

BUSINESS STRATEGY

Elastomers Business



Sustainable development within the industry, typified by the SDGs and a focus on reducing impact on the environment, will lead to further sophistication and diversification of customer and social needs. We see this trend as a major business opportunity for our elastomer materials. There are technological demands for low-wear and high-durability materials due to the widespread use of conventional fuel-efficient tires and electric vehicles (EV). Our solution polymerization SBR (SSBR) is set to provide a range of solutions for all the diversified needs of our customers.



Managing Officer in charge of
Elastomers Business

Hayato Hirano

Progress of Mid-Term Business Plan

Operating Results for Fiscal 2018

Revenue was 200,736 million yen (up 2.6% from previous year), and operating profit was 7,421 million yen (down 50.1% from previous year)

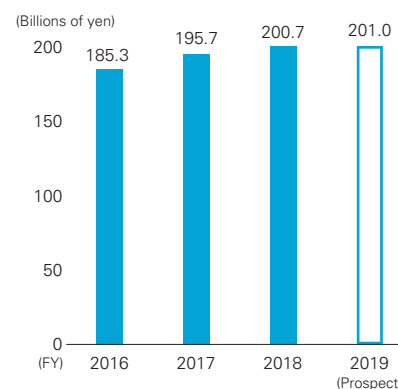
Production of automobile tires, a major demand industry, was higher in Japan than in the previous fiscal year but remained unchanged globally due to a decline in automobile production in China and Europe.

Under these conditions, although overall sales volume decreased compared with the previous fiscal year, revenue increased due to revised product prices and a rise in sales of solution polymerization SBR (SSBR), positioned as one of the Company's strategic products. With regard to operating profit, while the previous fiscal year saw improved buy/sell spreads due to a temporary pick up in the market environment which resulted in levels of high profit, this fiscal year has seen sales fall below those of the previous fiscal year due to a decline in buy/sell spreads from sluggish market conditions and an increase in fixed costs which include the start-up costs of the SSBR Hungary plant.

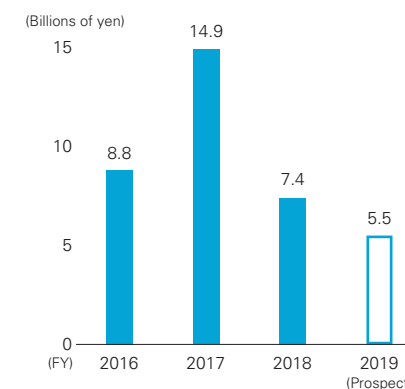
Business Outlook for Fiscal 2019

Global tire production is expected to be on par with the previous year while demand for SSBR for high performance tires is expected to grow steadily. In contrast, operating profit is expected to decrease due to the rise in fixed costs associated with the new JSR MOL Synthetic Rubber Ltd. plant, a joint venture established in Hungary, scheduled to begin operations in fiscal 2019.

Revenue



Operating Profit



Note: Since fiscal 2017, consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as per Paragraph 1 Article 120 of the Rules of Corporate Accounting. For reference, figures for fiscal 2016 are also presented based on IFRS.

BUSINESS STRATEGY: Elastomers Business

<ul style="list-style-type: none"> Technological capabilities developed from polymer technology Global production and sales bases 	<ul style="list-style-type: none"> Aging production facilities in Japan 		
Strength	S	W	Weakness
Opportunity	O	T	Threat
<ul style="list-style-type: none"> Tighter environmental regulations in various countries More awareness about reducing impact on the environment Wider use of electric vehicles Growing demand for all-season tires 	<ul style="list-style-type: none"> Fluctuating price of raw materials Drop in demand for cars Changing international situations (trade friction, tariffs, etc.) 		

Business Environment and Strategy

In line with increased global demand for SSBR for high-performance tires, such as fuel-efficient tires, the SSBR market growth rate is expected to be 6-8%. We are aiming to exceed this market growth rate with annual growth in sales volume of more than 10%, aiming to capture the top share in the global market.

