TOSOH

Review of Operations: Specialty

Snapshot

The Specialty Group meets the needs of diverse customers for high-value-added bioscience, organic chemical, and advanced material products and technologies. Its extensive portfolio offerings are solidly positioned in stable and expanding niche markets and individually and collectively are critical contributors to Tosoh's profitability.

The Specialty Group's clients span the globe and include the pharmaceutical, health care, semiconductor, consumer electronics, and automobile industries. They include emerging businesses whose success hinges on the Specialty Group's development of solutions to fuel their progress. Innovative products and technologies from the Specialty Group align Tosoh with market opportunities and offer potential for sustainable expansion strategies.

Group Performance and Markets

Strong Performance: Specialty Group fiscal 2014 net sales rose 16.5% over fiscal 2013 group net sales, to ¥153.4 billion (US$1.5 billion). That constituted 19.9% of Tosoh's consolidated net sales, compared with 19.7% in fiscal 2013. Group operating income climbed 114.0%, to ¥19.2 billion (US$186.8 million), for 46.2% of Tosoh's consolidated operating income—a dramatic increase from 36.7% a year earlier and equivalent to an operating income to net sales ratio of 12.5%.

The Specialty Group's shipments of ethyleneamines decreased because of reductions in production volume to improve profitability. Declining ethyleneamine production volume, however, was somewhat offset by ethyleneamine price increases and the yen's depreciation.

Shipments of bromine and bromine fire retardant products, meanwhile, rose, as did shipments of separation-related products, especially of liquid chromatography packing materials. Shipments of the group's automated immunoassay (AIA) instruments and in vitro diagnostic reagents also increased.

With export prices firming because of the weaker yen, shipments of electrolytic manganese dioxide (EMD) for dry cell and rechargeable batteries likewise rose. High-silica zeolite (HSZ) shipments, too, were boosted, by strong demand for HSZ as petrochemical catalysts and in automobile catalytic converters. In addition, zirconia shipments to the dental materials market recorded gains.

Developments

Strategic Resource Allocation to Create Value: Persistent ethyleneamine oversupply compelled Tosoh to shut down its oldest ethyleneamine production line in August 2013. In its place, the company is constructing a plant to produce Rzeta, Tosoh's proprietary, new, and unique emission-free reactive amine catalyst for polyurethane foam. Tosoh plans to launch Rzeta in November 2014.

In fiscal 2014, Tosoh announced a further, 50% expansion of HSZ production capacity at its Nanyo Complex. The capacity expansion is scheduled for completion in September 2014 and will meet increasing demand for auto emission catalysts, a category where Tosoh aims for a top share globally.

Tosoh Group company Tosoh SMD, Inc., will invest heavily in its US facility. The investment will provide facilities for developing and producing physical vapor deposition sputtering targets for the emerging 450-millimeter wafer semiconductor market, which is likely to transform the competitive landscape of the semiconductor industry.

In November 2013, Tosoh launched worldwide sales of its Toyopearl AF-r Protein A HC-650F. This newly developed, high-performance Protein A-affinity separation media achieves 30% to 50% greater antibody adsorption than similar products. It is representative of a class of media indispensable to the biopharmaceutical industry's purification of monoclonal antibodies in the production of antibody biopharmaceuticals. Antibody biopharmaceuticals have high efficacy in treating such life-threatening diseases as cancer and are a research priority in the biopharmaceutical industry.

Strategies and Outlook

Organic Chemicals
The Specialty Group's focus in organic chemicals in fiscal 2015 is on further restoring the profitability of its once top-earning ethyleneamines. The group will continue its shift to high molecular weight amines and its expansion of its global ethyleneamine derivative network, particularly for its TEDA, Toyocat, and Rzeta polyurethane catalyst operations.

The goals are higher pricing levels and larger market shares for core ethyleneamine grades. And in February 2014 Tosoh announced global price increases for its major ethyleneamines, effective April 1, 2014. With an annual ethyleneamine production capacity of 71,000 metric tons, the Tosoh Group is one of the world's largest producers of ethyleneamines, approximately 80% of which are exported.

The group's medium-term strategy for its bromine and brominated derivative products, of which Asia is the largest consumer, is to stay ahead of the competition by expanding product sales and reducing costs. Building a new production facility is also among the strategies under consideration.

