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Company: Japan System Techniques Co., Ltd.  
Representative: Takeaki Hirabayashi, President and CEO  
Stock code: 4323, Tokyo Stock Exchange, Prime Market  
Contact: Taku Hirabayashi, Director and Senior Officer  
Tel: +81-6-4560-1000

## **Start of Joint Research about Public Transportation Diversity and Health**

Japan System Techniques Co., Ltd. (JAST) and Kento Yoh, an assistant professor at the Osaka University Graduate School of Engineering (Location: Suita-shi, Osaka, President: Shojiro Nishio), have started a joint research program to determine how increasing the diversity of public transportation affects the health of residents of the area served by this transportation by using medical big data. The details are as per attached.

This matter will have only a negligible effect on JAST's results of operations. An announcement will be made promptly if there is any additional information that should be disclosed.

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Japan System Techniques Co., Ltd.  
Osaka University

## Start of Joint Research about Public Transportation Diversity and Health

Japan System Techniques Co., Ltd. (Head office: Osaka; Representative: Takeaki Hirabayashi, President and CEO; JAST) and Kento Yoh, an assistant professor at the Osaka University Graduate School of Engineering (Location: Suita-shi, Osaka, President: Shojiro Nishio), have started a joint research program to determine how increasing the diversity of public transportation affects the health of residents of the area served by this transportation by using medical big data.

This joint research program is part of the COI-NEXT program for supporting the formation of co-creation hubs. Osaka University was selected to participate in the regional co-creation field of COI-NEXT, which includes the Futuristic and Intelligent Infrastructure Co-Creation Center theme. This joint program will work on the second research and development theme: the development of methods for co-creation encompassing the private, academic and public sectors as well as the public with the goal of creating urban infrastructures centered on residents.

### ■ The Joint Research Program

This program aims to examine specific areas to determine the correlation between public transportation diversity indicators\*<sup>1</sup> and medical expenses of residents in these areas. Evidence will be gathered concerning the Osaka University COI-NEXT theme of assessing the health benefits of transportation centered on local residents. Activities will study benefits in municipalities and junior high school districts in the northern part of Osaka prefecture. JAST's medical big data will be used to obtain information for analysis concerning the relationship between public transportation diversity assessments and medical expenditures and the number of medical examinations for specific diseases.

### ■ COI-NEXT

COI-NEXT (Program on Open Innovation Platforms for Industry-Academia Co-Creation) is a program of the Japan Science and Technology Agency that is conducted by institutions that were selected for participation following an application process. One part of the project is research and development for innovations that use backcasting for creating a vision for centers that help accomplish the Sustainable Development Goals. The other part is the establishment of a co-creation system encompassing the private, academic and public sectors that has the objective of establishing centers that are self-reliant and sustainable. COI-NEXT has different sites for individual fields of this program, such as the regional co-creation field and the policy priority field. There are 42 sites throughout Japan, including 30 full-scale sites and 12 fostering sites. Osaka University is a site for four fields of COI-NEXT. JAST is participating with this university in the regional co-creation field regarding Futuristic and Intelligent Infrastructure Co-Creation Centers.

### ■ The Future Co-Creation Laboratory of JAST

The Future Co-Creation Laboratory of JAST is a medical big data business with the mission of using the digital transformation of health care backed by medical big data (health insurance invoice data\*<sup>2</sup>, health check-up data and other data) to solve issues at healthcare facilities and insurance companies and organizations. This laboratory will continue to analyze information obtained from research activities in order to raise the value of JAST's data and create more ways to solve the issues of customers.

Operations of The Future Co-Creation Laboratory also contribute to accomplishing Sustainable Development Goals number three, good health and well-being, and nine, industry, innovation and infrastructure. These activities include the use of medical big data to enable people to stay healthy and the use of alliances with the academic sector for joint research and the development of products.



**\*1 Public transportation diversity indicators**

Public transportation capable of improving the lives of the public requires more than simply a network of services. The diversifying needs of the public concerning transportation also demand a variety of methods for going from place to place. Professor Doi and assistant professor Yoh of the Osaka University Graduate School of Engineering are creating public transportation diversity indicators for the purpose of evaluating new public transportation services and regional services by looking at the types of services available in individual areas.

Reference: R. Nakase, C-C Chou, Y. Aoki, K. Yoh and K. Doi: “Evaluating Hierarchical Diversity and Sustainability of Public Transport: From Metropolis to a Weak Transport Demand Area in Western Japan,” *Frontiers in Sustainable Cities*, *Frontiers*, doi:10.3389/frsc.2021.667711 (2021.3) and T. Horiike, K. Yoh, K. Doi and C-C Chou: “Assessing the Hierarchical Diversity of Public Transportation Considering Connectivity and Its Implication on Regional Sustainability” *Sustainability* 2023, 15, 16494.

**\*2 Health insurance invoices**

When an individual receives a medical treatment covered by insurance, the healthcare institution sends an invoice listing the procedures and amounts due to the insurance company or organization. For medical and dental care, an invoice listing the procedures and amounts due is sent. For pharmacies, an invoice listing the drugs supplied and amounts due is sent. For nurses visiting individuals at home, an invoice listing home nursing care services and amounts due is sent. One invoice for each patient and individual healthcare institution is prepared every month. Invoices contain information about the reasons that individuals received medical care, the cost of the care and other items. JAST converts this information into a database for subsequent utilization.

**■ Inquiries**

- I. Japan System Techniques Co., Ltd.  
The Future Co-Creation Laboratory  
Contact: <https://www.jastlab.jast.jp/contact/>
- II. Website of The Future Co-Creation Laboratory: <https://www.jastlab.jast.jp/>

Evaluation and Public Relations Section, General Affairs Division, Graduate School of Engineering, Osaka University  
E-mail: [kou-soumu-hyokakouhou@office.osaka-u.ac.jp](mailto:kou-soumu-hyokakouhou@office.osaka-u.ac.jp)