



# SoftBank IoT Strategy

SoftBank Corp.

Vice President, Deputy Head of Smart IoT & AI Division

Masamitsu Kuwahara



# SoftBank Vision Fund 1

# SoftBank Vision Fund 1

## 82社



# AI

## 交通

- Uber
- DiDi
- Grab
- nauto
- NURO
- AUTO1 GROUP
- REEF
- CRUISE fair
- 瓜子 二手车直卖网 Guzi.com
- Getaround

## 物流

- DELIVERY Small World
- flexport.
- GROFERS
- 满帮
- DOORDASH
- Loggi
- Alibaba Local Services
- ZUME
- Rappi

## 医療

- GUARDANT
- ROIVANT SCIENCES
- VIR
- 医健通 HEALTHCONNECT
- 平安好医生 互联网+平安好医生
- 10X GENOMICS
- RELAY
- Collective Health

## 不動産

- wework
- Opendoor
- COMPASS
- KATERRA
- Clutter view

## 金融

- paytm
- policybazaar
- OakNorth
- 众安保险 ZhongAn Insurance
- 金融壹账通 ONECONNECT
- Greensill
- Kabbage
- creditas

## 法人サービス

- slack
- OSIsoft.
- mapbox
- COHESITY
- CAMBRIDGE MOBILE TELEMATICS
- Gympass
- Globality
- AUTOMATION ANYWHERE

## コンシューマーサービス

- OYO
- coupan
- Fanatics
- 字节跳动
- 作业帮
- Wag!
- plenty
- KLOOK
- BRANDLESS
- tokopedia
- firstory
- GET YOUR GUIDE

## 最先端テクノロジー

- arm
- brain corp
- IMPROBABLE
- Petuum
- light
- FUNGIBLE
- CloudMinds
- zymore

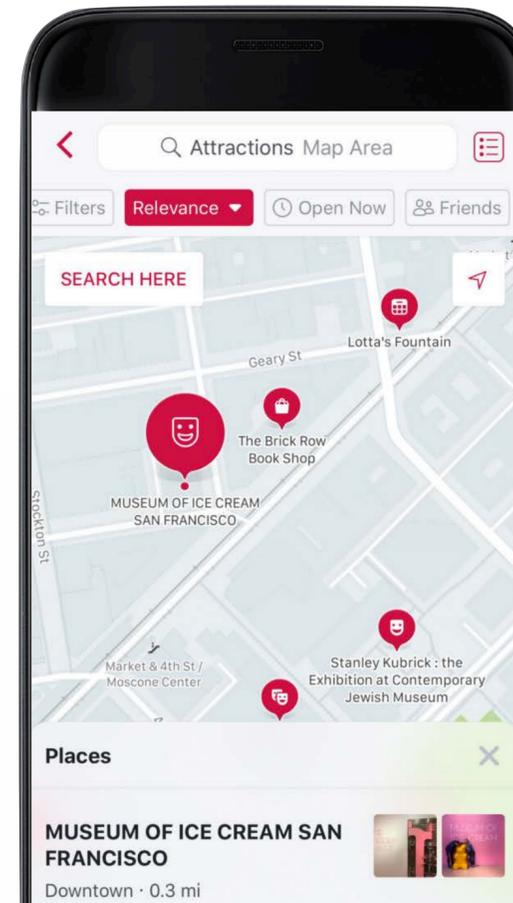
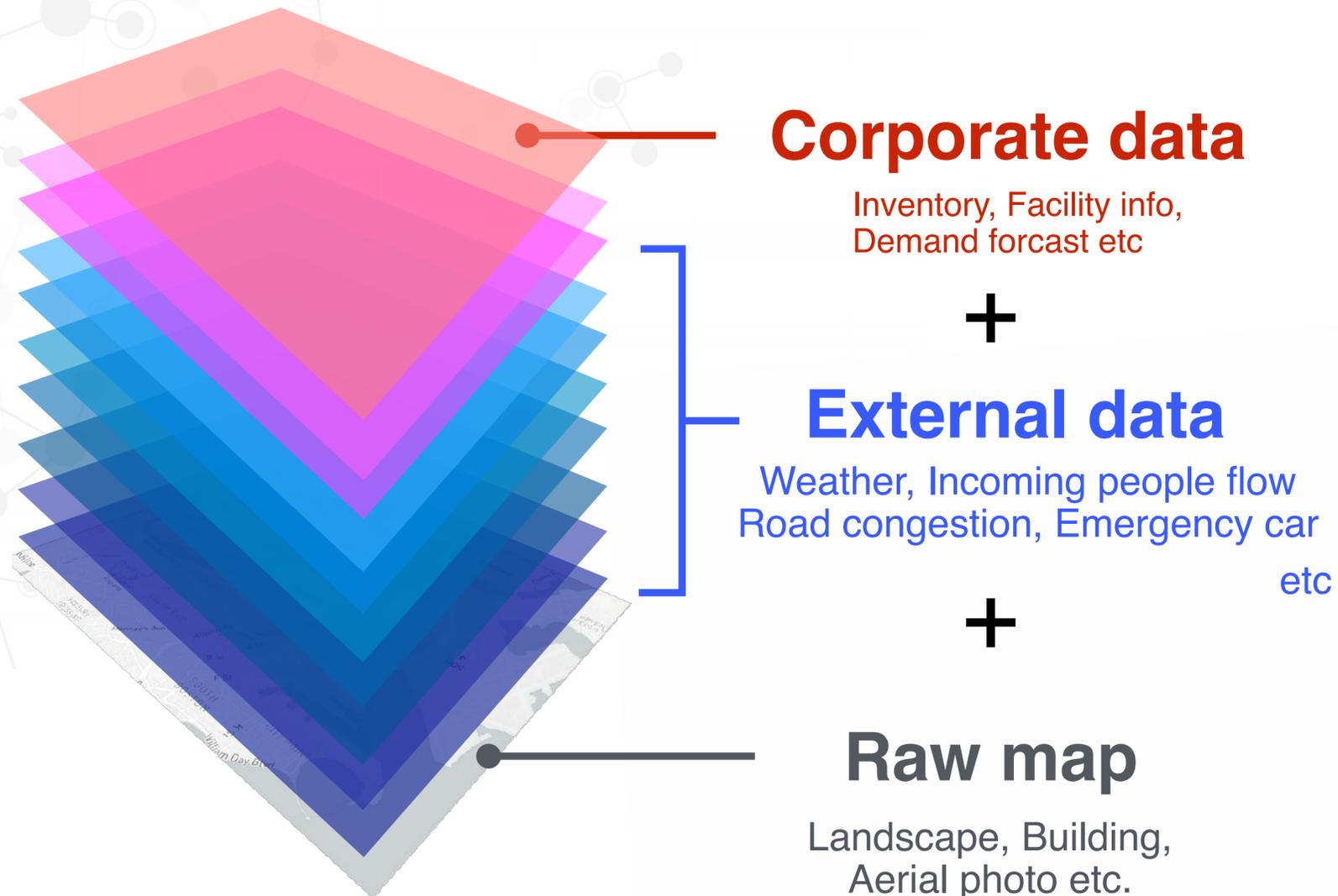
# mapbox