In fiscal 2018, sales volumes at JBE in Thailand were up, increasing by 11% from the previous year, exceeding 10% for the second consecutive year.

Currently, Thailand and Japan have a total SSBR production capacity of 160,000 tons, but we aim to further expand sales by increasing production capacity to 220,000 tons with the launch of the new plant in Hungary.

In addition to materials for tires, such as SSBR, we will provide not only materials but also solutions with our comprehensive expertise and processing technologies for a range of automobile parts such as car window frames and fuel hoses.

Synthetic Rubber SSBR for Fuel-Efficient Tires, Providing Great Potential for Solving Global Environmental Problems

SSBR is designed to have a low rolling resistance by reducing internal friction using a technology that makes it easy for the rubber and reinforcing molecules to closely bind together without changing the characteristics of the rubber, which are needed to stop the tire when moving. This helps to reduce the impact of the tire during use, which is where we see the biggest benefit to the environment within the life cycle of the tire, from raw material through to use and eventual disposal.

Contribution to tire parts on rolling resistance

Source: Kazumi Ueno: The technology trends of low rolling resistance tires. Journal of Society of Automotive Engineers of Japan. Vol34, No.10(1980)

Changing needs (High functionality: low fuel consumption+α)

Wear resistance for Electric Vehicles (EV)	Grip (DRY/WET/ICE) all seasons winter for hp (High performance)
+	+
Low fuel consumption (Environmental regulations)	

Production Capacity of SSBR

FY2016	FY2018
160,000 t/y	220,000 t/y
Japan : 60,000t Thailand : 100,000t	+ Hungary : 60,000t Japan : 60,000t Thailand : 100,000t

SDGs Contribution

JSR Corporation contributes to efficient energy use by providing solutions for automobile parts, such as tires



BUSINESS STRATEGY

Plastics Business



The mission of Techno UMG Co., Ltd., the main player in our Plastics Business, is to continue to provide added value in response to the diversified needs of our customers. Recently, we have developed a product called HUSHLLOY® that reduces the squeaking noise from plastic joints, leading to quieter cars. By utilizing the characteristics of the ABS material, which goes well with other materials, we provide not only physical properties such as strength and heat resistance but also added comfort to our customers.



Managing Officer in charge of
Plastics Business

Hayato Hirano

Progress of Mid-Term Business Plan

Operating Results for Fiscal 2018

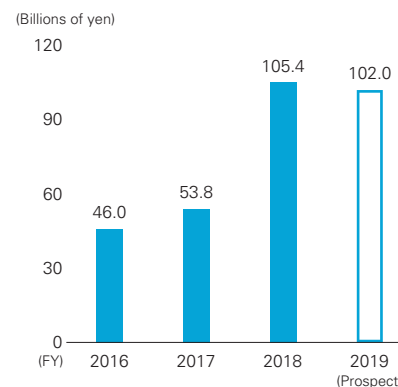
Revenue was 105,446 million yen (up 95.8% from previous year), and operating profit was 9,214 million yen (up 65.2% from previous year)

In the Plastics Business, sales revenue and operating profit were significantly higher than the previous fiscal year due to establishing the merged company, Techno UMG Co., Ltd. in April.

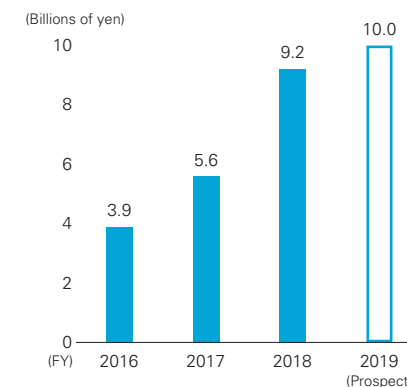
Business Outlook for Fiscal 2019

Techno UMG Co., Ltd. will realize synergies by improving development, manufacturing efficiency, cost competitiveness, increasing the range of differentiated products, and especially by expanding sales of specialty products overseas.

