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NTT Press Releases

October 1, 2014

Nippon Telegraph and Telephone Corporation
Preferred Networks, Inc.

NTT and PFN sign a business capital tie-up contract with the aim of developing next-generation Big Data technologies for the age of IoT

Nippon Telegraph and Telephone Corporation (headquartered in Chiyoda-ku, Tokyo; President & CEO Hiroo Unoura; hereinafter referred to as NTT) and Preferred Networks, Inc. (headquartered in Bunkyo-ku, Tokyo; President & CEO Toru Nishikawa; hereinafter referred to as PFN*) have agreed to establish a business and capital tie-up with the aim of developing next-generation Big Data technologies that target the Internet of Things (IoT), a field that is expected to grow dramatically.
Through this collaborative agreement, the two companies combine NTT's distributed processing and leading-edge machine learning technologies and know-how on network security with PFN's machine learning and deep learning technologies and know-how on development and implementation, in order to develop next-generation Big Data technologies and thereby further promote their Big Data businesses.

*　Overview of PFN

A venture company established on March 26, 2014. PFN was spun off from a venture company Preferred Infrastructure, Inc. (hereinafter referred to as PFI) in order to create business from real-time machine learning with a focus on the IoT. PFI has the world's top-class technical expertise in natural language processing and machine learning.

The details of the tie-up are as follows.

1.　Investment

Amount of investment	: About 200 million yen (stock holding ratio: less than 10%)
Method of stock acquisition	: allocation of new stock to a third party
Planned date of stock acquisition	: October 8, 2014

2.　Overview of the next-generation Big Data technologies, and their application fields

(1)　Jubatus, a Big Data processing platform, which has already been developed

NTT Laboratories and PFI have jointly developed Jubatus, a Big Data processing platform technology, since 2011. Jubatus is the world's first real-time Big Data processing platform that provides better performance in both real-time processing and deep analysis than existing Big Data processing technologies, such as Hadoop. Considered as a common asset that will contribute to utilization of Big Data, Jubatus has been released as open source software.

(2)　Next-generation Big Data technologies to be developed

In the coming age of the IoT, a huge number of widely distributed sensors and networks will generate Super Big Data (some zetabytes (i.e., trillions of GB) of data will be generated by tens of billions of devices). This will give rise to a number of technical issues, such as serious congestion in networks for access to clouds and inability to analyze data in real time. To solve these issues, it is necessary to develop next-generation Big Data technologies, such as wide-area distributed processing and advanced machine learning.

Technical points relating to the next-generation Big Data technologies

(i)Wide-area distributed processing

A mechanism for distributed sensors and edge nodes to work together to process Super Big Data, which are generated by widely distributed sensors and networks, efficiently.

(ii)Advanced machine learning

A mechanism to achieve highly accurate analysis in a simple manner by automating a variety of aspects of tuning (such as selection of input data), which have previously been performed manually, causing an issue in conventional machine learning.
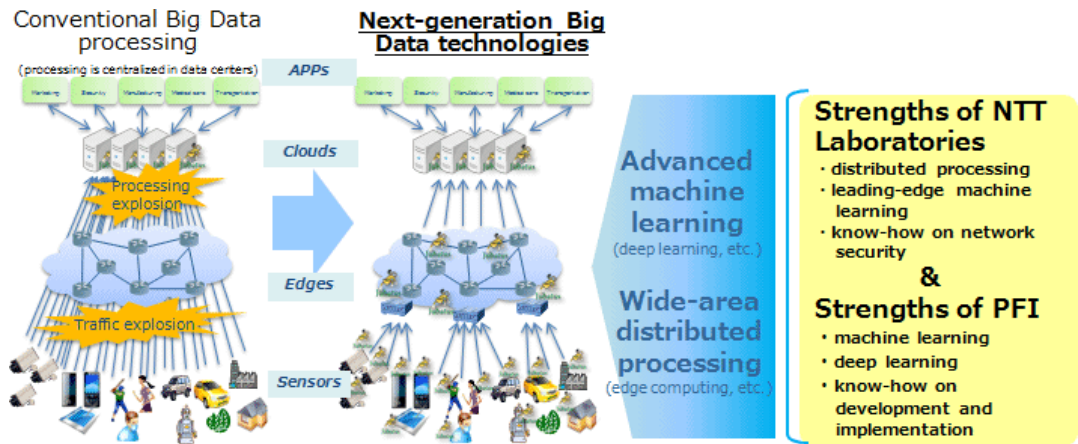
(3)   Application fields of the next-generation Big Data technologies

The next-generation Big Data technologies will enable a transition from a world in which only servers, PCs and smartphones communicate to a world in which all things communicate. This is expected to create new business opportunities in a wide range of fields, from manufacturing, health care, insurance, and finance to retailing, bringing about dramatic changes in society. Conceivable examples of the application fields are as follows.

Application fields

- Human flow measurements, behavior analysis and marketing using cameras, mobile terminals, Wi-Fi, etc.

- Urban traffic optimization using cameras, GPS, in-vehicle sensors, etc.

- Medical/health care and detection of pandemics by means of wearable sensors

- Network control and security monitoring using real-time analysis of all network traffic

- Detection of abnormal conditions and improper practices at manufacturing or food factories using sensors, cameras, etc.

(Reference) About Preferred Networks, Inc.

- Main business: Research, development and sales of computer software/hardware/networks with a focus on the IoT

- Address: Hongo, Bunkyo-ku, Tokyo

- Established: March 26, 2014

- Capital: 22.2 million yen (as of October 1, 2014)

- President and CEO: Toru Nishikawa

❚ Contact information on this subject for the press

◻ **Nippon Telegraph and Telephone Corporation**

R&D Planning Group, Research and Development Planning Department
Email: rdplan-pr@ml.hco.ntt.co.jp

◻ **Preferred Networks**

Email: pfn-info@preferred.jp
http://www.preferred-networks.jp/ 🗗

Innovative R&D by NTT
NTT Has Instituted a Logo to Represent R&D Activities.

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