Discussion material on MaaS

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The Japan Research Institute, Limited
Research & Consulting Division

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1. Background and purpose

In recent years, ICT has been used to create a cloud-based transportation system. All the mobility except for private cars is considered as a single service, and a new concept of “movement” called MaaS (Mobility as a Service) is being implemented. Those movement has become active.

This research is going to grasp trends in other countries related to MaaS and investigating and analyzing social impacts, issues and effects. And the result of research will contribute to the mid- to long-term study of Japan's future efforts in the transportation sector.

2. Overview of Our Research

Main Targets	Region/Country	Features	Timing of The Interviews
Kaohsiung City Transportation Bureau	Kaohsiung/Taiwan	◆Subscription Model (Train, Bus, Ferry, Share-cycle, Taxi) ◆Maas Application "MEN-Go" is provided	Nov. 2019
Land Transport Authority of Singapore	Singapore	◆Integrated Model (Public Transportation, Ride-sharing, accident insurance) ◆All-in-one MaaS Application "Zipster" is under the development	Nov. 2019
Smart Columbus	Columbus/US	◆Smart Columbus Operating System solves the traffic problems by using 1,100 sensors ◆Integrated Model (Public Transportation, Ride-sharing, accident insurance)	Dec. 2019
Tompkins County Dept. of Social Services	Ithaca/US	◆Multimodal solution "Tompkins Mobility-as-a-Service (MaaS) Phase 1" is under planning	Dec. 2019
US Department of Transportation	Washington DC/US	◆Interview about US Maas policy, the plan and the practices	Dec. 2019
US Federal Transit Administration	Washington DC/US	◆Interview about US Maas policy, the plan and the practices	Dec. 2019
San Francisco Municipal Transportation Agency	San Francisco/US	◆MOD Sandbox: Combination of BART train and car-sharing by using the Application	Jan. 2019
Central Puget Sound Regional Transit Authority	Seattle/US	◆MOD Sandbox: Los Angeles County and Puget Sound MOD First and Last Mile Partnership with Via Evaluation Plan	Jan. 2019

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3. Our classification of type of MaaS

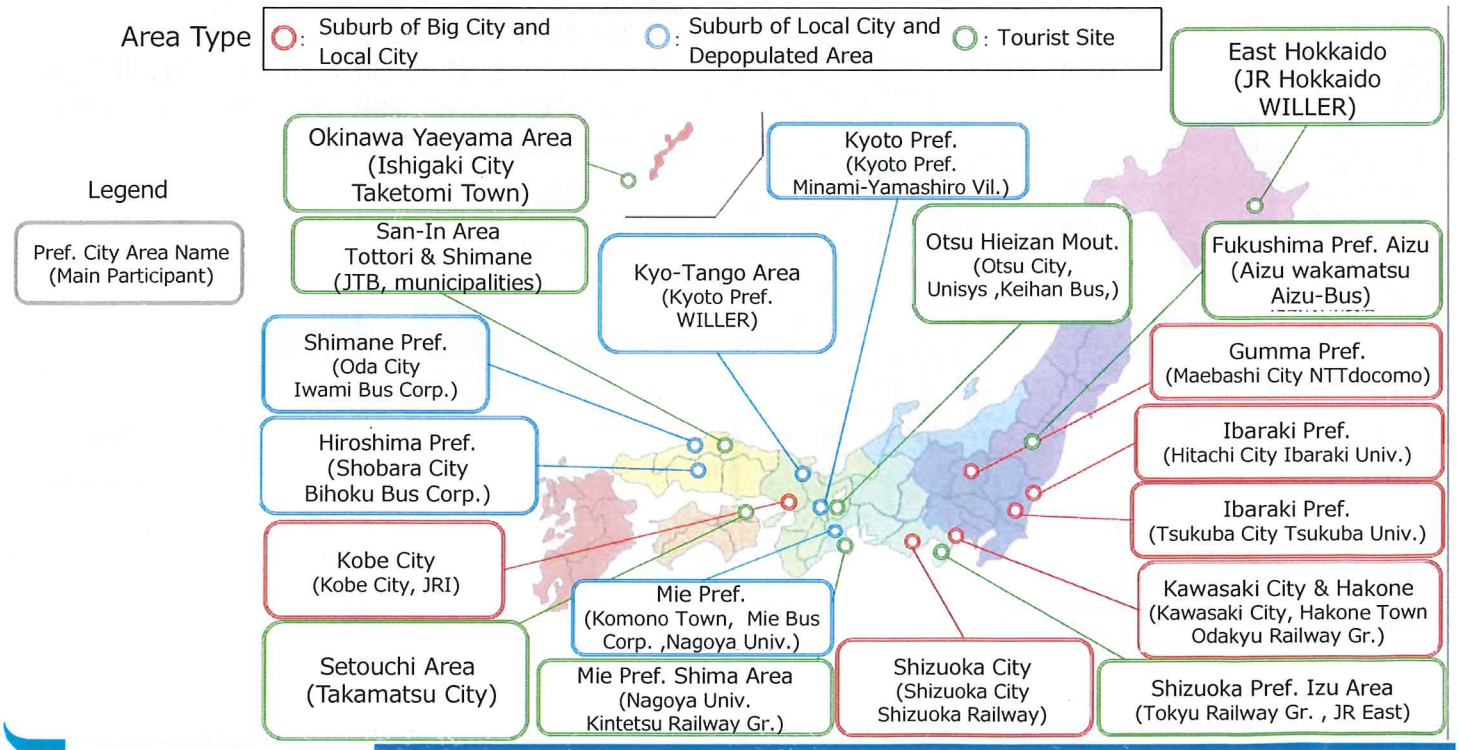
In this research, we classified cities as below with each city's population and features of transportation.