Revenue



Operating Profit



Note: Since fiscal 2017, consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as per Paragraph 1 Article 120 of the Rules of Corporate Accounting. For reference, figures for fiscal 2016 are also presented based on IFRS.

BUSINESS STRATEGY: Plastics Business

<ul style="list-style-type: none"> Development and manufacturing capabilities of specialty products using proprietary technologies Increased manufacturing efficiency and cost competitiveness through merger Global production bases and SCM system 	<ul style="list-style-type: none"> Not enough presence overseas In-house production base only in Japan 		
Strength	S	W	Weakness
Opportunity	O	T	Threat
<ul style="list-style-type: none"> Increase in demand for high value-added products for improved global living Increased need for noise reduction due to wider use of electric vehicles 	<ul style="list-style-type: none"> Soaring price of raw materials Slowdown in automobile production Increase in plastic substitutes due to plastic waste problems in the oceans, etc. 		

Business Environment and Strategy

Techno-UMG Co., Ltd. was created on April 1, 2018 through the merger of two companies; Techno Polymer Co., Ltd. (a wholly owned subsidiary of JSR) and UMG ABS, Ltd. (equally owned by Mitsubishi Chemical Corporation and Ube Industries, Ltd.).

In fiscal 2018 we were able to increase production efficiencies while reducing our investment to increase capacity by moving production items between plants.

Utilizing the manufacturing, development and sales capabilities of by both companies, we will strive to expand sales of specialty products such as those which target specific problems, especially in overseas markets, thereby achieving synergies through the merger.

Stronger Competitiveness through Mergers

The scale of earnings, production capacity and sales bases in the Plastics Business has expanded due to the merger of the two companies, the top domestic styrene resin manufacturers focusing on ABS resin.

Overview of New Company

Integrated new company Production capacity **400,000 tons per year**
 TPC: 250,000 tons + UMG: 150,000 tons

Techno Polymer (TPC) 51% UMG ABS (UMG) 49%

Europe Dusseldorf, German

Southern China Guangzhou, Hong Kong

Eastern China Shanghai

ASEAN Bangkok, Thailand

JAPAN Tokyo HQ, Nagoya Office, Osaka Office, Ube Plant, Otake Plant, Yokkaichi Plant

Americas Cincinnati, USA, Detroit, USA

● Techno-UMG and Overseas locations ● Production consignment Compounders ● Plant/R&D Center ■ License Manufacturers

The former Techno Polymer Co., Ltd. has strength in interior material applications and the former UMG ABS, Ltd. has strength in exterior material applications for cars. The merger of both companies aims to bring these strengths together.

SDGs Contribution

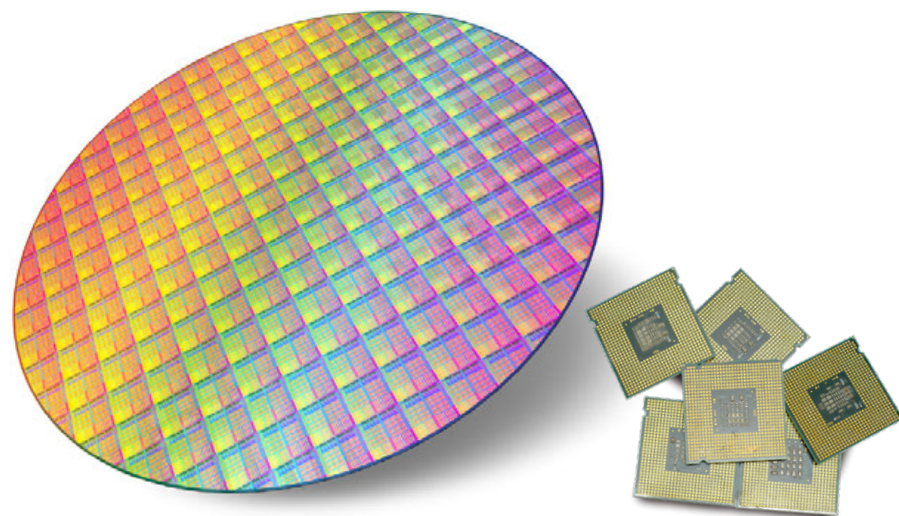
JSR Corporation contributes to a more comfortable way of life by providing high-performance ABS for automotive parts.



