



Visionaries 2016

# Linking Manufacturing with Value

— Global Procurement Logistics Service —

As companies seek to strengthen their global competitiveness, manufacturers are being called on both to satisfy diverse customer needs and to achieve optimal production by making sophisticated use of IT, such as through the initiatives taking place under Germany's Industrie 4.0 project. Key management challenges for achieving this include siting plants and establishing supply chains that are optimal at a global level, and establishing procurement strategies that take account of the TPP and other tax considerations. As part of Hitachi Smart Transformation Project, Hitachi is reforming its supply chains in sophisticated ways across the group. This provides support for comprehensive structural reform of the corporation, including, for example, the launch of the Global Procurement Logistics Service based on this know-how.



Kazuya Nakamura

## Potential for Improvement in China

Along with economic globalization, Japanese manufacturers in particular are increasingly establishing operations overseas. What this tends to mean in practice is that functions such as management and research and development are retained in Japan while manufacturing is undertaken in China, Southeast Asia, or other countries that offer low-cost labor. Most notably, along with its

transition from "global factory" to "global market," China, which has now grown into the world's second largest economy, has become the destination for growing investment from Japanese companies and the site chosen for the construction of a large number of factories.

Kazuya Nakamura [General Manager, Smart Logistics Business Group, Hitachi (China) Ltd.], who has moved to China to work on business operations there, offers the following analysis of this



companies manufacturing in China, Hitachi has launched its Global Procurement Logistics Service, which aims to help overcome them. As part of this, Hitachi's China subsidiary, Hitachi (China) Ltd., has also established its Smart Logistics Business Group.

Naohiko Gommori (General Manager, Industry Project Division, Business and Engineering Solutions Division, Social Innovation Business Promotion Division, Hitachi, Ltd.) describes the lead up to the launch of this service as follows.

“The sophisticated reforms that Hitachi is seeking to bring to supply chains through its Global Procurement Logistics Service are targeted at helping overcome management challenges that are common to all manufacturers, including reforming cost structures and improving cash flow. Having faced these same challenges itself, Hitachi has worked on ways of resolving them and achieved a certain degree of success. In other words, this service can be described as one that commercializes this problem-solving know-how.”



Naohiko Gommori

situation.

“China's economy is said to be entering a new phase (a 'new normal') that will be different from the rapid growth of the past. Nevertheless, there remains considerable scope for improvement, with inefficiencies still present in how things are managed and distribution costs that are higher than in developed economies. Moreover, with the Chinese government having recently announced its Made in China 2025 plan aimed at lifting the level of manufacturing up to that of developed economies over the next 10 years, it is anticipated that work on development and enhancement of the manufacturing infrastructure will continue.”

Other urgent issues include satisfying demand for higher levels of service quality and dealing with the rapid growth in the volume of goods being transported due to rising individual consumption. Against this background of challenges faced by



China's economy is said to be entering a new phase (a "new normal"). (The photos show downtown Shanghai.) Steps are being taken to raise the level of the nation's manufacturing industry under the Made in China 2025 plan.



Atsushi Nabeshima

### Based on Hitachi's Own Accumulated Know-how

Hitachi launched Hitachi Smart Transformation Project in FY2011 with the aim of improving cost-competitiveness to achieve growth in global markets. The project includes activities for reforming cost structures through better global procurement and logistics and the use of shared services to reduce the manufacturing costs, direct material costs, and indirect costs that together make up the cost of sales and of sales management. To realize the benefits of reforms made in procurement and logistics respectively, policies were put in place for extending the network of procurement offices, making greater use of consolidated purchasing, and adopting joint shipping and delivery. Furthermore, responsibility for international procurement, previously handled by operational divisions, was reassigned to take advantage of professional capabilities within Hitachi, such as having Hitachi High-Technologies Corporation handle procurement and Hitachi Transport System, Ltd. deal with logistics, for example. This achieved cost reductions by economies of scale.

Mr. Gommori comments, "To begin with, the idea of commercializing the business was prompted initially by the frequent consultations the company had as part of Hitachi Smart Transformation Project. No doubt the fact that Hitachi had achieved major cost reductions itself added a degree of credibility. Furthermore, Hitachi is engaged in all forms of manufacturing, from project-based work in the electric power, transportation,



Tetsuya Uchiyama

and other sectors; medium- and high-volume manufacturing; and also parts and materials businesses. As a result, being conversant with the challenges faced by manufacturers, the company saw itself as well placed to offer customers its know-how in a variety of different ways."

