

FOR IMMEDIATE RELEASE

Analytics technology to identify performance raising measures based on employee/customer behavior and performance big data

-Retail store pilot test achieve 15% increase in average sales per customer-

Tokyo, October 19, 2012 - Hitachi, Ltd. (TSE:6501, "Hitachi") and Hitachi High-Technologies Corporation (TSE:8036, "Hitachi High-Tech") today announced the development of big data analytics technology to help identify effective measures to improve business performance based on behavioral data collected from employees and customers using badge style sensors and business performance data such as POS data⁽¹⁾. In a retail store pilot test, employees were re-positioned within the store based on an analysis of 10-days of POS data and employee/customer behavioral data. Results showed a 15% improvement in average sales per customer, confirming the effectiveness of the big data analytics technology in assisting business performance improvements.

Business performance is affected by various factors including corporate activity, employee and customer behavior, and the external environment. If that huge amount of data can be collected and analyzed, clues hidden in the data may help identify effective measures to improve business performance. In 2007, Hitachi developed the "*Business Microscope*", a behavior measurement system based on a "sensor-net badge"⁽²⁾ and has successfully applied it to the collection and visualization of employee communication and activity in companies. From 2009, a solution service for organizational reform was developed based on the "*Business Microscope*," and to-date, over one million days of human behavior and big data consisting of 10 tera (10¹²) data items have been collected.

The analytics technology developed uses big data related to employee and customer behavior and business performance data to help identify measures to improve business performance. Features of the technology developed and the results of the pilot test are as described below.

(1) Analytics technology for big data

By employing the analytics technology developed, it is possible to automatically generate over 6,000 indices of business performance from the big data on behavior and business performance. The technology then automatically identifies the important factors affecting business performance from the indices, and derives equations describing the relationship between

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the factors and business performance. When a user inputs an item which needs to be improved, factors affecting that item, the degree of impact and the reasons therefore, are displayed, informing the user on the impact of measures on improving business performance.

(2) Pilot-test confirming effectiveness

A pilot test was conducted with the cooperation of the management consulting company, SIGMAXYZ Inc. over approximately 6 weeks in a large hardware retail store (floor space approx. 2,970m²) to verify the effectiveness of an improvement measure derived with the analytics technology. Using the *Business Microscope*, behavioral data such as customer service activity, and standing locations were collected over 10 days from the employees working in the store and a sample of 304 customers who visited the store during the study. As the data is tied to a time clock, information such as where and when the customer stood still, received service, what was purchased and where the sales employees were positioned at the time, was recorded. This behavioral data and the POS data were input into the analytics engine to automatically identify over 6,000 candidate indices affecting sales performance. Using these indices to produce an equation for average sales per customer, it was found that the location of employees within the store strongly influenced results. Further, it became apparent that there were areas in the store where sales employee presence raised purchase (H), and areas where presence had relatively little effect on purchase (L). Based on these results, a measure was initiated to concentrate employees in the H areas. Employee presence in the H areas increased by 1.7 times and led to a 15% increase in average sales per customer, indicating the effectiveness of the analytics engine in raising business performance.

Hitachi and Hitachi High-Tech, will continue to promote the development of products and services and using this analytics system, provide big-data related business for a wide range of services and operations beginning with distribution and retail.

Notes

- (1) POS (Point-of-sale) data: POS is the location where a transaction involving payment for and receipt of goods or services occurs. POS data refers to the information derived at this point such as which product was bought when, where and in what quantity.
- (2) Sensor-net badge: The distance between people talking face-to-face is measured via infrared sensors. An individual's activity level is measured by using a single three-axis accelerometer. The model created makes it possible to identify an individual's activity level (active or non-active), which is determined on the basis of subtle movements detected (such as talking, nodding, and silence).

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 totaled 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 High-Technologies Corporation

Hitachi High-Technologies Corporation (TSE: 8036), headquartered in Tokyo, Japan, conducts wide-ranging operations from a worldwide network of bases, employing approximately 10,000 employees globally. Hitachi High-Tech reported consolidated net sales of 645.9 billion yen (\$7.9 billion) and operating income of 25.5 billion yen (\$310 million) in fiscal 2011 (ended March 31, 2012). With core strengths in Electronic Device Systems, Fine Technology Systems, Science and Medical Systems, Industrial and IT systems, and Advanced Industrial Products, Hitachi High-Tech aspires to become a global leader in high-tech solutions as a business creation company by leveraging synergies between its trading and manufacturing capabilities. For more information on Hitachi High-Tech, visit the Company's website at <http://www.hitachi-hitec.com/global/index.html> .

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
