Transportation

From "cradle to cradle" The Ricoh Group promotes establishment of a resource-recirculating logistics system.

To achieve a resource-recirculating society, one important issue is the establishment of a logistics system for transportation of products. The Ricoh Group, led by Ricoh Logistics System Co., Ltd., is striving to create a resource-recirculating logistics system, in which arterial and venous logistics are integrated. Successful examples in Japan will be introduced around the world as examples of global supply chain management (SCM). A similar system was established in France in April 2003. These efforts will be further developed in the Americas, China, and the Asia-Pacific region.

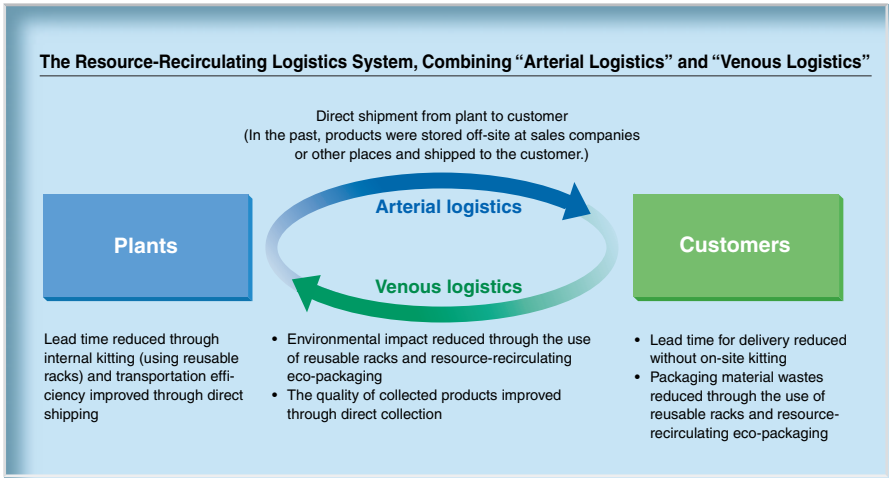
* See page 18 for "From ecosystem to ecosystem: A new concept."
* See the environmental impact data for transportation bases (page 48 for CO_2 emissions and page 49 for resource recovery rates and other information).

Japan

Establishing a Resource-Recirculating Logistics System

Reflecting a shift from the traditional "cradle to grave" LCA concept, Ricoh Logistics System Co., Ltd. is working to create a resource-recirculating, "cradle to cradle" logistics system in which arterial and venous logistics are integrated. To reduce the environmental impact of product delivery, which predominates in arterial logistics, a direct delivery system from plants to customers is being set up. To make the recycling business more profitable, a nationwide system* of green centers (collection centers) must be established, as well as systems for direct delivery to customers and collection systems. Aiming to collect used products directly from customers, Ricoh Logistics obtained a permit to collect and transport industrial waste in 98 administrative districts around the country to improve the quality of the resource-recirculating logistics system. This system, as a new business model, received the Japan Institute of Logistics Systems' Logistics Grand Prize for technology.

* See page 59.



Identifying and Reducing Environmental Impact

Ricoh Logistics System has obtained ISO14001 certification at a total of nine business sites including the Tokyo head office, as well as sites in Tohoku (Miyagi), Atsugi, and Osaka. Of the company's 80 business sites in Japan, 46 are scheduled for certification by November 2003. Aiming to reduce the environmental impact from vehicle use, 30 out of 250 company vehicles were switched to natural gas. Further efforts include semi-annual training programs in economical driving and company-produced video education programs on eco-driving. The company is also making efforts to reduce waste, which has a significant environmental impact, in addition to fuel consumption. The company has achieved Zero-Waste-to-Landfill* at five business sites as of the end of fiscal 2002. As a result of these proactive efforts in air pollution prevention, resource conservation, and recycling, Ricoh Logistics received the Logistics Environmental Award from the Japan Federation of Freight Industries.

* See page 49 for Zero-Waste-to-Landfill.

