Company Report

Construction machinery; TSE 1st Section

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NIKKO (6306)

Japan's largest asphalt plant engineering company with its sales to china rapidly growing

- Headquartered in Akashi-shi, Hyogo Prefecture, Nikko has approx. 70% and 30% domestic market shares respectively in asphalt plant (AP) and concrete plant (BP) businesses. Net sales from these two segments accounted for 76% of the total net sales in the year ended March 2018. A recent rapid increase in sales to China in AP business has caused the company's overseas sales ratio to 11.3%, a double-digit percentage for the first time ever.
- As part of its business model, Nikko has five core technologies, which are the source of its competitiveness: heating (AP), mixing and kneading (BP), conveyance, control and maintenance. The company develops and operates these technologies all in-house, which is the main factor contributing to its high market share. Also, with its maintenance and services accounting for 34% of the net sales, a large percentage of its businesses are recurring businesses.
- According to Nikko's forecast for consolidated performance in the year ending March 2019, net sales, operating profit, and net profit are projected to be, respectively, JPY34.0 billion (3% down year-on-year), JPY2.15 billion (2% up year-on-year), and JPY1.55 billion (4% up year-on-year). The new medium-term management plan will start in the year ending March 2020, which is expected to attract attention.
- The company's customers for AP and BP plants include domestic road pavement and ready-mix concrete companies, whose future growths are expected to be sluggish. In response, considering changes in the future needs, Nikko is developing a range of products. The company will show some of the development results at "Nikko Messe 2018," an event to be held at its headquarters toward its 100th anniversary in August next year, which will be an important turning point.

Company data	
Share price (yen)	2,420
Date	Aug. 29, 2018
Market cap (yen, bill.)	19.4
Number of shares issued (in thousands)	8,000
52-week price range (yen)	2,108–2,718
Forecast PER (times)	11.9
Forecast PBR (times)	0.6
Dividend (yen)	60
Dividend payout ration (%)	2.5
ROE (%)	5.0

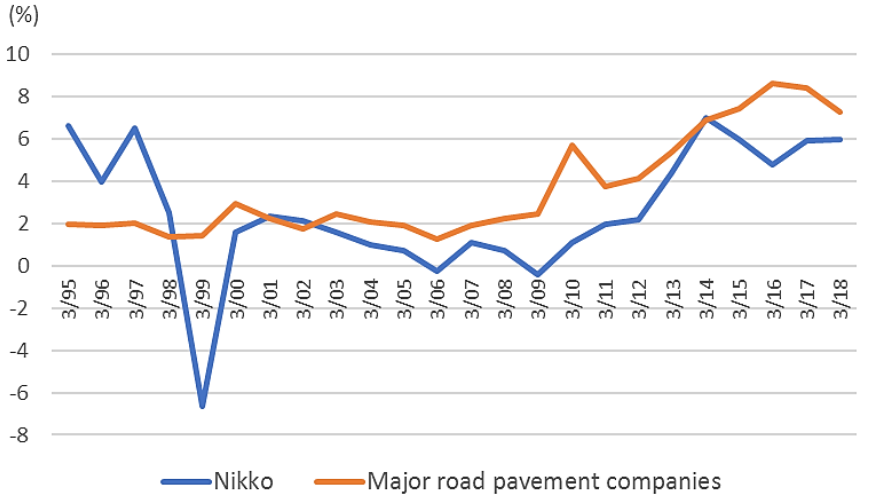
Nikko's profitability (%)	FY2013	FY2014	FY2015	FY2016	FY2017
Return					
Return on equity (ROE)	3.52	4.99	6.73	4.65	5.02
Return on asset	2.29	3.28	4.45	3.04	3.31
Return on total capital	3.25	4.70	6.31	4.44	4.80
Return on investment	3.98	4.97	4.08	4.43	3.88
Profit margins					
Gross profit on sales	25.99	26.13	24.29	26.24	25.10
EBITDA margin	8.24	7.34	6.20	7.42	7.33
Operating profit margin	7.01	5.97	4.78	5.94	5.99
Net profit margin	2.77	4.39	5.56	4.10	4.24

Sources: Bloomberg and CGRA

Key points about Nikko that 3 figures show

(1) Comparison with major road pavement companies in operating profit margin

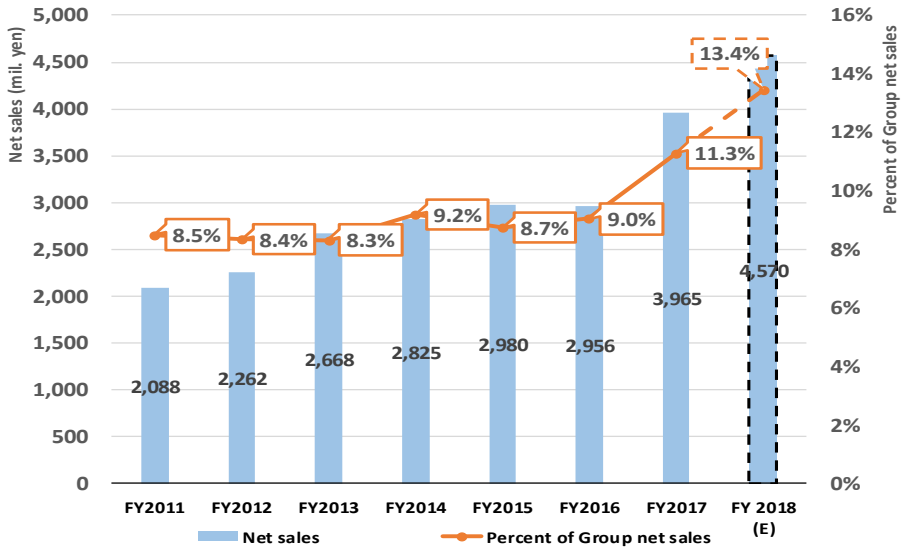
- Nikko's operating margin for the year ended March 2018 was 6%, decreasing from 7% in the year ended March 1995. Major road pavement companies' profit margin increased significantly in the same period. During this period, Nikko's market share rose to over 70%, partly owing to the acquisition of the AP business from Niigata Engineering in 2002. The major road pavement companies are expected to cause the demand for AP renewal to increase for the coming few years. In response, Nikko must improve its profitability from AP-related business and thereby increase its corporate value, along with the commencement of operation of its new customer service center (CSC).



Source: CGRA

(2) Overseas sales and sales ratio

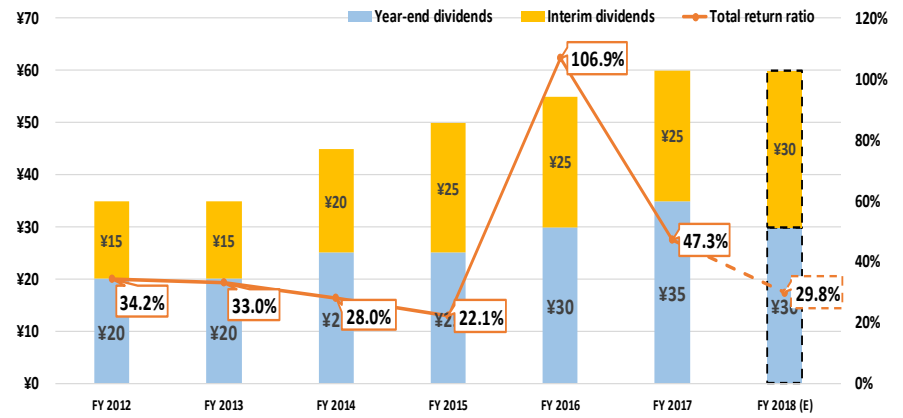
- Construction investment is likely to decline after the Tokyo Olympic Games. Hence domestic AP and BP plants are forecast to decrease in medium to long-terms. Against this backdrop, overseas business expansion will be the key to growth. Overseas sales ratio exceeded 10% in the year ended March 2018 for the first time ever, led by AP in China. The increasing need for improving environmental impacts of AP in China is forecast to boost the demand for Nikko's recycling and energy-saving technologies. Going forward, diversity of employees will be the key, too.



Source: Nikko

(3) Dividends and total shareholder return ratio

- Nikko increased dividends and implemented share buyback between March 2017 and March 2018, increasing its total shareholder return ratio to 47.3% as of March 2018. Still, the company's shareholders equity increased to JPY30.3 billion. Net cash increased by JPY10.6 billion. Nikko intends to use cash for growth investment and M&As and remaining cash for increasing shareholder return, seeking to limit an increase in shareholder equity as much as practicable. These initiatives are expected to improve ROE in a medium term.



Source: Nikko

Contents

(1) Overview and History of Nikko

Middle-scale construction manufacturer founded in 1919, approaching its 100th anniversary.

Headquartered in Akashi-shi, Hoygo Prefecture, Nikko is a medium-scale construction machinery manufacturer. Founded on August 13, 1919, it will celebrate its 100th anniversary next year. Nikko Group's management philosophy is as follows: "With the customer-comes-first principle as our management philosophy, we provide products and services that truly satisfy customers. Our mission is to be a solution partner that will grow with customers while building trust widely in the society. We will seek to improve ourselves accordingly."

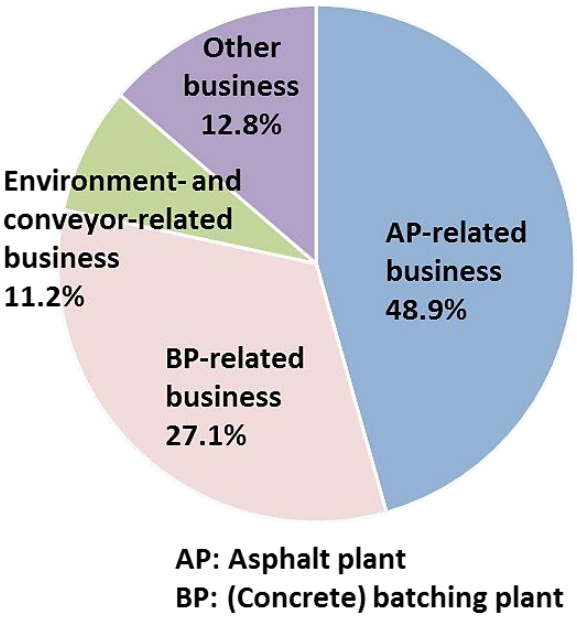
AP and BP are its main businesses, accounting for 76% of its net sales in the year ended March 2018.

Nikko's business started with the production of agricultural and civil engineering tools (such as shovels) with a dragonfly logo placed on them. It has manufactured them since its inception in 1919 and still manufactures them today. Production of its current flagship products—BPs and APs—were started respectively 1956 and 1958, or slightly prior to the beginning of Japan's rapid economic growth period. As of the year ended March 2018, revenues from asphalt plant-related business and concrete plant-related business accounted for, respectively, 49% and 27% of the total revenue. Beside these businesses, environment and transportation-related business and "other" businesses (including overlay equipment, agricultural tools, and import and sale of grinding mills) account for, respectively, 11% and 13%.

With 5 domestic and 1 overseas production centers, Nikko produces most of the core machines in-house.

There are presently 5 production centers in Japan including the plant at the headquarters and 1 overseas production center in Shanghai, China. Most of the plant makers are engineering, procurement and construction (EPC) contractors and therefore do not usually manufacture products in-house. However, Nikko produces most parts of core equipment in-house including having AP/BP control panels produced by its subsidiary, Nikko Electronics, while other companies purchase them externally. It conducts other Group-wide businesses mainly through its subsidiaries. Nikko is recently active in M&As and business transfers.

Fig. 1: Sales compositions by business segment (year ended March 2018)



Source: Nikko

Fig. 2: History

Products	Production Sites	Overseas Expansion	Group Expansion in Japan (including acquisitions and transfer of business)
1919 Established TOMBO brand hand tools	1919 Head office factory	1993 Capital participation in Benninghoven (Germany)	1968 Ichiishi Kogyosho (M&A)
1951 Concrete mixer Winch	1938 Industrial machinery factory	1994 Nikko Baumaschinen (Germany)	1971 Nikko Electronics (subsidiary)
1956 Ready-mixed concrete plant	1968 Tokyo factory	1997 Taipei branch (Taiwan)	1983 Nikko Machinery (subsidiary)
1958 Asphalt plant	1994 Satte factory	2001 Nikko (Shanghai) Construction Machinery	1994 TOMBO Industry (subsidiary)
1962 Pipe support	2004 Shanghai Jiading factory	2010 Shantui Chutian Construction Machinery	1995 NIKKO-SEC (subsidiary)
1963 Pipe scaffolding	2014 Kakogawa factory		2002 Niigata Engineering (transfer of business)
1966 Conveyor system	2016 Fukusaki factory		2006 Mitsubishi Heavy Industries (transfer of business)
1983 Floodgate			2008 Maekawa Kogyosho (M&A)
2000 System for cleaning oil-polluted soil			
2001 Waste plastic treatment system			
2007 Concrete pump			
2015 Crusher (import and sales)			

Source: Nikko

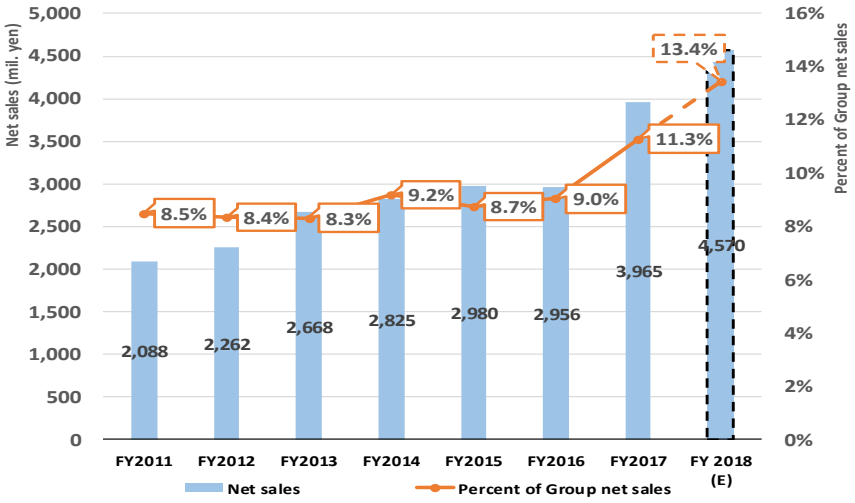
Overseas business development was relatively slow. But overseas sales ratio exceeded 10% for the first time ever in the year ended March 2018.

However, Nikko's overseas business development has been relatively slow. It started full-scale overseas business only after 1990. It made a capital investment in Germany's Benninghoven in 1993, and established Nikko (Shanghai) Construction Machinery in 2003. However, its overseas sales ratio was below 10% until the year ended March 2017.

Overseas sales ratio continues to increase in the year ending March 2019.

Nevertheless, Nikko Shanghai's revenue, mainly from APs, increased 55% in the year ended March 2018, which caused Nikko's overseas sales ratio to reach 11.3%, a double-digit percentage for the first time ever. The overseas sales ratio is expected to continue to rise in the year ending March 2019 (to 13.4% according to the company's projection). In China, Nikko once sought to increase its sales from BP business through a joint venture with a local company. However, it had to de facto withdraw due to low-priced copied products supplied by other local companies. AP business has a higher technological entry barrier than BP business and hence a lower risk of facing such competition. As to APs in China, users are increasingly becoming conscious of environmental regulations, which might provide a tailwind for Nikko given its superior recycling and energy-saving technologies.