Long term, the group's eco-business strategy is twofold. The group will continue making the piperazine-based agents that are its core environmental product line, and it will reinforce its competitiveness in the environmental and recycling market and top-of-the-line brand category. The group is looking beyond its domestic market, at China and other Asian countries, to ensure growth for its eco-business products and services.

Advanced Materials
In advanced materials, the Specialty Group is targeting increased sales of zirconia for dental applications, in part by introducing translucent and colored zirconia that differentiate its products in the market. It also is expanding its zeolite operations to emphasize HSZ product offerings that meet demand from the automotive, oil and energy, and environmental industries. With the rapid shift to ethane as a raw material for petroleum crackers for the shale gas revolution, catalysts for producing aromatics represent an especially good opportunity.

The traditional battery market is in decline, but uses for its raw materials are rapidly evolving. Among the Specialty Group's priorities in its EMD operations is a strategy for developing manganese applications other than batteries. It intends, too, to establish itself as a major producer of manganese-based cathode materials. Its product lines encompass EMD, of which Tosoh is the world's largest producer, and chemical manganese oxide (CMO), which is used for the dry cell and secondary battery markets.

The Specialty Group's thin film materials and quartz operations are ramping up production capacity for 300-millimeter wafer manufacturing and a foothold in the 450-millimeter wafer market. Part of the group's strategy involves entering the next-generation memory and printable electronics markets and developing and expanding sales of products for atomic layer deposition (ALD) and coating applications.

Bioscience
Tosoh seeks a major presence in the global bioscience market. One of the Specialty Group's immediate-term focuses is to expand sales of separation columns and Toyopearl in biopharmaceutical-related markets. The group will shift its line of columns to ultrahigh-performance liquid chromatography (UHPLC) products, which are rapidly becoming mainstream.

A focus in fiscal 2015 will be to press the advantage gained by the introduction of Toyopearl AF-r Protein A HC-650F separation media. The group's recent expansion of its Toyopearl production capacity should support its aim of winning a bigger share of the global separation media market.

The global diabetes market is worth approximately ¥50 billion and growing. Tosoh has ample room to raise its share of this market and to thereby contribute more to improving health outcomes for diabetics worldwide.

Treating diabetes is a Tosoh emphasis. The Specialty Group's bioscience operations offer various GHb analyzer models suitable for developed and developing countries.

Tosoh, moreover, is researching the high incidence of tuberculosis in emerging countries and particularly in India and Indonesia, which are among the top three countries by number of tuberculosis patients. Molecular testing for tuberculosis is exponentially faster than traditional methods and is an area of expertise for Tosoh.

In fiscal 2015, Tosoh will launch a new TRC system in the emerging molecular testing systems market.

Key Opportunity Checklist

- Leverage advanced medical diagnostics technologies to help medical caregivers improve the lives of more people
- Participate in the dramatic transformation of the global semiconductor industry by garnering business in the emerging 450-millimeter wafer semiconductor market
- Look beyond present regions to target opportunities in developed and developing economies, focusing particularly on the growing markets of Asia

TOSOH

Review of Operations: Chlor-alkali

Snapshot

The Chlor-alkali Group operates the largest fully integrated manufacturing capacities of their kind for chemical commodities in Asia and supplies the worldwide chlor-alkali industry with raw materials for a vast range of products. It is well positioned to take advantage of opportunities in Asia's expanding markets.

The group's main products are chlorine, caustic soda, vinyl chloride monomer (VCM), polyvinyl chloride (PVC) resins, calcium hypochlorite, and sodium bicarbonate. It both sells these raw materials and furnishes them as feedstock to Tosoh's fully integrated vinyl isocyanate chain, which yields Tosoh's commodity and specialty products.

The Chlor-alkali Group also supplies its products to the isocyanate operations of Tosoh's wholly owned subsidiary Nippon Polyurethane Industry Co., Ltd. (NPU). NPU uses them principally to produce methylene diphenyl diisocyanate (MDI) and hexamethylene diisocyanate (HDI).