Map platform

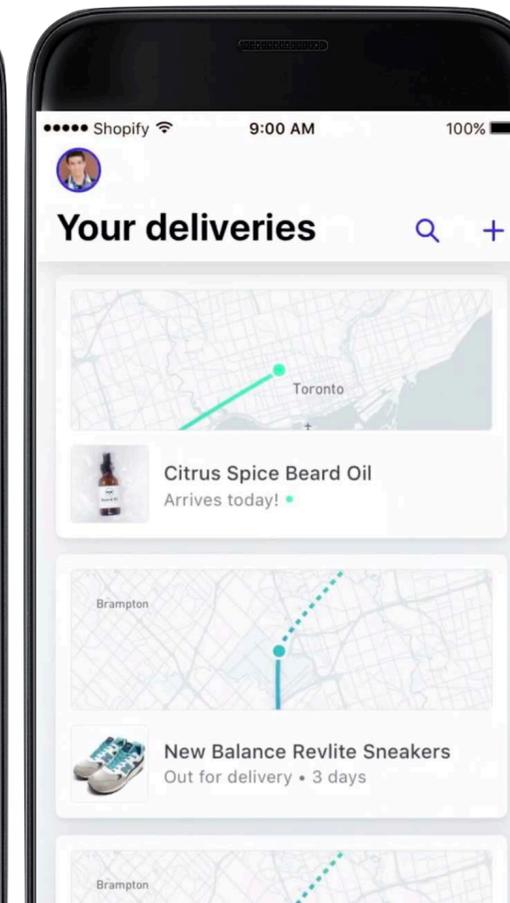
Entered into Japanese market



# Integrate with customer data Customizable map to meet each business users



facebook



shopify



The Weather Company

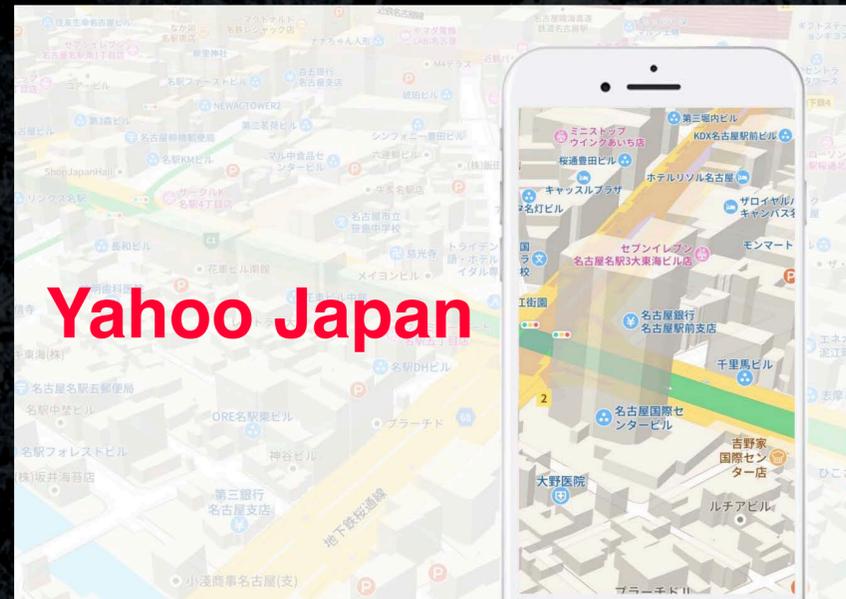
# mapbox

**Integrate with Zenrin**



**Growing coverage**

**Yahoo adopted**



**From this fall**

**Komatsu adopted**



**Business tool**



**arm**  
**TREASURE DATA**

No.1 share in Japan  
Data integrated CDP

# Data processing 50 trillion per day

## Data integration/analysis platform

Ingestion

Aggregate · Analysis

Use

### Customer data



### External data



### Softbank own data



arm TREASURE DATA

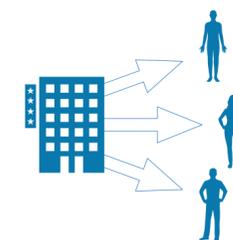


# CDP

(Customer Data Platform)