Fig. 3: Changes in overseas sales and sales ratios

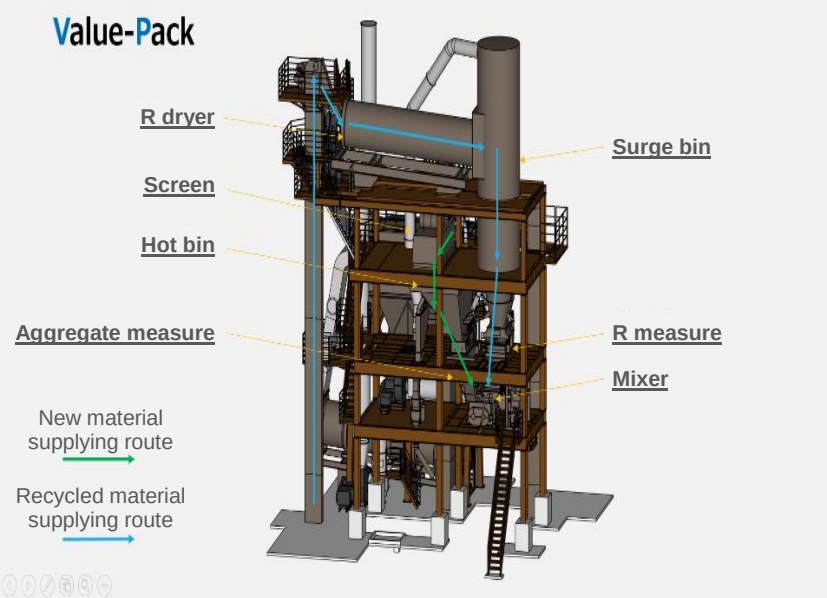


Source: Nikko

What is an asphalt plant?

An asphalt plant is a facility for producing bituminous mixture by measuring and mixing in the mixer necessary amounts of aggregate, fillers and asphalt. It consists of dryers to heat and dry aggregate, kettle to melt asphalt, measuring equipment, mixers to mix asphalt, aggregate etc. and other equipment. There are small-sized mobile APs, but most of the plants with 10 ton/hour or more capacity are stationary. Bituminous mixture is used for a range of pavement works such as road construction, airport construction and private-sector construction works. There are both newly produced and recycled heated bituminous mixtures. Recycled heated mixtures account for 75% of the total production in Japan. In response to this trend, demand for APs is also shifting from new production to recycling. In FY2017, 67% of the units of APs installed in FY2017 were recycling plants while new mixture plants accounted for 33%. Most of the users of APs are road pavement companies.

Fig. 4: Structure of an asphalt plant



Source: Nikko

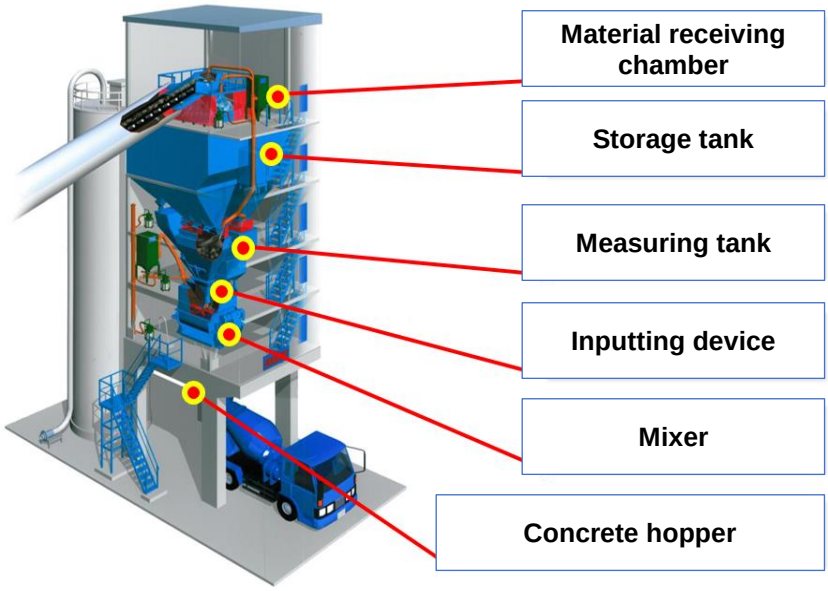
What is a batcher plant?

A concrete plant measures, mix and kneads pre-determined amounts of raw materials—cement, water, sand, gravel, mixed materials, etc. There are two types of concrete plants: batch plants and continuous plants. Most of the plants in Japan are batch plants that are also called batcher plants. A plant consists of layers of a storing part to receive materials, a measuring part, a mixing/kneading mixer (including accessories), etc. Most of the plants' operations are fully automated or remote-controlled although there are also semi-automated and manually operated plants. Many of the BP users are ready-mixed concrete suppliers. BPs for the precast concrete industry are also available where concrete structures are manufactured at a plant and installed at the construction sites. Recent labor shortage at construction companies is causing demand for PC to increase. Ready-mixed concrete is used in a range of fields including outdoor facilities for construction works, building frame construction works and civil engineering works.

Characteristics of ready-mixed concrete:

"Ready-mixed concrete" is the term used by Japanese Industrial Standards (JIS). It is commonly called, in abbreviated Japanese, *"nama con"* for *nama* (fresh) concrete. Users place orders to *nama con* suppliers for ready-mixed concrete with designated ratios of raw materials according to designed strength of concrete. Ready-mix concrete is delivered to the construction site on a concrete mixer and then injected to designated spots with a concrete pump from the concrete mixer. As quality of ready-mixed concrete changes with time (start to set within 2 to 5 hours in general), injection is normally completed within 2 hours (when outside temperature is 25 degree or below) or 1.5 hours (over 25 degree) from mixing/kneading. Ordering companies—construction or other companies—place orders taking into account traffic and other conditions.

Fig. 5: Structure of a concrete plant



Source: Nikko

(2) Business environment and trends of related industries

Asphalt plant-related businesses

Domestic road pavement project expenses continue to decrease, but their breakdown is changing.

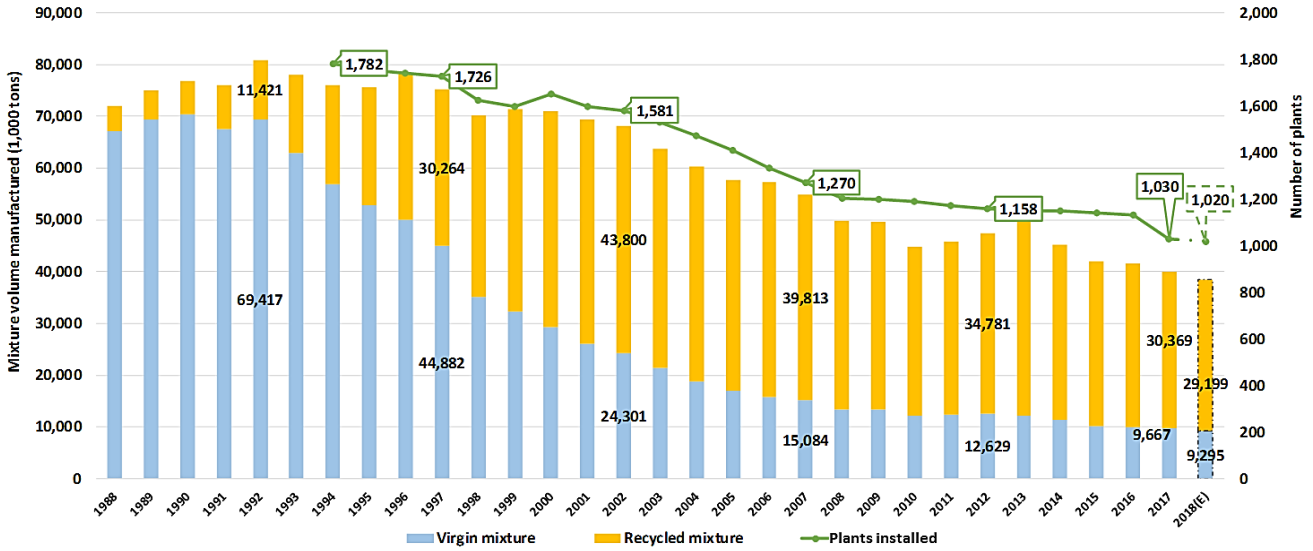
First, the following is the demand structure of and environment surrounding Japan's road pavement industry, the main user of APs. AP users are road pavement companies including NIPPO (TSE: 1881) and Maeda Road (TSE: 1883). The keys to their capital expenditure are road budget (i.e. road pavement expenditure) and bituminous mixture production volume. Japan's road construction expenditure peaked in FY1992 and declined until FY2008. It has since remained flat, or slightly declined to, around 7,500 billion yen till today. Road pavement expenditure, on the other hand, increased by over 6% until 2008 and further rose by 7–8% reflecting a supplementary budget and temporary demand for reconstruction works after the Great East Japan Earthquake. Road pavement expenditure includes repair and new installment. New installment expenditure has declined since 2008 while repair expenditure has increased. Presently, repair expenditure and new installment account for respectively approx. 70% and 30% of the total pavement expenditure.

Bituminous mixture production volume in Japan peaked in FY1992 at 80,838 thousand tons and then declined along with the reduction in public investment.

Bituminous mixture production volume continues to decline in a medium term, too.

However, after it bottomed in FY2010, it modestly increased until FY2013 partly due to the Great East Japan Earthquake. But it has been declining again since FY2014 down to 40,036 thousand tons in FY2017, a half of the volume in FY1992. In FY2018, the volume is expected to be slightly below 40,000 thousand tons. It is hardly expected to grow in a medium term, too. Over 60% of the bituminous mixture is used for public works (roads), and approx. 30% is used by the private sector. Highway works and non-road public works use 5% each. Out of the total bituminous mixture produced, recycled mixture and virgin mixture respectively account for approx. 75% and approx. 25%.

Fig. 6: Changes in bituminous mixture production volume and the number of asphalt plants installed



Source: Japan Asphalt Mixture Association (FY2018's number is Nikko's estimate.)

Demand for APs has continued to be flat since FY2015 at 40–45 units per year.

Along with these trends, the number of units of APs in place has declined. After it peaked at the end of FY1992 at 1,800 units (estimate by CGRA), it declined to 1,030 units at the end of FY2017. Even when bituminous mixture production volume increased, the number of units of APs in place slightly decreased instead of increasing because the number of units scrapped exceeded the number of units newly installed. The demand for APs has remained flat since FY2015 in the range between 40 to 45 units. Nikko projects the demand to be 42 units for FY2018.

Characteristics of Japanese road pavement companies, and the industry's structure:

Many of Japanese road pavement companies have their shares held by major construction companies, which leads to oligopoly by major players. NIPPO, Maeda Road, and Nippon Road (TSE: 1884)—respectively the largest, second largest and third largest companies in terms of net sales—are listed companies. On the other hand, Kashima Road, Obayashi Road and Taisei Rotec are non-listed companies, including being a 100% subsidiary of the parent company. Other players include Toa Road (TSE: 1882), Seiki Tokyu (TSE: 1898), Gaeart (Kumagaigumi's 100% subsidiary), Sato-Watanabe (TSE: 1807) and Sumiken Mitsui Road (TSE: 1776). Economic Census published by Statistics Bureau, Ministry of Internal Affairs and Communications, estimates the number of road pavement companies to be slightly less than three thousand. SMEs with 100 employees or less account for 99% of them. Major road pavement companies' share is high also in terms of revenue from completed construction contracts.

As to profitability of road pavement companies, the largest NIPPO and Maeda Road have close to 10% operating profit margin. On the other hand, Nippon Road (net sales in the year ended March 2018: 140.7 billion yen), Toa Road (98.2 billion yen) and Seiki Tokyu (81.6 billion yen) had less than 5%, slightly

Road pavement companies' performances are recovering, though varying in profit margins depending on sales sizes.

over 4%, and less than 8% OP margin, respectively. Sato-Watanabe (38.5 billion yen) had less than 4% OP margin. Sumiken Mitsui Road had slightly over 4% OP margin. Thus the profitability differs significantly between the top two players and the rest of the major players. Road pavement companies' performances were generally sluggish between March 2011 and March 2012. They then recovered due to the construction works following the Great East Japan Earthquake and an increase in the ratio of expenditure allocated to road pavement. However, in the year ended March 2018, the increase in raw material prices caused their growths to slow down.

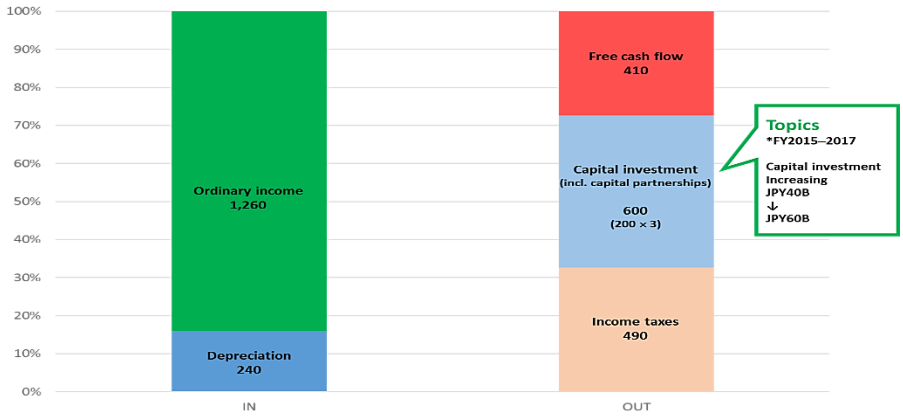
Recently-announced medium-term management plans of road pavement companies:

Medium-term business plans were announced by NIPPO and Sato-Watanabe recently and, in March 2017, by Toa Road and Obayashi Road. Many of these companies project their revenue and operation profit to modestly grow from the road pavement business, their core business. Many of them also expect their AP-related capital expenditure to increase in the years ending March 2019–2021 from the total capital expenditure incurred in the years ended March 2016–2018, mainly for renewal investment. CGRA believes that this is likely to lead to expansion of their businesses.

Major road pavement companies: NIPPO and Maeda Road plan to make proactive capital investment.

NIPPO plans to increase its capital expenditure by 50% to 60 billion yen in the years ending March 2019–2021 from 40 billion yen spent in the years ended March 2016–2018. Over 60% of NIPPO's capital expenditure is believed to go into AP-related facilities—including renewal investment for existing facilities and strategic investment (probably including overseas capital expenditure). Maeda Road projects its capital expenditure in the year ending March 2019 to be 10.7 billion yen (excluding land investment), increasing from 8.7 billion yen in the year ended 2018. This capital expenditure includes construction and expansion of AP and crumbing plants, increasing the number of plants to 8 from 3 in the year ended March 2018. Out of these plants, 5 plants are AP plants, and 3 plants are crumbling plants. Maeda Road plans to expand crumbling business, too. Major road pavement companies do not only use bituminous mixture internally but sell the product externally.

Fig. 7: Nippo's cash flow in 3 years



Source: Nippo's financial results presentation material

Medium-scale road pavement companies are also making proactive capital investment.

Toa Road does not disclose its medium-term management plan for the years ending March 2018–2022 but plans to increase its capital expenditure significantly to 3.9 billion yen in the year ending March 2019 from 2.1 billion yen spent in the year ended March 2018. Seiki Tokyu projects its capital expenditure to be 3.2 billion yen in the year ending March 2019, increasing from 2.1 billion yen spent in the preceding year. Obayashi Road aims to exceed 100 billion yen in both orders and net sales and to stably generate over 7 billion-yen ordinary profit, according to its Medium-Term Management Plan 2021 (for the period from the year ended March 2018 to the year ending March 2022). Its

business enhancement policy emphasizes the "securing of stable revenue in a sustainable manner in the changing construction market." It plans to proactively conduct capital investment towards the future including renewal of plant facilities for improved efficiency, reduction of environmental impacts and improvement of work environment (e.g. introduction of ICT). Sato-Watanabe's medium-term management plan (for the years ending March 2019–2021) projects 3.5 billion-yen capital expenditure, increasing from 2.2 billion yen spent in the years ended March 2016–2018, of which 1.0 billion yen will be allocated to renewal of APs and other facilities. Medium-scale road pavement companies' stances are similar to these major companies' stances.

Road pavement companies' work-style reforms could increase the importance of maintenance and services.