MDI is a key component of the group's and Tosoh's strategies because it is a raw material for polyurethane and a fine chemical with multiple uses in organic synthesis. It also offers attractive marketing synergies with Tosoh's diverse product lines, including organic synthesis compounds, polyurethane catalysts, and specialty polymers. HDI has applications in high-performance paints and other specialty polymers.

The Chlor-alkali Group's chemical commodities business is thriving as economies grow worldwide. But shipments and prices are constantly changing as supply and demand fluctuate. The group, however, has developed the know-how and the systems to optimize its production mix to match circumstances and to enable Tosoh to compete in the worldwide chlor-alkali industry.

The group also oversees Tosoh's cement operations. Cement production utilizes waste and coal ash, slag, and other by-products from Tosoh's operations and elsewhere to play a valuable role in recycling and reducing costs. Tosoh's cement output is sold entirely to Taiheiyo Cement Corporation, Japan's largest cement manufacturer.

Group Performance and Markets

Impressive Gains: Chlor-alkali Group net sales rose to ¥286.3 billion (US$2.8 billion) in fiscal 2014, a gain of 20.6% over fiscal 2013 group net sales. The group accounted for 37.1% of Tosoh's consolidated net sales, up from 35.5% a year earlier. It also improved its operating income ¥5.5 billion, to ¥3.9 billion (US$37.7 million), for an operating income to net sales ratio of 1.4%.

The group's exports and domestic shipments of caustic soda contracted in fiscal 2014, but a recovery in VCM manufacturing volumes supported an increase in VCM and PVC shipments. The yen's depreciation and improved overseas markets, moreover, supported higher VCM and PVC export prices. Domestically sold PVC also benefited from a price increase implemented early in the fiscal year. The group's urethane raw materials, meanwhile, benefited from rising export prices resulting from the yen's depreciation, and the group capitalized by increasing urethane raw material shipments.

The Chlor-alkali Group's cement operations continued to benefit from rebuilding efforts following the Great East Japan Earthquake. The group's shipments of cement increased as a result of strong, mostly domestic demand.

Progress

Strategic Resource Allocation to Create Value: Tosoh completed the implementation of an improved oxychlorination process at its Nanyo Complex in October 2013. The process clears a hurdle in producing VCM from ethylene dichloride (EDC) adds 200,000 metric tons to Tosoh's VCM production capacity.

Tosoh Group subsidiary Taiyo Vinyl Corporation is increasing the annual PVC production capacity at its plant in Chiba Prefecture, adjacent to metropolitan Tokyo, by 10,000 metric tons. The expanded facilities are scheduled for completion in October 2014 and will meet domestic demand for PVC. They will contribute specifically to meeting the substantial requirements for PVC in recovering from the Great East Japan Earthquake.

Tosoh Corporation, meanwhile, has decided to merge with NPU to strengthen NPU's operations for recovered profitability and a greater role in the Tosoh Group. NPU's isocyanate operations are integral to Tosoh's fully integrated vinyl chain operations. The merger will consolidate the companies' synergies under a single management structure to better respond to fluctuating exchange rates, expanding global production capacity, and rising competition from overseas manufacturers.

Tosoh's three-stage merger plan was approved at the company's annual general meeting of shareholders in June 2014. The merger will occur on October 1, 2014.

Strategies and Outlook

Vinyl Isocyanate Chain
Tosoh is committed to long-term corporate value, and the Chlor-alkali Group's VCM and PVC products are integral to that objective. The company, however, takes a balanced approach toward its product lines to ensure sustainable profitability. Management's assessment is that the Chlor-alkali Group's primary chloride line of caustic soda and related products is more profitable than VCM and PVC. So the group needs to strengthen its offerings of caustic soda and competitive caustic soda derivatives.

Medium term, there are significant opportunities for caustic soda sales in Oceania, centered on Australia, and in Southeast Asia and North America. Prospects are favorable for sales of hypochlorite, sodium bicarbonate, sodium sulfate, and other products. Even in Japan, where demand for caustic soda has contracted, Tosoh holds almost a 20% market share.

The Chlor-alkali Group is devising ways to share its independent electricity generation capabilities among its domestic factories and thereby boost the cost competitiveness of its primary chloride product line. Such initiatives will enable the group to address the rising per kilowatt cost of its electric power generation facilities amid rising global commodity costs. Environmental taxes on fossil fuels will be implemented incrementally in Japan over the next few years, and steps must be taken to keep electric power costs at Tosoh competitive.

