COMPANY RESEARCH AND ANALYSIS REPORT

Advanex Inc.

5998

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Index

Summary

Beginning volume production of new products during FY3/19

Advanex Inc. <5998> is a major specialty manufacturer of precision springs. Its market strategy focuses on automotive, medical, and infrastructure and home equipment applications as core areas and also targets rechargeable batteries and aircraft. The Company is entering an expansion phase in FY3/19 after finishing lengthy lead times.

1. Review of FY3/18 results

Automotive industry business, which accounts for just under 50% of sales, has a lead time from inquiry to volume production of 4-6 years, a longer period than the half year in office automation equipment and electric appliances and 2-3 months in mobile phones. Additionally, fixed-cost burden from investments, including personnel expenses, to maintain operations during the period from sample delivery through quality verification begins prior to volume production and has pressured the Company's earnings in recent years. In FY3/18, net sales rose 13.6% YoY to ¥20,294mn, while operating income only increased 5.0% to ¥259mn. Ordinary income dropped 31.5%, including the impact of forex losses booked in non-operating costs. Net income attributable to the owners of the parent company fell 25.9% because of an impairment charge on goodwill for an acquired subsidiary.

2. Income improvement initiatives by plants

Plant income conditions differ depending on the number of years elapsed since launching or acquiring the particular plant. Plants with more than five years elapsed are generally profitable, and those at four years or less incur losses. While the Company reported ¥259mn in FY3/18 operating income, combined operating income from plants that are profitable is ¥1.2bn, the amount targeted for FY3/21 in the mid-term management plan. The Company is aiming for 10% annual growth at profitable plants and loss reduction and profitability at plants with deficits.

The Saitama plant, which had the largest deficit, is headed for accelerating volume output of new products and narrowing its losses given the prospect of obtaining certification for the ISO/IATF16949 automotive industry quality management system standard during FY3/19. The plant in Mexico is targeting profitability in FY3/20 after reinforcement of operating assistance from Japan and the start of volume production for new products in FY3/19. The Chiba plant lost half of its mobile-related sales compared to 2015, but is seeking a rebound with the launch of volume production for contact probe parts in FY3/19. US plant income should improve on completion of ramp-up assistance for the Mexican plant from the previous fiscal year and the start of volume production for new medical products handled by the UK plant at the US site too. The Indonesia plant, which was acquired as a subsidiary, is taking steps toward earnings recovery through deploying the Company's production technology and quality and delivery control system. It aims to handle volume production of new products from FY3/20 after acquiring new production technologies.

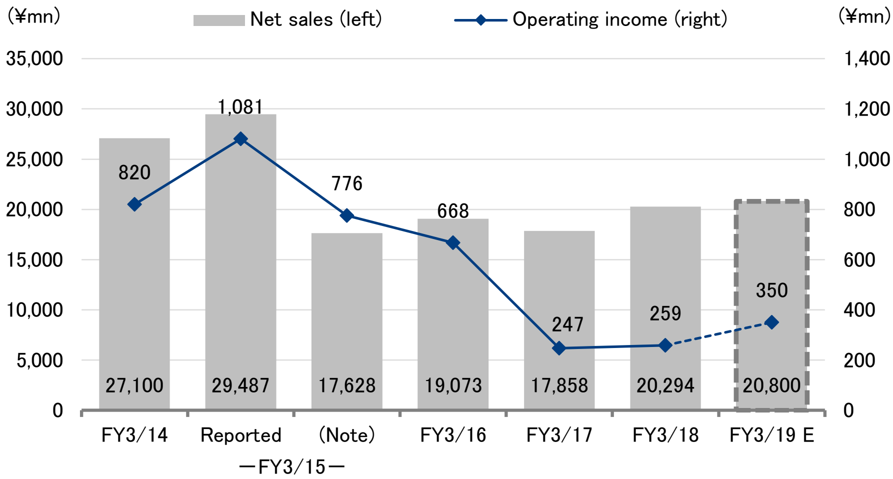
3. Strong reputation with customers

Recognition of the Company as a global Tier 2 supplier by Tier 1 suppliers has risen in the auto market. Its global supply operations have been well received, and customers are increasingly integrating orders placement on a global basis. The Company also seeks to obtain certification as a preferred supplier that lets it recruit orders of items slated for procurement on a priority basis.

Key Points

- Follows a "blue ocean" strategy as a top global niche supplier
- Combined operating income from plants that are profitable is ¥1.2bn
- Global Tier 2 business model well received by mega suppliers

Consolidated net sales and operating income



Note: Excluding most of the plastics business
Source: Prepared by FISCO from the Company's financial results

History and company overview

Precision spring maker with a global network

1. History

The first-generation president founded a spring factory in Tokyo in 1930. In 1946, this factory was incorporated as Kato Spring Works Co., Ltd., and in 2001, the company name changed to Advanex Inc.

In 1964, the Company listed its shares on the Second Section of the Tokyo Stock Exchange, and in 2004, the shares were elevated to the First Section.

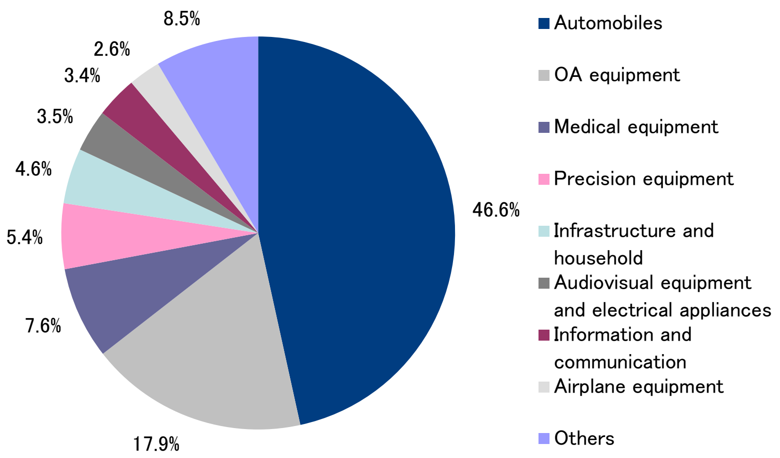
Since the 1980s, Advanex has released many products that have become global hits and has gained top shares of the markets for these products. Advanex has held a 70% share of the Japanese market for tape pads for audiotapes, a 50% share of the global market for flat springs for videotapes, an 80% share of the global market for shutters for 3.5-inch floppy discs, a 50% share of the global market for hinges for cellular phones, and a 90% share of the Japanese market for center hubs for optical discs. Advanex also holds a 60% share of the Japanese market for springs to protect needles implanted in the human body.

Advanex was early in entering overseas markets and set up its first overseas subsidiary in 1971 in the US. In following years, it established subsidiaries in Singapore, the UK, Hong Kong, Thailand, China, Vietnam, Mexico, Germany, and Indonesia. The UK subsidiary, founded in 1988, purchased a leading British maker of springs and now operates two plants. Advanex Europe Ltd. received the manufacturing division excellence award in the 2016 Nottingham State Business Awards sponsored by Nottingham Post. This was the subsidiary's second award after the best company award received in 2012. Main products are precision springs for medical equipment and components to strengthen fasteners for automobiles and airplanes. The UK subsidiary received technology support from Japan for its product development activities, and it is the most profitable subsidiary in the Advanex group.