Road pavement companies also emphasize the importance of efficient utilization of management resources. NIPPO intends to implement its human resources vision during the medium-term management plan period, concurrently with proactive capital investment. Especially, implementation of "work style reform" is closely related to its maintenance and services. NIPPO seeks to reduce the total working hours and increase the number of days off by proactively utilizing ICT, promoting flexible approaches, changing operation processes and operation spaces, and encouraging its employees to take leave. Toa Road, too, seeks to improve work environment—including promoting women's contributions, taking measures for aging population, and reforming work style—as part of its allocation of management resources for the next five years. In a medium term, given that Japan's population will be increasingly concentrated in urban areas, its business bases will be consolidated, too. This will make each business base having to cover a larger region than before. In response, Toa Road will share information management and reform its organizational structure. Sato-Watanabe, too, will proactively introduce ICT and implement work style reform, aiming to improve its field capabilities.

The average ages of many of Japanese road pavement companies' employees are mid-40s.

As to average ages of listed road pavement companies' employees, while Maeda Road's average age is 40.1 years old, other companies' ages are mostly mid-40s, as follows. NIPPO: 44.6 years old; Nippon Road: 43.5 years old; Toa Road: 45.4 years old; Seiki Tokyu: 42.1 years old; Sato-Watanabe: 45.2 years old; Sumiken Mitsui Road: 45.4 years old. Their average ages are around 2 years older than major construction companies' employees. Their "work style reform" might have a significant impact on management judgment. Statuses of the backlogs at listed road pavement companies at the end-March 2018 are as follows. NIPPO: 15% up from end-March 2017 (with backlogs for pavement in civil engineering increasing 35%); Maeda Road: 20% up; Nippon Road: 33% up; Toa Road: 29% up; Seiki Tokyu: 4% down; Sato-Watanabe: 15% down; Sumiken Mitsui Road: 3% up. Given the increases at many of them, the overall net sales for the year ending March 2019 are expected to be strong.

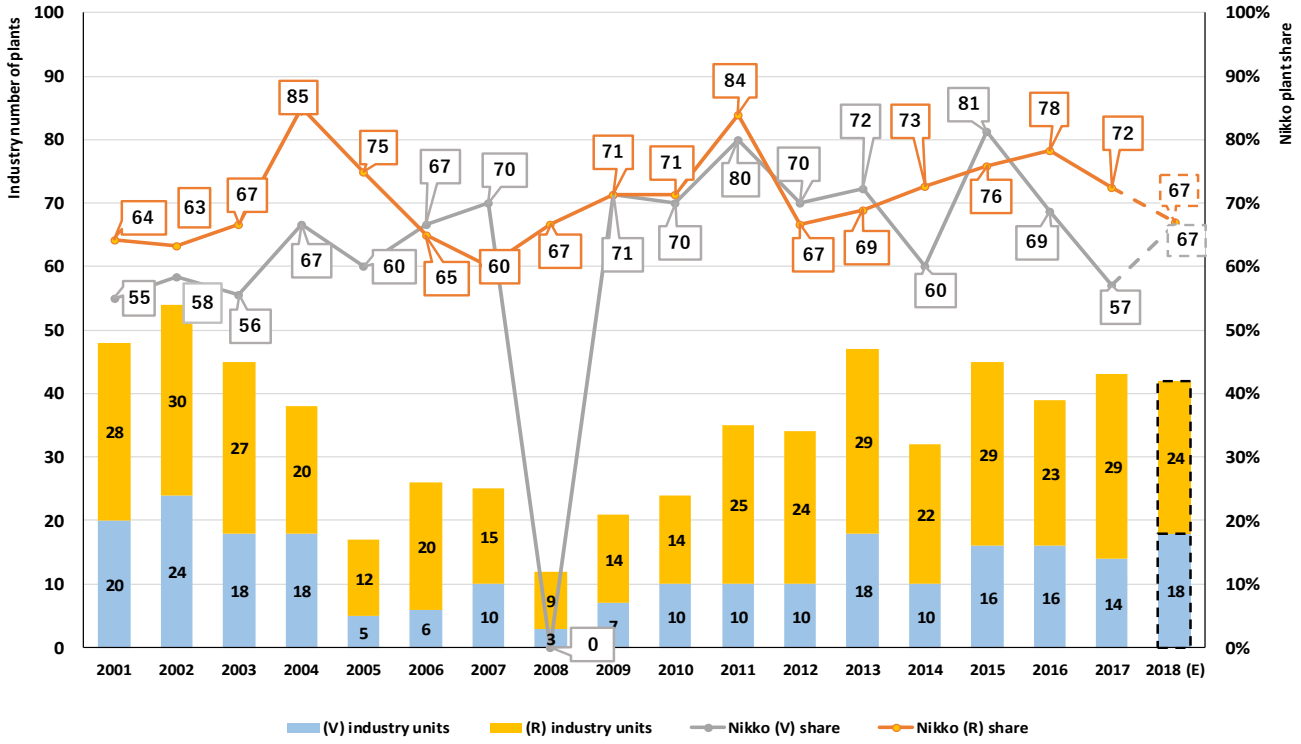
Proposals meeting new demand will be needed.

Although it is unknown whether the road pavement companies' capital expenditure will be implemented 100%, CGRA projects a high level of demand to be generated for renewing APs given that many of the existing APs were produced in early 1990s and are becoming 30 years old. In addition, the road pavement companies will seek to realize qualitative improvements through work style reform and other changes in work environment and the introduction of ICT in construction works. It is considered to be important for Nikko to make proposals that meet such new needs.

CGRA's view:
Domestic demand for AP renewal could rise in the coming 3 years.

Nikko has over 70% share in domestic demand for APs. Together with the second largest player Tanaka Iron Works, a non-listed company, they dominate the oligopolistic market. Nikko succeeded in further expanding its share in the industry by acquiring the AP business from former Niigata Engineering in 2002. Nonetheless, the demand for APs declined sharply from 54 units in FY2002 to 12 units in 2008 when the demand bottomed. The benefit from its market share was then limited. Since FY2014, although bituminous mixture production volume has continued to decline gradually, the demand for APs has remained almost flat at 40–45 units. The medium-term management plans of the major road pavement companies indicate an expected increase in renewal demand. CGRA forecasts the demand for APs to rise to around 50–55 units in three years. The keys to a further increase in Nikko's share would be expansion of sales of Value-Package (VP) and mid-ship APs that Tanaka Iron Works does not deal with and the new CSC's contributions.

Fig. 8: Demand for asphalt plants and Nikko's share



Source: Nikko

Concrete plant-related businesses

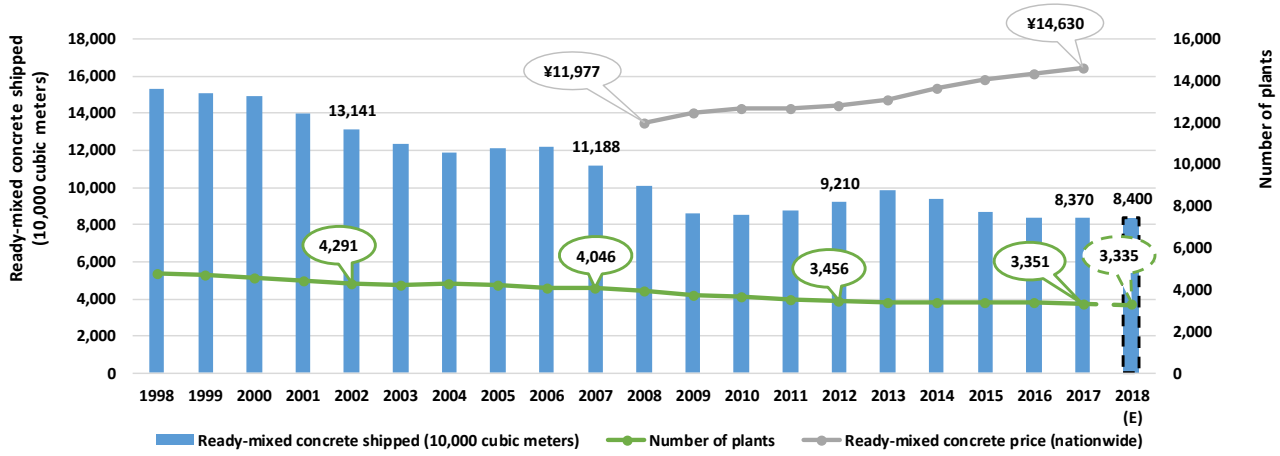
Japan's construction investment remains flat around 53 trillion yen.

Main users of BPs are companies in the ready-mixed concrete industry. Unlike APs that are mainly used by large pavement companies, however, ready-mixed concrete businesses are mainly conducted by local SMEs. Shipment of ready-mixed concrete and the number of ready-mixed concrete plants are proportionate to construction investment. Construction investment peaked in FY1992 and then declined almost by half to 42 trillion yen in FY2010. Then, it has recovered to the current level of 53 trillion yen, reflecting the demand generated by the reconstruction work following the Great East Japan Earthquake, the government's national resilience plan, and construction works being implemented toward the Tokyo Olympic Games.

Despite the sluggish growth of shipment volume of ready-mixed concrete, increasing prices will help improve operators' profitability.

For the said reasons, shipment of ready-mixed concrete in Japan continued to decrease until FY2009. It then recovered until FY2013 and, again, modestly decreased between FY2014 and FY2017. Recently, demand for ready-mixed concrete is recovering especially in Tokyo region, including the demand for construction of facilities to be used for Tokyo Olympic Games. Demand in FY2018 is expected to be 84,000 thousand m^3, slightly increasing from FY2017. On the other hand, despite the recovering demand for ready-mixed concrete, the number of ready-mixed concrete plants continues to modestly decrease because more plants are being scrapped than being renewed or newly installed. Given the significant increase in ready-mixed concrete price in these few years, profitability seems to be secured even without an increase in plant utilization rate, which is perhaps causing the pace of scrapping to shrink temporarily. The declining rate of the number of plants lags behind that of demands. There is a view that forecasts the ready-mixed concrete plants to be consolidated and their number to be reduced to 2,700 (from 3,351 as of the end of FY2017).

Fig. 9: Changes in shipment volume of ready-mixed concrete and the number of plants



Source: National Federation of Ready-Mixed Concrete Business Association; and
"Survey on Distribution of Ready-Mixed Concrete (unit price)," Ministry of Economy, Trade and Industry (FY2018 figure is Nikko's estimate.)

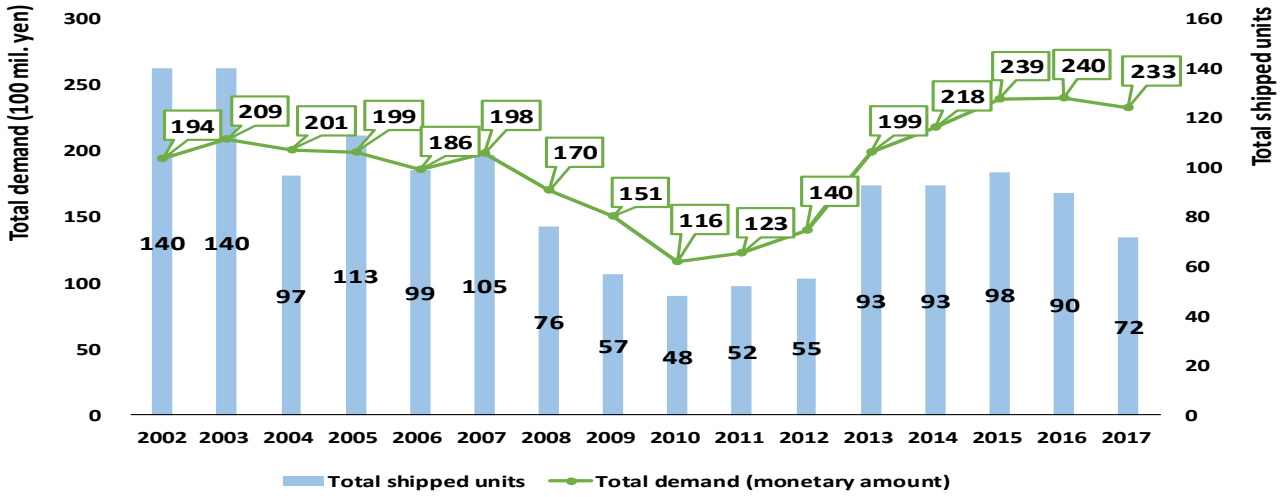
Domestic demand for BPs sees sluggish growth in terms of units but remains high in terms of amount.

Demand for BPs in Japan bottomed in FY2010 at 48 units and then recovered to 98 units by FY2015. It declined to 72 units in FY2017. However, the shipment amount including the revenue from maintenance and services and BPs remained flat at 23.3 billion yen in FY2017. CGRA believes that this mainly reflects the following factors: (1) ready-mixed concrete vendors conduct their immediate tasks by increasing maintenance and services rather than renewing the BP partly due to the rise in ready-mixed concrete price; (2) demand for secondary products of concrete is increasing from the precast concrete (PC) and other industries other than ready-mixed concrete vendors. Out of Nikko's revenue from BPs in the year ended March 2018, although revenue from the sale of the plants remained flat, revenue from maintenance and services increased 19%. Ready-mixed concrete for secondary concrete products is used as construction materials for floors, walls, pillars, etc. and in civil engineering concrete products such as piles, Hume pipes, utility poles, RC segments, and box culverts. Given secondary concrete products can be assembled at the construction sites with cranes and thus help reduce construction periods and save energy, demand for BPs is expected to increase in a medium term.

Japan's BP industry sees competition among the three major companies. Nikko's share is rising.

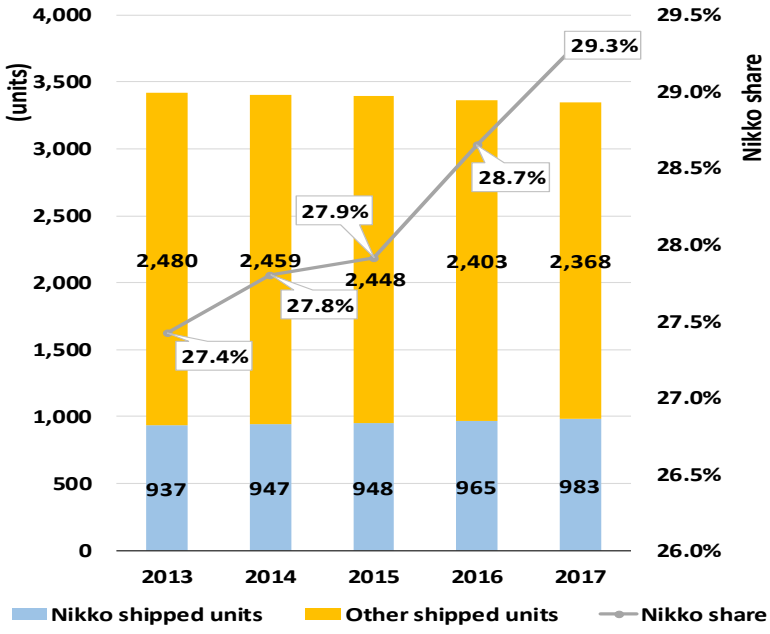
In the domestic BP industry, Nikko has had the third largest static share, falling behind Koyo Industries (non-listed; business transferred from IHI) and Kitagawa (TSE: 6317). However, in many of the past few years, its dynamic share has been over 40%, the largest share, based on expansion of sales to the PC industry and launch of new products. Its static share has also increased to 27% in the year ended March 2013 and close to 30% in the year ended March 2018. Nikko's competitive edge against the two competitors is in-house production of control panels. It has been building a track record with the PC industry, too, in these few years. Nikko aims to achieve 50% share by launching new control panels and next generation mixers.

Fig. 10: Changes in units and amounts of BPs shipped



Source: Japan Construction Machinery Manufacturers Association (Amounts include maintenance and services.)

Fig. 11: Changes in static share in BPs



Source: Nikko

Environment and transportation-related businesses

Technologies used in environment-conscious plants have their origins in APs and BPs.