Atsushi Nabeshima (Deputy General Manager, Hitachi Group Smart Transformation & Business Development Center, Global Business Development Headquarters 1, Hitachi Transport System, Ltd.), who was involved in getting the project up and running, identified the benefits of reforms to supply chain management as follows.

"The company is working on reforms at companies throughout Hitachi, and one of the reasons for its success has been the different approach it has taken to optimization. Whereas the objective in the past has been to optimize individual plants, the company now seeks to optimize operations across business units and the entire group. This has enabled it to reap the benefits of synergies."

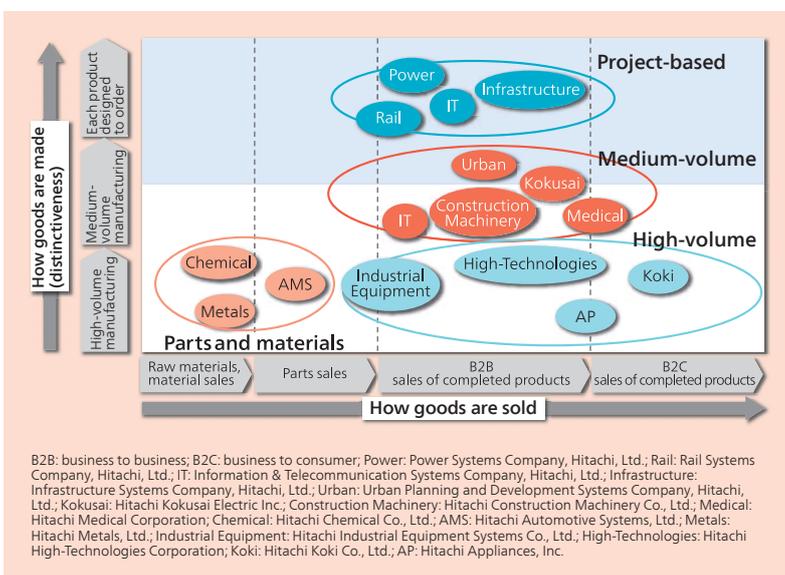
### Integrated Service for Procurement, Logistics, and Information

What does the Global Procurement Logistics Service actually involve? The major feature is that it integrates procurement, logistics, and information. That is, it reforms supply chain management in terms of optimizing all of its aspects by providing integrated functions for trading, logistics, and information technology (IT). The service can be described as drawing on the comprehensive capabilities of Hitachi, with its experience in all three areas of activity.

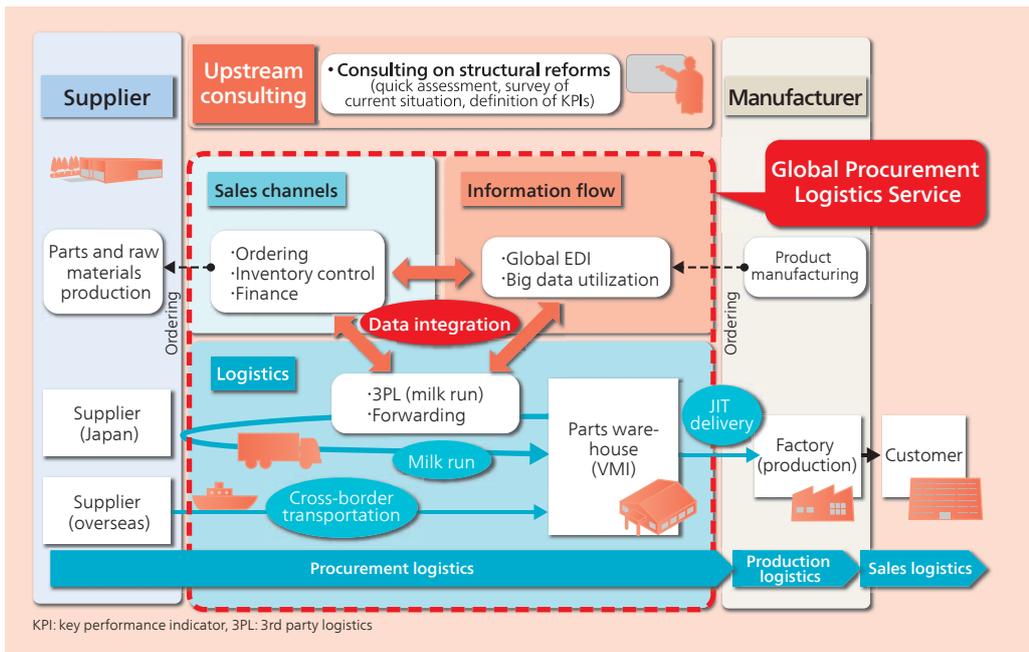
The procurement service utilizes the trading company capabilities of Hitachi High-Technologies Corporation. It includes support for the procurement of parts and materials, inventory management at production plants and their associated warehouses, operation of vendor-managed inventory (VMI), and importing. It also covers financial services such as factoring (the purchase of trade debt owed to a company and its subsequent collection).