2. Business description

The Company is currently a specialty manufacturer of precision springs after the sale of the plastics business (only leaving areas with synergy effect), which it had previously acquired, in FY3/15. Advanex operates a single business segment, but discloses breakdowns of consolidated net sales by application and location. Net sales composition by market in FY3/18 was automotive at 46.6%, OA equipment at 17.9%, medical equipment at 7.6%, precision equipment at 5.4%, infrastructure and household at 4.6%, audiovisual equipment and electrical appliances at 3.5%, information and communication at 3.4%, airplane equipment at 2.6%, and others at 8.5%. The automotive market has been the largest destination since FY3/15.

Breakdown of consolidated sales by market (FY3/18)

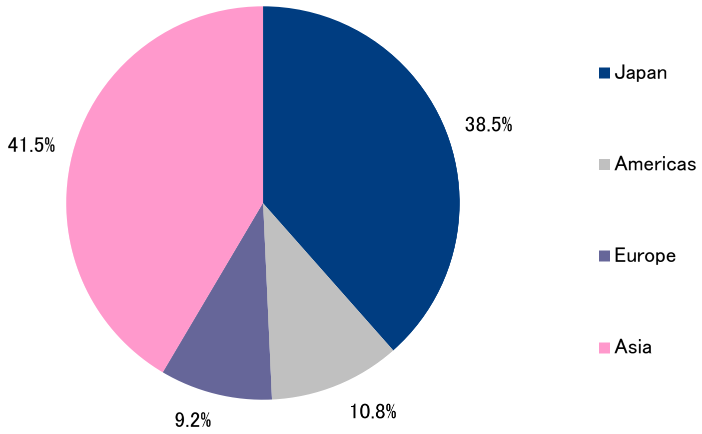


Source: Prepared by FISCO from the Company's materials

Advanex has about 2,000 business counterparts and handles roughly 15,000 product types. It engages in transactions with German and Japanese auto parts manufacturers battling for global No.1 and No.2 positions.

Net sales composition by location consists of Japan at 38.5%, the Americas at 10.8%, Europe at 9.2%, and Asia at 41.5%.

Consolidated net sales composition by region (FY3/18)



Source: Prepared by FISCO from the Company's materials

Business strategy

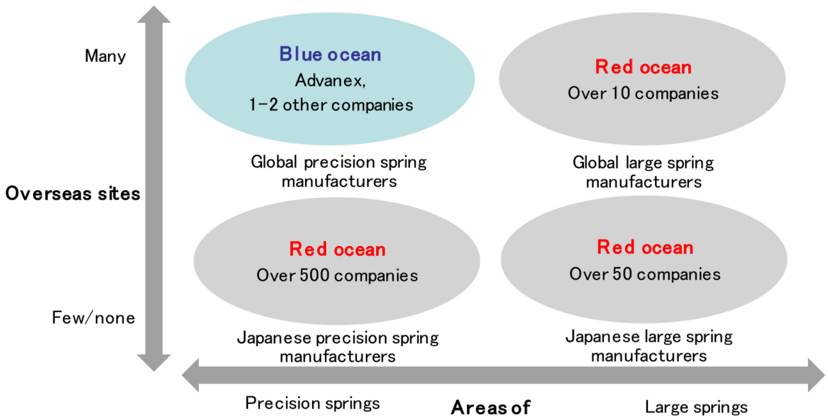
Follows a “blue ocean” strategy as a top global niche supplier

1. Follows a “blue ocean” strategy as a top global niche supplier

Advanex is the only maker of many of its products, which has allowed it to earn high market shares in Japan and globally. Initially venturing into overseas business in 1971, the Company now has many plants and sales offices in the Americas, Europe and Asia. It has developed its automobile products business and medical equipment businesses globally, and it targets global manufacturers in a timely fashion. Advanex identifies areas where it can obtain a global niche top position, and extracts target customers. It formulates the business strategy by area, customer, field, and processing technology and product in order to strengthen its positioning. The Company is now stressing four businesses in which it is very competitive and for which the markets are growing rapidly: automobile products, medical equipment, housing equipment, and infrastructure products.

Advanex pursues a blue ocean strategy of priority development of markets with few rivals where it can leverage strengths. In the automotive spring market, major domestic spring firms specialize in chassis springs and other large products and have minimal direct competition with Advanex in precision springs. Advanex’s rivals are over 500 small and very small firms. These companies generally lack the resources to enter overseas markets.

Positioning in the springs market



Source: Prepared by FISCO from the Company's results briefing materials

Global Tier 2 parts manufacturer accommodating mega suppliers

2. Characteristics of automotive-related business

(1) Parts procurement difficulty from Tier 2

Automotive business involves R&D outlays, capital investments, and other costs and requires a lengthy amount of time until sales are booked. These aspects create difficult conditions for liquidity at small and very small manufacturers. Customers also request rigorous quality control because of risk to human life, dictating passage of certifications. They expect fulfillment of supply responsibility and continually ask for cost reductions. Nevertheless, once a supplier is selected, demand remains stable and continuous as long as the vehicle model stays in production. Small Japanese spring manufacturers with low-volume output at cheap prices are not rivals in the global market, and Advanex has fostered segmentation from large spring manufacturers mainly delivering large springs.

Automakers are increasingly producing suitable amounts in appropriate regions for the purpose of curtailing forex fluctuation risk and also raising local procurement rates to obtain beneficial treatment. Volume production takes place overseas even if new vehicle development and prototyping occurs in Japan. Parts manufacturers participate in new vehicle development projects by finished vehicle firms as a "design-in" process and develop parts alongside of the overall development. They must collaborate with the R&D headquarters in Japan from the early phase of development.

Tier 2 suppliers come under four groups. Companies that already have an overseas presence, such as Advanex, can collaborate during development in Japan, supply products through local production, do not require significant efforts or time prior to beginning supply, possess price responsiveness, and guarantee quality and reliability. Theses suppliers are the most effective source of parts procurement for Tier 1 firms compared to the other three groups. When Tier 1 firms bring along Tier 2 suppliers without an overseas presence, the second group, additional time is required to make decisions, such as ramping up a new plant, and pricing must be adjusted in exchange for bringing them along. When overseas sites procure parts from plants in Japan, the third group, pricing becomes an issue because of forex rate fluctuation risk as well as tariffs and transportation costs. Development and cultivation of local suppliers, the fourth group, takes effort and time in technology guidance and certification, has difficulties in rapid collaboration with R&D headquarters in Japan, and still confronts concerns in quality and reliability.