Nikko started its environmental products business about 20 years ago. This business leverages heating technology for APs and mixing technology for BPs. Nikko has delivered various products, especially drying and heating products, to a range of businesses from utilities to blast furnace manufacturers in the past nine years. Many of these products were produced in contract projects for research and development purposes. Nikko has a track record for soil decontamination plants delivered to its joint venture with Shimizu Corporation. It also deals with drying equipment used in the upstream process of biomass power generation. The prices of a unit of plant range between 100 million yen and 900 million yen.

Pay attention to recycling-related waste gypsum board plants.

In a medium term, Nikko is focusing on recycling-related environmental products which to be developed as future core products, paying attention to recycled waste gypsum boards as part of such products. Waste gypsum boards are generated in the process of demolition of buildings. Momentum might emerge for recycling them. Nikko has already delivered close to 10 small-sized plants (with 1–2 tons/hour processing capacity). If gypsum boards get certified as Designated Construction Materials, the needs for recycling them will rise rapidly.

It seems difficult to have transportation-related business grow significantly.

As to transportation-related business, Nikko deals with conveyers and other products. Its market is expanding in logistics and other areas. In the 200 billion-yen transportation market, Nikko's revenue is only over 2 billion yen. It needs to expand its business from the sale of units of conveyers alone to engineering.

Earnings vary significantly depending on profitability of environment-conscious plant projects.

The revenue from environment and transportation-related business accounted for 11.2% of Nikko's total revenue in the year ended March 2018. The breakdown of revenue from the business by product is as follows: environmental products: 40.0%; transportation products: 57.4%; transportation services: 2.6%. In terms of environmental plants, there were 3 large spot sales transactions including a scale dryer for a blast furnace manufacture, which caused the relevant revenue to increase by 2.5 times from the year ended March 2017. There were large-scale transportation product projects, too, as reflected to 16.9% increase in revenue. In the environment and transportation-related business, maintenance and services account for only less than 3%. Therefore, its performance fluctuates significantly depending on environment plant projects and profitability. In terms of profitability, operating profit margin was around 20% in the years ended March 2012 and 2015 but was 7.8% in the year ended March 2018 due to the low profitability of a large environment plant project.

Other businesses

"Other" businesses enjoy stable profitability. Overlay equipment accounts for the largest ratio.

The revenue from the "other" businesses accounts for 12.8% of the total revenue. Most of these businesses are conducted by the subsidiaries. Breakdown of products was as follows: overlay equipment (Nikko Sec): 1.51 billion yen; floodgates and water-proofed boards (Nikko Machinery): 980 million yen; agricultural farming tools (Tombo Industry): 720 million yen; crushers (Maekawa Kogyosho): 410 million yen; development sales and real estate: 380 million yen; electronics (external sales; Nikko Denshi): 310 million yen; and renovation and insurance (Nikko Kosan): 160 million yen. While electronics and development sales and real estate businesses grew significantly, respectively by 80.9% and 42.8%, overlay equipment decreased 3.4%. Crushers business handled by Maekawa Kogyosho grew robustly by 14.6%. The "other" businesses' operating profit margin is stable around 10%, supporting Nikko's profitability.

(3) Financial analysis: Considering future strategy based on SWOT analysis

Consolidated financial results for the year ended March 2018

In terms of consolidated performance in the year ended March 2018, BPs' maintenance and services were strong, covering APs' and environment-related products' underperformance.

Consolidated financial results for the year ended March 2018 were as follows: orders received: 33.61 billion yen (1.5% down from the year ended March 2017); net sales: 35.11 billion yen (7.3% up); operating profit: 2.10 billion yen (8.2% up); ordinary profit: 2.23 billion yen (12.3% up); net profit attributable to owners of the parent: 1.49 billion yen (11.2% up). These results were roughly in line with Nikko's initial projection (net sales: 34.5 billion yen; operating profit: 2.1 billion yen; and net profit: 1.5 billion yen). By segment, however, AP-related business slightly underperformed the company's expectation. Environment and transportation-related business also underperformed the company's projection in terms of operating profit. On the other hand, BP-related business outperformed the company's projection. Regarding AP-related business, while Nikko Shanghai's sales of plant bodies increased sharply, the domestic sales from the profitable maintenance and services declined. As to BPs, although the domestic sales of plant bodies were flat, the domestic revenue from maintenance and services increased 19% partly due to the increase in ready-mixed concrete market prices. Reduction in the sales of unprofitable concrete pumps was a factor contributing to the profitability. In terms of environment and transportation-related business, there were 3 large-scale projects, which helped increase the revenue but lowered profitability.

Consolidated performance forecast for the year ending March 2019

Consolidated performance for the year ending March 2019 is forecasted to see a decrease in revenue but an increase in profit owing to revised prices of services for APs and other factors.

Nikko projects its consolidated performance for the year ending March 2019 to be as follows: orders: 34.0 billion yen (1.1% up year-on-year); net sales: 34.0 billion yen (3.2% down); operating profit: 2.15 billion yen (2.2% up); ordinary profit: 2.30 billion yen (2.7% up); and net profit attributable to owners of the parent: 1.55 billion yen (4.0% up). Projections by segment are as follows. As to AP-related businesses, sales from China and other overseas markets are expected to increase. The cost rate in maintenance and services is expected to improve. The operating profit is projected to increase by 160mn yen year-on-year to 1.51 billion yen. Regarding BPs, on the other hand, both revenue and profit are forecast to decline due to an expected decrease in the sales of plant bodies. As to the environment and transportation-related business, while the previous fiscal year had the 3 large-scale spot projects, the current fiscal year will have no such large-scale projects. Consequently, although the sales will decrease significantly, the degree of a decline in operating profit will be insignificant. The "other" businesses are expected to be strong owing to the import and sale of crushers and real estate property leasing.

Fig. 12: Nikko's revised performance outlook

	FY 2017			FY 2018				
	1Q actual	1H actual	Full year actual	1Q actual	YoY change	Change rate	1H forecast	Full year forecast
Net sales	6,179	16,153	35,114	5,415	(764)	-12.4%	16,000	34,000
Operating income	48	808	2,103	(26)	(74)	-	950	2,150
Operating margin	0.8%	5.0%	6.0%	-0.5%	-1.3%	-	5.9%	6.3%
Ordinary income	161	925	2,239	87	(74)	-46.0%	1,050	2,300
Net income attributable to owners of parent	182	743	1,490	130	(52)	-28.2%	750	1,550
New orders received	5,896	21,829	33,616	5,693	(203)	-3.4%	16,000	34,000
Order backlog	11,346	11,409	10,132	10,409	(937)	-8.3%	10,132	10,132
Exchange rate (EUR/JPY)	120.19	132.21	127.19	132.32	+12.13	+10.1%	130.0	132.5
Exchange rate (RMB/JPY)	16.43	16.90	16.63	17.03	+0.60	+3.7%	17.0	17.0

In millions of yen, or yen; Source: Nikko

Fig. 13: Revised performance outlook by business segment

		FY 2017			FY 2018			
		1Q actual	1H actual	Full year actual	1Q actual	YoY change	1H forecast	Full year forecast
Asphalt plant-related business	Net sales	2,768	7,432	17,179	2,361	(407) 85.3%	8,800	17,800
	Operating income	100	450	1,348	42	(57) 42.0%	750	1,510
	Operating margin	3.6%	6.1%	7.8%	1.8%		8.5%	8.5%
Concrete plant-related business	Net sales	2,236	5,606	9,521	1,671	(565) 74.7%	4,200	9,000
	Operating income	145	669	1,015	66	(79) 45.5%	420	900
	Operating margin	6.5%	11.9%	10.7%	3.9%		10.0%	10.0%
Environment- and conveyor-related business	Net sales	407	1,453	3,931	462	+54 113.3%	1,300	2,600
	Operating income	24	101	308	59	+35 245.8%	130	260
	Operating margin	5.9%	7.0%	7.8%	12.8%		10.0%	10.0%
Other business	Net sales	766	1,660	4,480	921	+154 120.2%	1,700	4,600
	Operating income	22	107	462	21	(1) 95.5%	170	520
	Operating margin	2.9%	6.5%	10.3%	2.3%		10.0%	11.3%
Corporate expenses		(244)	(519)	(1,031)	(216)		(520)	(1,040)

In millions of yen; Source: Nikko

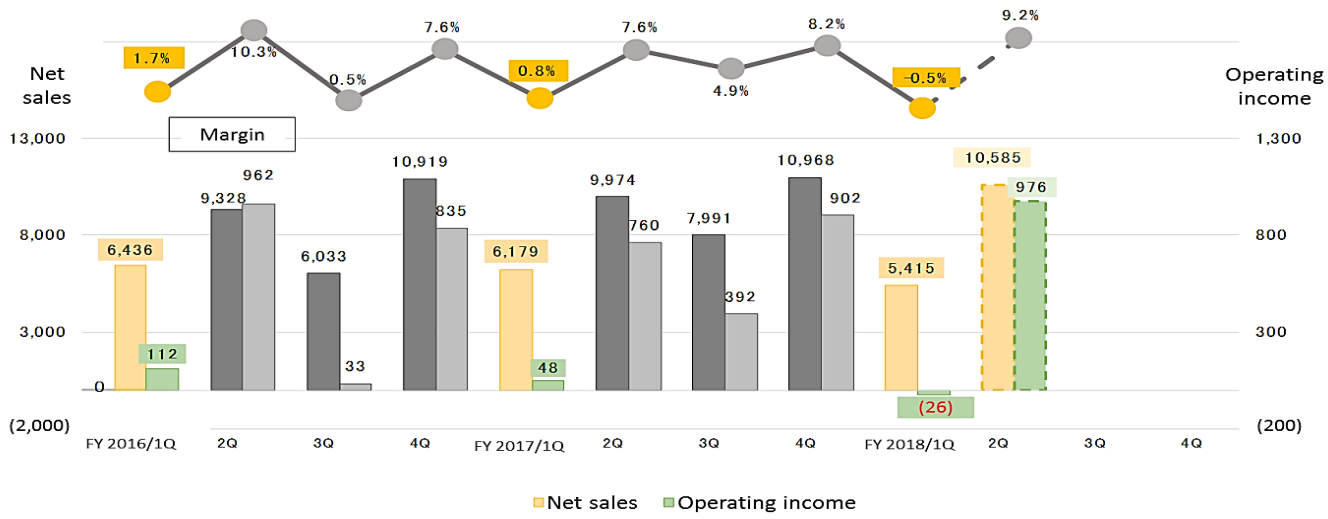
Factor analysis of changes in ordinary income in the year ending March 2019:

The attribution analysis of the increase/decrease in ordinary profit expects the contribution from the improved cost ratio to be positive at 480 million yen. Factors in the contribution include the price revision that has been implemented since April and concentration purchasing of products purchased. The 150 million-yen increase in SG&A expenses mainly reflects costs associated with Nikko Messe 2018 which to be held at the headquarters from October 22, many of which are temporary costs.

Review of the results in 1Q in the year ending March 2019:

The consolidated financial results have been announced for the 1Q of the year ending March 2019 as follows: orders received: 5.69 billion yen (3.4% down year-on-year); net sales: 5.41 billion yen (12.4% down); ordinary profit: 90 million yen (46.0% down); and net profit: 130 million yen (28.2% down). Although the quarterly results slightly underperformed Nikko's internal projections, the 1Q results tend to be low due to seasonality. After announcing the 1Q financial results, Nikko made no revision in its performance projection from the beginning of the fiscal year.

Fig. 14: Quarterly revenue and operating profit



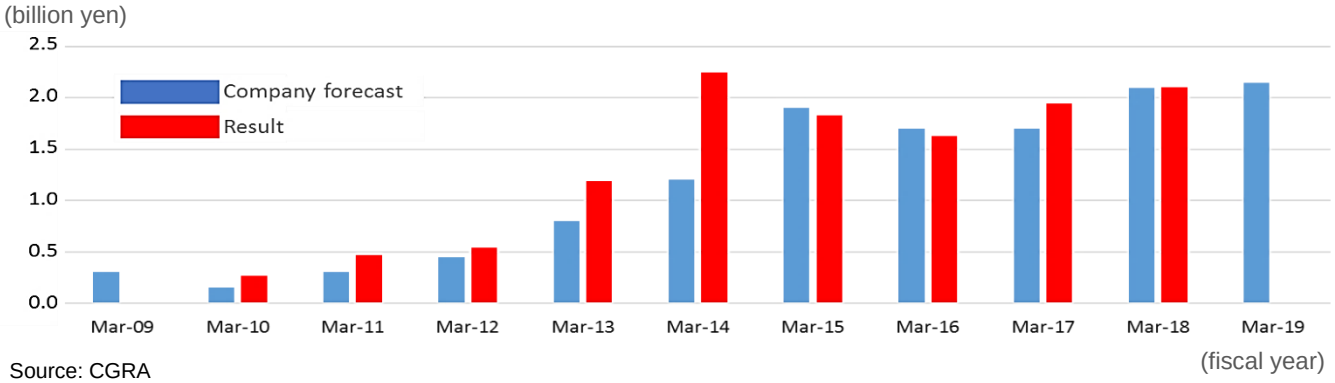
In millions of yen; Source: Nikko

Examination of the visibility of the performance forecasts

Visibility for performance forecast (operating income) is becoming relatively stable.

The following findings have been indicted as CGRA examined Nikko's performance visibility by comparing the company's projection (made at the beginning of fiscal years) and results in terms of operation profit over the past 10 years (the years ended March 2009–2018). It indicated that there were 7 upward revisions and 3 downward revisions. The downward revisions were made in the years ended March 2016, 2015 and 2009. Except the revision in the year ended March 2009, the degrees of revisions were small: the projections for the years ended March 2016 and 2015 were revised downward respectively by 4.2% and 3.6%. Upward revisions were mostly made within 15% except the years with low operating profits (1 billion yen or less) and the years ended March 2014 and 2013 when the projections were revised upward respectively by 87.4% and 48.2%. Maintenance and services account for around 35% of Nikko's total revenue, which contribute to the stability of the company's revenue. The revenue from plant bodies is within 1 billion yen. Therefore, the visibility of Nikko's performance forecasts is considered relatively high.

Fig. 15: Nikko's operating profit forecast at the beginning of the fiscal year; and results



Source: CGRA

Financial trend and the corporate policy

FCF increased significantly in the last five years, with net cash doubling.

The following findings have been indicted as CGRA looked into the changes in Nikko's balance sheets between the year ended March 2013 and the year ended March 2018 when the company's performance and free cash flow improved significantly. While shareholders equity ratio slightly increased from 65.3% to 67.1%, net positive cash doubled from 5.20 billion yen to 10.56 billion yen. During this period, Nikko strengthened its shareholder return including increasing the dividend from 35 yen to 60 yen and implementing a 1.25 billion-yen share buyback. Still net cash increased substantially. It conducted capital investment since the year ended March 2014 at the level exceeding the depreciation cost—spending 1.26 billion yen in the year ended March 2017. Still the increase in cash exceeded the spending. Although ROE was only 5.0% in the year ended March 2018, it is worth noting that the shareholders equity has exceeded 30.3 billion yen. Nikko will implement 1.2 billion-yen capital expenditure in the year ending March 2019 including for the construction of the techno center. The capital expenditure is expected to return to its ordinary level after the year ending March 2019.

Nikko's capital policy is to use excess cash for strengthening shareholder return.

Under these circumstances, Nikko will use its cash for M&As and expansion of its overseas production bases. Going forward, it will keep its net assets at the current level, slightly over 30 billion yen, and will not have it increase significantly from this level. Its policy is to allocate excess cash to shareholder return. Nikko's dividend payout ratio has been basically around 30% so far. CGRA believes that the company is likely to increase its payout ratio.