Tetsuya Uchiyama (General Manager, Functional Materials & Supply Chain Div., Hitachi High-Technologies Corporation) made this point as follows.

"Significant developments are underway in association with the formation of major economic zones, including free trade agreements (FTAs) and the Trans-Pacific Partnership (TPP). When the rise of a new economic zone excludes a nation



Hitachi's business activities categorized according to how goods are sold and how they are made. As a manufacturer itself, Hitachi is involved in all different types of manufacturing.



Overview of Global Procurement Logistics Service. Hitachi has platforms for all steps along the supply chain and supplies comprehensive services for dealing with complex challenges.

from which parts have been sourced in the past, it can result in the imposition of new tariffs or, depending on the nature of the parts, changes to the procedures for satisfying trade administration requirements. While Hitachi has know-how in how to deal with such situations, companies operating overseas find this difficult due to the limited availability of human resources in their overseas operations. To address this difficulty, Hitachi offers to reorganize their procurement operations on a global basis.”

The logistics service utilizes the global network of Hitachi Transport System, Ltd. to reduce the costs of international logistics through the joint shipping of goods by sea or air. For transportation within Japan, the service provides a high level of added value by combining the distribution centers it operates at each of its facilities with practices such as milk-run and just-in-time (JIT) delivery.

Mr. Nabeshima states, “The logistics provided by this service go beyond simply the transportation of goods. Rather, the aim is to provide the same advanced logistics practices used in Japan by, for example, reconfiguring logistics so as to treat the company’s warehouses as part of the production line. The intention is to establish optimized supply chain management practices by combining logistics and procurement and integrating transaction and other customer logistics data.”

Underpinning these practices are IT platforms

based on the use of electronic data interchange (EDI) in procurement. These information services utilize Hitachi’s TWX-21 business media service to establish interconnections between production sites and suppliers that extend globally so that electronic practices can be adopted for procurement, and also to provide visibility in the supply chain and enable such things as coordination of supply and demand.

Recognizing that each customer has different challenges and objectives, Takeshi Ishizaki (Senior Director of Smart Business Department, Smart Information Systems Division, Information & Telecommunication Systems Company, Hitachi, Ltd.) describes the provision of the service as follows.

“One of the reasons that logistics in the emerging economies of Asia are so expensive is the extreme inefficiency of practices that results from the slow uptake of electronic methods. As well as providing shorter lead times, paperless operation, and lower labor costs, the service is based on lot-level traceability, meaning it can also cope with product recalls. The company starts by taking note of the customer needs identified during its marketing activities and incorporating these into the IT service.”

As part of providing the Global Procurement Logistics Service, Hitachi undertook a preliminary demonstration project at a number of its sites in China. This involved trialing a shared milk run



Takeshi Ishizaki

for local Chinese suppliers (three new suppliers and seven existing suppliers with which neighboring factories already had dealings) and succeeded in reducing procurement and logistics costs by 12.7%. The demonstration project also achieved a 22.4% reduction in inventory levels thanks to the more frequent deliveries of smaller quantities that milk runs make possible.