BUSINESS STRATEGY

Digital Solutions Business

—Semiconductor Materials—



The semiconductor market is expected to grow due to the full-scale introduction of 5G, IoT, and autonomous driving. Consequently it is likely to bring about major changes in a wide range of fields including electronic components, industrial equipment, and automobiles. JSR is working with semiconductor manufacturers around the world to develop cutting-edge materials that contributes to evolution of semiconductor technologies.



Officer in charge of Electronic Materials Business

Junichi Takahashi

Progress of Mid-Term Business Plan

Business Results in Fiscal 2018

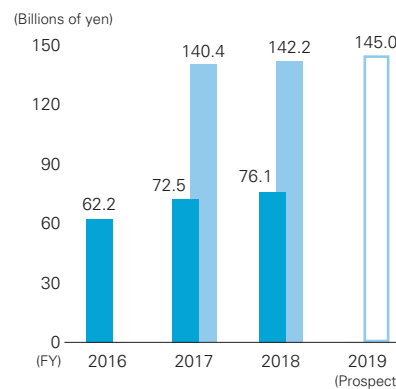
Revenue was 142,216 million yen (up 1.3% from previous year), operating profit was 32,663 million yen (up 6.4%) of which 76,100 million yen (up 5%) was revenue in the semiconductor materials business

On the back of steady demand for semiconductors, revenue and operating profit increased due to increased sales volumes of lithography materials, centered on cutting-edge photoresists, CMP materials, cleaning solutions, and packaging materials.

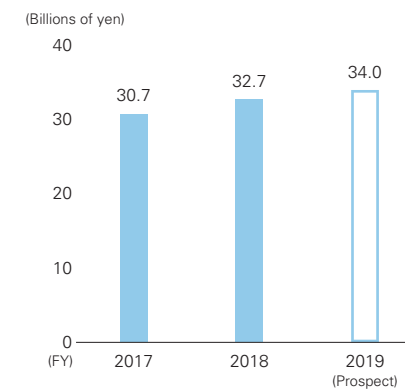
Fiscal 2019 Forecast

By strengthening our competitiveness in the global market we will increase revenue and operating profits on lithography materials, CMP materials, cleaning solutions and packaging materials for cutting edge semiconductors.

Revenue



Operating Profit



■ Digital Solutions Business: Semiconductor Materials
 ■ Digital solutions business in total

* Results for the digital solutions business in fiscal 2016 not published
 Note: Since fiscal 2017, consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as per Paragraph 1 Article 120 of the Rules of Corporate Accounting. For reference, figures for fiscal 2016 are also presented based on IFRS.

BUSINESS STRATEGY: Digital Solutions Business –Semiconductor Materials–

<ul style="list-style-type: none"> Strong relationship with global cutting edge users Material development capabilities utilizing polymer / organic synthesis and analytical technologies Manufacturing and continuous supply of high quality products 	<ul style="list-style-type: none"> Promote portfolio expansion to avoid heavy dependence on certain areas 					
Strength	<table border="1"> <tr> <td>S</td> <td>W</td> </tr> <tr> <td>O</td> <td>T</td> </tr> </table>	S	W	O	T	Weakness
S	W					
O	T					
Opportunity		Threat				
<ul style="list-style-type: none"> Growing demand for semiconductors due to progress of digitalization in society Increasing needs for cutting-edge materials because of digital technology innovation 	<ul style="list-style-type: none"> Responding to rapid changes in technologies 					

Business Environment and Strategy

JSR Group will develop and provide cutting-edge materials that contribute to the evolution of semiconductors in a growing market driven by innovations in digital technology, such as with the development of IoT and 5G. In the field of advanced lithography materials for the 10nm generation, we continue to maintain a large share of the global market. In addition, we focus on product development and improvement of production technologies for EUV (extreme ultraviolet) resists, which are now being used for high volume production in the 7nm generation devices.