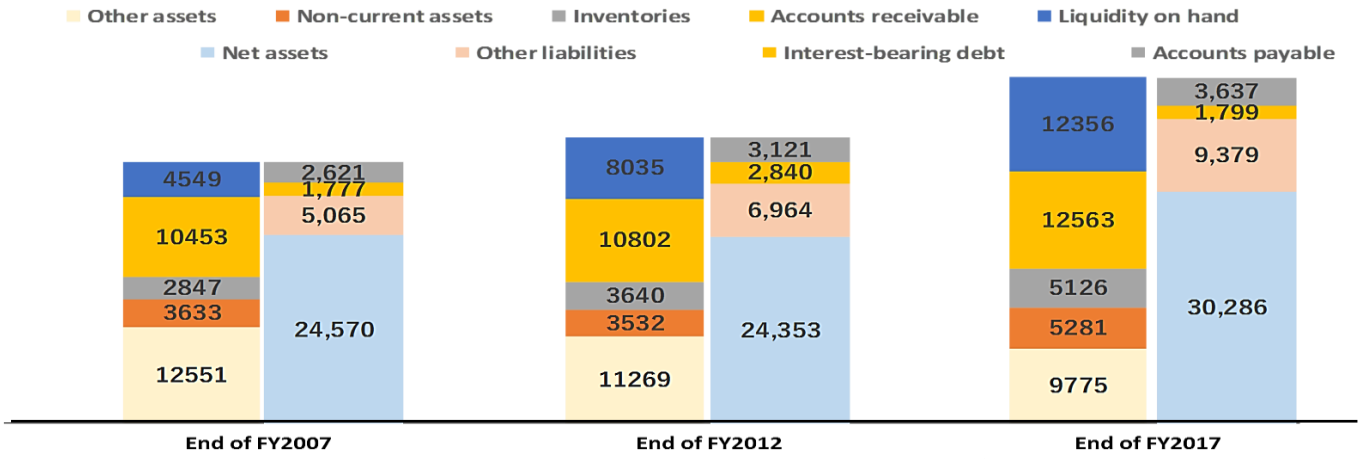
Fig. 16: Nikko's balance sheet

Nikko (6306 JP)

JPY, billion (without numbers per share) 12 months	FY 2011 03/31/2011	FY 2012 03/31/2012	FY 2013 03/31/2013	FY 2014 03/31/2014	FY 2015 03/31/2015	FY 2016 03/31/2016	FY 2017 03/31/2017	FY 2018 03/31/2018
Total assets								
+ Cash, cash equivalents and STIs	6.6	6.8	8.0	9.0	9.3	10.1	13.1	12.4
+ Cash and cash equivalents	6.3	6.8	8.0	8.6	8.8	9.9	12.7	12.2
+ Short-term investments (STIs)	0.3	0.0	0.0	0.4	0.5	0.3	0.4	0.2
+ Accounts and notes receivable	8.8	10.1	10.8	11.6	11.0	13.4	11.4	12.6
+ Inventory	3.0	4.1	3.6	3.8	5.3	5.5	5.4	5.1
+ Raw materials	0.6	0.9	0.9	0.9	1.2	1.1	1.0	1.1
+ Work in process	1.6	2.4	2.3	2.3	3.2	3.0	2.8	3.3
+ Finished products	0.8	0.8	0.5	0.5	0.9	1.3	1.5	0.6
+ Other current assets	0.8	0.7	0.8	1.1	1.0	0.8	0.9	0.8
Total current assets	**19.2**	**21.7**	**23.3**	**25.4**	**26.7**	**29.8**	**30.8**	**30.8**
+ Net fixed assets	3.7	3.6	3.5	4.1	4.3	4.6	5.2	5.3
+ Total fixed assets	12.8	13.0	12.9	13.8	14.3	14.8	14.8	15.1
- Accumulated depreciation	9.1	9.4	9.4	9.7	10.0	10.2	9.6	9.8
+ Total long-term investments	5.1	5.2	6.5	7.4	7.7	7.0	7.1	7.1
+ Other fixed assets	4.8	4.5	4.0	3.5	3.3	1.9	1.9	1.9
+ Total intangible assets	0.2	0.1	0.1	0.1	0.3	0.3	0.3	0.3
+ *Other intangible assets*	*0.2*	*0.1*	*0.1*	*0.1*	*0.3*	*0.3*	*0.3*	*0.3*
+ Deferred income tax asset	1.5	1.1	0.9	0.5	0.6	0.5	0.5	0.5
+ Investment in affiliates	2.1	2.1	1.8	1.7	1.2	0.0	0.0	0.0
+ Other fixed assets	1.1	1.2	1.2	1.1	1.1	1.0	1.1	1.1
Total non-current assets	**13.6**	**13.3**	**14.0**	**15.0**	**15.3**	**13.4**	**14.2**	**14.3**
Total assets	**32.9**	**35.0**	**37.3**	**40.3**	**42.0**	**43.2**	**45.0**	**45.1**
Liabilities and equity								
+ Accounts payable and accrued expenses	2.0	3.2	3.1	3.8	3.5	3.5	8.1	7.3
+ Accounts payable	2.0	3.2	3.1	3.8	3.5	3.5	3.8	3.6
+ Tax payable	—	—	—	—	—	—	0.7	0.3
+ Other accounts payable and accrued expenses	—	—	—	—	—	—	3.7	3.4
+ Short-term liabilities	2.8	2.8	2.7	2.1	2.2	2.0	1.6	1.6
+ Short-term debt	2.8	2.8	—	2.1	2.2	2.0	1.5	1.5
+ Long-term debt due within 1 year	—	—	—	—	—	—	0.1	0.1
+ Other current debts	2.2	3.0	4.4	5.5	5.6	5.8	2.8	2.5
+ Other current debts	2.2	3.0	4.4	5.5	5.6	5.8	2.8	2.5
Total current debts	**7.0**	**9.1**	**10.2**	**11.4**	**11.3**	**11.3**	**12.5**	**11.5**
+ Long-term liabilities	0.1	0.0	0.2	0.1	0.0	0.4	0.4	0.2
+ Long-term debt	0.1	0.0	—	0.1	0.0	0.4	0.4	0.2
+ Other non-current debts	2.6	2.6	2.6	2.7	2.8	3.0	3.0	3.1
Total non-current debts	**2.7**	**2.6**	**2.8**	**2.8**	**2.9**	**3.4**	**3.4**	**3.4**
Total liabilities	**9.7**	**11.7**	**12.9**	**14.2**	**14.1**	**14.7**	**15.9**	**14.8**
+ Shareholders equity and paid-in surplus	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
+ Common stocks	—	—	—	—	—	—	9.2	9.2
+ Paid-in surplus	—	—	—	—	—	—	7.8	7.8
- Treasury stocks	0.1	0.1	0.1	0.1	0.1	0.1	1.1	0.6
+ Surplus	—	—	—	—	—	—	10.9	11.2
+ Other equity	7,808.0	7,808.0	7,808.0	7,808.0	7,808.0	7,808.0	2,297.0	2,673.0
Equity before deduction of equity attributable to the minority interest	**23.1**	**23.3**	**24.4**	**26.2**	**27.8**	**28.5**	**29.1**	**30.3**
+ Equity attributable to the minority interest and equity attributable to the non-controlling interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net assets	**23.1**	**23.3**	**24.4**	**26.2**	**27.8**	**28.5**	**29.1**	**30.3**
Total assets (liabilities + equity)	**32.9**	**35.0**	**37.3**	**40.3**	**42.0**	**43.2**	**45.0**	**45.1**
Note:								
Accounting standard	JP GAAP	JP GAAP	JP GAAP	JP GAAP	JP GAAP	JP GAAP	JP GAAP	JP GAAP
No. of shares issued	8.4	8.4	8.4	8.4	8.4	8.4	7.8	7.7
No. of company's own shares	0.0	0.0	0.1	0.1	0.1	0.1	0.7	0.3
Pension liabilities	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.0
Foreign ownership	2.29	2.21	2.58	4.63	4.72	4.55	5.77	9.20
No. of shareholders	3,516	3,355	4,169	3,129	3,212	2,500	2,335	2,145
Net debt	-3.7	-3.9	-5.2	-6.7	-7.1	-7.8	-11.1	-10.6
Net debt/capital ratio	-16.00	-16.82	-21.30	-25.77	-25.64	-27.23	-38.10	-34.86
Tangible equity capital/tangible asset ratio	70.20	66.43	65.21	64.73	66.08	65.79	64.41	66.92
Current ratio	2.75	2.38	2.29	2.22	2.37	2.64	2.46	2.69
Cash conversion cycle	155.81	161.95	152.14	131.15	151.94	157.78	165.22	145.83
Total no. of employees	792	775	763	767	796	803	797	807

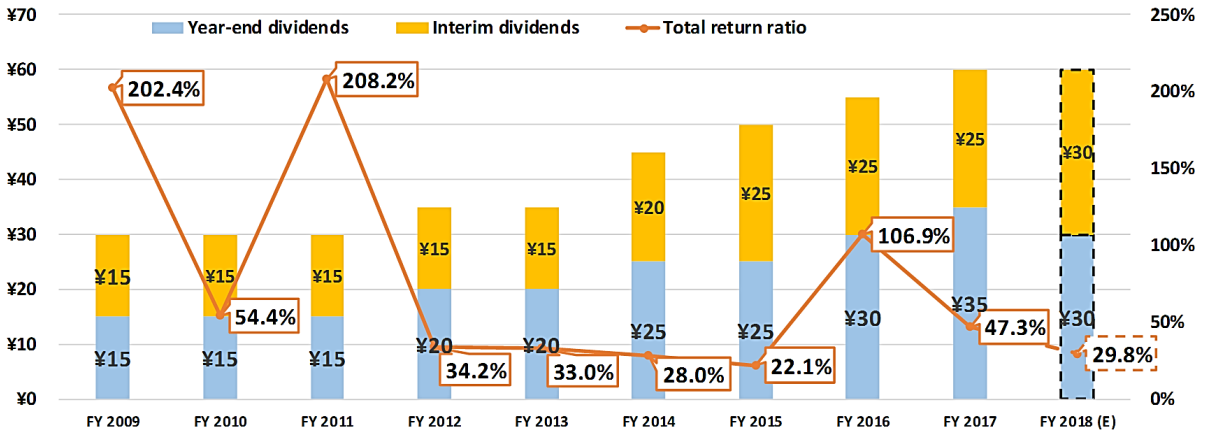
Source: Bloomberg, and CGRA

Fig. 17: Changes in balance sheet



In millions of yen; Source: Nikko

Fig. 18: Changes in dividends and total shareholder return ratios



Share buyback	1	1	4	9	1	2	1	1,006	246	–
Treasury stock retirement	0	0	0	0	0	0	0	0	752	–

In millions of yen; Source: Nikko

Comparison with competitors, and SWOT analysis

Comparison in profitability with the medium-scale construction machinery manufacturers; and SWOT analysis:

Next, based on comparing and identifying the relative positioning of Nikko's profitability in the year ended March 2018 with that of eight medium-scale construction machinery manufacturers, CGRA has conducted a SWOT analysis and considers measures for improving Nikko's growth and profitability. The SWOT analysis was developed by Albert Humphrey, who was at Stanford University, in the 1960s as a strategic corporate evaluation tool. It is still today used widely as a corporate analysis approach. "S" stands for strength, an internal factor. "W" stands for weakness an internal factor. "O" stands for opportunities, future potentials and opportunities found in the external environment. "T" stands for threat, future risks and threats identified in the external environment. Thus "S" and "W" refer to internal factors while "O" and "T" refer to external factors. It is important to utilize the SWOT analysis as a strategic management tool by incorporating both aspects of it.

Profitability looks weaker compared to the 8 medium-scale construction machinery manufacturers.

The analysis compared Nikko's profitability with the simple average of 8 medium-scale construction machinery manufacturers: Giken Industrial (fiscal year ending Augusts), Aichi Corporation, Hokuetsu Industries, Kitagawa, Kato Works, Sakai, Okada, and Maeda Seisakusho. Nikko's operating profit margin of 6.0% is 4.0 percentage points below the eight companies' average profit margin of 10.0%. This is reflected to other profitability indicators as follows (Numbers in parentheses are the eight companies' averages.): ROA: 3.3% (5.4%); ROE: 5.0% (10.0%); and ROC: 4.8% (7.9%). Operating profit margins of four companies—Giken Industrial, Hokuetsu Industries, Aichi Corporation, and Sakai—exceed 10%. Operation margins of only two companies—Maeda Seisakusho and Kato Works—are below Nikko's operating profit margin.

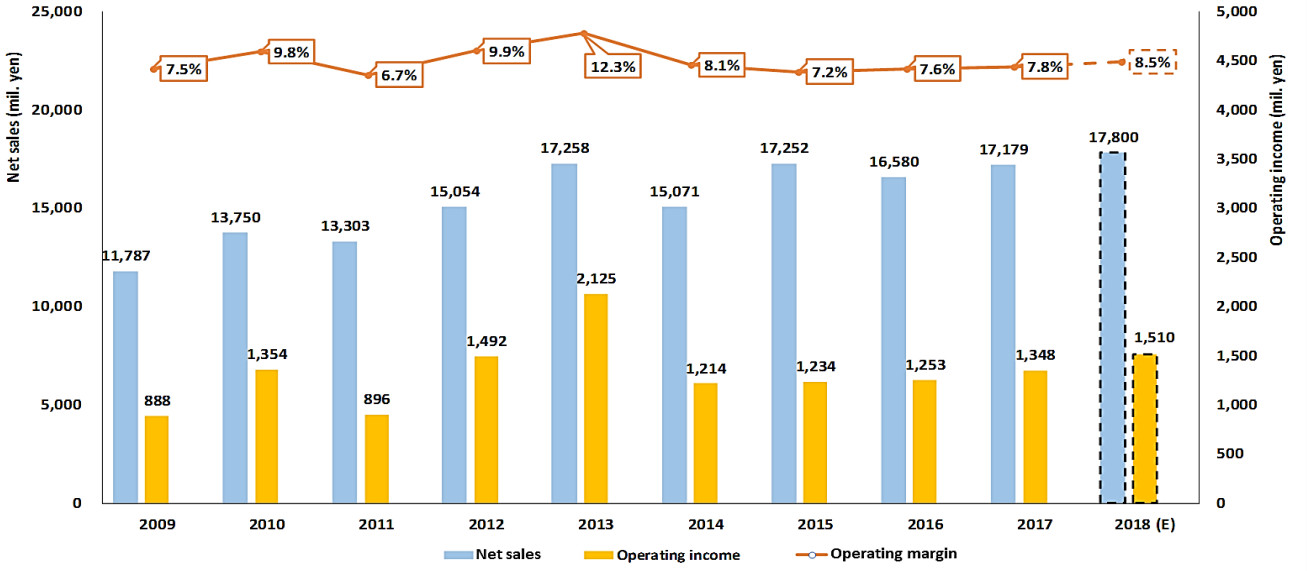
Improvement in profitability seems weaker than the average improvement in road pavement companies' profitability.

In terms of Nikko's long-term profitability (since the year ended March 1995), the operating profit margin peaked around 7% and has not exceeded this level. However, the operating profit margins of the users of Nikko's APs, major road pavement companies, improved significantly from 2% in the year ended March 1995 to 7–8% in the year ended March 2018. CGRA is paying attention to the fact that their profitability improved significantly despite insignificant growth of their net sales in the past ten years.

Adequate operating profit ratio seems 9–10%, considering major road pavement companies' behaviors.

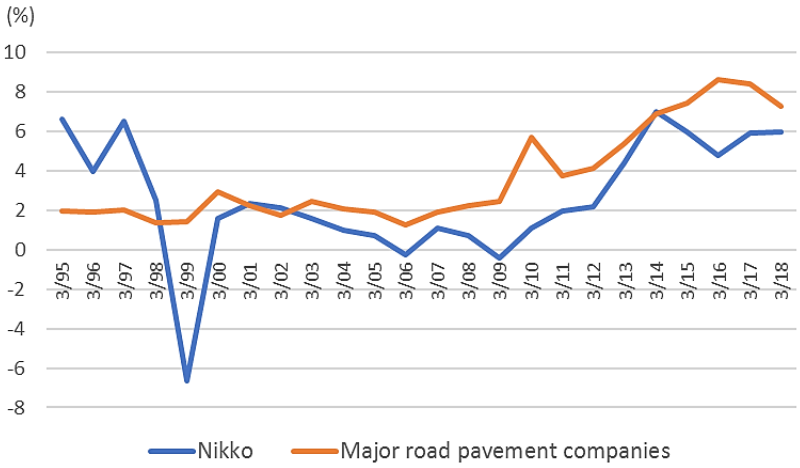
During the same period, considering the fact that Nikko's market share rose to over 70% after acquiring the AP business from Niigata Engineering, its profit margin should improve to 9–10%. Based on 9.5% hypothetical operating profit margin (3.3bn yen operating profit) for the previous fiscal year, adding 1.2 billion yen—the difference from the actual 2.1 billion-yen operating profit from the AP-related business—would lead to close to 15% operating profit. This number differs significantly from the actual 7.8% operating profit margin from the AP-related business. According to Nikko, while mid-1990s saw strong sales of standardized APs, today's APs are mostly customized. Also, Nikko has been developing AP technologies jointly with major road pavement companies. These factors make it difficult to realize a high margin. However, major road pavement companies plan to increase AP renewal investment in the coming three years. Improving profit margin during this period would have a significantly positive impact on corporate value.