### Tools for Highlighting Value

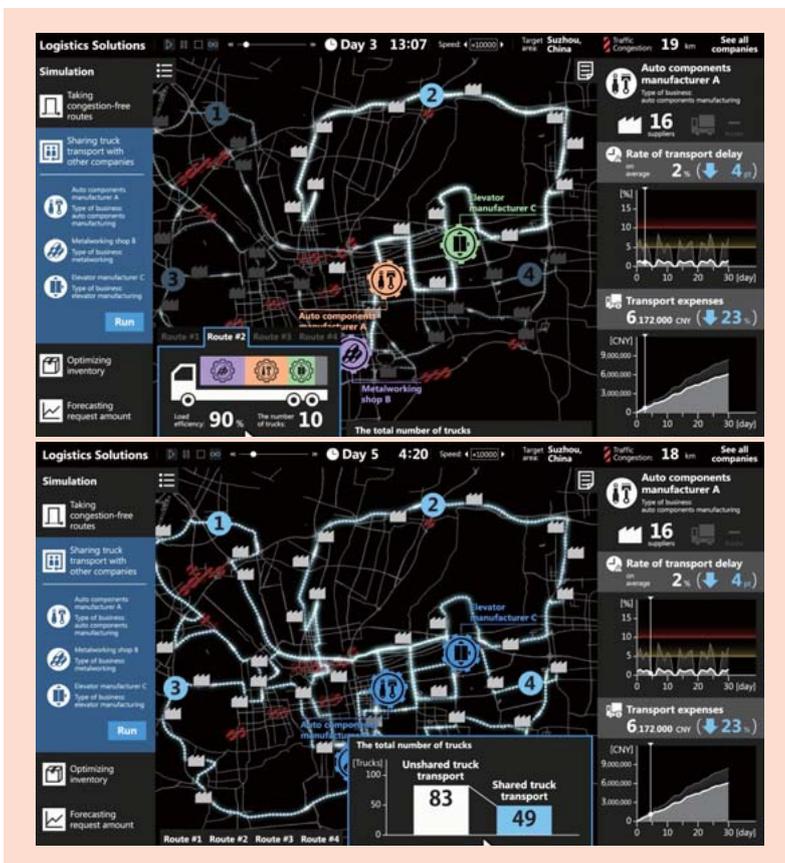
Having confirmed these benefits, the Global Procurement Logistics Service was launched in FY2015. The service is initially targeting Japanese companies that manufacture transportation equipment, electrical machinery, parts, and other products for the Chinese market, with offerings that include warehouse management, transportation, procurement and other operational outsourcing, and also ways of helping with improvements and efficiency enhancements for operational management such as the visualization of information on procurement and logistics. Mr. Nakamura, who is coordinating the project at Hitachi (China) Ltd., describes it as follows.

“The project team started out with a staff of around 20 including members from the research and development division. The team covers consulting and engineering, sales, and project management, with its role being to design supply chain management practices that combine the procurement, logistics, and information services to cut the cost of logistics and reduce inventory levels. That is, it is the team’s task to put together optimal proposals that will lead to the provision of specific services for overcoming the challenges faced by customers. Upstream consulting plays a vital role in this work. Because of the obvious need for a quantitative assessment of business viability, the team uses business value simulation tools to show customers the sort of improvements that can be made.

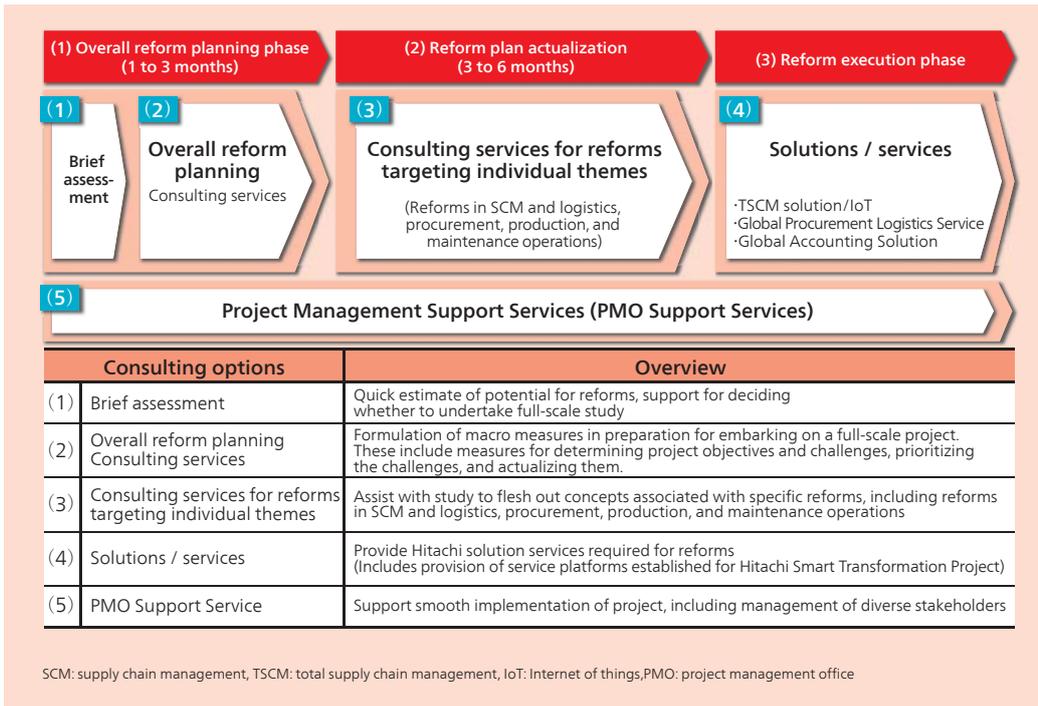
The service itself is provided in a series of steps: (1) preliminary assessment, (2) proposal of new models, (3) specific proposals, (4) system and operation preparations, (5) trial operation, and (6) full roll-out. The preliminary assessment involves two steps: a structural review of current logistics practices and an investigation of new models with quantitative simulation of the benefits. A business value simulation tool called NEXPERIENCE / Cyber-Proof of Concept (Cyber-PoC) is used in this latter step.