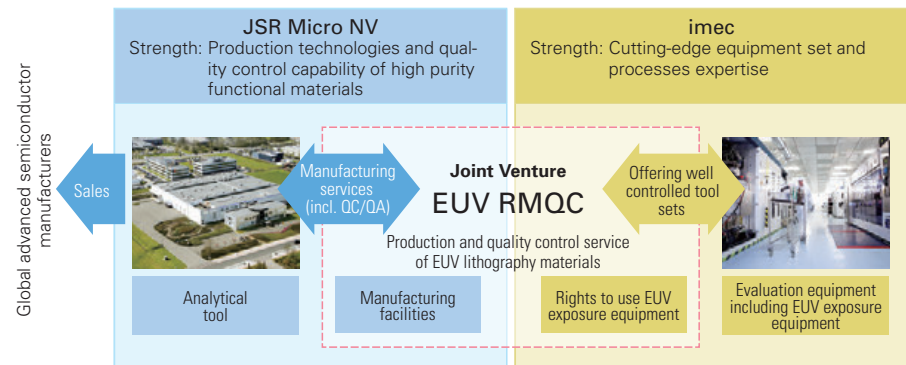
We will expand our product portfolio with peripheral materials including CMP materials, cleaning solutions, and packaging materials.

EUV Resist Manufacturing & Qualification Center N.V. (EUV RMQC)

EUV RMQC, established as a joint venture with imec, a leading research institute on nano-electronics technology, and began commercial production of EUV resists in 2017.

Leveraging the strengths of both JSR and imec, high-quality EUV resists are supplied to the world's leading semiconductor manufacturers.

About EUV Joint Venture (EUV RMQC)



EUV RMQC has built an infrastructure of production and quality control for EUV lithography materials to support the next generations of advanced devices in the semiconductor industry.

SDGs Contribution

JSR contributes to the realization of a smart society by providing cutting edge semiconductor materials.



BUSINESS STRATEGY

Digital Solutions Business

—Display Materials—



The liquid crystal panel market is growing mainly in China where we will further expand JSR's presence. In the liquid crystal and next-generation display markets, we will continue to propose solutions that fit our customers needs by making full use of novel development initiatives arising from digitalization.



Senior Officer in charge of Display Solution Business

Yoshikazu Yamaguchi

Progress of Mid-Term Business Plan

Business Results in Fiscal 2018

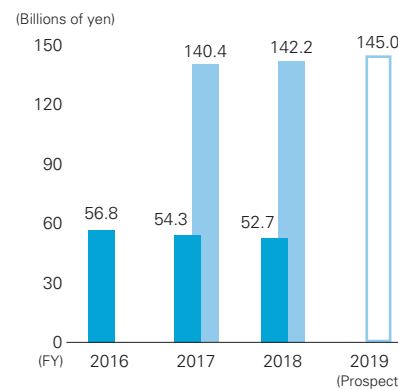
Revenue was 142,216 million yen (up 1.3% from previous year), operating profit was 32,663 million yen (up 6.4%) of which 52,671 million yen (down 3%) was revenue in the display materials business

Product prices and sales of color resists declined in fiscal 2018 due to severe competition. However, overall revenue decreased slightly due to increased sales volume of alignment films and insulating films which are particularly strong in China, which is marked by stable liquid crystal panel production.