Type	City (example)	Population ('000)	Area (km^2)	Density	Criteria	City in Japan
Big city	Los Angels	3,990	1,214	3,287	In addition to long-distance trains and commuter trains, there are several public transport systems (light rails, subways, buses) in the city.	Tokyo Yokohama Osaka Nagoya Fukuoka Sapporo
	San Francisco	883	121	7,273		
	Seattle	745	217	3,433		
Local city	Columbus	893	578	1,545	There are no suburban railways or subways in the city, and only public transportation is bus. If it is a state capital or a city with a large population (approximately 700,000 or more), it is classified a "local city", otherwise it is a "local suburb".	Nigata
Local suburbs	Ithaca	31	16	1,971		Kosyu(Yamagata pref.), Kitsuki (Oita pref.) etc.

Reference: MaaS in Japan

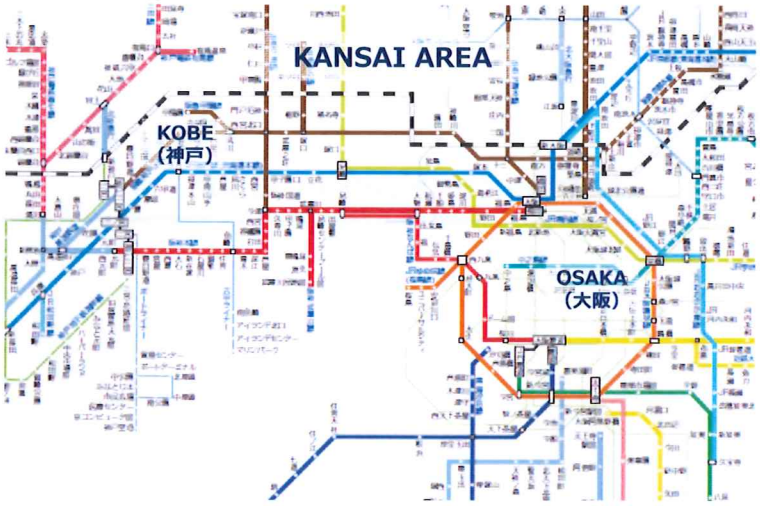
PoC of Maas in Japan

PoCs have been conducted in Japan with the support from ministries. All of them are not the type of "big city".