Keeping VCM product prices in line with rising naphtha and other fixed costs is likewise under evaluation. Also being considered is shifting priorities to domestic and overseas markets that present opportunities for profitability amid changing exchange rates, market conditions, and technologies.

We are focusing on products, including PVC, produced by Tosoh subsidiaries. Our plan is to encourage subsidiaries to collaborate in expanding markets while ensuring their profitability. Specifically, our goal for our VCM and PVC operations is to provide stable VCM supplies to our PVC manufacturing subsidiaries while maximizing profits, which in practice means strengthening domestic sales and seeking sales opportunities overseas in such markets as Indonesia and India. In contrast, China has become a difficult market characterized by its rising use of the carbide method to produce PVC.

Tosoh produces more than 35% of Japan's VCM output and is the domestic leader in PVC resins, accounting for one-fourth of national output. Domestic demand for VCM and PVC for post-earthquake reconstruction is expected to remain firm in fiscal 2015. Long term, VCM and PVC demand should consistently increase throughout Asia, and Tosoh expects to benefit despite heightened competition at home and abroad.

MDI and HDI
Tosoh and NPU will merge in fiscal 2015, and it is a Tosoh priority to make that process a success. The transition includes tapping Tosoh's ample resources to further NPU's business strategies. NPU plans, for example, to exploit the newly combined R&D capabilities to develop profitable new products.

NPU's conversion, meanwhile, to low-cost MDI production is mostly complete. And NPU management is contemplating additional production capacity in anticipation of a competitor's market exit. NPU intends to exploit this opportunity to capture market share and raise prices.

NPU likewise seeks to augment its greater than 50% dominance of the domestic polymeric MDI market. Another objective is to improve the color and quality characteristics of monomeric MDI to support higher pricing.

In addition, NPU is in the final stages of setting up an MDI stockpiling base in Singapore. This will reinforce its MDI marketing drive in Asia, particularly in ASEAN markets.

NPU also is targeting a growing share of the overseas HDI market, through expanded sales to US and European customers. In addition, it will expand its sales of liquid polycarbonate diol (PCD), a highly pliable and tough raw material for polyurethane resin products, and of other of its products.

Cement
The Chlor-alkali Group's one-kiln cement production system is lessening fixed costs through reduced maintenance and lower labor and outsourcing expenses. Improved waste plastic processing capacity and capability also contribute to operational profitability.

Medium term, the group is considering increasing the waste plastic processing of its cement operations, and this will involve an upgrade to its cement manufacturing facilities. It also will continue its programs to conserve energy and reduce energy costs.

In fiscal 2015, the group anticipates that demand for cement will remain flat. This is primarily due to a combination of a slackening in demand from Great East Japan Earthquake rebuilding projects and an increase in demand for the 2020 Olympics in Tokyo. In addition, private-sector demand is expected to be strong.

Key Opportunity Checklist

- Enhance position as the clear leader in chlor-alkali in Asia and as a major chlor-alkali player globally
- Take advantage of healthy demand for MDI in Asia, which is increasing at 10% per year
- Leverage merger with NPU to maintain or increase share of the polymeric market

Review of Operations: Petrochemical

Snapshot

The Petrochemical Group supplies diverse customers with conventional and high-performance and specialty products. Olefins and polymers are its main product lines, and the group maintains its competitive edge by moving its products upstream, managing its product mix, cutting its costs, and diversifying its product lines. The Petrochemical Group bridges the gap between the Specialty and Chlor-alkali Groups in Tosoh's dual commodities and specialties strategy.

Tosoh and the Petrochemical Group's customers use olefins to manufacture a broad range of products, from automotive additives to food flavors and fragrances. Tosoh has utilized its olefins feedstock from the group to become an integrated manufacturer of hydrocarbon-based products and their derivatives, including ethylene, propylene, cumene, and aromatic compounds.