Fiscal 2019 Forecast

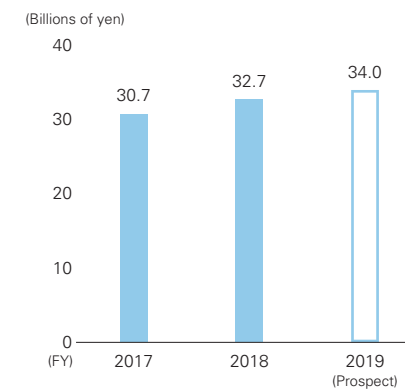
Although we expect continued stable growth in the liquid crystal panel market, as display materials become more commoditized and competition intensifies, we will strive to increase sales with a focus on our competitive alignment films and insulating films for large-sized liquid crystal panels, especially in the Chinese market where considerable growth is expected.

Revenue



■ Digital Solutions Business: Display Materials
■ Digital solutions business in total

Operating Profit



* Results for the digital solutions business in fiscal 2016 not published

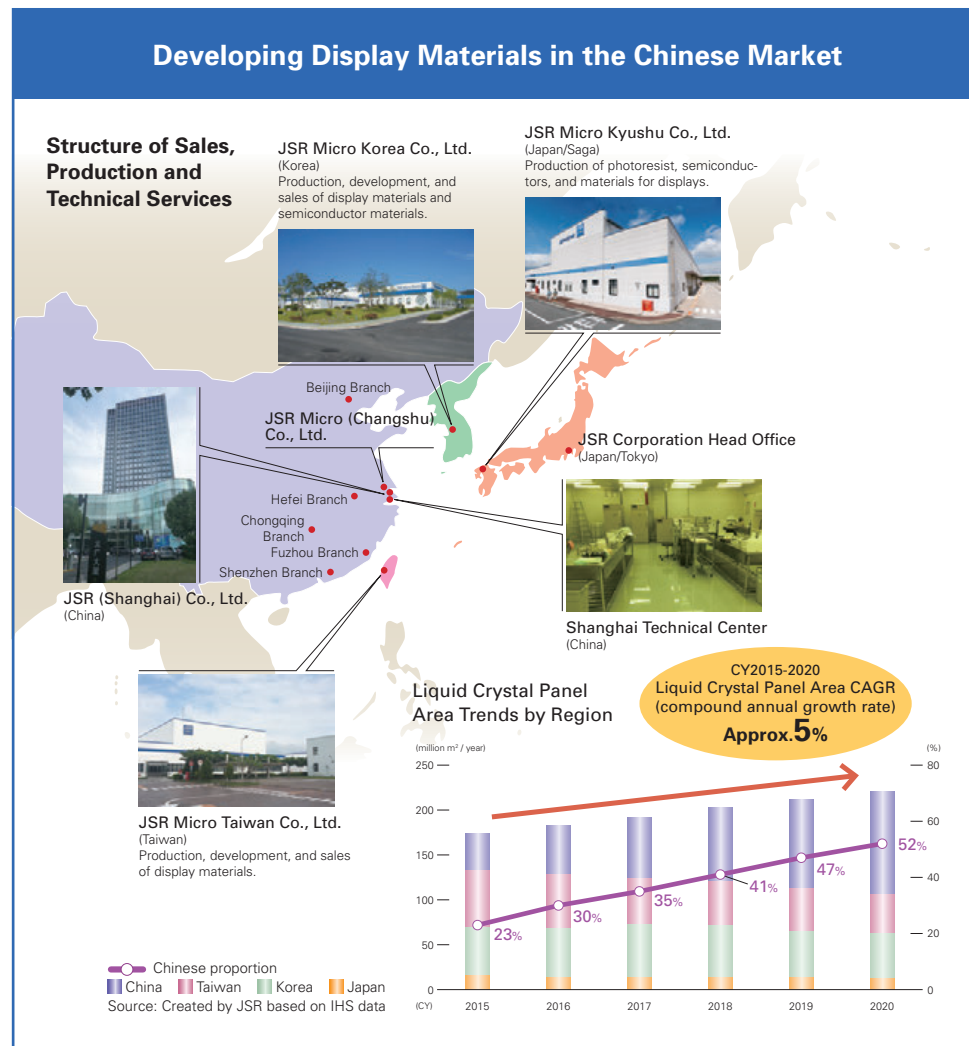
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BUSINESS STRATEGY: Digital Solutions Business –Display Materials–