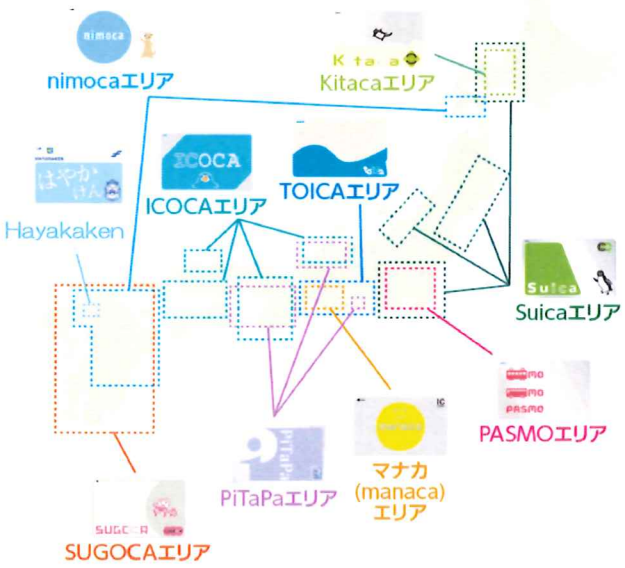


Characteristics of Public Transportation in Japan 1/2

In Japan, most of the railway operators are private companies and have their own assets. They have competed with each other to build a railway line. In the result, dense rail network has been developed in urban areas.

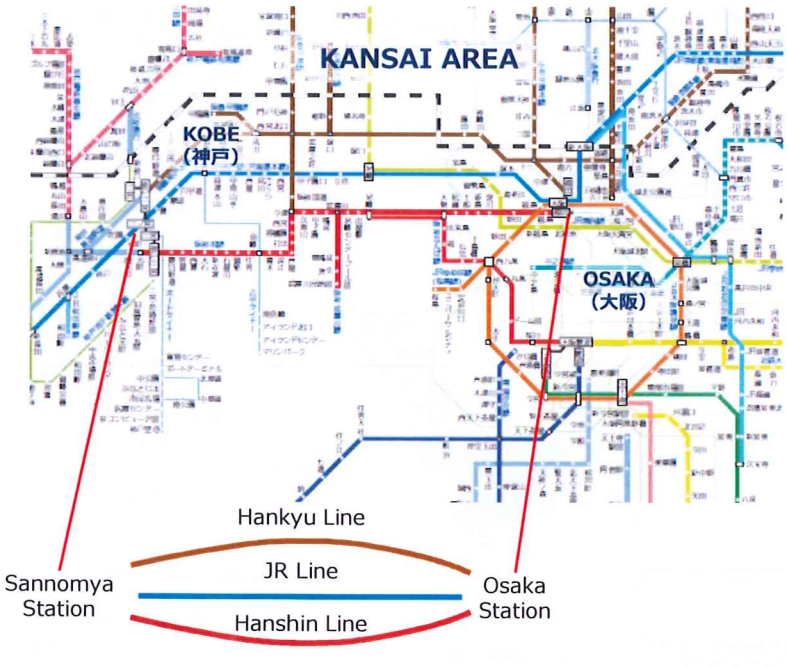


IC cards can mutual use across Japan.



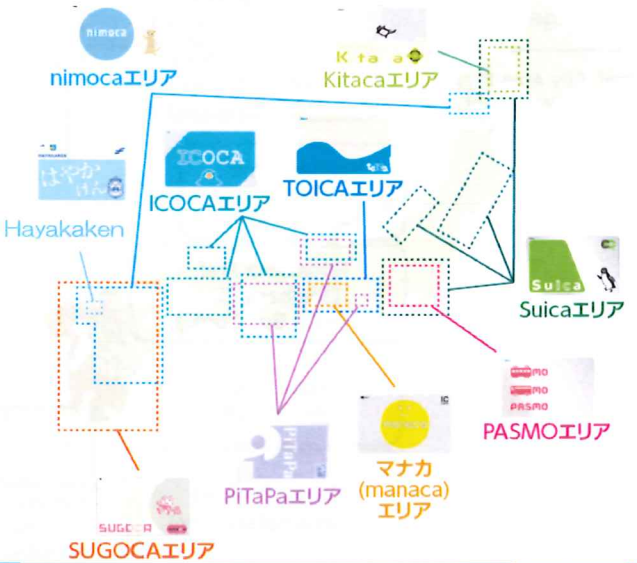
Characteristics of Public Transportation in Japan 2/2

There are multiple competing routes in urban areas, so it is difficult to build a cooperative system among competitors.