Marketing measure



One to One Marketing



Result review after measure

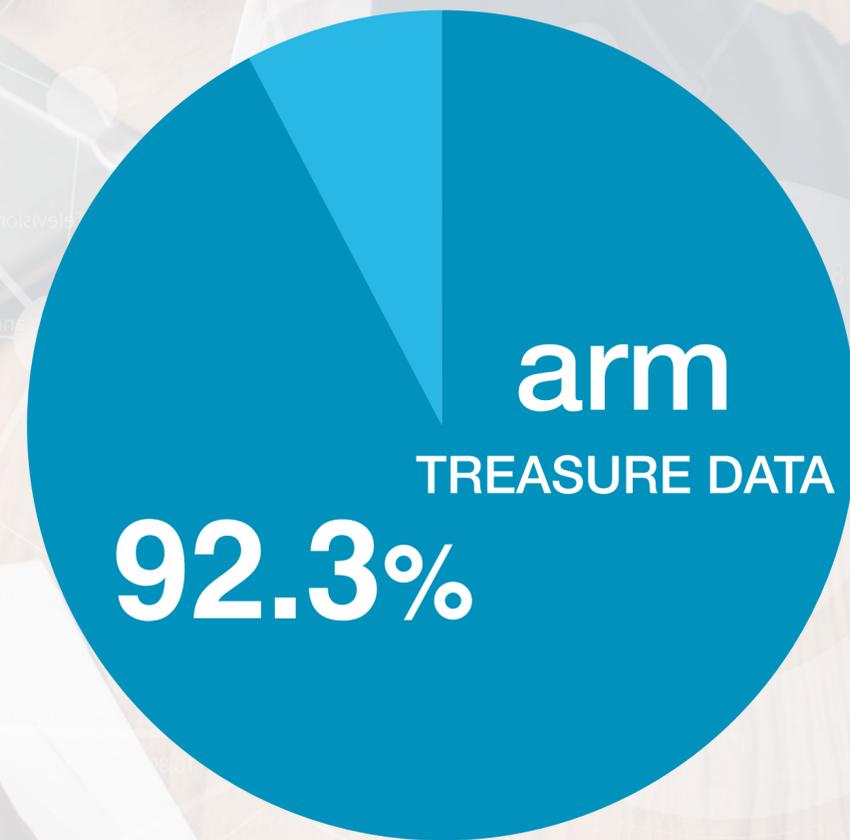
# arm TREASURE DATA

「Best CDP 2019」 Award

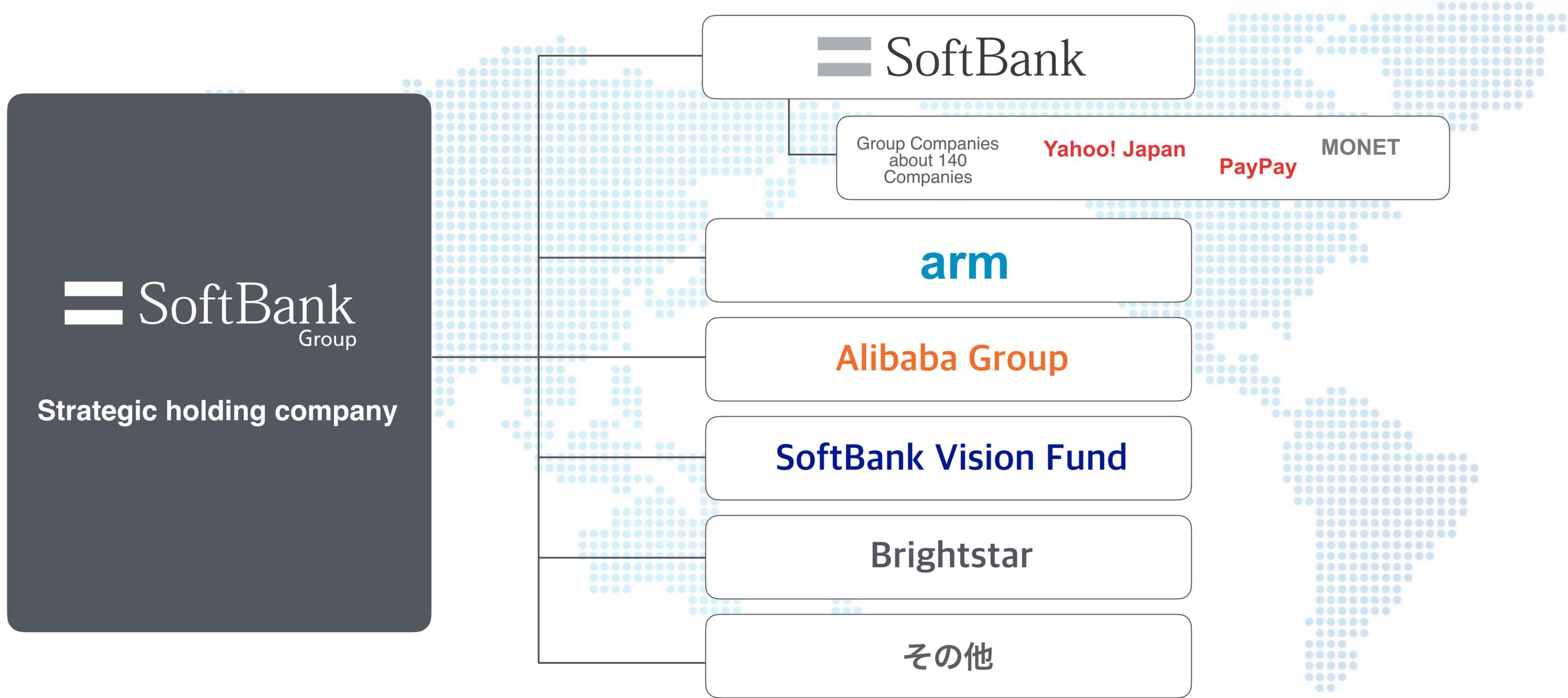


※The Marketing technology AWARDS

No1 Share in Japan



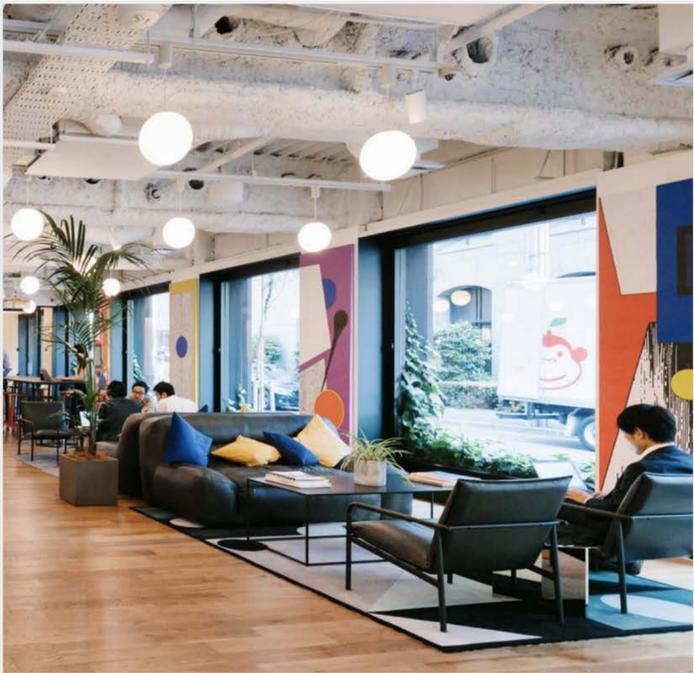
# Center of business operation in Japan



# Mission ~ ① SVF investees Japan business development

## Business development/commercialization of advanced technologies/business models in Japan

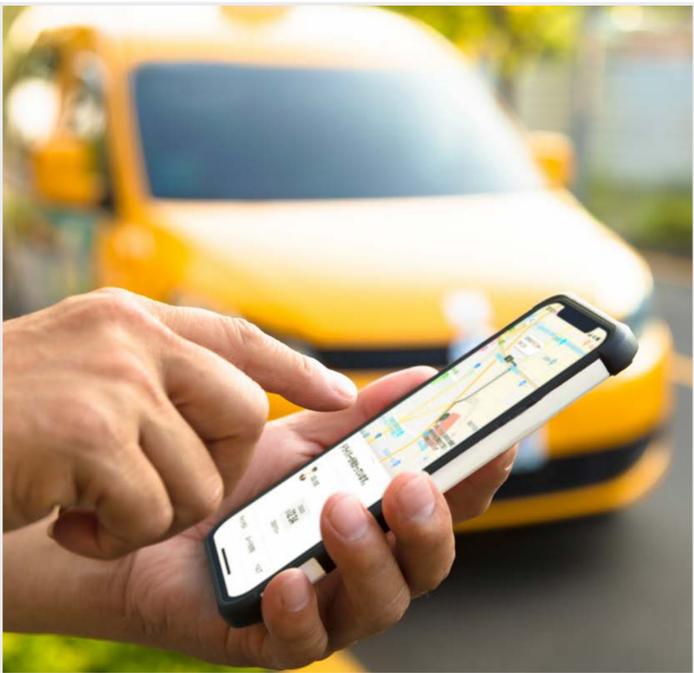
**wework**



Jan, 2018



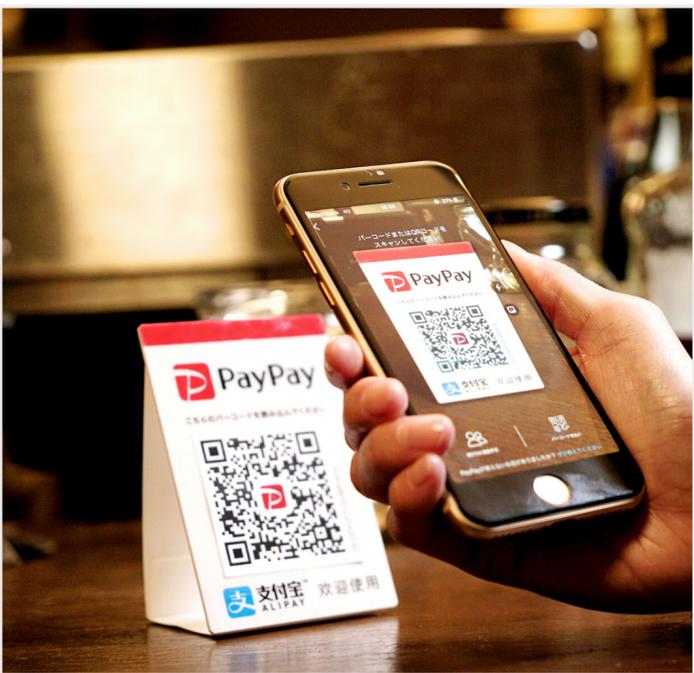
 DiDi



Sep, 2018



 PayPay



Oct, 2018

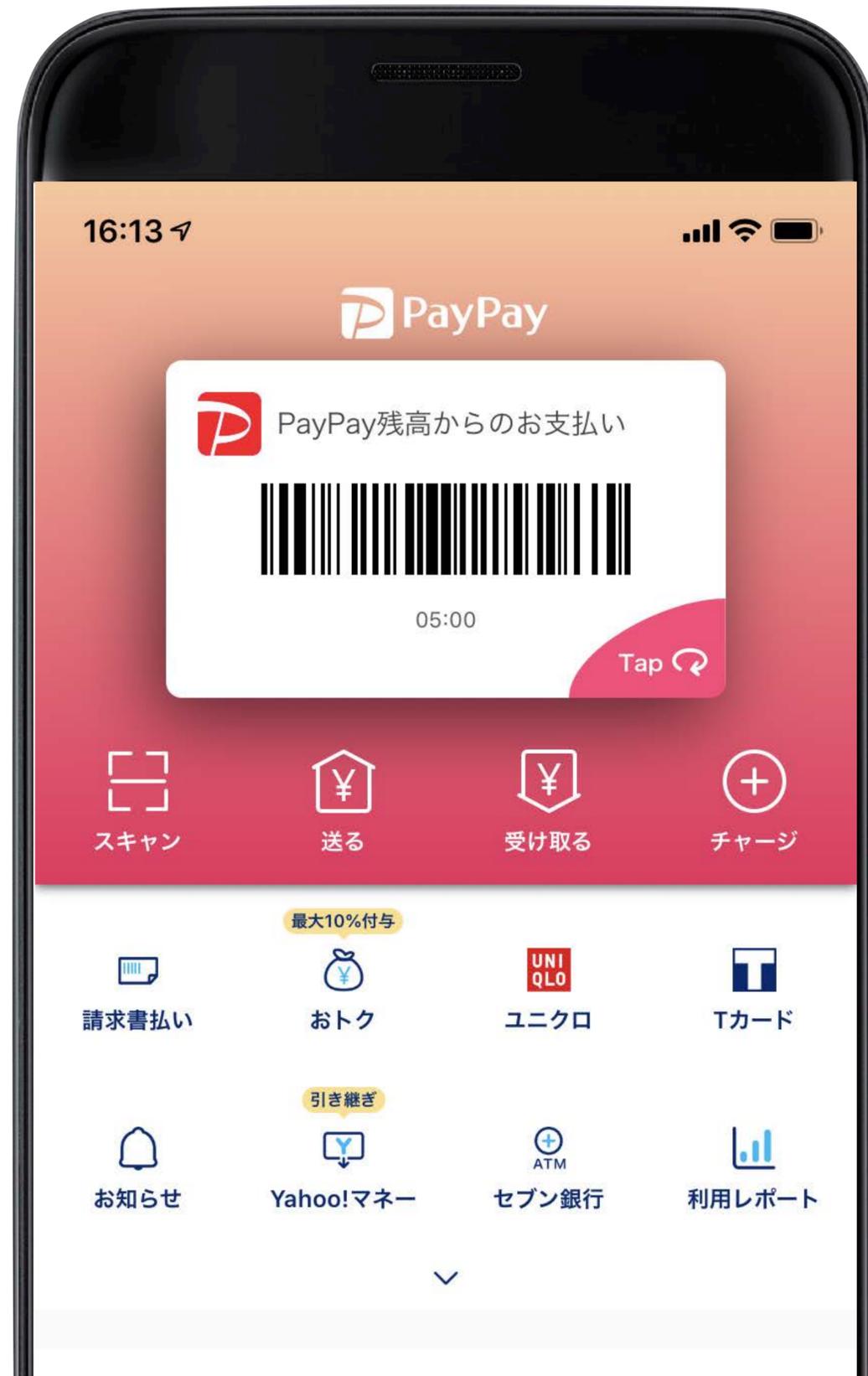