This tool simulates factors such as the cost-benefit of infrastructure construction projects in cyberspace. While reforming the supply chain includes demonstration projects and other trials as well as assessing potential improvements with reference to considerations like cost, cashflow, and lead times, these are costly in both time and money. NEXPERIENCE / Cyber-PoC utilizes techniques from big data analytics to help study the viability of improvements and reforms by simulating a wide variety of hypotheses and presenting their outcomes on a computer.

Mr. Nakamura states, “In addition to its obvious uses for presenting information about the current situation, the service can simulate what happens when conditions such as lead times or inventory are modified, and also initiatives that are desirable but difficult to implement in practice, such as teaming up with other manufacturers. Unlike existing logistics analyses that are difficult to understand, NEXPERIENCE / Cyber-PoC is a valuable tool for presenting customers with clearly intelligible opportunities for identifying value in quantitative form and with the sort of visual presentation that you would get from the results of an actual



Example screens from NEXPERIENCE / Cyber-Proof of Concept, a simulation tool that is simple to use and can simulate a variety of hypotheses to highlight waste and help identify value through improvements.



Structure and offerings of the Transformation Support Services, which utilizes practical know-how that Hitachi has built up through trial and error in its own reforms to help companies with global business operations to undertake fundamental structural reforms.

trial. Hitachi is also currently collaborating with its research and development division to present information on the efficiency of truck deliveries. The company believes these will also prove effective in the future for demonstrating its capabilities for using IT to companies from China or other overseas nations.”

In the future, Hitachi intends to expand the service beyond Japanese companies to also target Chinese companies, with a view also to deploying and expanding the service into Southeast Asia.

**Future Prospects for Corporate Structural Reform**

Amid these developments, in December 2015, Hitachi commenced delivery of a new service. Called the “Transformation Support Services,” it is targeted at Japanese companies with global business operations.

Mr. Gommori states, “With considerable demand from customers wanting to engage in corporate reform, Hitachi launched the Transformation Support Services to assist companies with comprehensive structural reforms.

“The service provides solutions that have generated benefits and practical know-how that Hitachi has acquired through trial and error in Hitachi Smart Transformation Project. Because it can utilize vari-

ous templates and ways of dealing with challenges that Hitachi used in Hitachi Smart Transformation Project, use of the service makes it possible to undertake projects in a short timeframe.”

The service is designed to be provided in three phases: an overall reform planning phase, a reform plan actualization phase, and a reform execution phase. Along with the Global Procurement Logistics Service, the reform execution phase also extends to production reforms, global accounting, and maintenance reforms, making available solutions and services to support the operations of manufacturing businesses.

Mr. Gommori states, “Japanese companies are still behind the best overseas companies in terms of operating profits and cashflow margins. Hitachi wants to leverage its past successes and failures to assist with reforms by customers and support global growth strategies.”

Initiatives such as Germany’s Industrie 4.0 project and the Made in China 2025 plan that are aimed at utilizing IT to enhance competitiveness in manufacturing are attracting international attention. Hitachi is striving to provide services with a high level of added value to contribute to structural reforms that lead to greater manufacturing competitiveness.