Level of difficulty in parts procurement from Tier 2 firms for Japanese Tier 1 suppliers

	Japanese Tier 2 firms with existing overseas operations (Advanex)	Japanese Tier 2 firms setting up jointly (second group)	Imports from Japanese Tier 2 firms (third group)	Development and cultivation of local suppliers (fourth group)
Effort and time required (to begin supply)	○	× Decisions, new plant ramp-up	○	△ Technology guidance, certification, etc.
Pricing	○	△ Price consideration for making the move	× Tariff, transportation costs, etc.	◎
Quality and reliability	○	○	○	×
Collaboration with R&D headquarters in Japan	○	○	○	×
Level of parts procurement difficulty for Japanese Tier 1 suppliers	Relatively easy	Difficult	Difficult	Difficult

Source: Prepared by FISCO from the Company's materials

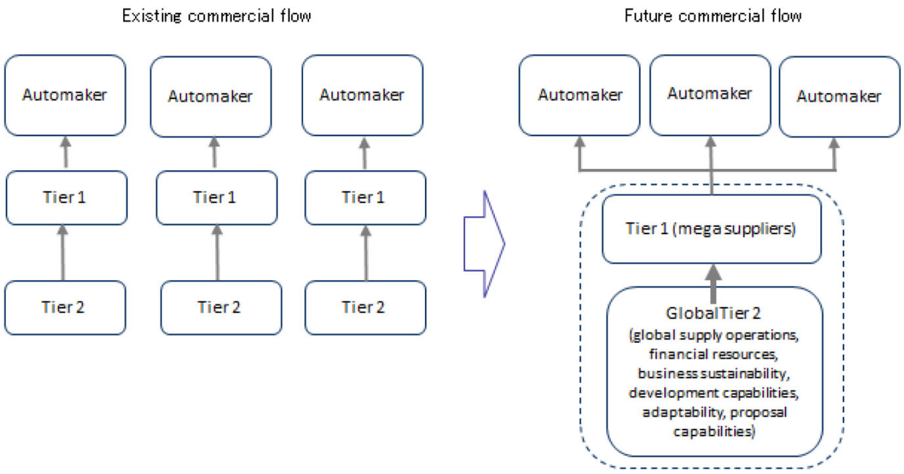
(2) Structural changes in the automotive industry

Electronic equipment production shifted from "coordinated technology" in the analog era to "combined technology" with interface standardization in PCs and digital home electronics. This change enabled emerging economies with little technology accumulation to manufacture electronic equipment. In the automotive industry with electronic systems making steady inroads, we expect advances in combinations of standardized modular parts as the mainstream production format for electric vehicles (EVs). Developing and producing individualized parts by model faces issues in the development period, capital investments, and manufacturing costs. To simultaneously diversify auto models and lower costs, auto firms are likely to standardize and share platforms, develop common components (parts), standardize designs, and extensively adopt modules that can be shared. With component sharing, usage of modular parts will transcend chassis sizes and types.

Discussions are taking place toward industry standardization of technologies used in automated driving and connected cars. Automobiles utilize about 30,000 parts, and commodity parts comprise half of overall costs. Commodity parts offer low pricing because of the large production volume. Wider usage hence contributes to cost savings. Automakers have unique parts on the scale of a few hundreds of thousands versus a much larger order of a few million for commodity parts. Added value from parts is shifting from automakers to parts firms through standardization and modularization. Global Tier 1 parts firms are emerging as mega-suppliers to multiple car manufacturers, in contrast to their previous role as sub-contractors to specific firms.

Advanex aims to be a Tier 2 supplier that deals directly with Tier 1 mega-suppliers. The Company thinks that while a certain number of the few hundred Tier 1 firms have 10 or more overseas sites, very few of the few thousand Tier 2 firms possess this type of presence.

Supply chain changes in the automotive market



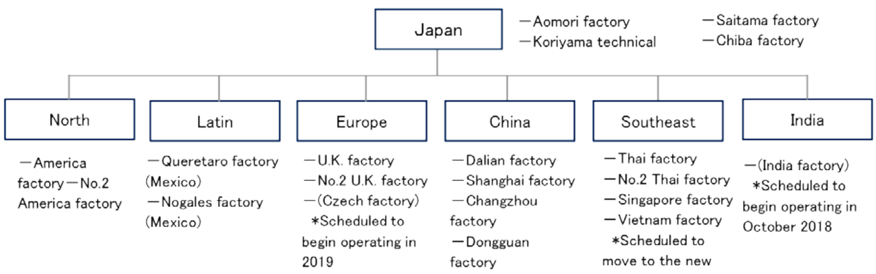
Source: Prepared by FISCO from the Company's results briefing materials

Mega-supplier formation is more advanced in the US and Europe than in Japan. Global No.1 and No.2 Germany-based Robert Bosch and Continental have sales at 2.1x and 1.7x the level at top Japanese supplier Denso <6902> respectively.

(3) Advanex's global production operations

Advanex's global production operations consist of five domestic sites and 17 overseas sites. It is expanding domestic and overseas production capacities and opening new sites to bolster the sales network in accordance with the medium- to long-term plan.

Advanex's global production operations



Source: Prepared by FISCO from the Company's results briefing materials

We review trends from the past few years. Advanex acquired Funabashi Electronics Co., Ltd., which specializes in deep drawing technology, in April 2015 and absorbed the Chiba and Miyagi plants. It merged the Miyagi plant, which was fairly small, into the Chiba plant in March 2017. Advanex started operating the Saitama plant, a new "smart factory" with emphasis on labor savings and automation, for automotive business in April 2016 (Honjo City, Saitama).

Outside of Japan, it acquired PT. Yamakou Indonesia, which is based in Indonesia and manufactures and sells precision metal presses and insert molded parts, and converted it to a consolidated subsidiary in January 2017. This acquisition secured a production site in Indonesia and also obtained a list of a few tens of customers, including Japanese auto parts firms. In Latin America, Advanex began operations of a new plant in Mexico, its second in this country, in April 2016. The Queretaro (Mexico) plant aims to acquire business from Japanese and US/European automotive parts manufacturers located in Mexico, in contrast to the existing Nogales (Mexico) plant that targets US demand. It curtailed initial investments by leasing an existing building. Advanex also acquired operations from Electronic Stamping Corporation, a manufacturer of automotive press parts located in California (US), in September 2016. This plant is near Advanex's existing plant and is being positioned as the No.2 plant in the US. The transfer included facilities and other assets and a customer base of about 30 companies. Human resources can be utilized to support the Mexican plants. In Europe, the Germany-based sales companies stared operations in April 2016. In 2018, the Company is scheduled to begin operations at the India plant (2,157m^2 in floor area) in July, the Czech plant (7,700m^2) in the fall, and the Vietnam plant (8,000m^2) in December.

Expansion of the site network in recent years and plan

Date	Country	Details
April 2014	Japan	Acquired shares in Funabashi Electronics and converted it to a subsidiary, started operating plants in Chiba and Miyagi
January 2016	Japan	New plant in Honjo City (Saitama), built the Saitama plant and began operations
April 2016	Mexico	Started operating the No.2 Mexican plant as the 12th overseas production site
April 2016	Germany	Started operating the new sales company, Advanex Deutschland GmbH
September 2016	US	Acquired California (US)-based press manufacturer Electronic Stamping Corporation
January 2017	Indonesia	Acquired additional shares in PT. Yamakou Indonesia (mainly makes precision metal presses) and converted it to a subsidiary
October 2017	Mexico	Establishment of a local entity in Mexico
October 2018	India	Scheduled to begin operation of the India plant (2,157m^2 in floor area)
December 2018	Vietnam	Scheduled to begin operation of the Vietnam plant (8,000m^2 in floor area)
2019	Czech Republic	Scheduled to begin operation of the Czech plant (7,700m^2 in floor area)

Source: Prepared by FISCO from the Company's materials

Expansion of business opportunities from the EV shift

(4) Expanding and deepening technologies

Although Advanex, which accumulated processing technologies in its effort to become a comprehensive metal processing company, sold the group company that handled its plastics business in March 2015, it retains the insert moldings business, which combines metal pressing and extruded plastic moldings. Meanwhile, Europe offers extensive demand for thin deep-drawn products. The Company obtained this production technology through its acquisition of Funabashi Electronics. It currently has wire spring, leaf spring, insert mold, deep drawing, and other processing technologies. It plans to transfer processing technologies from Japan required for products in specific areas and markets. The Company utilizes a four-firm global operation. The UK is the technology center for Europe. The UK subsidiary will ramp up and give technology assistance to the Czech plant, similar to the way in which the US subsidiary provided personnel support to the Mexican plant.

