

**FOR IMMEDIATE RELEASE**

**Global supply chain design technology to minimize total costs**

*- Accommodating production line set-up and preferential tariff rates -*

**Tokyo, November 27, 2012** - Hitachi, Ltd. (TSE:6501, "Hitachi") with the cooperation of Hitachi Transport System, Ltd. (TSE: 9086, "Hitachi Transport"), has developed supply chain design technology for facility locations including suppliers, production and warehouse facilities to achieve a minimal cost supply chain for global corporate entities. The technology developed accommodates for various cost factors which exist in a supply chain such as the type of product, production costs, lead time, depreciation of the manufacturing line, etc. and produces the changes in total cost depending on the domestic or overseas location of the respective facilities. The technology features the ability to accommodate for the production line set-up as well as preferential tariff rates<sup>(1)</sup> and can be applied to the total cost assessment of global companies when establishing supply chain networks.

In recent years, optimizing the location of production facilities and warehouses, as well as shipment transit time to reduce costs in supply chains has become an important management issue for global companies. In the past, a design tool which addressed specific conditions such as labor, shipment and facility fixed costs, was used to assess the total cost when considering the location of facilities. In order to further reduce costs, it is necessary however to consider a wider range of parameters including procurement and production of raw materials, shipping lead time, floor space and production capacity of factories, shipment routes, container size, and the exchange rates between the various countries in which facilities are located, to determine the optimal location of sites for minimizing costs across the total supply chain. Further, site selection considering preferential tariff rates established to promote investment in one's country, and the establishment of a high-operation rate production line to reduce fixed costs, are also needed. Reducing the calculation time in order to determine the optimal locations based on a consideration of such a wide range of parameters was a major issue.

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In response to this need, Hitachi introduced a new model for total cost assessment, and developed and applied an original calculation algorithm. The supply chain design technology developed for facility locations takes into consideration the various parameters for site determination, as well as the set-up of the production line and preferential tariff rates, thus enabling a assessment of total costs across a supply chain.<sup>(2)</sup> Features of supply chain design technology developed for determining facility location are as described below.

■ **Features of the technology developed**

The packing model<sup>(3)</sup> was introduced to the layout of production lines on factory floor space. The new calculation algorithm was applied to this model to enable the identification of the optimal set-up from among the countless configuration patterns possible from the viewpoint of maximizing production, minimizing floor space and costs of production lines, within a short time.

Based on this supply chain design technology for facility locations, Hitachi will offer a supply chain management solution for globally expanding companies.

- (1) Preferential tariff rate: Determined under the Economic Partnership Agreement (EPA), the preferential tariff rate applies to designated countries or regions, and is set lower than that those for non-designated regions
- (2) A report on some of the applicable parameters was presented at the Autumn research meeting of the Japan Industrial Management Association held from 17<sup>th</sup> – 18<sup>th</sup> November in Osaka, Japan
- (3) A mathematical model which can determine the types of foodstuff which can be packed into a bag of a given capacity, within the capacity of the bag, and is used to simulate the food packaging process.

**About Hitachi, Ltd.**

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 320,000 employees worldwide. Fiscal 2011 (ended March 31, 2012) consolidated revenues totalled 9,665 billion yen (\$117.8 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes information and telecommunication systems, power systems, industrial, transportation and urban development systems, as well as the sophisticated materials and key devices that support them. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

**About Hitachi Transport System, Ltd.**

Hitachi Transport System, Ltd. (TSE: 9086), headquartered in Tokyo, Japan, is a leading global logistics company with approximately 21,000 employees worldwide. Fiscal 2011 (ended March 31, 2012) consolidated revenues totalled 554 billion yen (\$6.7 billion). Hitachi Transport System offers high-quality services to a large clientele, spanning a wide range of industries and business types, through our core business of providing comprehensive support to corporate logistics. For more information on Hitachi Transport System, Ltd., please visit the company's website at <http://www.hitachi-hb.co.jp/english/>

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