**OYO**



Summer, 2019





QR Code Payment



12 months from the service launch

**Over 15M users**

# New business creation with partners in various industries

## Pacific Consultants

Disaster preventive infra.  
Using IoT sensors



## MITSUBISHI ESTATE

New city development using data



## SUMITOMO LIFE

IoT Insurance



## Ministry of Land, Infrastructure, Transport and Tourism

Infra maintenance with less people



## NIKKEN

Smartbuilding

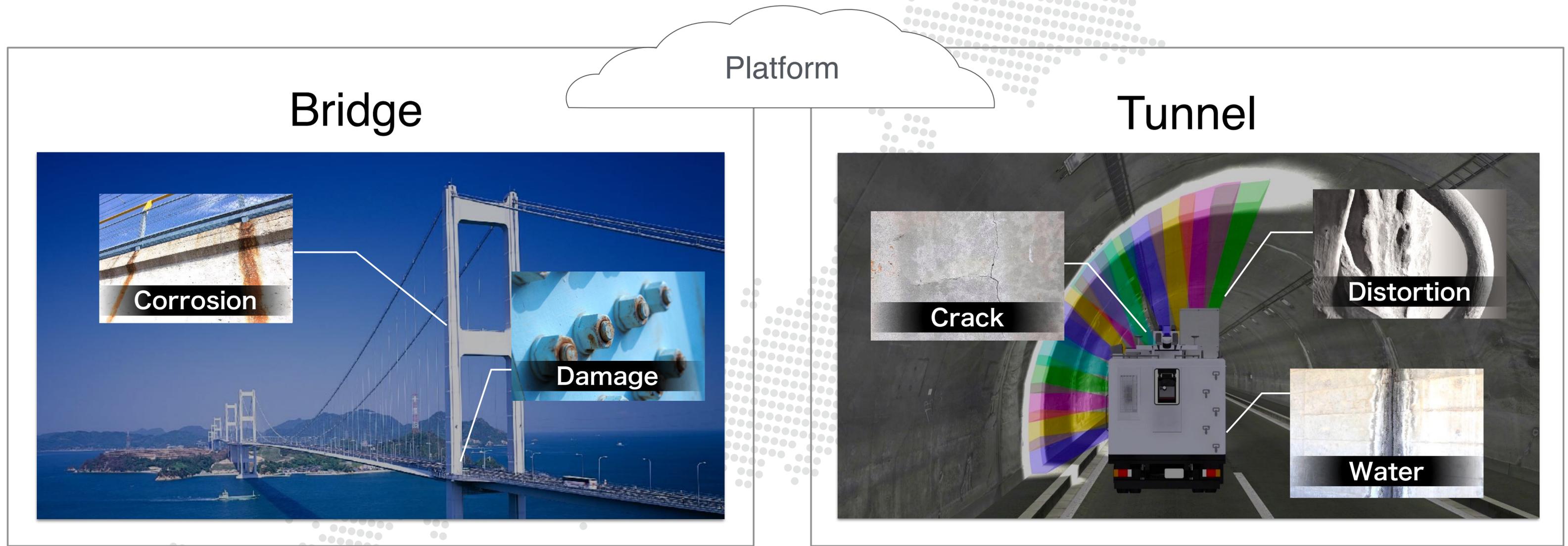


## Regional & Local Gov

Better service of regional government  
and education

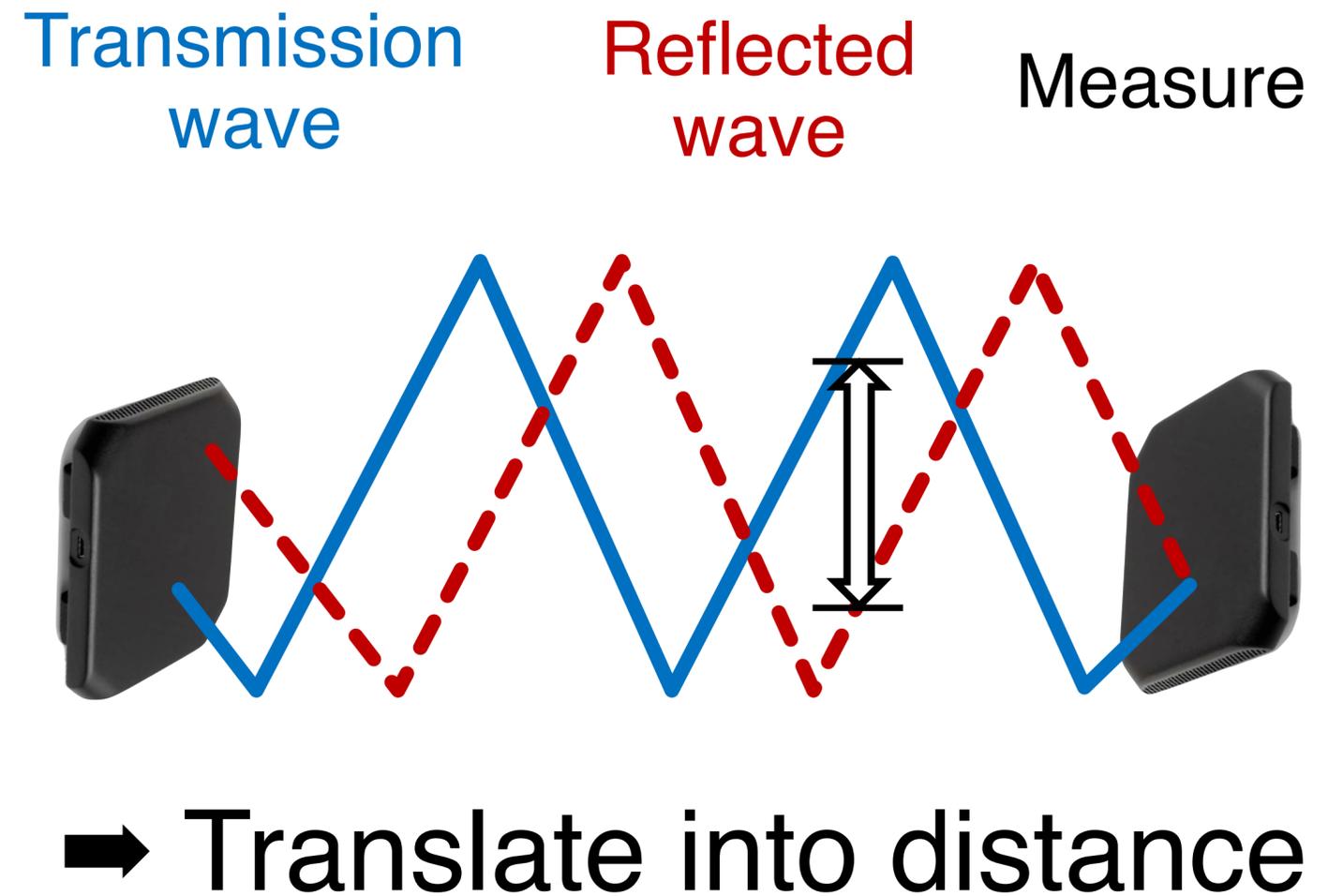
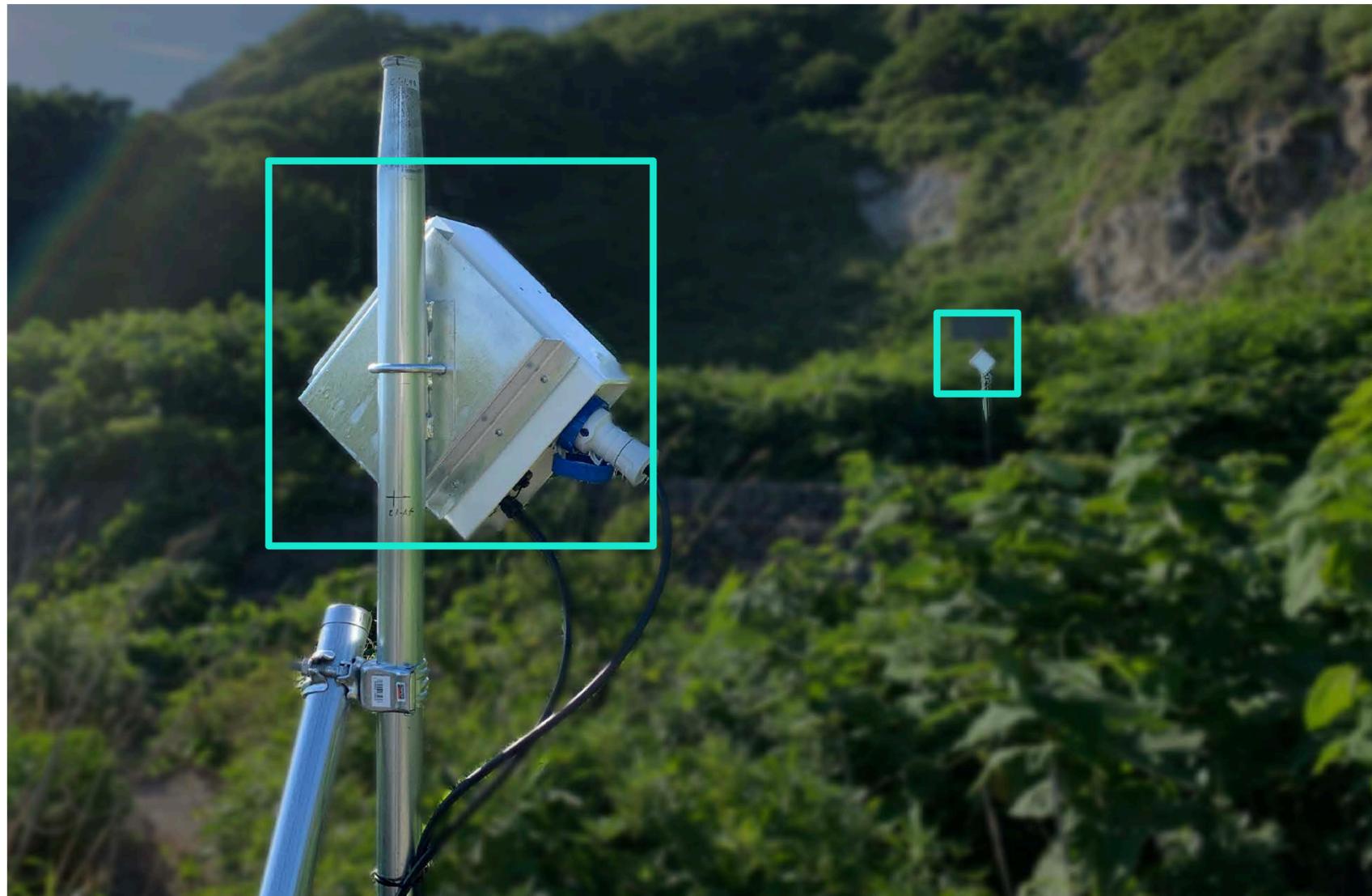