Deployment plan for processing technologies by area

Processing technology	Japan	North America	Latin America	Europe	China	Southeast Asia	India
Wire springs	○	○	●	○	○	○	■
Flat springs	○	●	■	○	○	○	■
Insert molds	○		■	■	○	■	
Deep drawing	○			■			

Note: ○Existing, ●new deployment, ■deployment plan
Source: Prepared by FISCO from the Company's results briefing materials

(5) Automotive parts and the Company's field

Advanex pursues a business strategy of extending reach in areas, customers, fields, and processing technology and products and thereby expanding its business "coverage." It has broadened scope in the automotive market by entering areas where it can leverage strengths and with a high difficulty and quality strictness hurdles.

When it first entered the automotive market in 2000, Advanex was supplying products only to optional car navigation systems and other car electronics and antennas. Its area scope was Japan and Thailand. Advanex broadened market areas to instruments and interior from 2005, powertrains from 2010, and safety and control (advanced driver assistance system; ADAS), HVs and EVs, and automated driving from 2015.

Potential demand for the Company's products viewed in terms of the vehicle drive format is larger per vehicle for HVs than existing internal combustion engine (ICE) vehicles and even more for EVs. Based on use of the Company's products in ICE vehicles as 100, the estimated level expands to 120 in HVs and 125 in EVs. Engines, radiators, cranks, shafts, frames, suspensions, seats, and bodies required by ICE vehicles do not come under the Company's scope. Safety and control ADAS, meanwhile, is a common feature in ICE vehicles, EVs, and EVs and offers demand for the Company in all of the drive formats. While ICE vehicles mainly utilize wire springs and other simpler products, added value is higher for EV products since they use multiple processing technologies, such as forming and insert mold.

Comparison of latent demand (usage volume for the Company's products per vehicle) by drive method

	Internal combustion system	Electric powered system	Battery system	Body, Control, ADAS, In/Exterior	Outside infrastructure	Total
Internal combustion engine vehicle (ICE)	40 Injector Pump valve Sensor etc.	0	0	60 Brake, Handle Belt, Airbag Meter, Switch, Mirror, ETC, Camera, Sensor etc.	0	100
Hybrid vehicles (HVs, PHVs)	40 Same at gasoline vehicle	10 Inverter Motor Sift by wire etc.	10 Case Pin Bus bar etc.	60 Same as above	0	120
Electric vehicles (EVs)	0	15 HV+ α	25 HV+ α	80 +Autonomous +Other electronic	5 Power supply Connector	125

Source: Prepared by FISCO from the Company's results briefing materials

Inquiries are increasing for parts used in devices with large electric currents found in HVs and EVs. These parts utilize insert-molding technology for integration formation metals and resins. Products from other companies use a plate for the metal portion. Advanex, meanwhile, excels in wire processing with proprietary forming technology and holds advantages in simplified wiring and costs for large electric currents. The Company's demand opportunities increase with EVs because of their use of storage batteries in multiple ways besides just drive. Rechargeable battery parts include deep-drawn cases, pressed terminals, internal structure, and insert mold terminals. Charger equipment also comes under the Company's scope. The Company does not need to recruit new customers because it has existing transactions with rechargeable battery manufacturers.

Advanex has seen a steep rise in inquiries for sensor parts that use deep drawing technology obtained from absorbing Funabashi Electronics. Position sensors and speed sensors are leading examples. We expect steadily rising demand for onboard sensors due to increase in vehicle models equipped with automatic braking and other ADAS features and growing sophistication in the automotive industry. Advanex supplies parts for not only sensors, which correspond to the input portion of electronic control in automobiles, but also valves, pumps, injectors, and other mechanical parts that are the output portion. Full-fledged income contributions from deep-drawn products should begin around FY3/21 when volume production of new products ramps up.

(6) National support for an EV shift

The Japanese government views wider adoption of next-generation vehicles as an important issue in automotive industry policy. In the "Japan is BACK Revised Strategy 2015," it sets a goal of raising the next-generation vehicle percentage of new vehicle sales from 50% to 70% by 2030. In particular, it is putting emphasis on EVs and PHVs because of the high CO2 reduction effect and ability to be use as emergency power sources in a disaster. METI's "Automobile Industry Strategy 2014," presents goals of lowering the conventional (ICE) vehicle share of new vehicle sales from 65.2% in 2016 to 30-50% in 2030 and raising hybrid vehicles from about 30% to 30-40% and EVs and PHVs from less than 1% to 20-30%.

New vehicle sales results and targets for next-generation vehicles

	2016	2030 goals
Conventional vehicles	65.2%	30~50%
Next-generation vehicles	34.8%	50~70%
Hybrid vehicles (HVs)	30.8%	30~40%
Electric vehicles (EVs)	0.37%	20~30%
Plug-in hybrid vehicles (PHVs)	0.22%	
Fuel cell vehicles (FCVs)	0.03%	~3%
Clean diesel vehicles (CDVs)	3.5%	5~10%

Source: FISCO Inc. from

3. Strategic products and priority areas

(1) "Insert collars"

Insert collars are used to strengthen plastic fastenings. As global regulations on fuel efficiency have been tightened, automakers have increased their use of plastic components to lighten automobiles. Insert collars are metallic components used to strengthen the parts of plastic components into which bolts are affixed. A single automobile uses hundreds of insert collars. Insert collars are the main strategic product made at the Company's new Saitama factory. Insert collars are important strategic products at the Saitama plant that specializes in automotive parts.

(2) Medical equipment parts

Advanex's sales of products for the medical equipment market in FY3/18 were ¥1,539mn, 7.6% of total sales. The medical equipment market seems appropriate for the Company, as it aims to be a top provider for global niche markets. As the global population and global medical expenditures are increasing, the global market for medical equipment is likely to grow steadily. Furthermore, the trend of increase in self-administered health care indicates that the demand for disposable medical products is likely to increase. Medical equipment has a long product life cycle, few model changes, and provides large profits. On the other hand, the cost of developing medical equipment and producing it on a trial basis is high, this equipment must be tested for a long time before it can be commercialized, and the plan for developing and commercializing a piece of medical equipment may be abandoned. If these negative factors, which constitute barriers to entry, can be overcome, medical equipment can provide large profits consistently.

(3) Continuity testing tool parts

Probes (continuity testers), a continuity testing tool, use many contact probes. The Company successfully manufactured barrels, a contact probe part, with a deep drawing process. While it is estimated that a few tens of manufacturers make barrels by cutting pipe, only one US-based firm makes them with a deep-drawn process that has cheaper manufacturing costs. The Company is the second firm to obtain this capability and offers a line-up of products with outside diameter ranging from 0.3mm to 1.5mm. Probe firms are accelerating shift in orders placement from the US-based firm that had previously monopolized the market to the Company. There are roughly five major probe manufacturers. The Company hopes to obtain a high share in the future thanks to its advantages in quality, cost, and delivery (QCD).