The Petrochemical Group's polymer operations manufacture ethylene vinyl acetate (EVA); low-density polyethylene (LDPE); linear low-density polyethylene (LLDPE); high-density polyethylene (HDPE); and such functional polymers as chloroprene rubber (CR), adhesive polymers, and engineering plastic resins. Those operations adapt product specifications to meet customer needs for polymers in consumer and industrial products. Various grades of EVA are found in everything from solar cells to shoe-soles. LDPE is used in medical applications and food packaging. And HDPE is applied in injection moldings and high-purity phamaceutical containers.

Chlorosulphonated polyethylene (CSM) rubber and polyphenylene sulfide (PPS) feature in the Petrochemical Group's functional polymer lineup. CSM is a highly durable rubber in short supply worldwide, and Tosoh is the leading global CSM producer. PPS is an engineering plastic also in great demand globally. It is valued by automotive manufacturers for enabling lighter, more fuel efficient vehicles.

Group Performance and Markets

Strongest Gains in Tosoh Group: The Petrochemical Group posted net sales of ¥223.5 billion (US$2.2 billion) in fiscal 2014, a 19.1% jump from a year earlier. The group's contribution to Tosoh's consolidated net sales edged up from 28.1% in fiscal 2013 to 28.9%. Its operating income rose ¥4.2 billion, or a solid 40.3%, to reach ¥14.8 billion (US$143.7 million), for an operating income to net sales ratio of 6.6%. The Petrochemical Group's operating income accounted for 35.6% of Tosoh's consolidated operating income.

Shipments of ethylene, propylene, cumene, and other olefins were brisk in fiscal 2014 and were supported by increased production in the absence of scheduled maintenance. Cumene in particular benefited from a weak yen and consequently generated high returns from exports. Tosoh raised its olefin product prices to offset higher costs for naphtha and other raw materials and production generally.

Polyethylene resin sales were invigorated by a recovery in the photovoltaic cell market that boosted shipments of EVA copolymer. Shipments of CR and CSM expanded on the strength of recovering demand in markets abroad and improved export prices resulting from the yen's depreciation. Escalating naphtha costs, meanwhile, compelled Tosoh to increase domestic polyethylene resin prices.

Progress

The Petrochemical Group has developed two new grades of high melt strength polyethylene (HMS-PE). They are suited to use in medical bottles that meet Japan's safety standards and are highly transparent. The group also plans to develop and sell variations for infusion bags, ampoules, and unit-dosage dispensers for eyedrops and other medicines. Sampling is beginning in anticipation of an early launch of commercial applications.

Strategies and Outlook

Olefins
The Petrochemical Group anticipates growing demand for olefins in fiscal 2015. The Japanese government's so-called Abenomics monetary and fiscal stimulation policies to date lend optimism to the domestic market for continued progress. A weakened yen and a strengthened stock market have improved circumstances particularly for corporate Japan's export-oriented companies, ushering in growing capital investment.

Over the next three years, three ethylene plants will be shut down in Japan by Tosoh's domestic competitors, at a pace of one a year. This will improve supply and demand for olefins in Japan and will leave Tosoh as the only provider of olefins in the Chukyo region, around Nagoya.

Elsewhere in Asia, the Petrochemical Group's olefins business is hampered by the influx of product from Middle Eastern suppliers and from added production capacity at Asian suppliers to meet the region's economic growth. Long term, however, the group sees olefins as a growth market because developing economies invariably consume increasingly large amounts of plastics, as is happening throughout the Asia-Pacific region.

Petrochemical manufacturing depends on naphtha. So rising oil prices challenge the group's operational stability. The Petrochemical Group, however, has implemented a feedstock diversification strategy and seeks cost savings in the portion of ethylene it sources externally.

The group also relies on its refining and petrochemical modeling system (RPMS) to deal with a changing business environment. It adjusts the mix of its cracker output, for instance, to maximize profitability. As a result, it is prepared to expand by taking advantage of opportunities that arise from managing the balance among production rates, product mix, and market prices.

Polyethylenes
Global economic recovery has raised demand for polyethylenes. The Petrochemical Group nevertheless forecasts a mixed performance for its product categories, with only some growth in shipments overall. Increased prices in some categories, though, and the weak yen will contribute to improvements in profitability.

The group, meanwhile, is emphasizing high-value-added products in its polyethylene (PE) market strategy. Among its PE product lines, the group is cultivating additional niche markets for Melthene. It aims for profitability by expanding its sales of "easy-peel" Melthene for industrial and food products and has recently introduced plastic cap liners, layer binding adhesives, and dimming glass for automobiles.