Fig. 19: Revenue and operating profit from AP-related business



Source: Nikko

Fig. 20: Operating profits of Nikko and major road pavement companies



Source: CGRA

Improving profitability of AP business necessitates improved quotation accuracy.

CGRA is paying attention to a significant gap between the quotations number (and amount) proposed to domestic AP users and the actual number (and amount) of orders received, where the proposed quotation number includes bodies, control panels and components. Nikko proposed 231 quotations amounting to a total of 31.14 billion yen in the year ended March 2018. In actuality, however, it received only 49 orders amounting to a total of 4.15 billion yen. Even considering some of the quotations proposed for products to be delivered after the year ended March 2018, the 21% conversion rate (13% in amounts) seems too low for the top manufacturer with over 70% market share. Given the rich AP customer data that Nikko has accumulated and the new CSC's future contributions, CGRA believes that Nikko should aim for 40% conversion rate. The conversion rate for BPs is also low at 21%, but the company's share in BPs is not as high as in APs.

Improving quotation accuracy perhaps necessitates changing the compensation system for sales reps.

For example, reducing the number of proposed quotations to 150 and thereby receiving 60 orders would improve productivity and reduce cost significantly. In order to improve the conversion rate (the ratio of orders received to quotations proposed), it might be effective to set an efficiency-related KPI for performance assessment of sales representatives and link it to their compensation. Also, in addition to improving the conversion rate, it is necessary to make efforts to narrow the gap between the quoted prices and the ordered prices. To this end, instead of emphasizing the price of plant body alone, it is imperative to focus on a comprehensive proposal to road pavement companies, including the new CSC. As the AP price leader in Japan, it also needs measures for improving (recovering) sales prices. Provided that these aims are fulfilled, CGRA does not consider it difficult for Nikko to achieve 15% operating profit margin. The coming three years would be the key period to Nikko's improved profitability, when the domestic road pavement companies' investment sentiment is forecast to be high.

Nikko's "SWOT" factors in CGRA's view:

In considering Nikko's management strategy, CGRA suggests three factors to be addressed in each of the "SWOT" attributes. Although there could be other SWOT factors, this report focuses on general ones and attempts to develop the company's future strategies that could be assumed on their multiplication:

3 elements each in “S,” “W,” “O” and “T” identified by CGRA.

- S (strength):
  (1) Over 70% share in the domestic market; (2) In-house production of AP and BP core equipment and control panels; (3) A high ratio of maintenance and services

- W (weakness):
  (1) The low overseas sales ratio and concentration to China; (2) Low research and development ratio; (3) Lack of diversity of employees

- O (opportunities):
  (1) An increase in domestic AP users' renewal investment; (2) Domestic AP/BP users’ work-style reform; (3) Increasing environmental needs in China’s AP market

- T (threat):
  (1) A decrease in construction investment after the Tokyo Olympic Games; (2) A decrease in the number of domestic AP/BP factories; (3) Intensifying competition in China

It is necessary to expand in new areas and overseas business while domestic renewal investment is made at a high level.

In terms of “S” (strength), in CGRA’s view, few other companies have the same three strengths of Nikko. However, it seems that its 6% operating profit margin, the result of its strengths, is not yet a differentiating factor but remains only a good thing. Nonetheless, implementing new initiatives enhancing all three factors, (1) to (3), might lead to differentiation. As to “O” (opportunities), as mentioned above, CGRA believes that the expected increase in domestic users’ renewal investment in the coming three years and the users’ work-style reforms are likely to crate business opportunities for Nikko. In overseas markets, environmental awareness is forecast to increase in China, Nikko’s main overseas market, the market needs are likely to shift from the quantitative expansion stage to the qualitative improvement stage, which would lead to creating business opportunities for Nikko that has strengths in recycling and other environment-friendly technologies.

Nikko’s effective measures for “W” and “T” will be also important.

Regarding “W” (weakness), Nikko’s currently low overseas sales ratio needs to increase given that the domestic AP/BP-related market is not expected to grow in a medium term. Presently 80% of its overseas sales come from China in the year ended March 2018. Diversifying its business into other countries in Asia etc. is necessary. This initiative necessitates improved diversity of its employees. As to “T” (threat), a significant decline in Japan’s construction investment after the Tokyo Olympic Games could fuel consolidation of domestic AP/BP manufacturers. Nikko is currently developing new products and initiatives toward this. The point is whether the company could get these initiatives on track. Given that, in China, an increasing number of local companies are forecast to enter the high-end AP market, Nikko needs differentiation in recycling and energy-saving technologies.

It is necessary to increase future growth and profitability based on “S” and “O.”

Based on “O” and “S,” CGRA believes that it is important for Nikko to implement a proactive growth strategy, including: (1) expanding sale of VP, a new product, for AP renewal investment, (2) expanding sale of crusher plants in new areas, (3) supporting users’ adoption of ICT and providing new services based on the new CSC and new control panels, and (4) rolling out in full scale its recycling, energy-saving and other environment-related technologies to Chinese AP market that it has accumulated in Japan.

"T" and "W" need to be addressed from perspectives differing from conventional perspectives.

To avoid a fatal damage from its "T" and "W," it is important for Nikko to increase its share in the existing areas and develop new areas anticipating decreases in construction investment and in the number of APs and BPs after the Tokyo Olympic Games. Regarding the existing areas, however, increasing its share in the domestic AP market is difficult although there still is room for an increase in the domestic BP market. It is uncertain whether this effort will lead to improved profitability. CGRA believes that important factors in new area development include an increase in research and development expenses, M&As, and diversity of employees who have perspectives differing from conventional perspectives.

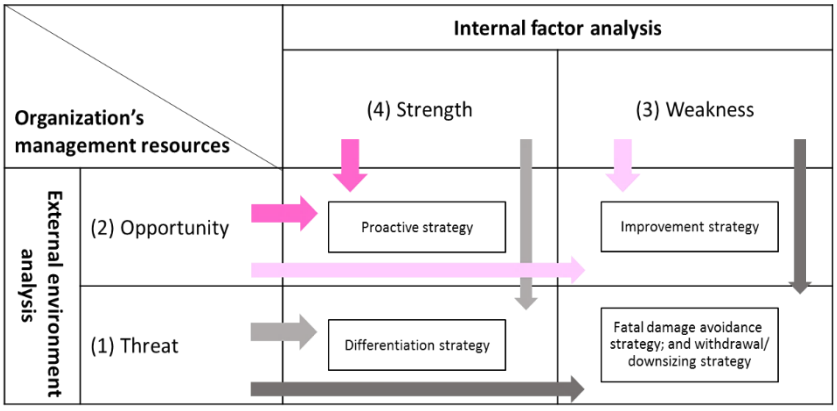
It is necessary to strengthen allocation of resources to R&D and diversity in a medium term.

Nikko's R&D expense to sales ratio is 0.8% in the year ended March 2018. It has 13 employees in R&D, whose average age is 38.3. (Registered patents number: 240; registered utility models number: 7; registered designs number: 64; registered trademarks number: 87) Although its R&D expense ratio is not relatively low compared to its competitors, some of which have around 1% R&D expense ratio, it is desirable to increase its R&D expense from its current level of 300 million yen along with the establishment of the new techno center to enhance differentiation and new area development. Diversity of employees should be improved, too. Nikko has 17 women employees, only 3% of the total employees, as of the end of the year ended March 2018 on a non-consolidated basis. It has 101 foreign employees, or 12.5% of the total employees, as of the same date, indicating an insignificant increase relative to the increase in overseas sales ratio.

The key to "T" and "S" is a differentiation strategy; that for "O" and "W" is an improvement strategy.

In terms of "T" and "S," concrete initiatives are needed for implementing Nikko's differentiating strategy. A risk in its external environment is a possible decline in construction investment in Japan after the Tokyo Olympic Games. Also, in response to the expected consolidation of AP and BP factories, Nikko needs a strategy leveraging its strengths. If it can expand sale of AP Value Packages (VPs) based on the new CSC business model and bundle sale of new crusher plants to road pavement and other companies, it will be able to minimize the impact of the worsening external environment. Regarding "O" and "W," the key is an improvement strategy. Management needs to avoid a situation where the company's weaknesses prevent achievement of results despite business opportunities it has. In this regard, employees and management diversity is important, to which attention should be paid. Nikko also needs to change its R&D structure and implement M&As.

Fig. 21: SWOT analysis and strategy



Source: Prepared by CGRA based on *Jissen SWOT Bunseki* (SWOT Analysis in Practice)

(4) Non-financial analysis: Verifying the business model

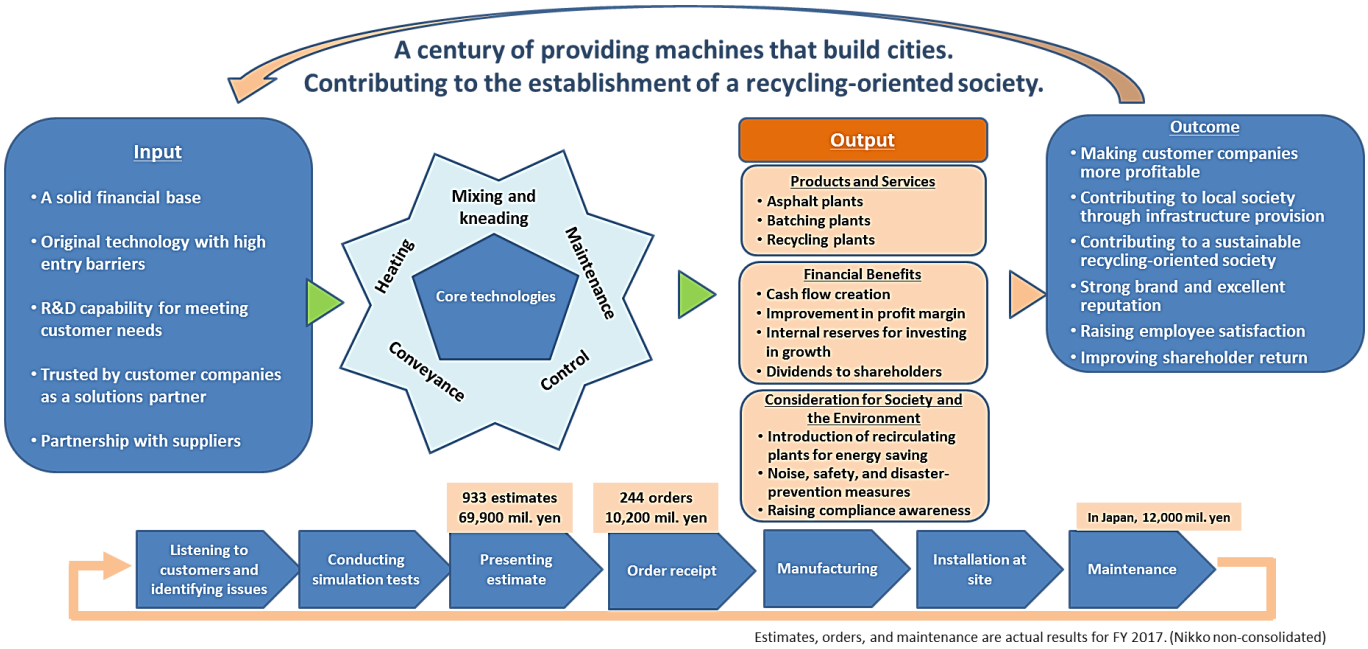
Medium and long-term investors increasingly need non-financial information disclosure for their analysis.

In recent few years, investors increasingly require environmental, social and governance (ESG) and other non-financial information along with financial information. Especially for long-term investment, non-financial information analysis is considered relatively valid. Non-financial information is important in following senses: (1) it is imperative for medium and long-term improvement of corporate value based on corporate philosophy; (2) it is linked to the business model and helps develop and enhance the company's unique model; and (3) management strategy is the key. Moreover, corporate governance needs to support the validity of these factors, (1) to (3). Investors are also increasingly requesting disclosure of non-financial information, of which framework should be considered.

Points in business model disclosure:

CGRA believes the core non-financial information to be disclosed is the business model. Among listed Japanese companies, there is significant room for improvement in this regard. Although the business model is conceptually shared internally, companies' challenge is to disclose in clear language the business model's strengths and readiness for risks. They need to explicitly describe business strategy for developing and enhancing their unique models, valid measures to respond to risks and changes that could weaken their models, and KPIs that indicate the progress of strategy. In this process, the company might need to decide on allocation of management resources or withdrawal or, in some cases, to change its business model. "E" and "S" factors are incorporated into the business model. It is important that the board of directors and other "G" functions supervise the executive members from an objective perspective and guide them to sustainable improvement of corporate value.

Fig. 22: Nikko's business model



Source: Nikko

An analysis of Nikko's business model:

A point in a business model is to describe the following elements in a simple and clear manner: (1) competitiveness and the sources of it, (2) factors in driving profits, (3) targeted business results, (4) positioning in the market competitive landscape, and (5) relations with various stakeholders that support its competitiveness. In terms of "(1)," Nikko's competitiveness is demonstrated by its over 70% share in APs with a significant difference from the second largest Tanaka Iron Works that has less than 25% share. CGRA believes that the source of Nikko's competitiveness is its maintenance and services. Maintenance and services also play a significant role as a factor in driving profits. Items to be taken into account in considering Nikko's business model are: its sound financials (67.1% shareholder equity ratio), unique technologies contributing to the high entry barrier, R&D system which to respond to customer needs, trust from customer companies (as their solution partner), and partnerships with suppliers.

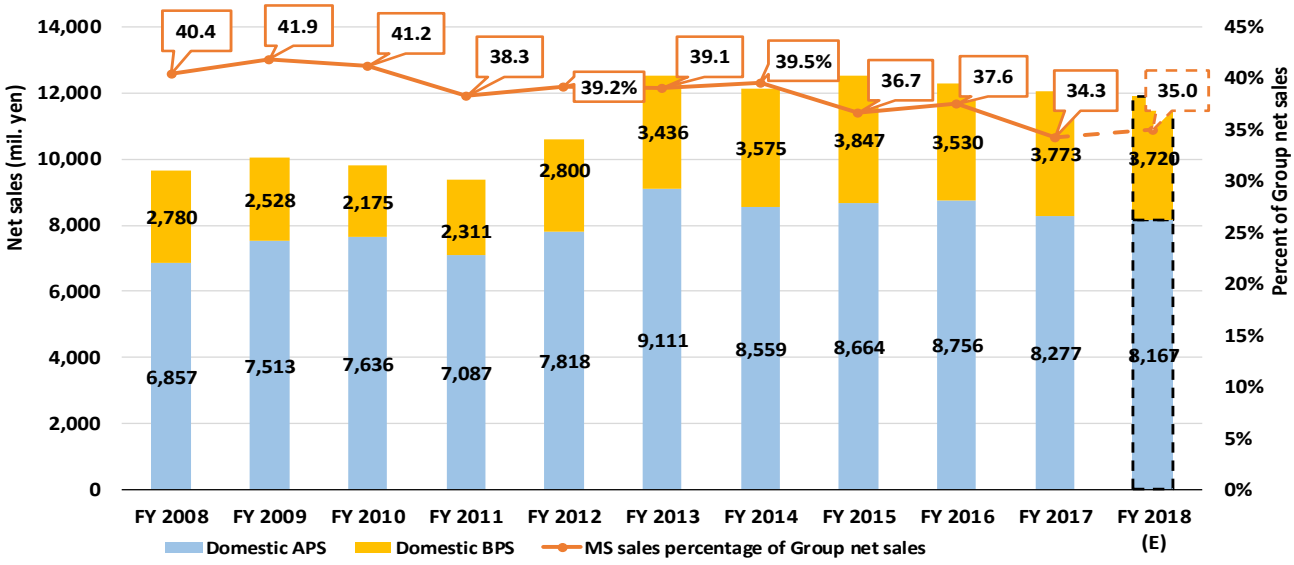
5 core technologies supporting Nikko's business model:

Nikko has five core technologies: heating in APs, mixing and kneading in BPs, maintenance and services supporting both types of plants, IoT-oriented control, and transportation utilized in a range of areas. Its core business, AP and BP business, has a high entry barrier; there has been no new entrants to the market for many years. Nikko has manufactured its core products in-house and sold them directly to users, thereby developing new products before its competitors and together solving the users' issues including improving their profitability.