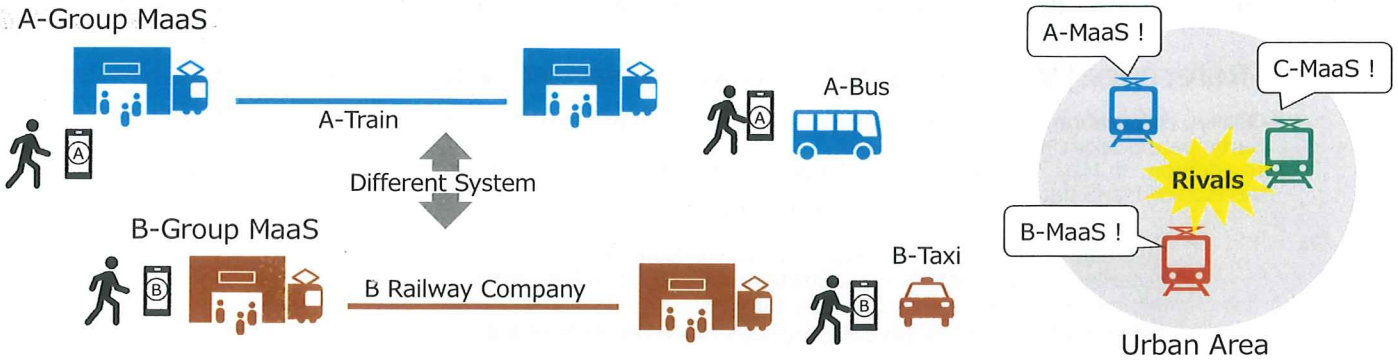
3 Companies Lines Competing

IC card systems require high-specifications so that they are expensive. It is difficult for small bus operators and railway companies to introduce these systems.

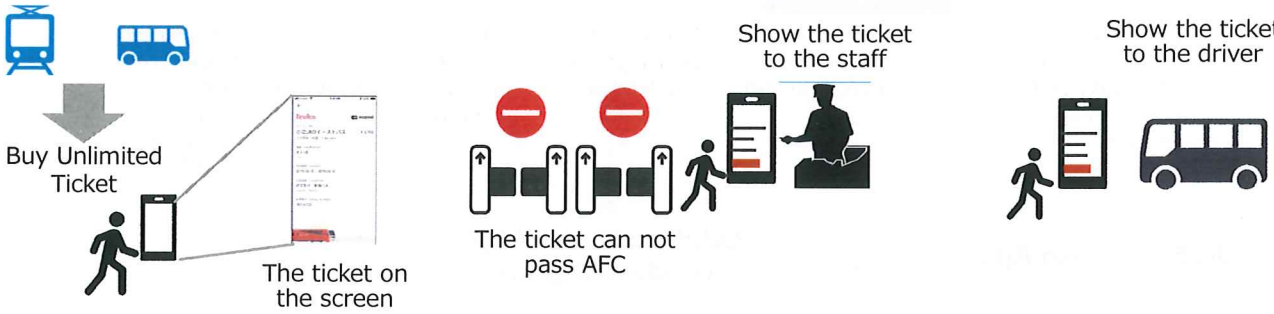


As a result,

It is difficult to build a MaaS platform including multiple transportation companies.



It is difficult to link IC card with MaaS platform.



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MaaS in Japan（1）："IZUKO"

- "Izuko" is a MaaS app for the trial experiment, which is customized for the Izu area and based on Moovel. "Izuko" has three functions: Route search, reservation and settlement.

Overview

Izuko is developed based on Moovel. Route search function utilizes API cooperation of route search software "EKISPERT". The reservation function seems to utilize API cooperation with Rakuten's system.

Item	Description
Type	Application for integration of intermodal passenger transportations （Bus, car rental)
Area	Izu area
Price	Free to download and use
Language	Japanese, English

Main function

The main functions are:
1. Railway and bus search,
2. Settlement for digital free pass,
3. On-demand traffic, bicycle rental, and car rental

There are two payment methods, which you can choose.

MaaS in Japan（2）：”ODAKYU Maas”

- Odakyu, a Japanese private rail operating company, has developed data infrastructure called ”Maas Japan” in collaboration with many private companies, such as Val Laboratory.

[Reference] Val Laboratory ～ Odakyu MaaS (joint-development)

Odakyu corporation, Val Lab, Times 24, Docomo bike share and WHILL (next generation electric chair) participate Odakyu MaaS.
In addition, on May 27, Val Lab. and Odakyu announced they collaborate with JAL and JR Kyusyu for developing MaaS data basis.

Outline of Odakyu MaaS

Val Lab, which operates "EKISPERT", an old-fashioned route search service in Japan, has a strategy to build a MaaS platform in collaboration with other companies.
They try to roll out Odakyu MaaS (MaaS Japan) to other regions.