# Technology support for AI utilization on infra maintenance promoted by the government

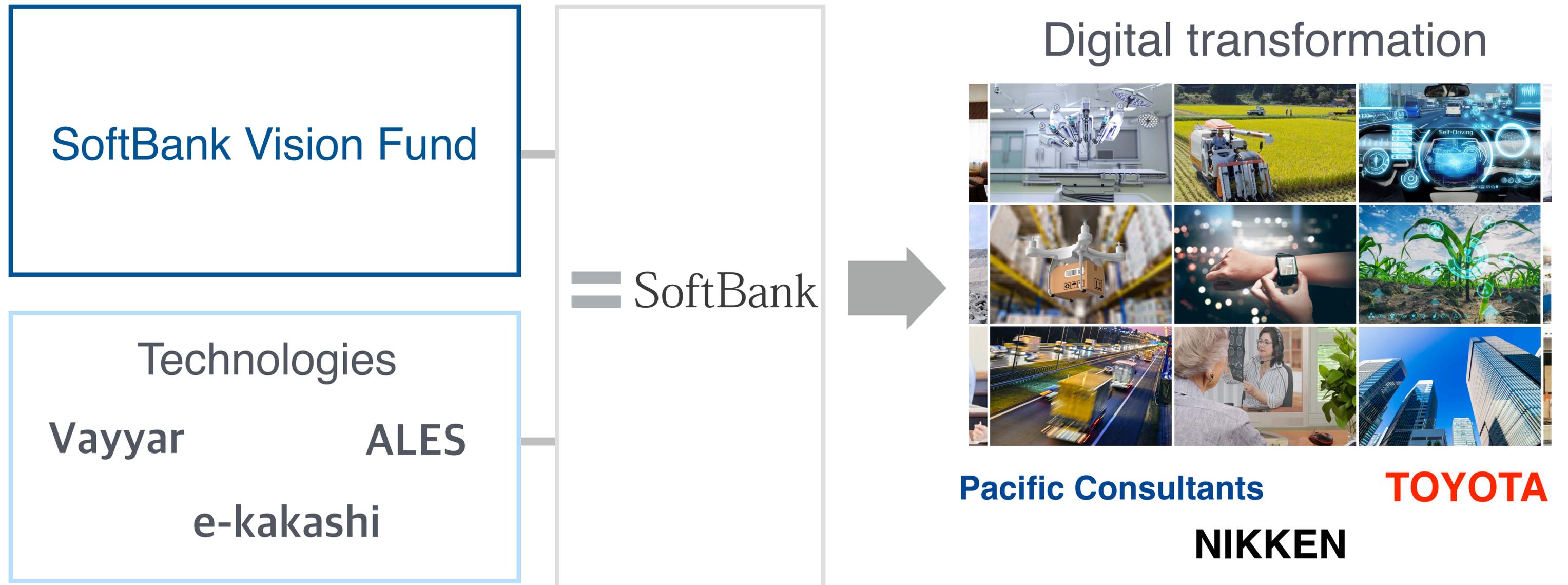


Ingest image data at inspection, aggregate, AI analysis

# Detect landslide in an accuracy at several mm



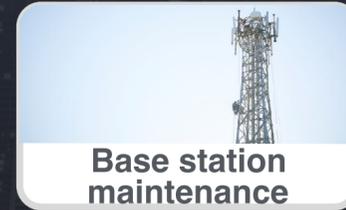
# SoftBank Corp. Role



“Glue” technologies together

# SoftBank IoT Platform

## Applications



## API

Device data

Network

Analysis  
Recognition

Base station  
Human flow data

Message

Authentication  
Payment

Opencode

Application  
development



Data analysis

arm TREASURE DATA

## Cloud

## Connectivity

Network  
management

Device  
management

FOTA

Protocol conversion

## Network

Closed

NB-IoT

NIDD

Cat.M1

Wi-Fi

LoRaWAN

LTE

5G

OneWeb

Bluetooth

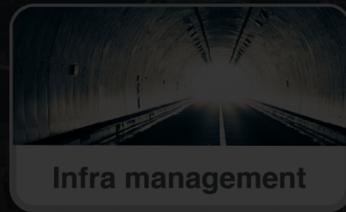
**Total business development depending on project needs**

# Network Management

Applications



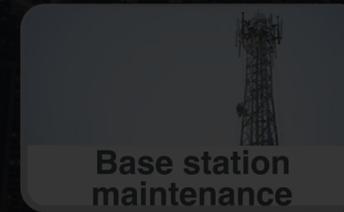
Ease traffic congestion



Infra management



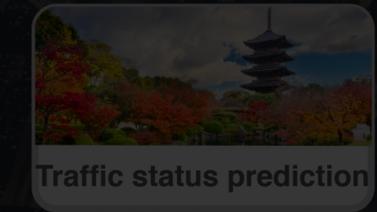
MaaS system



Base station maintenance



Building management



Traffic status prediction

API

Device data

Network

Analysis  
Recognition

Base station  
Human flow data

Message

Authentication  
Payment

Opendata

アプリ開発

VANTIQ

Data Stores

arm TREASURE DATA

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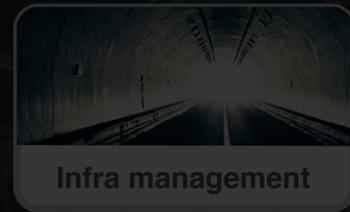
Heterogenous network management