In the new medium-term management plan, changing maintenance and services would contribute to increasing corporate value.

In announcing the business strategy for developing and enhancing its unique business model as part of its new medium-term management plan, which to commence in the year ending March 2020, it is imperative to describe changes and contributions of maintenance and services. The new medium-term management plan will have to explain them to investors in a concrete manner. In addition to setting KPIs which to show the progress of strategy, it will need to indicate effective measures to address risks and changes. Lastly it will have to indicate the company's policy concerning distribution of profits based on performance results. Generally speaking, Japanese companies' medium-term management plans tend to overemphasize the last fiscal year's financial targets, which need to be re-considered in the future.

Fig. 23: Revenue from maintenance and services and its composition ratio



Source: Nikko

Changing the business model of maintenance and services with the New CSC

Growth of revenue from maintenance and services has been sluggish.

The revenue from maintenance and services in the year ended March 2018 was 12.05 bn yen, accounting for 34.3% of Nikko's total revenue in Japan on a non-consolidated basis. Though the revenue from maintenance and services comprises relatively a high percentage, its growth has been slow since the year ended March 2015. This is also the case for profit margin. This tendency has been more visible with APs than with BPs. According to Nikko, factors in the sluggish growth include renewal of plant bodies that eliminate revenue from maintenance and services. BPs generally generate a higher maintenance and service revenue than APs because of the higher price of the plant body and use of heat.

Details of maintenance and services:

Revenues from maintenance and services consist of those from (1) components, (2) emergency repairs, (3) planned repairs, (4) systems (sold as a stand-alone unit), (5) projects and (6) remote maintenance. Out of them, the largest revenue comes from planned repairs, which is followed by systems and components in both APs and BPs. APs' gross profit margin is considered close to 7 percentage points lower than BPs' because APs are mainly sold to road pavement companies, a more competitive market. BPs' maintenance is priced higher than APs' maintenance, but BPs' cost is lower than APs' cost. BPs, therefore, have a higher impact on earnings. Another factor is BPs' customers. Most of them are ready-mixed concrete companies, most of them are small-sized companies; few of them are large companies.

Strengthening support for AP/BP users with the new CSC.

Nonetheless, Nikko is implementing initiatives towards improved profitability including revising AP maintenance and service prices in April to pass on the increase in cost and establishing the new CSC at the headquarters. Specifically, it plans to commence the operation of the new CSC for maintenance on October 1, increasing the personnel by 50% and expanding the floor area by 50% to 100 m² on the first floor of the headquarter building. (The CSC's operation hours will remain unchanged—from 7:00 to 19:00.) The existing CSC has assumed only a back-up function, playing a passive role of communicating users' consultation and related information to the sales representative. Nikko seeks to eventually transform the CSC from a cost center to a profit center.

Shift the business model from posteriori maintenance to preventive maintenance with the new CSC.

To this end, Nikko needs to adequately understand the users' challenges they face at the plant and to change its passive response approach that has been conventionally based on consultation over the phone and emails. It should shift its function from posteriori maintenance to preventive maintenance by proactively proposing components replacement and services. It thereby should seek to reduce opportunity losses in users' plant operations and receive a compensation or part of their revenues. Nikko has accumulated big data concerning operations of APs etc. for over 10 years. It is important to leverage them for solving issues and thereby to monetize them. Nikko provides remote maintenance for 60–70% of its BP users. On the other hand, there are few cases of remote maintenance of APs given that in many cases road pavement companies outsource AP operations.

The new CSC will support road pavement companies' plant operation.

AP users usually have no excess on-site personnel for operating the plant. In the case of an AP installed in a metropolitan area, they have a person always stationed on-site. Troubles sometimes occur. Nikko's new CSC will support the on-site personnel to help increase their productivity by 20–30%. AP users are expected to increasingly utilize IoT and outsource plant operations given the work-style reform and labor shortage. Nikko intends to benefit from this trend by receiving compensations by providing relevant services. The point here would be that the users see added value in services that Nikko provides in relation to such outsourcing. Furthermore, if Nikko conducts regular "health checks" of the users' plants and suggest the timing of components replacement and risks concerning productivity decline, that will lead to proposals for plant body renewal. While the profit margin from BP maintenance and services is relatively high, Nikko will seek to further improve the margin by communicating the effectiveness of the new CSC among the local ready-mixed concrete companies. Nikko's business model should center around maintenance and services.

Over 200 partnering companies throughout Japan are the source of Nikko's differentiating competitiveness.

Tanaka Iron Works, Nikko's competitor in APs, provide services on its own. On the other hand, Nikko provides services through over 200 partner-companies along with its own sales reps. This is a differentiating factor. According to Nikko, consultations regarding simple maintenance and services are handled and completed by the partner-companies alone without Nikko's sales reps accompanying them. Nikko's approach is more efficient. Along with the commencement of the operation of the new CSC for improving, Nikko intends to improve and standardize the partner-companies' skills. Going forward, it will change its system and internally share information collected through the new CSC to enable orders for components to be placed not only by the person in charge of service but by other members. Quality of services differs significantly between experienced members and junior members. Nikko intends to overcome this issue with the operation of the new CSC.

Fig. 24: Headquarters permanent exhibition hall after renovation; and the new CSC

Source: Nikko

Governance system supporting the business model

Governance supporting the progress of business strategy:

Roles of governance are to implement business strategy for driving progress and growth and monitor its effectiveness vis-à-vis related risk factors and changes. In terms of Nikko's corporate governance, Nikko is a "company with board of company auditors." It has 4 company auditors, of whom 3 are outside company auditors (including 1 independent officer), 7 directors, of whom 2 are outside directors, and 5 executive officers. One of the 5 executive officers is concurrently a director.

Comment by CEO Nishikawa:

Nikko's CEO Nishikawa stated that "we have always addressed user needs straight (earnestly) and taken good care of our customers. We will maintain these efforts in corporate governance, too." Nikko seeks to be a company that is reliable and indispensable for the users. According to Mr. Nishikawa, BPs are not considered as reliable as APs. The company seeks to improve this situation.

Nikko proactively addressing diversity, a governance issue.

As to Nikko's present governance, there seems room for improvement including age composition and other elements of diversity of directors. According to CEO Nishikawa, Nikko promotes employees who indicate potential for becoming a director in the future to the regional head in their early-40s. (Usually employees promoted to the said positions are over 45 years old.) They can also assume a position to manage a large branch office. Promotion of an employee to a management position is considered based on his/her supervisor's recommendation but is also discussed with other departments.

(5) Expectations towards the new medium-term management plan

3 areas Nikko is emphasizing in the current medium-term management plan:

Nikko's current medium-term management plan (FY2016–2018) describes three priority areas: (1) stable domestic business base, (2) domestic growth strategy, and (3) overseas growth strategy. In the following, CGRA identifies factors important for Nikko's domestic business base and domestic/overseas growths and describes key points concerning past progress and future outlook. Nikko's targeted consolidated net sales and operating profit margin for the year ending March 2019, the last year of the said medium-term management plan period, respectively 32 billion yen and 7%, are forecast to be roughly achieved.

What CGRA wants to see in the new medium-term management plan:

Concerning the new medium-term management plan for the period commencing in the year ending March 2020, CGRA would like to see, in addition to financial targets, such items as: (1) indication of business environment towards the last year in the said period, (2) establishment of KPIs indicating improvement of corporate value, and (3) linkage between last fiscal year's results and management members' compensations. CGRA believes that KPIs should include not only financial information—such as the ratio of VPs and mid-ship plants to AP bodies, revenue from crusher plants, ratio of recycling plants in China, BP's domestic share, profit margin from maintenance and services with commencement of the operation of the new CSC—but also non-financial information such as diversity of employees and contribution to environment and society. Such KPIs will clearly indicate a pathway to improved corporate value and be appreciated by the stakeholders.

Stabilizing domestic business foundation: The key is Value Packs (VPs).

VPs and mid-ship plants together accounted for 20% of the domestic sales of AP bodies in the year ended March 2018.

The key to stabilization of the domestic business is expansion of sales of VPs. (Refer to Fig. 4.) VPs are designed for small and medium-sized plants with 50–100 thousand ton production capacity. They meet various present and future needs concerning bituminous mixture. Minimum production capacities of a VP and a mid-ship plant are, respectively, 50 thousand tons and 100 thousand tons. According to Nikko, net sales from VPs and mid-ship plants for the year ended March 2018 were, 580 million yen (2 units) and 400 million yen (1 unit), totaling to 980 million yen (3 units). They together accounted for 20% of the domestic revenue from AP bodies (5 billion yen) and 10% of the unit sales. Nikko forecast the revenue from them together to be 1.26 billion yen for the year ending March 2019, of which revenue from VPs to be 920 million yen. They are expected to comprise an increased percentage in the total revenue.

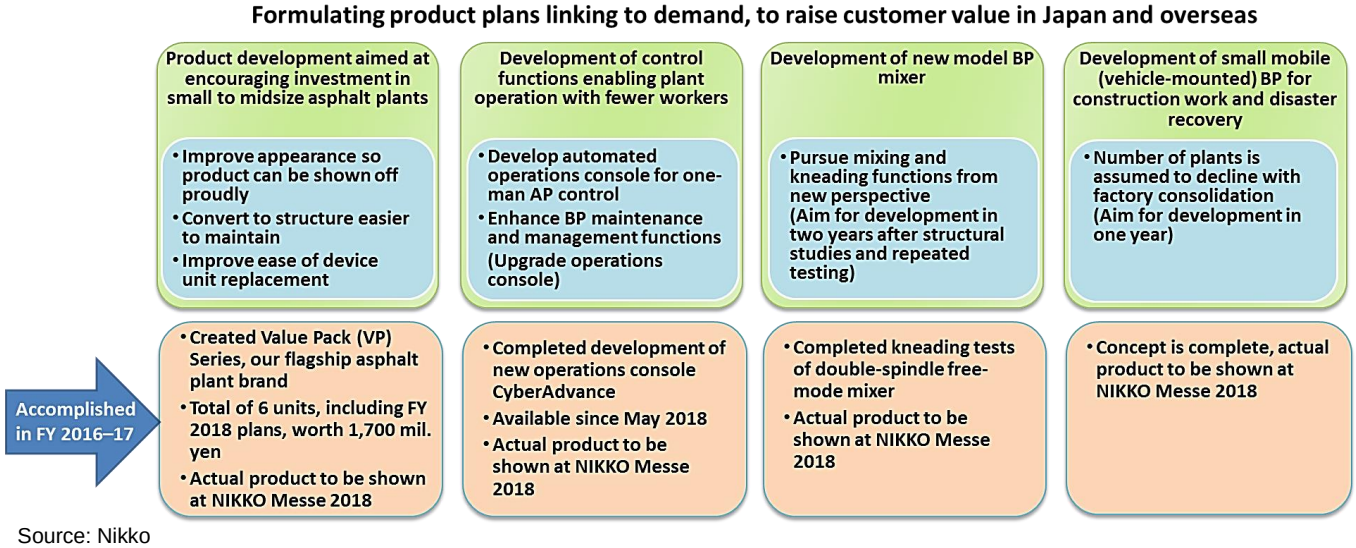
VPs have 4 characteristics—including being the first of the kind mainly using recycled mixture materials.

VPs have four major characteristics. They (1) are structured to use mainly recycled materials; (2) consider environmental impacts and safety; (3) are space-saving; and (4) have value prices. In relation to "(1)," in today's bituminous mixture shipment, recycled materials used account for about 75%. It is rather odd that there had been no such structure before. In the past, according to Nikko, the company was increasing the percentage of recycled materials by adding a recycled bituminous mixture unit to a plant otherwise using 100% new materials. Although VPs are highly productive and energy-efficient, road pavement companies seldom replace their existing plant with a VP as long as they can use the existing plant. We would like to see whether Nikko could come up with a strategy that changes this situation.

VPs are products that meet today's needs.

As to the characteristics "(2)," consideration of environment impacts and safety, this could be a significantly positive point, especially when road pavement companies are emphasizing work-style reforms in the field. As described above, road pavement companies must immediately implement work-style reforms including shortening field work hours, considering the high average age of their employees and long work hours.

Fig. 25: Stabilization of domestic business base



Source: Nikko

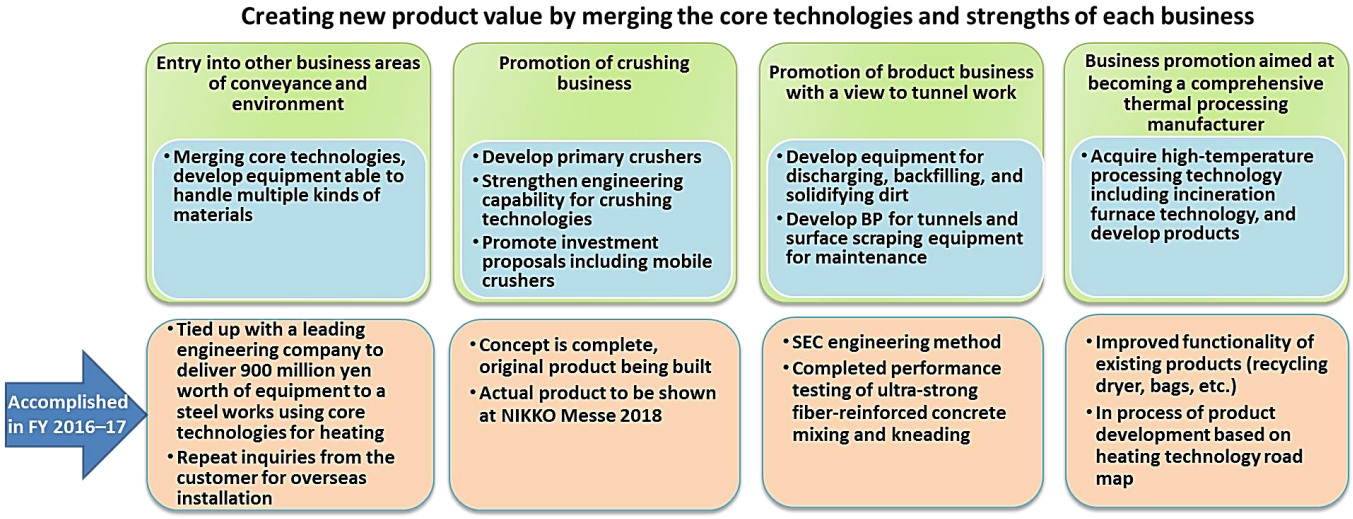
Regarding the characteristics "(3)," space-saving, a VP's footprint has been reduced 20% compared to the conventional type—from 216 m^2 (conventional type) to 173 m^2 (VP)—with the AP body stacked underneath the recycling unit. This contributes to improved efficiency in the use of the premises, securing separate routes for dumper trucks and excavators and thereby securing spaces for safe operations of heavy machinery. In terms of "(4)," value prices, on-site construction periods are reduced with the body and the recycling unit placed in a single frame. In addition, structure application related procedures could be reduced. Besides, Nikko started selling "mid-ship" APs, with a larger capacity in the same concept, as part of the same series with VPs.

