

News Release

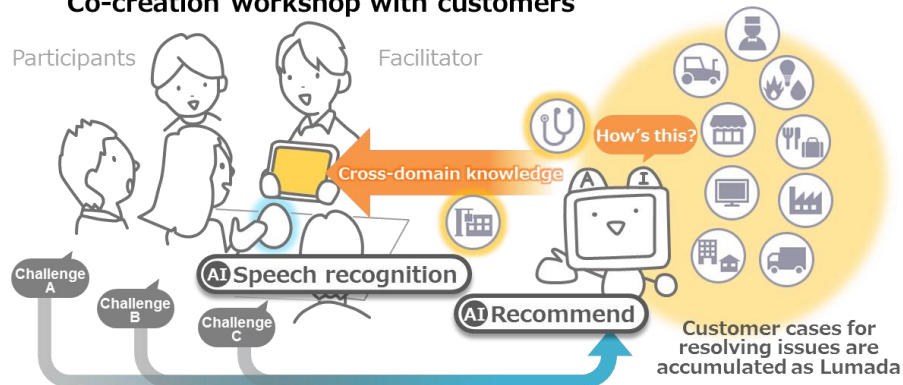
FOR IMMEDIATE RELEASE

Development of System to Accelerate the Creation of Innovative Ideas through Co-Creation Workshops with Customers *Using AI technology for speech recognition and customer case recommendation to create ideas connecting cross-industry knowledge*

NEXPERIENCE⁽¹⁾: Co-creation Methodology for Innovation Design



Co-creation workshop with customers



Tokyo, October 9, 2018 --- Hitachi, Ltd. (TSE: 6501, "Hitachi") today announced that it has developed a system to accelerate the creation of innovative ideas connecting cross-industry knowledge, such as that from energy, manufacturing, and finance, using artificial intelligence (AI) to perform speech recognition and recommend customer cases. This system uses knowledge accumulated in Lumada, which has been condensed from Hitachi's achievements in operational technology (OT) and information technology (IT). The technology has been developed for ideation workshops with NEXPERIENCE⁽¹⁾, Hitachi's unique customer co-creation methodology. This newly developed system will contribute to the creation of new businesses by accelerating ideation among participants in workshops to innovate and connect cross-industry knowledge.

As society becomes more diversified and globalization progresses, people and companies are facing increasingly complex challenges. To resolve such challenges,

- more -

innovative ideas are required. Since 2015, Hitachi has worked to accelerate co-creation with customers using NEXPERIENCE. NEXPERIENCE is a customer co-creation methodology uniquely established by Hitachi to create innovation for resolving societal challenges. NEXPERIENCE fosters creative and high-quality discussion using various approaches, advanced IT tools, and dialogue space to encourage the development of innovative ideas. To date, NEXPERIENCE has been applied in more than 600 cases.

One approach incorporating NEXPERIENCE is a workshop for creating new service ideas. This workshop can produce high-level solutions by connecting cross-industry knowledge, such as that from energy, manufacturing, and finance. For that reason, it is ideal to invite experts of various backgrounds. However, involving them in all the workshops is difficult, and even if such a gathering were to occur, obtaining insight in such a way that encourages collaborative ideation would be another obstacle.

To address these challenges, Hitachi has developed a system to accelerate the creation of innovative ideas in NEXPERIENCE workshops by utilizing cross-industry knowledge accumulated in Lumada.

AI technology support innovative ideation through real-time analysis of dialogue at workshop

This system applies the world's top-level noise-robust speech recognition technology⁽²⁾ for NEXPERIENCE/Service Ideation to automatically extract key words in real time from discussions during workshops. Furthermore, depending on the extracted words, it recommends customer cases of other industries from Lumada to resolve challenges. This system utilizes AI technology in the process of obtaining voices and presenting recommendations. Workshop participants can refer to the recommended customer cases, and create innovative and feasible ideas that connect cross-industry knowledge.

For example, in an ideation workshop for promoting IoT solutions at factories, participants referred to a customer case in energy. In the customer case, sensing technology for detecting whether residents are at home was applied. The sensing technology could be used to evaluate the degree of corporate activity based on a factory's operating status, and the participants came up with an idea of using it for corporate fundraising.

By utilizing this system in workshops, it was confirmed that innovative ideas connecting

cross-industry knowledge were created twice as frequently in comparison to when the system was not used⁽³⁾.

Hitachi will introduce this system for customer co-creation workshops in November, 2018. Moreover, the company will continue to advance NEXPERIENCE and use digital technology to accelerate its social innovation business and contribute to resolving challenges faced by its customers and society.

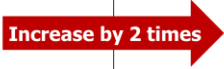
Image of the system being used



Workshops with the system using AI technology that performs speech recognition and recommends customer cases

- (1)Hitachi, Ltd. news release: “Hitachi Establishes NEXPERIENCE for Accelerating Social Innovation Business” dated October 15, 2015.
<http://www.hitachi.com/New/cnews/month/2015/10/151015.html>
- (2)In the evaluation by Corpus of Spontaneous Japanese, Hitachi’s speech recognizer has achieved the world-best word error rate of 6.6% and the character error rate of 5.0%. This was presented in an international conference : Interspeech2018 (held in September, 2018). Hitachi was also awarded the second prize in an international competition: The 5th CHiME Speech Separation and Recognition Challenge (CHiME-5) for its noise robust speech recognition.
- (3)The ratio of the number of ideas connecting cross-industry knowledge among the ideas from workshops. The percentages of the conventional system (without this system) and this system are compared for the same themes. The ideation workshops were held in similar conditions, with

participants from similar fields and job titles.

	Without this system	With this system
The ratio of ideas connecting cross-industry knowledge (%)	44.4%	 81.3%

About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges, combining its operational technology, information technology, and products/systems. The company's consolidated revenues for fiscal 2017 (ended March 31, 2018) totaled 9,368.6 billion yen (\$88.4 billion). The Hitachi Group is an innovation partner for the IoT era, and it has approximately 307,000 employees worldwide. Through collaborative creation with customers, Hitachi is deploying Social Innovation Business using digital technologies in a broad range of sectors, including Power/Energy, Industry/Distribution/Water, Urban Development, and Finance/Social Infrastructure/Healthcare. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

For more information regarding this release

please contact the Research & Development Group, Hitachi, Ltd.

<https://www8.hitachi.co.jp/inquiry/hqrd/news/en/form.jsp>

###

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.