(4) Standardized parts

Advanex focuses on sales of standardized parts with broad applications and large demand potential. Its main standardized parts are tangless inserts used to strength screw holds in soft materials, such as aluminum, and LockOne devices that prevent loosening of bolt-nut connections. Advanex developed these items leveraging its technology advantages. They offer better cost performance and operational efficiency than existing products and cannot be easily replicated by other firms.

a) Tangless wire inserts for strengthening screw holes

Tangless wire inserts are used to strengthen screw holes in soft materials, such as aluminum. Airplanes are made of light materials, such as aluminum and carbon fiber-reinforced plastic. Screw holes in these materials must be reinforced, and a single airplane may require reinforcement for from several ten thousands to several hundred thousands of screw holes. Tangless wire inserts have been replacing other kinds of reinforcement for several years now. Tangless wire inserts have many characteristics for which they are more highly valued than conventional products. They are also highly profitable because they do not use more materials or steps to produce than conventional reinforcements. They are projected to increase their share of the market for airplane screw hole reinforcements.

b) LockOne device to prevent loosening of bolt-nut connections

A promising product for housing equipment and infrastructure is the "LockOne" spring that prevents loosening of nut-to-bolt connections and failures. The "LockOne" spring targets use in railways, condominiums and other buildings, highways, electric power equipment, and other areas. However, the spring must be certified, which lengthens time to adoption. It is already being used by subway systems. Specialty trading companies for each market handle sales.

Business trends

Posted higher operating income but faced forex loss and extraordinary loss setbacks in FY3/18

1. Summary of operating results in FY3/18

Advanex reported FY3/18 results with ¥20,294mn in net sales (+13.6% YoY), ¥259mn in operating income (+5.0%), ¥237mn in ordinary income (-31.5%), and ¥49mn in net income attributable to the owners of the parent company (-25.9%). The Company posted an increase in operating income, despite investment burden and higher personnel costs in emerging countries. Recurring income, however, slipped due to booking a ¥72mn forex loss from yen appreciation and other impacts (vs. a ¥5mn profit in the previous fiscal year) under non-operating costs. Net income attributable to the owners of the parent company moved to a larger decline because of a taking a ¥60mn extraordinary loss as an impairment charge for goodwill from an acquired subsidiary. Compared to guidance, while sales overshot by 1.5%, profits missed at shortfalls of 35.1% in operating income, 37.5% in recurring income, and 79.2% in net income.

FY3/18 consolidated results

(¥mn)

	FY3/17		FY3/18			YoY		vs. forecast	
	Result	Ratio to sales	Forecast	Result	Ratio to sales	Change	% change	Change	% change
Sales	17,858	-	20,000	20,294	-	2,436	13.6%	294	1.5%
Gross income	4,466	25.0%	-	4,859	23.9%	393	8.8%	-	-
SG&A expenses	4,218	23.6%	-	4,599	22.7%	381	9.0%	-	-
Operating income	247	1.4%	400	259	1.3%	12	5.0%	-140	-35.1%
Ordinary income	346	1.9%	380	237	1.2%	-109	-31.5%	-142	-37.5%
Net income attributable to the owners of the parent company	67	0.4%	240	49	0.2%	-17	-25.9%	-190	-79.2%

Source: Prepared by FISCO from the Company's financial results

(1) Trends by location

The Company revised headquarters costs covered by regional entities from FY3/18. These adjustments take into account that not only R&D activities, but also prototyping of products made at overseas sites and establishment of volume production technology occurs in Japan. Regional operating income changes worked out to an addition of ¥328mn for Japan and reductions of ¥65mn for the Americas, ¥56mn for Europe, and ¥206mn for Asia.

For Japan, sales rose 3.7% YoY on upbeat automotive business and segment income improved by ¥485mn YoY to an ¥87mn loss (narrowing the loss). Profit increase factors were higher sales in automotive business and revision of the headquarters burden. Increase in fixed costs at the Saitama plant, meanwhile, was a negative factor. In the Americas, while sales climbed 10.4%, the segment loss widened from ¥161mn a year earlier to ¥369mn. Sales benefited on growth in automotive business and new plant additions, but the loss increased due to Mexican plant investments, higher personnel costs, and extra headquarter costs. In Europe, even though sales rose 8.5%, segment profit weakened 4.1% to ¥238mn because of the headquarters cost change. For sales, aircraft-related business was flat, while medical business and standard product had gains. In Asia, sales expanded 27.3% YoY thanks to upbeat automotive and office equipment businesses and consolidation of the Indonesian subsidiary. Segment profit, meanwhile, fell 32.4% from ¥724mn in FY3/17 to ¥489mn due to higher fixed costs and personnel costs and the change in headquarters costs.

Breakdown of consolidated sales and segment income by geographical market

(¥mn)

		FY3/17		FY3/18		YoY	
		Amount	Ratio to sales/ profit margin	Amount	Ratio to sales/ profit margin	Change	% change
Japan	Sales	7,531	42.2%	7,808	38.5%	277	3.7%
	Segment income/loss	-572	-7.6%	-87	-1.1%	485	-
Americas	Sales	1,987	11.1%	2,193	10.8%	205	10.4%
	Segment income/loss	-161	-8.1%	-369	-16.9%	-208	-
Europe	Sales	1,725	9.7%	1,871	9.2%	146	8.5%
	Segment income	248	14.4%	238	12.7%	-10	-4.1%
Asia	Sales	6,613	37.0%	8,421	41.5%	1,807	27.3%
	Segment income	724	10.9%	489	5.8%	-234	-32.4%
Profit adjustment value for transactions between segments		8	-	-11	-	-	-
Total	Forex rate (¥/USD)	17,858	100.0%	20,294	100.0%	2,436	13.6%
	Segment income	247	1.4%	259	1.3%	12	5.0%
Forex rate (¥/USD)		109.2		110.8		1.6円安	

Source: Prepared by FISCO from the Company's financial results

(2) Trends by market

Automotive sales grew 29.8% YoY and climbed 5.8ppt to 46.6% as a share of overall sales. While sales of office automation equipment, the second largest category, had dropped sharply through the previous fiscal year due to the impact of design changes that eliminated the Company's products, this factor disappeared and sales were flat in FY3/18. Medical equipment sales rose by a robust 19.3%. Infrastructure and housing equipment sales were up 11.1%. The Company is promoting a strategy that focuses on automotive, medical equipment, and infrastructure and housing equipment areas to drive growth. Audiovisual and electric appliances sales increased 31.1%. Information and communications equipment sales, meanwhile, fell 19.6% on removal of Asian smartphone business. Aircraft-related sales only gained 3.1% due to sluggishness in manufacturer output.

Breakdown of consolidated sales by market

(¥mn)

	FY3/17		FY3/18		YoY	
	Sales	Ratio to sales	Sales	Ratio to sales	Change	% change
Automobiles	7,278	40.8%	9,449	46.6%	2,171	29.8%
AO equipment	3,631	20.3%	3,633	17.9%	2	0.1%
Medical equipment	1,290	7.2%	1,539	7.6%	249	19.3%
Precision equipment	1,144	6.4%	1,093	5.4%	-51	-4.5%
Infrastructure and household	832	4.7%	924	4.6%	92	11.1%
Audiovisual equipment and electrical appliances	537	3.0%	704	3.5%	167	31.1%
Information and communication	862	4.8%	693	3.4%	-169	-19.6%
Airplane equipment	519	2.9%	535	2.6%	16	3.1%
Others	1,765	9.9%	1,724	8.5%	-41	-2.3%
Total	17,858	100.0%	20,294	100.0%	2,436	13.6%

Source: Prepared by FISCO from the Company's results briefing materials

2. Financial conditions and cash flow statement

Gross assets at end-FY3/18 were up ¥1,577mn YoY to ¥20,325mn with gains of ¥1,245mn in current assets and ¥332mn in fixed assets. Current assets added ¥439mn in cash and deposits on higher sales, ¥365mn in promissory notes received and accounts receivables, and ¥296mn in inventory assets. In liabilities, interest-bearing debt increased ¥1,558mn. Capital investments in FY3/18 totaled ¥1,568mn, exceeding the ¥975mn in depreciation costs and goodwill amortization costs.