# Connectivity Management

Applications



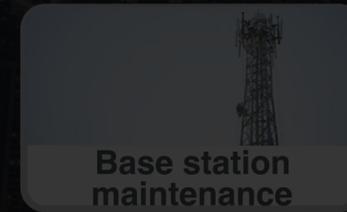
Ease traffic congestion



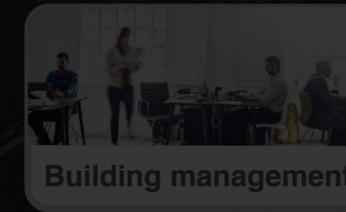
Infra management



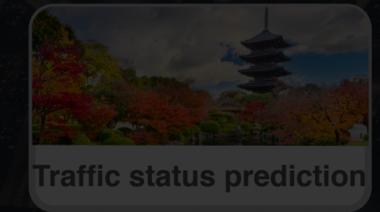
MaaS system



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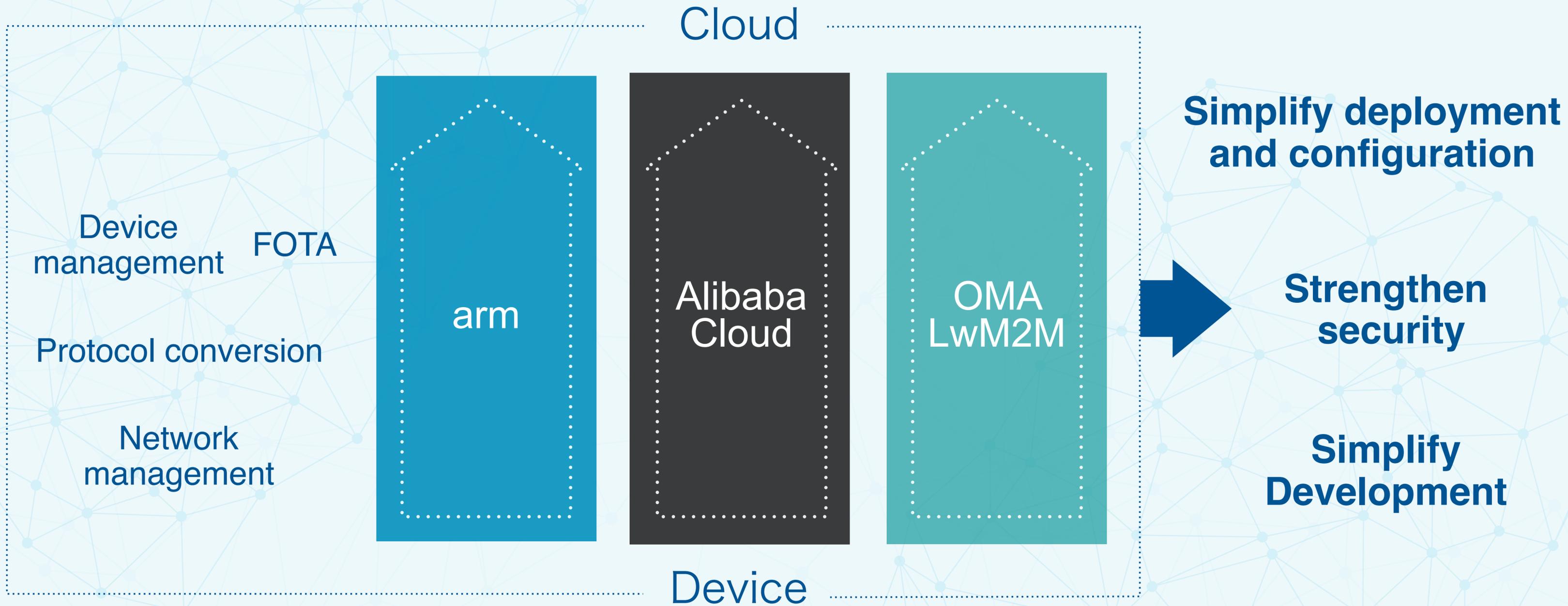
5G

OneWeb

Bluetooth

Efficient management of huge number of devices, data

# Connectivity ~ Eco System Strategy



Drive IoT by building the environment connecting various kinds of devices and cloud platforms

# Strategic Alliance with VANTIQ

Strategic Alliance with VANTIQ

# Until now, data utilization is limited



Service status

Car location

Vacancy information

Sales record

Car location

Reason behind delay

Traffic information

Reservation status

Inventory data



Cloud

Connectivity

Network management

Device management

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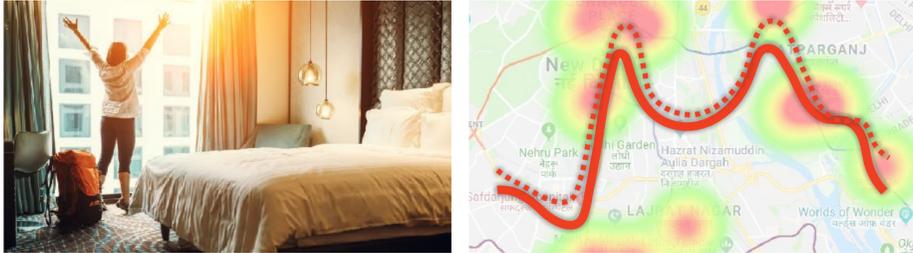
# Now, use events horizontally across applications using VANTIQ

## MaaS



Demand prediction / AI auto delivery

## Smartcity (Hotel · Restaurant)



Dynamic pricing / Vacancy filled

## Supply chain



Order prediction / Delivery matching

Traffic congestion on Line 10

Taxi Allocation status

Traffic accident occurs at xx sta.



EC Sales data

Cargo load data by truck

Delivered near xx sta.



### Cloud



### Connectivity

Network management

Device management

FOTA

Protocol conversion

### Network

Closed

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NIDD

Cat.M1

Wi-Fi

LoRaWAN

LTE

5G

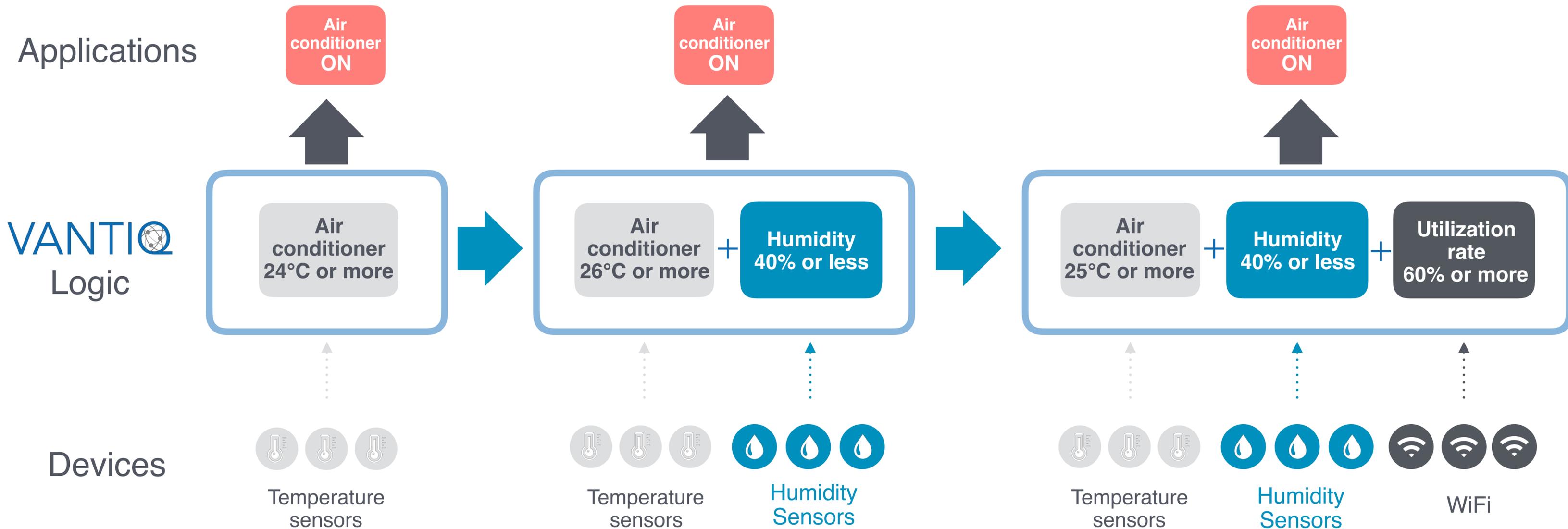
OneWeb

Bluetooth

# Improve Application DevOps Efficiency

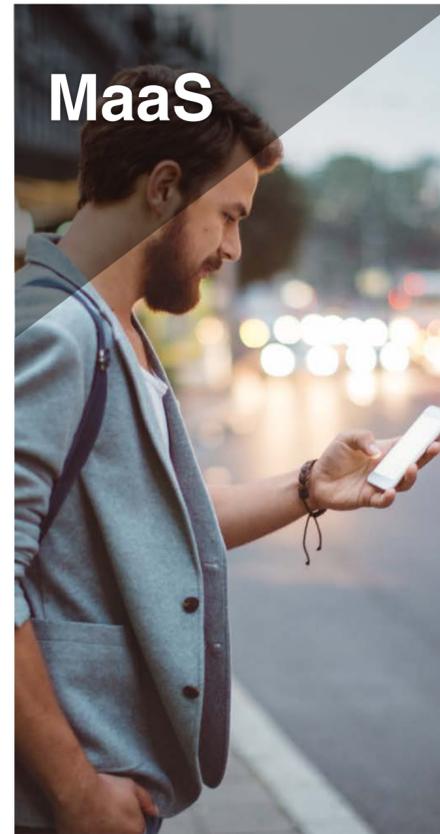
# Control logic using VANTIQ

## No change required for application when a device is added



Suitable for Smartcity-type projects with huge number of devices

# Toward the Foundation of Digital transformation



SoftBank

VANTIQ



# Takeshiba Area Smartcity/building project

— SoftBank

**東急不動産**

# Verification on advanced technologies in collaboration with companies

(National Strategic Special Zone)

## Drone

Urban type drone delivery



## Face recognition

In-coming Security



## Robot

Office autonomous cleaning



©SoftBank Robotics

## MaaS

MONET service

## 3D Sensor

Visual congestion at EV hall



# SoftBank Corp. Role

Collect, analyze, utilize data from buildings and cities in an integrated fashion

Smart City Platform  
SoftBank VANTIQ

Lighting

Congestion

Restroom

Energy

Sensor

Camera

Face recognition

Airconditioner

Robot

People flow

Traffic condition

Weather information

Shop status

Event

# Use case ~ ① Traffic

## Realtime monitoring traffic status and guide how to go home

Bus



Congestion on Route 3

25 min delay

Train



Accident occurs at xx sta.