In addition, the group will focus on expanding its sales of EVA grades for the solar cell market, for masking, and for ink enhancers.

Functional Polymers
The profitability of the Petrochemical Group's functional polymers, except PVC paste, will benefit from a weak yen in the same way as its PE products. Demand for functional polymers, though, is expected to be stronger than for PE products.

PVC paste remains underpriced. But the group plans to raise the product's profitability by expanding its share of high-margin specialty PVC paste grades for the automotive industry and for high-performance wallpaper and flooring.

The group, meanwhile, is repositioning itself in the technically advanced segment of the CR market by expanding its line of and introducing superior-grade products. This includes CR grades that do not contaminate metal molds and sulfur-modified CR grades.

Tosoh is the world's top supplier of CSM to the high-end market, a position buttressed by a declining yen. The Petrochemical Group's continued product development program will lead to Tosoh's further expansion in production capacity and market growth.

Differentiating Tosoh's PPS resin products is essential to overcoming the global oversupply of PPS and ensuring the profitability of the company's PPS resins business. The Petrochemical Group as a result offers special grades of PPS resins. These include Susteel-brand PPS, which features superior metal bonding for automotive applications. A major smartphone manufacturer began using the group's SGX-grade PPS resin in its mobile phone casings in 2013. And several Chinese smartphone makers have since introduced the product into their manufacturing processes.

Key Opportunity Checklist

- ✔ Boost sales of olefins abroad as emerging markets increasingly utilize plastic products
- ✔ Target high-performance petrochemical products to balance conventional ones
- ✔ Remain the global leader in CSM amid firm demand and short supply worldwide

Review of Operations: Engineering

Snapshot

The Engineering Group comprises water treatment and pure water generation leader Organo Corporation, groundwater and soil survey and soil purification and remediation operator Eco-Techno Corporation, and construction company Tohoku Denki Tekko Co., Ltd.

The group focuses on two core areas of concern in today's communities: water and soil treatment and environmental testing. These markets may be mature or maturing in advanced countries, but they are growing rapidly in developing economies around the world. The Engineering Group's technological prowess in these areas represents strong potential for business development.

Group Performance and Markets

Strategic Response to Challenging Conditions: In fiscal 2014, the Engineering Group recorded a decrease of ¥4.2 billion in net sales, to ¥68.6 billion (US$666.2 million), from net sales in fiscal 2013. The decrease was mainly due to postponements or cancellations of projects in Japan. And it occasioned a ¥4.2 billion decline in operating income, to ¥1.3 billion (US$12.2 million), for an operating income to net sales ratio of 1.8%.

The Engineering Group accounted for 8.9% of Tosoh's fiscal 2014 consolidated net sales, compared with 10.9% in fiscal 2013. Its contribution to Tosoh's consolidated net operating income likewise declined, from 17.8% to 3.0%.

The group's domestic sales of water treatment facilities, services, and related chemicals slackened because of postponements or cancellations of capital investment, maintenance, renovation, and other business by Japanese customers in the electric power generation and other industries. Its overseas water treatment related orders and sales, however, rose on the strength of improved industrial performance, particularly in the global electronics industry. Overall sales of the group's construction-related activities likewise rose compared with the previous year.

Strategic Moves

Strategic Collaboration and Reorganization: In July 2013, Organo concluded a business alliance with Katayama Nalco Inc. in the water treatment chemicals business. The two companies will work together to expand their water treatment businesses. Organo's chief products are in water and wastewater treatment chemicals, while Katayama Nalco's core lines are process-related chemicals for steel, petrochemicals, and pulp and paper. Organo expects the alliance will add upwards of ¥2 billion to the Engineering Group's annual net sales by fiscal 2016.

On April 1, 2014, Organo launched a comprehensive reorganization that includes merging six regional sales companies and Organo Yamashita Chemical Corporation.

The reorganization addresses the steady growth of regional sales company profits at the expense of Organo, the parent company. It is expected to raise the efficiency of sales activities and make it easier to approach potential customers among small and medium-sized enterprises (SMEs).

