacturer

Strengthening of the Environmental Product Line

Contribute to the realization of a sustainable society through the development of technologies, products and services that can harmonize with the environment, in addition to low environmental loads.

“Contribute to the realization of a world where all living creatures and the environment can coexist harmoniously and with vitality.”



During the period of the medium-term management plan SIC-I, we will lay the foundation for the sustainable growth of the Toyo Ink Group, and in 2019, the second year of the plan, we will promote changes in existing businesses and the expansion of new business areas.

Annual Policies

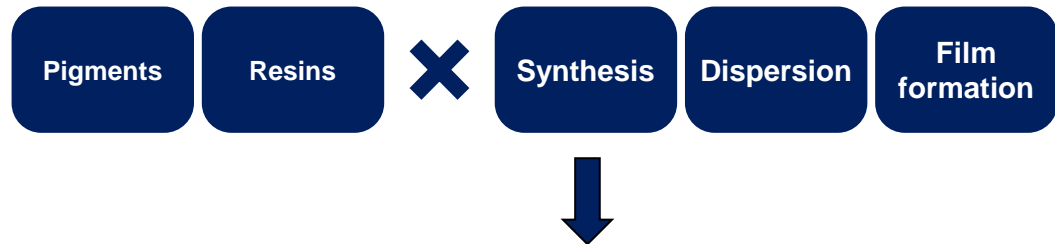
- Develop new businesses and provide value that captures changes in the market and meets customer needs.
- Lead the market with a technological advantage by fundamentally reviewing the supply chain, product mix and manufacturing methods and procedures at domestic and overseas bases as a manufacturing company.
- Renovate culture and the personnel system and reorganize businesses to be willing to change and promote challenges.

Changes in existing businesses

Colorants and Functional Materials	Expand alliance in the pigments business. Expand sales and strengthen the supply system of materials for LiB and color filter materials, among others, in the functional materials business.
Polymers and Coatings	Enhance electronics- and display-related product lines. Globally expand sales and strengthen the supply system of eco-friendly products.
Packaging Materials	Continuously launch eco-friendly products using raw materials derived from natural sources. Expand sales of gravure inks in the volume zone overseas.
Printing and Information	Accelerate business structural reforms in Japan where the market is shrinking. Expand into emerging regions where demand expansion is expected.

Expansion of business areas

Create new businesses in novel areas by utilizing the Group's own technologies.



- Next-generation display materials
- Materials for image sensors
- Electromagnetic wave shields for high-speed communication systems
- Patch-type pharmaceutical products
- Inkjet inks for digital printing
- Flexographic inks/EB inks for flexible packaging, etc.

- Expand business areas into growth markets such as IoT, mobility and energy as well as environment-related ones in all business segments.
- Aim to leap forward as a science company across the Group, including the review of production and management systems by utilizing data science.