Domestic growth strategy: Expectation toward crusher plants, a new area

Crusher plant business, which Nikko is newly entering, is expected to generate synergy with AP business.

As part of the domestic growth strategy described above under "(2)," the crusher business is expected to be value-creating in terms of products. In the crusher plant market, Nakayama, a non-listed company, has about 90% share. Although Nakayama had 3 crusher plants installed in the past few years, they were purchased products with limited value added. There are 650 APs equipped with crusher facilities. Apart from them, there are approx. 900 crushed stone suppliers in Japan. Therefore, approx. 1,550 plants are Nikko's target plants for new business. It plans to start producing crushers in-house in the year ending March 2019 and to conduct the crusher plant business in full scale from the year ending March 2020. The average price of a crusher plant is approx. 130 million yen. A larger plant could be priced over 200 million yen. Along with in-house production of crushers, it will seek to expand revenue from both the plant bodies and maintenance and services, including equipping the crusher plants with sensors to shift from on-site monitoring to remote monitoring.

Fig. 26: Domestic growth strategy



Source: Nikko

Achieving 30% share in crusher plants could add approx. 2 billion yen to the revenue.

Nikko has over 70% market share in APs. If it can sell APs and crusher plants in a bundle, it will be able to generate significant synergy including increased revenue from maintenance and services and improved efficiency. Demand for 40-50 crusher plants per year is anticipated. If, for example, Nikko can secure 30% share, its revenue from crusher plants and maintenance and services for them would be about 2 billion yen. In its "other" business segment, too, Nikko imports and sells crushers made by Kleemann, German's Wirtgen Group subsidiary. The company is increasing its focus on crusher business.

Overseas growth strategy: Increasing revenue from Chinese market

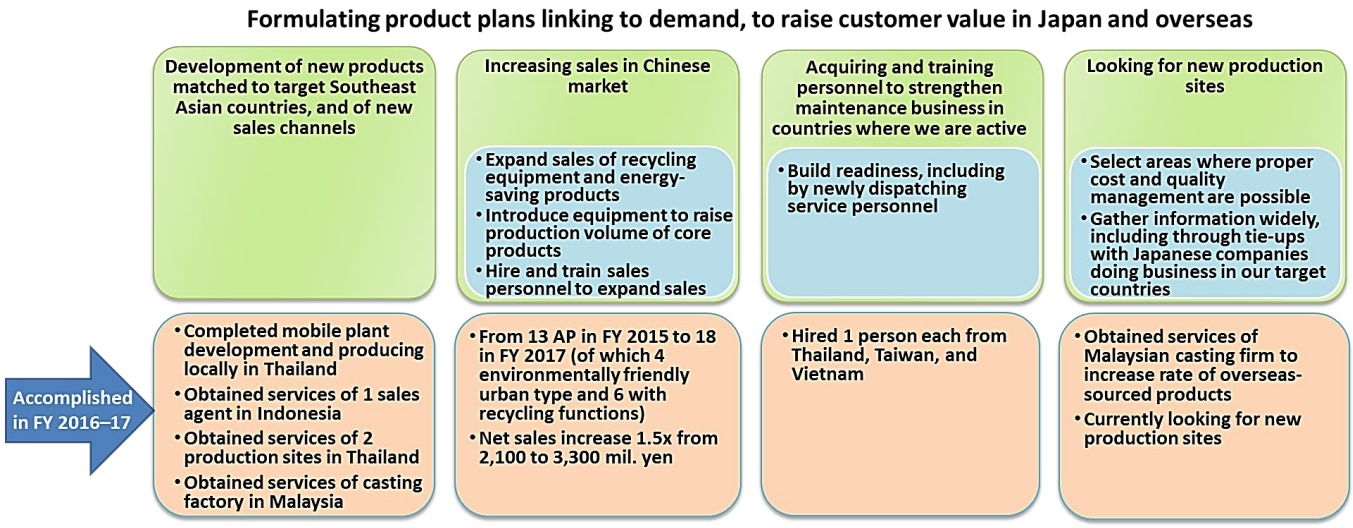
Characteristics of Nikko Shanghai's Aps:

The key to growth strategy for Nikko's overseas business, the priority area "(3)," is to increase revenue from Chinese market. Nikko's overseas sales reached 3.965 billion yen in the year ended March 2018 (up 34% year-on-year), with its overseas sales ratio reaching 11.3%, a double-digit percentage for the first time ever. The increase in revenue from Nikko Shanghai reaching 3.299 billion yen (up 55% year-on-year) accounted for all of the increase in the overseas revenue. Nikko Shanghai's revenue is expected to be 3.36 billion yen in the year ending March 2019, with its revenue growth slowing down. Nevertheless, Nikko forecasts its overseas revenue to reach 4.57 billion yen, with the overseas sales ratio increasing to 13.4%.

There are some 4 Chinese competitors in the high-end AP market.

There are 3 models of APs for Chinese market: 320 tons/hour, 240 tons/hour and 400 tons/hour. The 320 ton model sells the most. Its local sales price is 8.30 million RMB (approx. 140 million yen). Nikko has bigger production capacity, and a less number of models, in China than in Japan. In the past, 120 and 160 ton models used to sell the most. However, with tariffs imposed on them, China's local companies have become the main players for these models. Today, in the high-end market that Nikko is in, there are four competitors—2 Chinese and 2 European companies.

Fig. 24: Overseas growth strategy



Source: Nikko

High-end APs' ratio is forecast to increase in China in a medium-term partly due to the environmental regulations.

China's AP market is the world's largest with about 500 units per year. Approx. 50 companies are anticipated to be in the market. In this market, there are approx. 115 units of high-end APs, accounting for only 23% of the total units. In the high-end AP market, China's D&G has the largest share, 30 units, followed by Switzerland's Ammann and Italy's Marini, with 25 units each, and Xi'an Road, with 20 units. Nikko Shanghai presumably has the 5th largest share, with 15 units. In terms of amounts, however, Ammnan has the largest share, followed by Nikko Shanghai and Marini, which have similar shares. D&G and Xi'an Road seem to have 10–15% lower share than Nikko Shanghai. Amman has its components shipped from Switzerland.

Reasons of high evaluation on Nikko Shanghai's APs compared to its peers (environmental measures, etc.)

According to Nikko, the reasons for the higher evaluation on Nikko Shanghai over its peers in China include: (1) urban-type plants, which process dust and lampblack in double-layered internal and external treatment facilities, (2) recycling units, which control temperature control, prevent contaminations, and reduce maintenance work, and (3) electric tanks, which can be flexibly positioned, unlike European, mainly heavy-oil, tanks with fixed positions. Electric tanks incur less running costs than heavy-oil tanks, too.

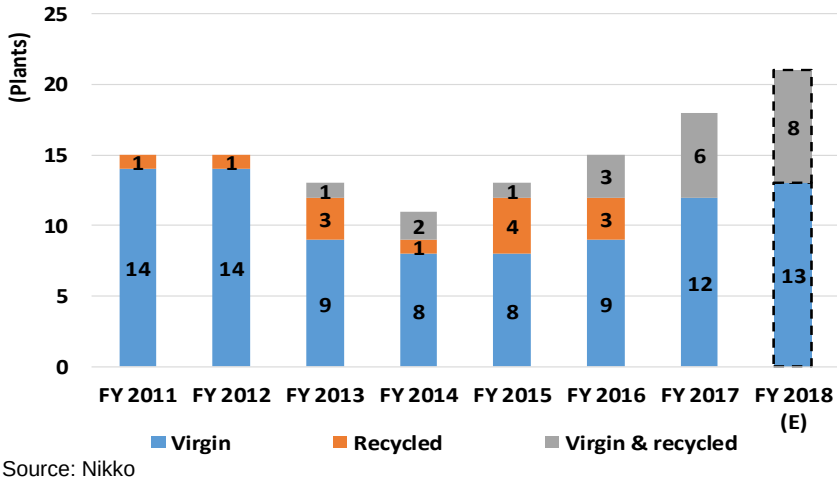
China's tightening environmental regulations is expected to provide a tail wind for Nikko.

In recent years, China is becoming increasingly interested in environment-conscious products. Presently recycled mixture materials account only for 10% in China, a percentage equivalent to the percentage in the early 1990s in Japan. China's highways have to use new materials 100%. However, first-tier and second-tier roads can use recycled mixture materials for their middle and lower layers though not for their surface layers. Regional and non-trunk roads, parking lots and on-premises pavement can use recycled mixture materials, too. Presently, Chinese road pavement companies use recycled materials mainly for the cost reduction purpose. In a medium term, however, when the ratio of road repairs increases compared to new road pavement, and if tighter environment regulations are introduced, demand for APs is forecast to increase that can use both new and recycled mixture materials.

The ratio of Nikko Shanghai's APs using recycled materials will increase in a medium-term, too.

In line with these trends, unit sales of Nikko Shanghai's APs for recycled mixture materials are increasing. While in the year ended March 2015 Nikko sold 3 units of APs for recycled materials, it sold 6 units in the year ended March 2018. Recycled materials used account for over 30% of the total materials, which is forecast to increase further.

Fig. 28: Nikko Shanghai's AP unit sales



Source: Nikko

Nikko Messe 2018 is expected to trigger Nikko's growth toward and beyond its 100th anniversary.

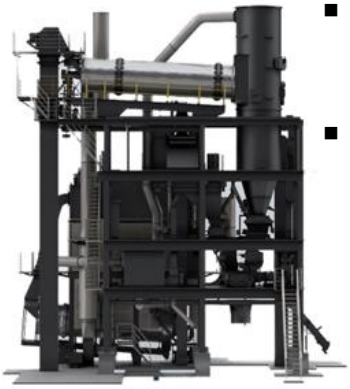
Key points of Nikko Messe 2018

Nikko will hold Nikko Messe, a commemorative event, from October 22 through November 2 at its headquarters towards its 100th anniversary in 2019. According to Nikko, 1,200 people are expected to participate from its user companies excluding distributors. (800 people attended a previous similar event.) A range of products will be exhibited. AP products to be exhibited include VPs, crusher plants, new control panels, and mobile crushers. Machinery-related products to be exhibited include heat-related products, crusher-related products, and other products useful for operation and maintenance of plants in place. Control-related products to be exhibited include IoT-related products contributing to improved efficiency of customers' operations and system products enhancing effectiveness of maintenance. Self-propelled crushers, conveyers, soil improving apparatuses etc. will be exhibited also, given an expected medium-term shift in demand from stationery equipment to mobile equipment.

Furthermore, by the time when Nikko Messe 2018 is held, the new CSC and the Techno Center (the R&D building) will commence operations. The new CSC will be fully glass-walled and located in the center of the headquarters' permanent exhibition hall, which is now undergoing a renovation. The Techno Center will be located next to the headquarters building. These and other changes are expected to occur.

Fig. 29: Main exhibitions at Nikko Messe 2018

AP (asphalt plant-related) products



- **New model asphalt plant Value-Pack**
  - Newly designed plant for recycled mixture
- Crusher plant
  - Impact crusher for use in asphalt plants

BP (concrete batching plant-related) products

- New model batching plant DASH-Progress
- Batching plant for tunnels
- Next-generation mixer
  - Prototype mixer with new kneading mechanism
- Compact plant for construction work and disaster recovery
- New BP operations console
  - Plant operation and provision of error information and equipment information from server
  - Operations console settings and operation log, etc. can be checked from tablet

Mobile products

- Self-propelled jaw crusher

- Self-propelled conveyer Trackstack

- Self-propelled soil improver Mobix

Other products:

- Beverage container sorter
- New model conveyor, etc.

Source: Nikko

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Net sales	24,553	27,087	32,073	30,707	34,110	32,717	35,114
AP-related business	13,303	15,054	18,258	15,071	17,252	16,580	17,180
BP-related business	4,719	5,889	8,577	8,287	10,267	9,356	9,522
Environment- and conveyor-related business	2,521	2,085	1,944	2,853	2,289	2,647	3,932
Other business	4,008	4,058	4,292	4,495	4,301	4,133	4,481
Operating income	541	1,186	2,249	1,832	1,629	1,943	2,104
AP-related business	896	1,492	2,125	1,214	1,234	1,253	1,348
BP-related business	(39)	317	678	712	878	1,006	1,015
Environment- and conveyor-related business	530	250	166	527	337	369	309
Other business	(7)	59	388	451	277	417	463
Corporate expenses	(838)	(933)	(1,109)	(1,074)	(1,097)	(1,102)	(1,031)
Ordinary income	621	1,108	1,982	1,582	1,648	1,993	2,103
Net income attributable to owners of parent	122	881	888	1,348	1,896	1,340	2,239

Cash flow from operating activities	574	2,457	2,641	1,001	(1,040)	5,064	274
Cash flow from investing activities	299	(954)	(936)	(305)	2,142	(316)	41
Total dividend	250	292	292	376	418	426	459
Share buyback	4	9	1	2	1	1,006	246

Full-year new orders received	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	YoY change
AP-related business	14,493	18,278	17,114	16,743	16,718	17,182	464
BP-related business	6,293	8,884	10,068	9,541	9,965	9,066	(899)
Environment- and conveyor-related business	2,037	2,396	2,711	2,796	3,202	2,947	(255)
Other business	3,741	4,356	4,606	4,202	4,247	4,420	173
Total	26,564	33,915	34,500	33,284	34,134	33,615	(519)

End-of-term order backlog	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	YoY change
AP-related business	3,671	4,685	6,727	6,218	6,356	6,359	3
BP-related business	1,378	1,685	3,466	2,741	3,350	2,894	(456)
Environment- and conveyor-related business	—	451	309	815	1,390	387	(1,003)
Other business	360	424	535	436	531	490	(41)
Total	5,410	7,246	11,039	10,212	11,629	10,132	(1,497)

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Capital investment	292	335	844	815	877	1,261	550	1,200
Depreciation and amortization	432	389	395	422	487	482	472	495
R&D expenses	239	256	295	276	227	271	291	300

Employees (consolidated)	775	763	767	796	803	797	807
Average age of employees (non-consolidated)	44.2	44.7	43.3	43.1	42.2	42.3	42.2
Average years of service (non-consolidated)	21.5	21.2	20	19.3	18.2	18.5	18.3
Female employees (non-consolidated)	10	11	11	10	12	15	17
Overseas employees (consolidated)	92	90	91	95	92	91	101
Foreign national employees (consolidated)	92	90	91	95	94	93	101

<Coverage analyst>

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Hidehiko joined New Japan Securities (Current Mizuho Securities) in April 1987, where he was assigned to Corporate Research Department. He joined Jardine Flemming Securities (Current JP Morgan Securities) in 1997 and later Deutsche Securities. He was with UBS Securities from 2006 to 2016. He was a managing director at Deutche since 2003 and later at UBS Securities. He covered the machinery sector since 1988. He was the vice president of the machinery disclosure group at Securities Analysts Association of Japan over 10 years. In June 2017, he founded Capital Goods Research & Advisory Co, Ltd where he serves as the representative director. He is a certified member of the Securities Analysts Association of Japan.

<Analyst evaluation by third parties>

- Nikkei Veritas (formerly Nikkei Financial Newspaper):
  Analysts Ranking (Machinery Sector):

  Ranked 1st in 1999–2001; Ranked 2nd in 2002–2012; Ranked 3rd in 2013–2015

- Institutional Investors:
  Sell-side Analyst Ranking (Machinery Sector)

  Ranked 1st in 2003 and 2009; Ranked 2nd in 1998–2002, 2004–2008 and 2010–2013: Ranked 3rd in 2014 and 2016; 2015: Ranked 4th in 2015

- Thomson Reuter Starmine Analyst Awards Japan:
  Performance Forecast (Machinery Sector)

  Ranked 1st in 2013; Ranked 2nd in 2016