NTT Group Initiatives to Create New Internet of Things Business

Shinji Sugimoto, Shuichi Yoshino, Tsutomu Horioka, Naoto Abe, and Daiki Endo

Abstract

The NTT Group is promoting initiatives to solve societal issues and bring lifestyle innovation using a business-to-business-to-X (B2B2X) model through collaboration with partner companies in a wide range of industries such as manufacturing, agriculture, and transportation. We are developing businesses that use the Internet of Things to provide new added value to end users, represented by the X in B2B2X. The NTT Group is also supporting promotional activities such as trade shows to distribute information about new business initiatives.

Keywords: Internet of Things, B2B2X, collaboration

1. NTT Group Internet of Things initiatives

The NTT Group is promoting initiatives to solve societal issues and bring lifestyle innovation using a business-to-business-to-X (B2B2X) model through collaboration with partners in a wide range of industries. In order for service providers—the second B—to be able to provide new added value to the end users (X), innovation in both the NTT Group and its partner companies in other business areas is important, and we are working to expand such business, including in the field of the Internet of Things (IoT), which is highly anticipated for its wide-ranging potential (**Fig. 1**).

Moving from trials and proof of concept to business is a very important task when creating business using IoT. Accomplishing this task requires more than simply *visualizing* the data gathered by sensors and other IoT devices. Data analysis must be used to solve end-user problems or to create new value, and there are many possible forms of second B service for each industrial field and many different problems and types of value for end users. As such, domain knowledge and experience are necessary to use data in this way. The NTT Group is therefore promoting collaboration with various partner companies having their own domain knowledge and experience in order to create new business using IoT in a broad range of fields including manufacturing, agriculture, transport, smart cities, and healthcare (**Fig. 2**).

For example, in manufacturing, IoT could be used to centrally manage equipment such as machine tools on the production floor (factory), and to operate them more efficiently and with less waste, thereby increasing productivity. The NTT Group is working in collaboration with FANUC CORPORATION, a global supplier in factory automation, to gather and analyze data in factories in real time on the operation of industrial robots and large machine tools [1]. This is used to increase productivity by tuning the equipment, detecting any signs of malfunction or faults in the machinery early, and reducing overall factory down time. As part of this, the NTT Group is using edge computing research and development (R&D) technologies, data analysis, and cloud services to implement real-time data gathering and analysis.

In agriculture, producers are continuing to age, and workers are in demand, so automating work and using smart machinery to save on labor are key issues, along with optimizing harvesting methods to stabilize and increase the harvest [2].

NTT Group companies are collaborating with Kubota Corporation, an agricultural machinery manufacturer, in studying ways to combine advanced

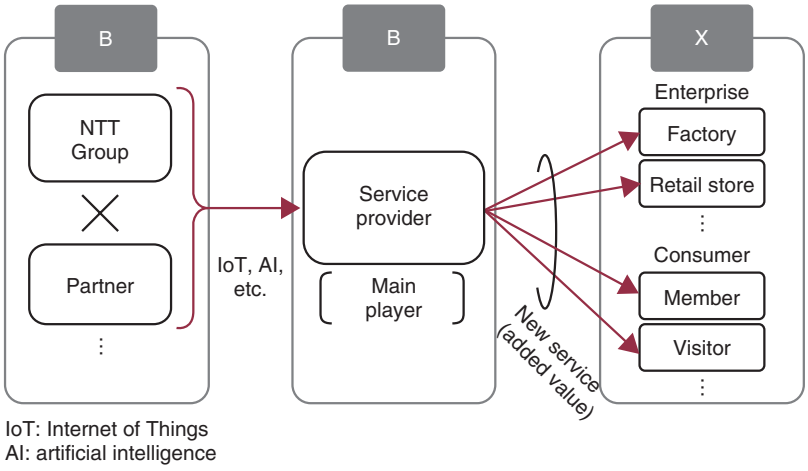

Fig. 1. B2B2X model initiative.