NOx and SOx Emissions Produced by Transportation of Ricoh Logistics Vehicles (Fiscal 2002)

Reviewed by BVQI (28)

NOx	SOx
4.1 (t)	0.4 (t)

Modal Shift

Aiming to reduce the environmental impact and cost of product transportation, Tohoku Ricoh Co., Ltd., a manufacturing subsidiary, entered into partnership with Japan Freight Railway Company to promote a modal shift from truck to railway transportation. The first step was to shift shipments to Sapporo, Osaka, and Kyushu, which together account for 7% of total product transportation, from truck to railway transportation. This cut CO_2 emis-

Costs and Effects of a Modal Shift from Trucks to Railways (Segment Environmental Accounting)

Costs			Effects			
			Economic benefits		Effect on environmental conservation	
Item	Main cost	Amount	Reduction	Amount	Reduction	Amount
Business area cost	Investment cost	0 yen	Transportation cost	¥57.4 million	CO_2 emission	117 (t)

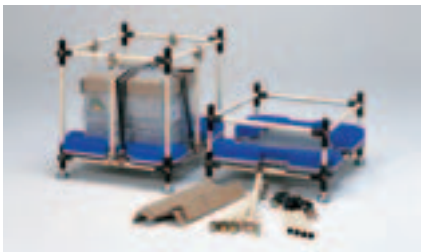
* Effects are calculated for the period starting from October 2001. There was no initial investment.

sions for these shipments by 85% and transportation costs by 18%, as well reducing lead times, by making use of a direct delivery system from plants. In Tokyo, however, which accounts for 93% of all product transportation, the modal shift to railway transportation may raise costs. However, by sharing 30-foot containers with other companies from April 2002, it is estimated that CO_2 emissions will be reduced by 70% and transportation costs cut by 9%. To further encourage use of railway transportation and to promote Japan Freight Railway's green logistics business, Tohoku Ricoh is publicizing improvements, as well as soliciting comments and proposals from relevant parties.

Improvement of Packaging for Copiers and Other Equipment

The Ricoh Group has developed reusable packaging materials for copiers and other products, including resource-recirculating eco-packaging for copiers made of recycled plastic, and pipe-framed reusable racks for printers. At present, 7,500 sets of resource-recirculating eco-packaging are used for eight copier models. New mini reusable racks are also on the market. At the end of fiscal 2002, more than 70% of the products manufactured at Gotemba Plant, which is a major copier manufacturing plant, were shipped in resource-recirculating eco-packaging. Using such packaging materials and bringing the waste produced at the customers' offices back for recycling help cut waste at the customer end to zero.

Resource-recirculating eco-packaging is available for eight models of copiers.



Reusable racks enable products to be delivered with the optional devices attached.

New-type mini reusable racks

International

Improvement of Packaging for Digital Cameras

In order to reduce the environmental impact of digital cameras in transportation, a review was conducted to reduce packaging and enclosures including manuals. Previously, 16 enclosures, including five manuals, were included in a single package. By creating simple, user-friendly manuals the number of enclosures was cut to four, including one manual and one CD-ROM. For products shipped to Europe, where a variety of languages are spoken, a new packaging method was developed whereby only English and German manuals are packed at the Ricoh Group production sites in China. Enclosures in seven other European languages are packed locally. The Caplio RR30, marketed in September 2002, has a packaging volume of 1,978cm^3, a significant reduction from the 5,830cm^3 of the previous model, the Caplio RR10. The same concept was applied to the Caplio 300G/G3/G3 Model M/G3 Model S.

Packaging of the Caplio RR30, a new product (right), and packaging of the Caplio R10, an earlier product (left)

Europe

The Netherlands: European Service Parts Center

The European Service Parts Center (ESPC) stores and distributes the parts for countries in Europe, the Middle East, and Africa. In its efforts to improve efficiency and customer satisfaction, ESPC provides overnight deliveries to England, Germany, Italy, Benelux countries and France. To reduce the environmental impact of the upstream and downstream supply chain, ESPC asks parts suppliers to reduce their use of packaging materials, such as plastic bags, used in shipping goods. As well as using duplex printed delivery slips for outbound shipments.

ESPC shipment and packaging line