The reorganization has three goals: strengthen sales capabilities, by establishing a single, flat sales organization that can expand sales to SMEs; integrate management resources; and strengthen cost competitiveness, by eliminating redundant operations and boosting procurement power.

Strategies and Outlook

Water Treatment
Tosoh subsidiary Organo Corporation is a specialist in water treatment and pure water generation technologies and systems. It focuses on water treatment systems for industry and for municipal waterworks and sewage treatment plants. Organo also offers soil remediation technologies that rank highly worldwide.

Organo's operations encompass two business segments: water treatment engineering and functional products. Its water treatment engineering consists of plant and solutions businesses. The plant business markets water treatment systems. The solutions business maintains and manages delivered systems. Organo's functional products business sells consumables, including standard products, chemicals, and food processing materials.

In fiscal 2015, Organo anticipates further growth in many of its product lines amid improving domestic and global economic conditions. It will focus on sales of wastewater desulfurization treatment systems and integrated gasification combined cycle (IGCC) wastewater treatment systems. Its environmental-related sales, however, will be adversely affected by a lack of orders in fiscal 2014.

Large-scale projects, though, are scheduled for the electronics industry. And Organo will take advantage of the upswing to expand orders and sales to that industry. It also aims for strong gains in sales to the pharmaceutical industry. In addition, it will expand its solutions business and continue to reduce costs to improve profitability.

Organo also expects increased sales to industrial customers following its parent and group company reorganization for strengthened sales operations. Organo will strive for orders especially for wastewater treatment systems from the untapped SME segment.

In fiscal 2015, Organo will continue to make functional products a priority because of their contribution to stable earnings. At the same time, the business alliance with Katayama Nalco will support cost reductions. New products, an upgraded sales organization, and an expanded granulation business will also contribute to Organo's profitability.

The mature domestic market compels Organo to increasingly look abroad for business especially in water treatment engineering for power stations. This sees Organo leverage its network of subsidiaries and affiliates in China, Thailand, Malaysia, Taiwan, Vietnam, and Indonesia and convert its overseas activities to local operation and staffing as appropriate.

Other Operations
Tohoku Denki Tekko is poised for further progress in its performance in fiscal 2015 based on a greater-than-forecast growth in orders a year earlier. This subsidiary's cost structure has been improved, and it is reviewing its public works labor and material costs. Ongoing domestic economic recovery and capital investments in the Tohoku region for post-disaster reconstruction following an initial delay will fuel business opportunities.

Tohoku Denki Tekko's strategic objectives include adopting a solutions-oriented sales approach in its industrial electrical machinery businesses that goes beyond hardware to planning, construction, and installation. New business is always a priority. And the subsidiary will develop its bag filter system business to lift its reputation as a systems provider. In addition, Tohoku Denki Tekko will review the merits of selling its facility maintenance and repair services for Tosoh Group companies in the Kanto region.

Key Opportunity Checklist

- ✔ Focus on international opportunities to counter mature conditions domestically
- ✔ Target the rapidly modernizing areas of Asia with water treatment facilities and thermal plant projects, particularly in Indonesia and Vietnam

Review of Operations: Other

Snapshot

Tosoh is committed to close connections among its business operations and customers. It relies on its other businesses to ensure those connections.

The timely provision of support for Tosoh's diverse operations and for Tosoh's customers is mission critical. Tosoh's other businesses thus are always on call.

They handle facility construction, maintenance, expansion, and upgrading; administrative services; personnel training; information technology (IT) support; and more. They also contribute essential research and analytical support for Tosoh's introduction of innovative technologies, products, and services.

Tosoh works to ensure that each of its other businesses evolves from a cost center to a profit center. And it ensures that they compete with external suppliers for Tosoh Group business, which benefits them and the Tosoh Group by promoting cost and administrative effectiveness and technological advances.

Group Performance and Markets

Superior Services and Earnings: In fiscal 2014, other business net sales edged up 3.8% over net sales the year before, to ¥40.6 billion (US$394.0 million). Operating income rose 11.1%, to ¥2.4 billion (US$23.6 million), for an operating income to net sales ratio of 6.0%. The performance improvements were the result of the growth in sales of Tosoh's trading company and logistics subsidiaries.