Consolidated balance sheet

(¥mn)

	FY3/16	FY3/17	FY3/18	Change
Current assets	9,957	10,957	12,203	1,245
(Cash and deposits, securities)	3,465	3,906	4,346	439
Fixed assets	7,066	7,790	8,122	332
Total assets	17,024	18,747	20,325	1,577
Current liabilities	5,852	7,445	8,827	1,382
Fixed liabilities	4,593	5,004	5,264	260
Total liabilities	10,446	12,449	14,092	1,642
(Interest-bearing debt)	5,095	6,617	8,175	1,558
Net assets	6,578	6,298	6,233	-64
[Stability]				
Current ratio	170.1%	147.2%	138.2%	
Equity ratio	38.4%	33.3%	30.4%	

Source: Prepared by FISCO from the Company's financial results

Cash and cash equivalents were down ¥271mn YoY to ¥3,533mn at end-FY3/18. Cash flow from operating activities only amounted to ¥311mn and was not enough to offset the ¥1,496mn outflow in cash flow from investing activities. The Company covered the gap with higher loans in cash flow from financing activities.

Consolidated cash flow statement

(¥mn)

	FY3/16	FY3/17	FY3/18	Change
Cash flows from operating activities	1,415	773	311	-462
Cash flows from investing activities	-2,823	-1,302	-1,496	-194
Cash flows from financing activities	910	1,266	1,436	170
Balance of cash and cash equivalents at the end of the fiscal year	2,669	3,261	3,533	-271

Source: Prepared by FISCO from the Company's financial results

Forecasts

Projects gains of 2.5% in net sales and 34.9% in operating income in FY3/19

1. Consolidated outlook for FY3/19

The Company projects higher sales and profits in FY3/19 with ¥20,800mn in net sales (+2.5% YoY), ¥350mn in operating income (+34.9%), ¥320mn in ordinary income (+34.9%), and ¥160mn in net income attributable to the owners of the parent company (+3.2x). It expects operating margin to improve from 1.3% in FY3/18 to 1.7%. The ¥100/$ forex rate assumption provides some flexibility in the projections.

Consolidated outlook for FY3/19

(¥mn)

	FY3/18		FY3/19 E		YoY	
	Result	Ratio to sales	Forecast	Ratio to sales	Change	% change
Sales	20,294	-	20,800	-	505	2.5%
Operating income	259	1.3%	350	1.7%	90	34.9%
Ordinary income	237	1.2%	320	1.5%	82	34.8%
Net income attributable to the owners of the parent company	49	0.2%	160	0.8%	110	221.2%

Source: Prepared by FISCO from the Company's financial results

Combined operating income from plants that are profitable is ¥1.2bn

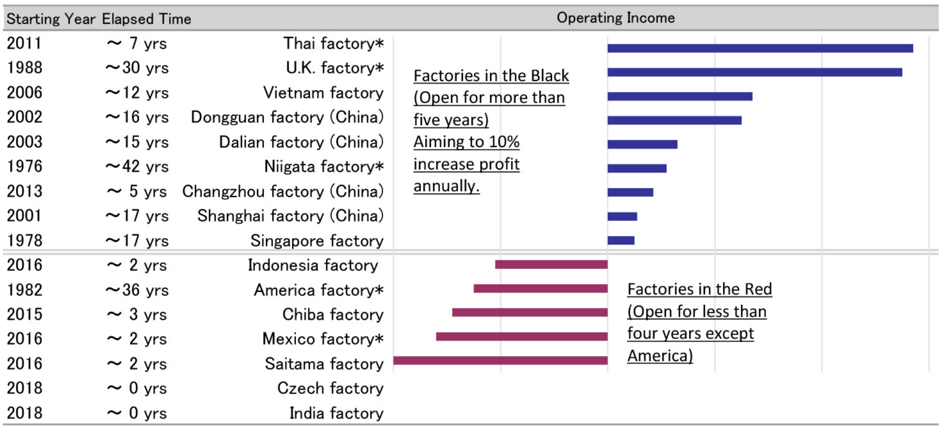
2. Initiatives to improve income at individual plants

Income conditions at the Company’s domestic and overseas plants adhere to a clear pattern depending on the number of years elapsed from opening or acquiring the facility. Plants are generally profitable when five or more years have elapsed since beginning operations, excluding special cases. Facilities in operation for four years or less, meanwhile, generally have deficits. Combined operating income from plants that are profitable is ¥1.2bn, the amount targeted for FY3/21 in the mid-term management plan. The Company is currently aiming for loss reduction and profitability at plants with deficits.

Plants in Thailand and the UK are the main income sources, but even China is delivering profits despite dispersed locations. Japan’s longstanding plants in Niigata, Oita, and Aomori generate positive income. The Saitama plant, which has only been operating for two years, incurs a hefty loss. The China plant, which was obtained in the acquisition of Funabashi Electronics, is still running a loss, despite integration with the Miyagi plant. Losing half of the plant’s sales for mobile-phone antennas since 2015 had a major impact. The acquired Indonesia plant is likely to take until at least FY3/20 to reach profitability due to curtailment of orders after the purchase. Since adding this site as a subsidiary, the Company deployed its production technologies and quality and delivery control system and thereby improved quality and restored customer trust. The subsidiary’s name was changed to PT. Advanex Precision Indonesia in April 2018. Plans call for deployment of wire springs and forming capabilities to contribute to acquisition of new orders.

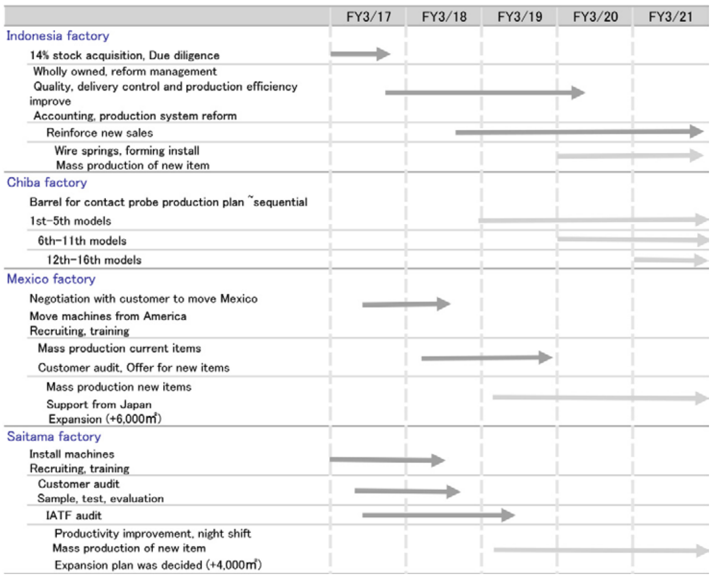
Income slumped at the US plant due to pressure from provision of ramp-up assistance to the Mexican plant. These efforts include transfers of equipment from the US, hiring, acceptance of 30 trainees from Mexico, negotiations with customers, and working fund support. The FY3/19 outlook envisions a profit on non-recurrence of the Mexican assistance. Expansion of customer production in the medical business from the UK to the US means that the Company's US plant will be making the same product as the UK plant. The new product output ramp-up should be quick because the US site is receiving molds and other equipment and technology assistance from the UK.