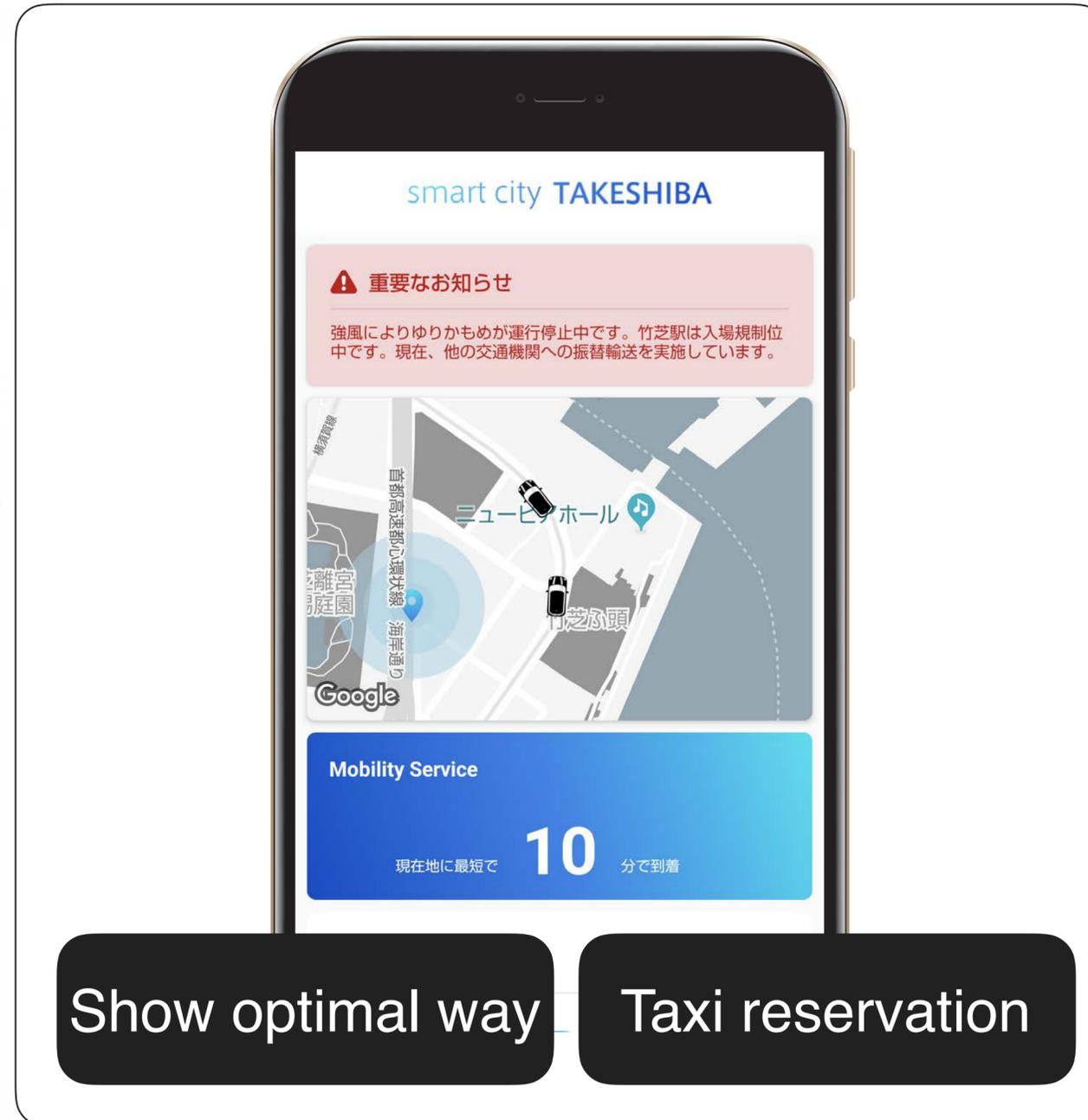
Resume service in 30min.

Taxi



Car location data

Assign car near xx sta.



smart city TAKESHIBA

⚠️ 重要なお知らせ

強風によりゆりかもめが運行停止中です。竹芝駅は入場規制位中です。現在、他の交通機関への振替輸送を実施しています。

Google

Mobility Service

現在地に最短で **10** 分で到着

Show optimal way

Taxi reservation

Users



# Use case ~ ② Retail store

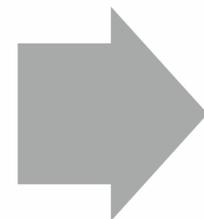
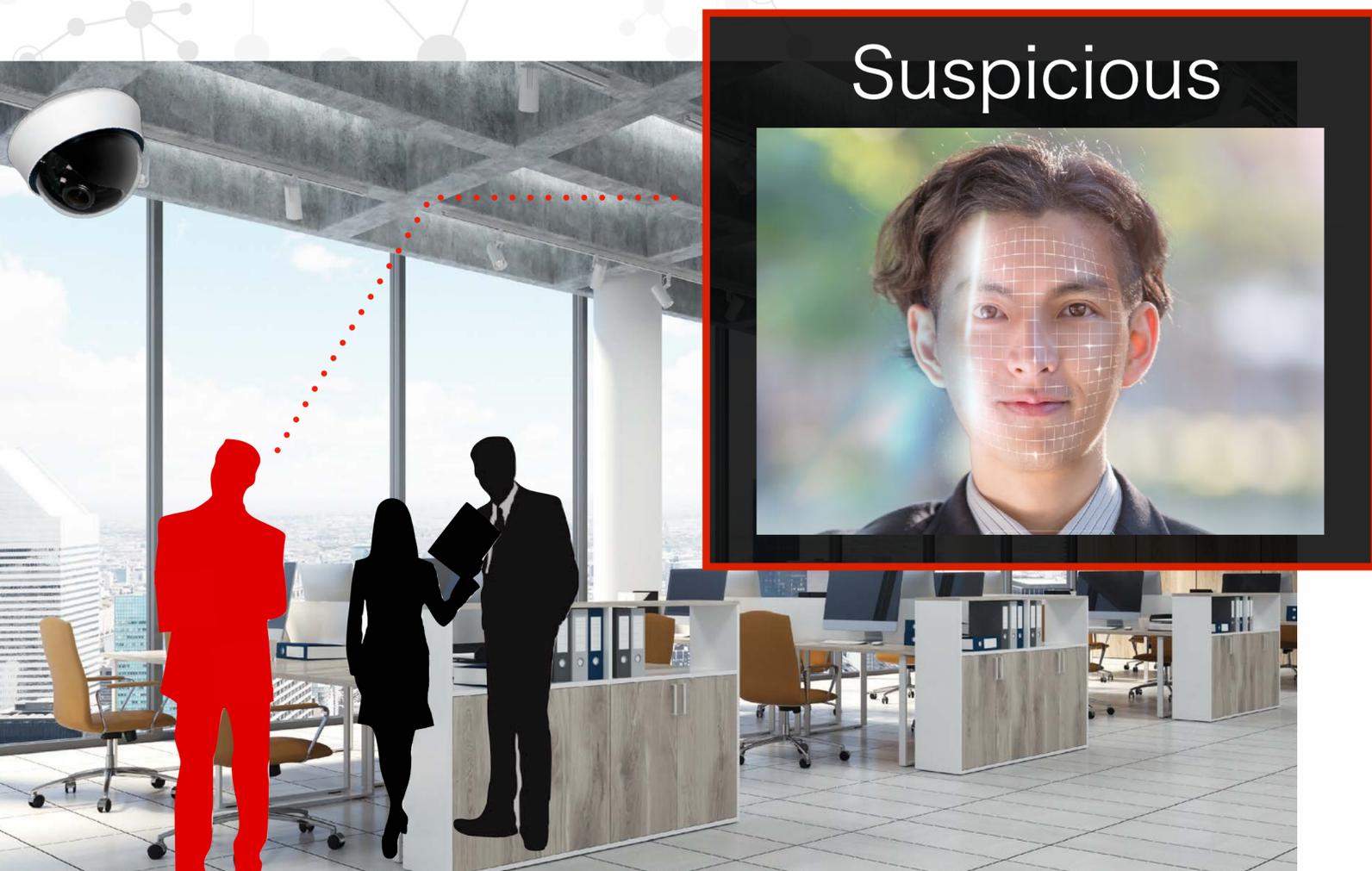
## Show vacancy information on digital signage before going to a store