<ul style="list-style-type: none"> ▪ Possessing high share product ▪ Sales and production systems to meet customer needs ▪ Technological capabilities developed from polymer technology 	<ul style="list-style-type: none"> ▪ Response to more commoditized products ▪ Dispersion of resources 					
Strength	<table border="1"> <tr> <td>S</td> <td>W</td> </tr> <tr> <td>O</td> <td>T</td> </tr> </table>	S	W	O	T	Weakness
S	W					
O	T					
Opportunity		Threat				
<ul style="list-style-type: none"> ▪ Spread of high-definition televisions such as 4K and 8K ▪ Expansion of liquid crystal panel production in China due to strong demand for liquid crystal panels 	<ul style="list-style-type: none"> ▪ Severe competition in materials coming from more commoditized liquid crystal panels ▪ Rapid technological progress beyond industry and market forecasts 					

Business Environment and Strategy

In the Chinese market, where growth is expected for large liquid crystal panels, we will continue to increase sales by proposing high-image quality solutions for liquid crystal panels that compete with OLED.



SDGs Contribution

JSR provides high-image, high-quality solutions for liquid crystal panels.



BUSINESS STRATEGY

Life Sciences Business



JSR Life Sciences has grown substantially through acquisition throughout the last several years. Moving forward, we will rely on our core values of Innovation, Quality, Customers and our Employees as we focus more heavily on integrating our affiliated companies and continue to expand our materials and services offerings.



Officer in charge of
Life Sciences Business

Tim Lowery

Progress of Mid-Term Business Plan

Operating Results for Fiscal 2018

Revenue: 43,872 million yen (up 66.0% year-on-year)

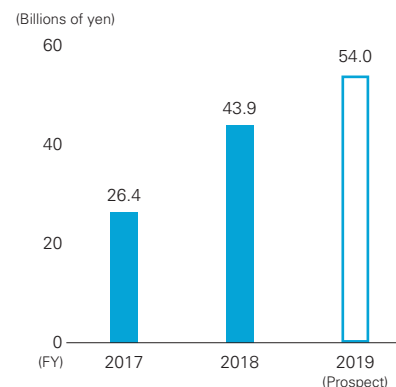
Operating profit: 781 million yen (operating loss of 1,803 million yen in the previous fiscal year)

Revenue in our Life Sciences business segment increased considerably from the previous fiscal year. This growth was due to 3 primary factors: the acquisition of Crown Bioscience, which became a consolidated subsidiary at the end of May 2018, a significant increase in demand for contract services provided by KBI Biopharma, and solid growth in the delivery of JSR's bioprocess materials (Amsphere™ A3) and in vitro diagnostic and research reagents. Through these efforts, the Life Sciences business segment's operating profit became positive within this fiscal year.

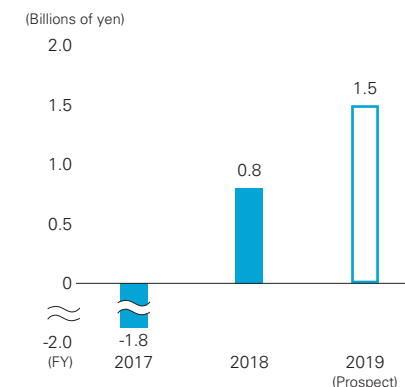
Business Outlook for Fiscal 2019

Revenue and operating profit is expected to increase through the expansion of our drug discovery, analytical and manufacturing support services provided by Crown Bioscience, Selexis SA and KBI Biopharma, and increased demand for JSR Life Sciences' bioprocess materials and in vitro diagnostic and research reagents.