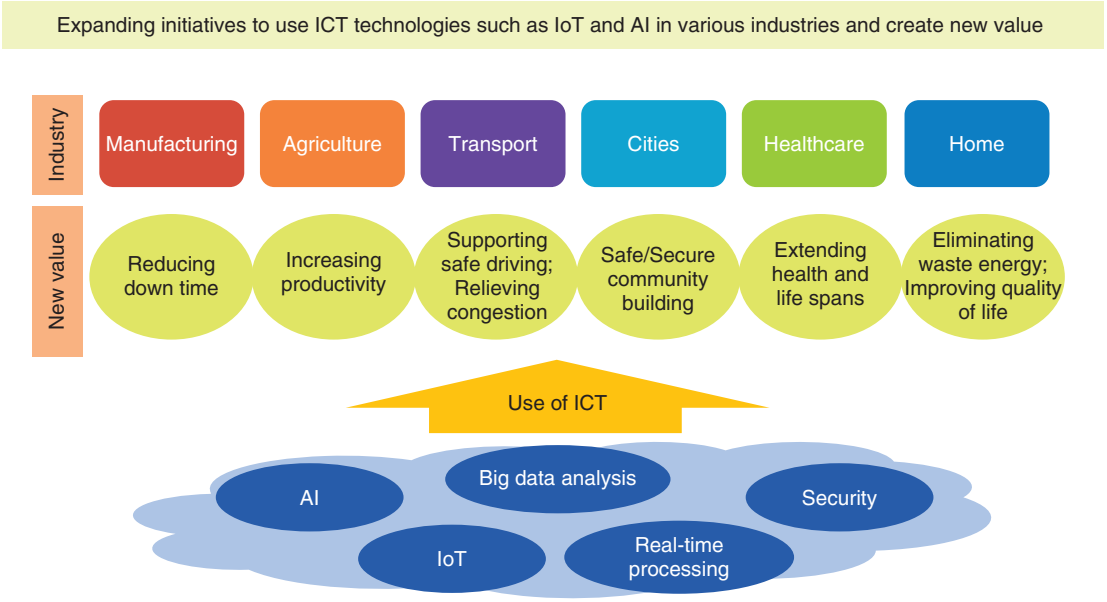

Fig. 2. IoT initiatives in wide-ranging fields.

information and communication technology (ICT) services such as wireless technology and weather information and map information, with advancing R&D technologies such as artificial intelligence and IoT, to build optimized systems for gathering data efficiently in farming environments under various conditions. The data are then used to create value in the agricultural field. We are collaborating with partners to advance the agricultural machinery and agriculture support systems provided by our partners. This is expected to achieve high-quality agriculture through visualization, automation, and improved efficiency of agriculture management [3].

In the transport field, we are working to use vital data in bus operation systems to support safe operation and improve administrative efficiency [4].

As described above, the NTT Group is undertaking initiatives to create new value through IoT by collaborating with partners in various fields.

Photo 1. NTT Group display at CEATEC JAPAN 2016.

Photo 2. NTT Group display at CeBIT 2017.

2. Promotion through trade shows

To disseminate information on NTT Group IoT business initiatives, we are promoting them through exhibits at the NTT R&D Forum and external events such as trade shows.

The NTT Group appeared at CEATEC JAPAN 2016, held October 4–7, 2016 at Makuhari Messe Convention Center, presenting NTT Group IoT business initiatives to the many attendees. Five group companies (NTT EAST, NTT WEST, NTT Communications, NTT DOCOMO, and NTT DATA) exhibited 19 solutions in six fields: manufacturing, logistics/retail, cities, healthcare, agriculture, and home, and also introduced each solution on the presentation stage (**Photo 1**).

We also appeared at CeBIT 2017, held in Hanover, Germany on March 20–24, 2017 (**Photo 2**). CeBIT is

the largest information technology trade show in the world, with approximately 3300 companies and organizations from 70 countries around the world exhibiting, and over 200,000 attendees over the five days. In total, 118 Japanese companies and organizations exhibited their products and technologies in the Japan Pavilion. The NTT Group exhibited videos of advanced B2B2X business using ICT, including collaborations using IoT in the fields of manufacturing, agriculture, and transportation [5].

The NTT booth had over 5000 visitors in the five days, including many high-ranking and well-known people, and politicians such as Japanese Prime Minister Shinzo Abe and German Chancellor Angela Merkel. It was covered by 26 television and newspaper media companies (20 from outside Japan), resulting in NTT Group initiatives being introduced to the world.

The IoT business continues to advance daily, and we will continue to carry out promotional activities such as these as a valuable opportunity to understand customer needs and respond to markets so that we can create new business in a timely manner.

3. Future prospects

Going forward, the NTT Group as a whole will collaborate with top-tier partners to develop markets and create new value using the advanced technologies from Group R&D efforts. We will also identify technologies that can be applied across different fields through collaboration in various industrial fields, and work to expand our business range utilizing IoT.

References

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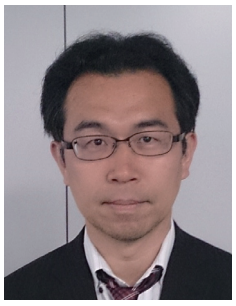

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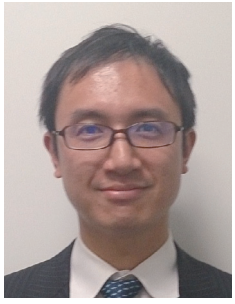

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