Income comparison for plants and regions



*Total for multiple plants
Source: Prepared by FISCO from the Company's results briefing materials

Effort to improve profitability



Source: Prepared by FISCO from the Company's results briefing materials

The Mexican plant is receiving operational and technology assistance from Japan in FY3/19. A larger number of inquiries from Japanese companies than expected are coming to the Company due to hesitancy by rivals with their initiatives in Mexico with the policy change of the US government. In Japan, the Company is strengthening its sales activities to Japanese Tier 1 firms. It is moving equipment and molds with solid track records in Japan to Mexico. The Company is dispatching wire spring and press engineers for technological assistance. New product volume output should start in FY3/19. The plan calls for profitability from 2H and an addition of 6,000m².

The Saitama plant, which is positioned as a specialty automotive site, is putting efforts into raising productivity and profitability and reduction of the loss. Profitability is likely to take until after FY3/19. Main efforts through FY3/18 were transferring equipment from other plants, hiring, education, prototyping, customer evaluation, and customer certification reviews. New product volume output should accelerate during FY3/19 given the prospect of receiving certification for the automotive quality management system standard (IATF) in 1H. Facility operating rates in FY3/18 were just 70% for insert collars and 30% for insert molds. The plant was manufacturing items with excessive fixed costs prior to starting volume output for new products. Insert molds should move to a higher operating rate once production gains momentum. The Company is considering adoption of two shifts. It is also preparing a plan to expand plant floor space from 5,000m² to 9,000m² in order to accommodate increased demand from 2020.

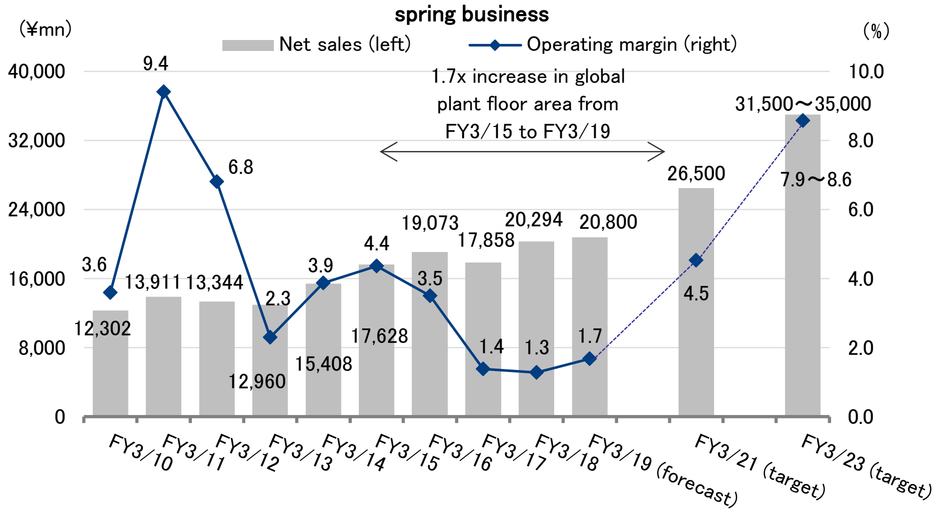
Longer-term growth strategies

Growing business in automotive and medical areas on favorable assessment of global supply operations

1. Mid-term management plan

The current mid-term management plan targets ¥26,500mn in net sales, ¥1,200mn in operating income and 4.5% operating margin in FY3/21 and also sets goals for FY3/23, the final year, of ¥31,500-35,000mn in net sales, ¥2,500-3,000mn in operating income, and 7.9%-8.6% in operating margin. Three-year CAGR with FY3/18 as the base year works out to 9.3% in sales and 66.7% in operating income. The Company is factoring in sharp earnings growth.

Results trends and mid-term management plan goals in the precision spring business



Source: Prepared by FISCO from the Company's financial results and results briefing materials

We think the FY3/21 goal is within reach because the Company posted 4.5% or higher operating margin in the precision spring business five times since FY3/00. The FY3/23 margin goal, meanwhile, is a tougher hurdle because this level has only been surpassed once with FY3/11's 9.4%. While expansion of global plant floor area by 1.7x from roughly 80,000m^2 in FY3/15, when the mid-term plan was announced, through FY3/19 lays the groundwork for attaining the FY3/21 goal, we believe the Company needs additional or new capital investments to reach its FY3/23 goal.

2. Strategy outlined in the mid-term management plan

The business model of delivering high-quality products in large amounts with lengthy lead times on tight schedules continuously to multiple global sites is challenging for the Company and presents significant entry barriers to smaller precision spring manufacturers. Auto market mega suppliers with global operations are increasingly impressed by the Company's capabilities. With its global operations, the Company is aiming for priority supplier certification from the top-four Tier 1 firms.

(1) Area strategy

The Company will have 17 overseas plants following completion of new sites in Czech, India, and Vietnam. The Czech and Vietnam plants are large sites with 7,700m^2 and 8,000m^2 respectively. Global production floor area will have increased 1.7x in the five years through FY3/19. The Company budgets a steep rise in capital investments from ¥1,568mn in FY3/18 to ¥3,364mn in FY3/19. Depreciation costs are likely to increase from FY3/18's ¥939mn to ¥1,034mn in FY3/19.

(2) Market strategy

The Company's market strategy focuses on automotive, medical, and infrastructure and home equipment applications as core areas and also targets rechargeable batteries and aircraft. Market sales ratio projections in FY3/23 are automotive at 50% (+3.4ppt vs. FY3/18), office automation equipment at 10% (-7.9ppt), medical at 10% (+2.4ppt), infrastructure and housing equipment at 10% (+5.4ppt), and others at 20% (-3.4ppt). Automotive business has already risen more than expected and is likely to meet the 50% target.

In automotive business, the Company benefits from a strong volume effect and global orders from mega suppliers. It has added a few hundred new customers in the past three years. The Company's approach has been well received by customers, confirming the efficacy of the global Tier 2 concept.

Customer assessments in the automotive market

Comment from a Japanese Tier 1 firm "Advanex's strength is global support as a precision spring manufacturer."
Comment from a European Tier 1 firm "Business sustainability is uncertain for our current supplier. We intend to place orders with Advanex as much as possible going forward in light of the smooth ramp-up of our new product."
Comment from a Japanese Tier 1 firm "Advanex has plants near almost all of our production sites. We want to begin transactions in areas besides Mexico where business has already started."

Source: Prepared by FISCO from the Company's results briefing materials

Global production involves orders for a single product that might begin in Japan and then spread to other locations, such as Thailand, China, and India. Automotive parts pass through repeated inquiries, estimates, and designs and prototypes prior to starting volume output. Additional overseas orders remove the design and prototype process. Increased output volume lifts skill levels and enables the manufacturer to meet cost savings requests from customers. A key factor supporting substantial improvement of profit margin in the medium-term business plan is less growth in SG&A expenses and other spending than sales.