Revenue



Operating Profit



* Results for the digital solutions business in fiscal 2016 not published

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BUSINESS STRATEGY: Life Sciences Business

<ul style="list-style-type: none"> ▪ Capability to provide one stop shop services from drug discovery to GMP ▪ Capability to provide development support of very complex biological drugs ▪ Robust QA systems established through Semiconductor and other businesses 	<ul style="list-style-type: none"> ▪ Low market recognition as JSR Life Sciences brand due to relatively new entry to this space 				
Strength	<table border="1"> <tr> <td style="text-align: center;">S</td> <td style="text-align: center;">W</td> </tr> <tr> <td style="text-align: center;">O</td> <td style="text-align: center;">T</td> </tr> </table>	S	W	O	T
S	W				
O	T				
Opportunity	Weakness Threat				
<ul style="list-style-type: none"> ▪ Drug demand increasing with aging population ▪ Development of precision medicines ▪ Continuous rapid advancement in technology 	<ul style="list-style-type: none"> ▪ Increase in competition by new entrants into this space ▪ Possible changes in laws and regulations 				

Business Environment and Strategy

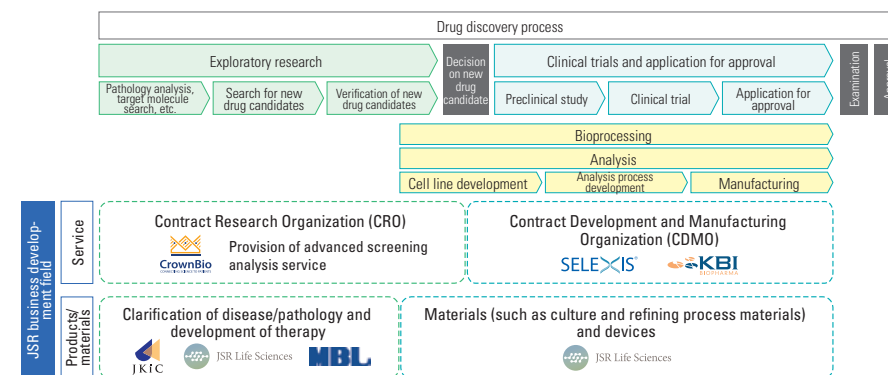
In fiscal year 2018, we acquired Crown Bioscience, a provider of preclinical drug discovery and development services, as a consolidated subsidiary. Together with our previous acquisitions of KBI Biopharma, Inc., MEDICAL & BIOLOGICAL LABORATORIES CO., LTD., and Selexis SA, the JSR Life Sciences group has created a business structure and innovation engine to support the entire process of new drug development, from discovery to production.

JSR will create synergies among our affiliate companies through the integration of each companies' unique capabilities and expertise. The business will recognize the benefits of previous and continued investments, achieving revenue of approximately 50,000 million yen in fiscal 2019 and approaching the level of 100,000 million yen in the early 2020s.

Our mission is to shorten the timeline and improve the probability of success for our drug development partners

JSR is committed to providing a portfolio of integrated products, services and technologies to the life sciences industry to reliably develop and commercialize therapeutics and diagnostics that benefit global human health.

We will work directly with pharmaceutical companies, startups and academia to provide services and innovative materials throughout the entire drug discovery and development process.



Synergies among Group Companies

Through operational integration, co-development and collaborative R&D initiatives, we are able to enhance and expand each JSR Life Sciences companies' core technology.

- The time to IND can be reduced from 12-24 months to 9 months (KBI x SELEXIS)
- New biomarker and CDx discoveries through AI-based analysis (Crown x KBI x MBL)
- A complete suite of services from pre-clinical to IND (Crown x SELEXIS x KBI)

SDGs Contribution

We will contribute to societal good health and longevity through our support of the entire drug discovery and development process.