Other businesses contributed 5.3% of Tosoh's consolidated net sales in fiscal 2014, compared with 5.8% in fiscal 2013. They also accounted for 5.8% of Tosoh's consolidated operating income, versus 8.9% a year earlier.

Strategies and Outlook

Logistics
Tosoh's logistics operations involve four main areas: (1) assisting Tosoh companies and manufacturing groups by reducing manpower requirements and improving efficiency; (2) providing risk management processes and other procedures to upgrade safety and quality; (3) ensuring that shipping terminals and warehouses have the capacity to meet the Tosoh Group's changing needs and to optimize shipping route traffic; and (4) supporting overseas expansion.

In fiscal 2015, logistics operations will focus on fostering the synergies of Tosoh Corporation's merger with NPU. They will help the merged operations and Tosoh Silica Corporation improve their earnings.

Logistical cost-reduction projects include reorganizing the transport of VCM at the Nanyo Complex following the 200,000-metric-ton VCM production capacity expansion there. In addition, there will be projects to reassess the outsourcing of loading and delivery services for truck and train logistics at the Nanyo Complex and to rearrange Tosoh's shipping fleet schedules.

Quality control and safety projects also figure among logistics operations in fiscal 2015. This involves updating Tosoh's crisis management manual and expanding the scope of its equipment maintenance system, including the number of group companies covered.

General Services
Tosoh puts people first. And it has established other businesses to handle personnel management, employee benefit administration, and training.

General services will continue its mandate to handle and improve personnel management and employee benefit administration and training in fiscal 2015. This includes encouraging subsidiary and affiliate participation in the Tosoh Group salary administration system to support ongoing efforts to raise efficiency.

Overall, general services will try to raise the level of its services, to implement safety and career- stage education and training programs, and to ensure the optimum health of employees.

Analysis and Research
Tosoh's chemical analysis operations provide Tosoh Group companies worldwide with a wide range of sophisticated services specializing in organic, inorganic, and polymer chemistry and in electronic materials. These services support Tosoh's product and application development programs.

In fiscal 2015, analysis and research operations will take further steps to boost Tosoh's technical capabilities, brand reputation, and profitability. Ongoing research for Tosoh Group companies in structural analysis, organic chemistry, surface analysis, high-molecular weight polymers, and inorganic chemistry will continue. About half of the research is conducted at the Nanyo Complex, with the Yokkaichi Complex and Tokyo operations handling the rest.

Tosoh's analysis and research operations will continue to install new equipment to upgrade the level and scope of their testing capabilities. The budget for such equipment is set at approximately ¥110 million in fiscal 2015.

In addition, analysis and research operations will further expand outside the Tosoh Group. External sales have been edging up in recent years. And following the establishment of marketing programs in fiscal 2014, the fiscal 2015 target is to cultivate business with major customers outside the Tosoh Group. Tosoh's analysis and research operations promote their services in part by preparing scientific papers, making presentations, and participating in conferences and other events.

Information Systems

Tosoh's information systems maintains more than 300 servers, nearly 8,000 personal computers, and around 170 networks across 44 companies. Such work spans administrative and factory operation systems. Information systems has also developed an enterprise resource planning (ERP) system that allows Tosoh management to assess the performance of Tosoh Group members.

Information systems is tasked with evaluating and introducing technology, systems, and services. It also maintains and upgrades systems and services and reduces IT costs for the Tosoh Group.

Ongoing information systems projects include installing various information and communications technologies (ICTs) at Tosoh Corporation and at Tosoh Group companies. These include advanced plant information (PI) web services and PI systems, concentrated at the Nanyo and Yokkaichi Complexes. In April 2014, information systems installed a work process management system for Tosoh Techno-System, Inc., and it will be integrating the NPU and Tosoh Corporation systems in time for the merger in October 2014.

A high level of reorganization activity in fiscal 2015 leads information systems to expect firm growth in its sales.

In the meantime, it is reinforcing the skills of its staff members by managing their education and training. Specific areas include writing applications for the group's core IT systems, capabilities in a diverse range of programming languages, and skills in innovation and process improvement.

Key Opportunity Checklist

- ✔ Target business development outside the Tosoh Group
- ✔ Support the global expansion initiatives of the Tosoh Group