# Use case ~ ③ Security

When non-employees enter company closed area

AI detects incident / Automatic notification to the nearest security staff



## Provide total solution including API / Application dev environment Package under study

Microservices (=Logics)



API Gateway

Vantiq

Treasure Data

Network

LoRa WAN

Private LoRa

NB-IoT

EnOcean

HTTPS /REST

Sensors  
Gateways

In-door  
Wi-Fi

Digital  
Signage

Security  
camera

EV

AI  
camera

3D  
sensor

Environment  
sensor

Open/shut  
sensor

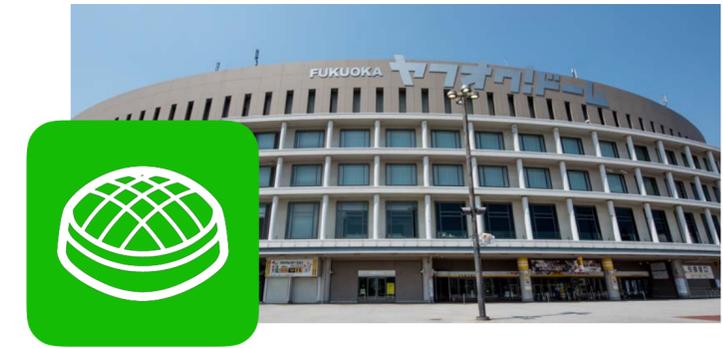
# Produce VANTIQ logics in large quantity Shared and used to other services as a Micro-service



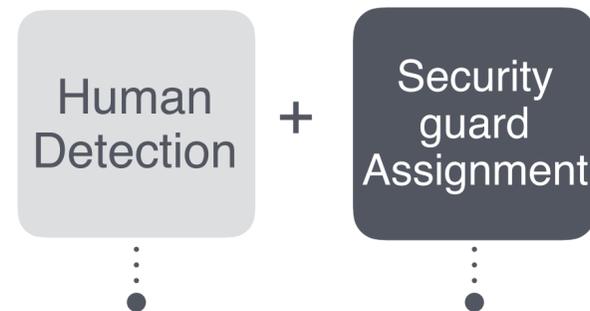
Security staff in buildings  
Notify suspicion person



Hospitals  
Patient monitoring

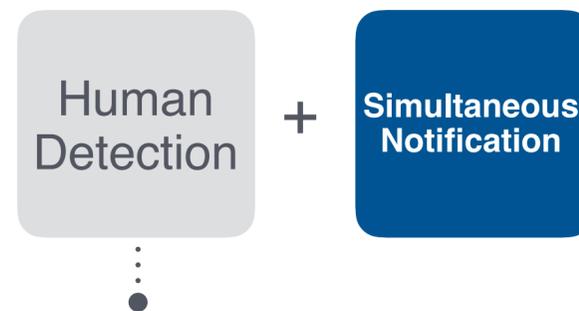


Stadium security  
Notify suspicious person



Suspicious  
Person

SMS



Hospitalized  
patient



Lost child  
Criminal

LINE

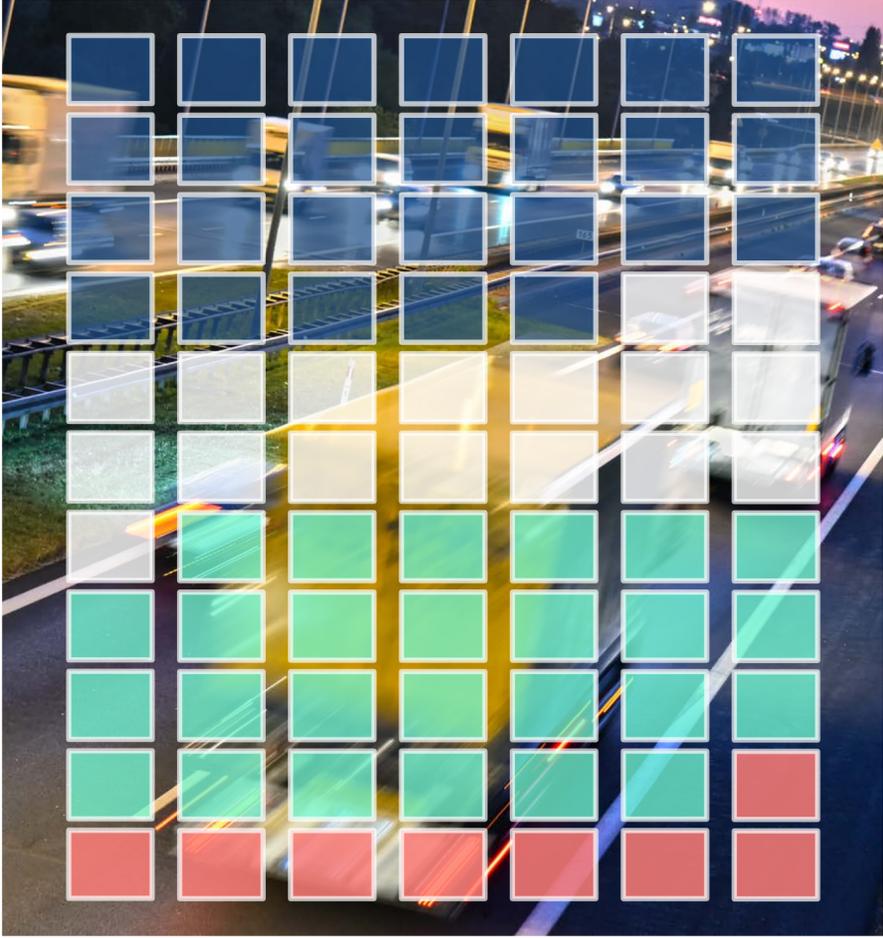
# Expanding into various industries with VANTIQ



Smartcity



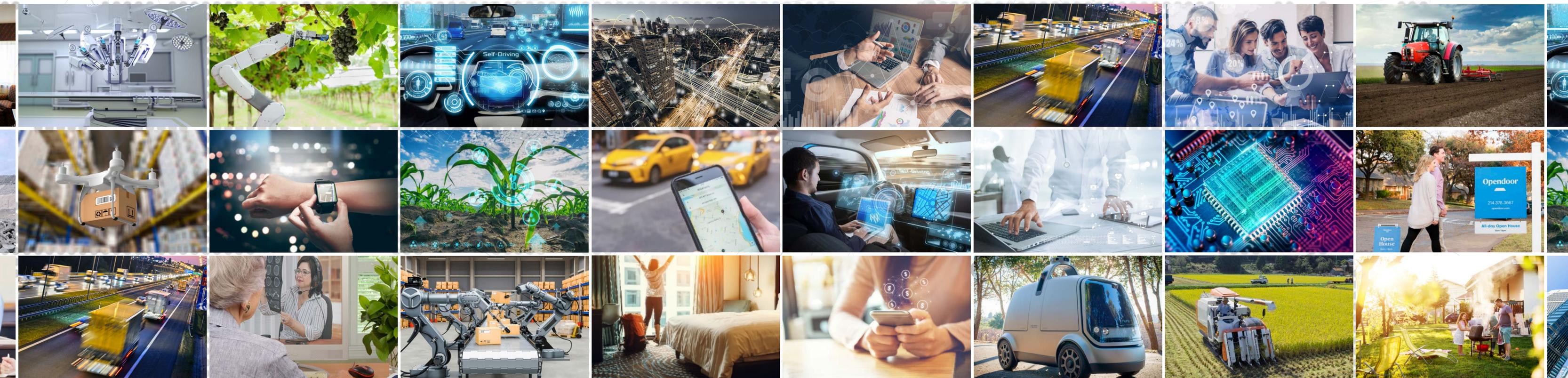
Construction



Logistic

# Together with SIs and Partners

Digital transformation



 SoftBank

VANTIQ 

SIs and Partners