In the medical market, a highly profitable area, the Company plans to begin volume output at the US plant and start operations at the Czech plant in FY3/19. It expects to begin volume production of self-injector springs and deep-drawn parts in FY3/21. Global production provides significant cost benefits. PC, mobile phone, and camera parts have annual outputs ranging from 100,000 units to 10mn units and thus are suited to concentrated output at one location. Disposable medical kits with outputs in the range of 10mn and 100mn units, meanwhile, realize savings through dispersed production in areas of consumption in light of tariffs, domestic production incentives, and transport costs.

Related medical equipment

Asthma medicine inhalant

Insulin self-injectors

Automatic blood drawing device

Source: The Company's results briefing materials

While Europe and other developed markets with aging societies had been the main markets, the number of patients with lifestyle diseases due to lifestyle changes has dramatically risen in emerging markets with large populations too. The Company's global supply operations are the strength because medical customers also have global presence.

Events and schedule for automotive and medical markets

		Automobile market	Medical market
FY3/18	1Q	Start of Indonesian subsidiary consolidation	Start of catheter hub volume output
	2Q		
	3Q		Increase in indwelling needle spring output
	4Q		Start of product supply for generic asthma medicine
FY3/19	1Q		Start of volume output at the US factory
	2Q	Acquisition of quality management certification at the Saitama factory	
	3Q	Mexico factory contributions, start of volume output for the No.1 customer in Europe	
	4Q	European major Tier 1 preferred supplier certification	
FY3/20	1Q	Ramp-up of volume output for deep-drawn products	
	2Q	Start of volume production for HEU and EU mission-critical units	Start of volume output for asthma inhalants at the Czech factory
	3Q		
	4Q	New Vietnam factory, India factory contributions	
FY3/21	1Q		
	2Q	Czech factory contribution, ramp up of insert molds for electric vehicles	
	3Q		Start of volume production for insulin injection kits
	4Q		

Source: Prepared by FISCO from the Company's materials

(3) Product strategy

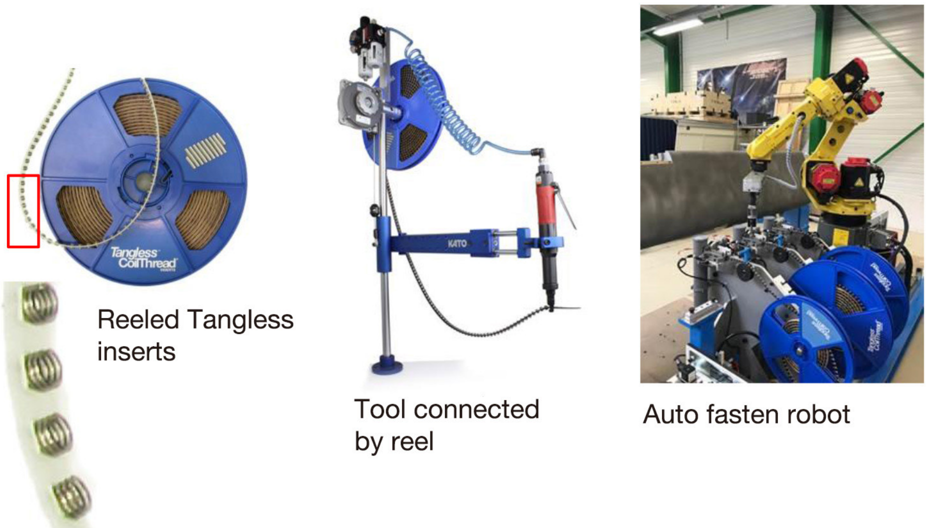
The Company is bolstering its line-up of standard products, such as Tangless inserts, insert collars, and LockOne, and widening sales channels globally. It transfers technology to overseas plants and recruits demand for insert molds and deep-drawn products with robust demand in overseas markets.

The UK subsidiary acquired the AS9100 quality management system standard for aircraft production and is strengthening Tangless insert orders. Aircraft extensively utilize soft materials to reduce weight and use about 300,000 Tangless inserts that reinforce bolt holes per plane. Tangless inserts enable faster process speed than previous products because the Tang portion does not need to be broken and retrieved after insertion. The Company proposes use of a reel and connected insertion tool to improve operation efficiency at customer production sites for airplanes, railway vehicles, and other equipment that requires large volume. Automated insertion robots are an option for use in PC housings. Sales totaled ¥1bn in FY3/18, and the Company hopes to double business within five years.

Usage example of Tangless inserts in airplanes – Internal structure and seat fixed portion

Source: The Company's results briefing materials

Proposal to improve the efficiency of the insertion task for Tangless inserts



Source: The Company's results briefing materials

(4) M&A strategy

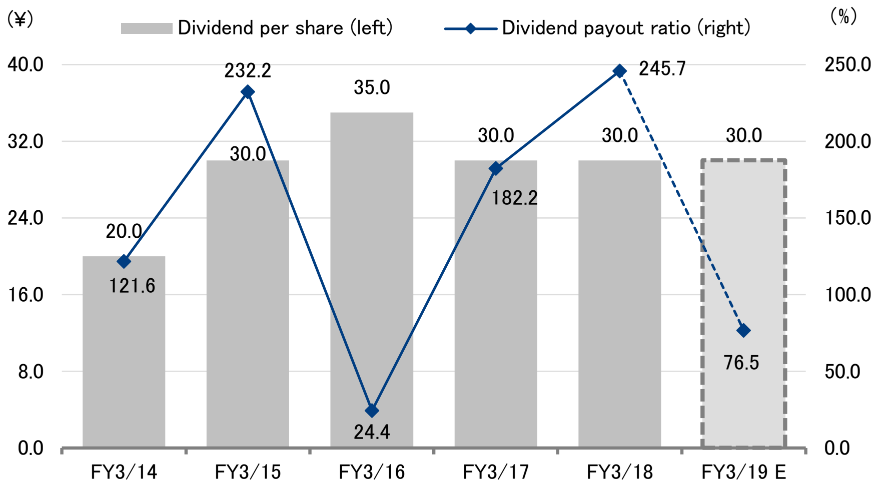
The Company continues to look at M&A opportunities for companies with unique technologies and companies that can expand sales channels.

Shareholder return policy

Intends to keep the dividend at ¥30 per share

The mid-term management plan targets a dividend payout ratio of 30%. Advanex set the dividend at ¥30 per share for a 51.0% payout ratio in initial FY3/18 forecast. The FY3/18 dividend payout ratio exceeded 100% for a second straight year at 245.7% because the Company maintained a ¥30.0 annual dividend despite shrinkage of net income per share to ¥12.21 on weaker earnings.

Dividend per share and dividend payout ratio



Source: Prepared by FISCO from the Company's financial results

Information security policy

The Company takes an organizational approach to information security measures. It utilizes anti-virus software, intrusion detection, firewalls, and other functionality as the system-level response and educates employees and conducts periodic tests as personnel and organizational efforts. It has not incurred major trouble over the past year. The division handling security participates in external seminars and acquires knowledge. Society as a whole, including customers, is requiring more information security, and the Company intends to make necessary investments. While the Company uses data centers with seismic-resistance capabilities and other disaster-related preparations, it wants to further improve safety, such as storing data at a remote site.

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