

# **Introduction to JVCKENWOOD DX Business**

October, 2020

JVCKENWOOD Corporation

**1. DX Business**

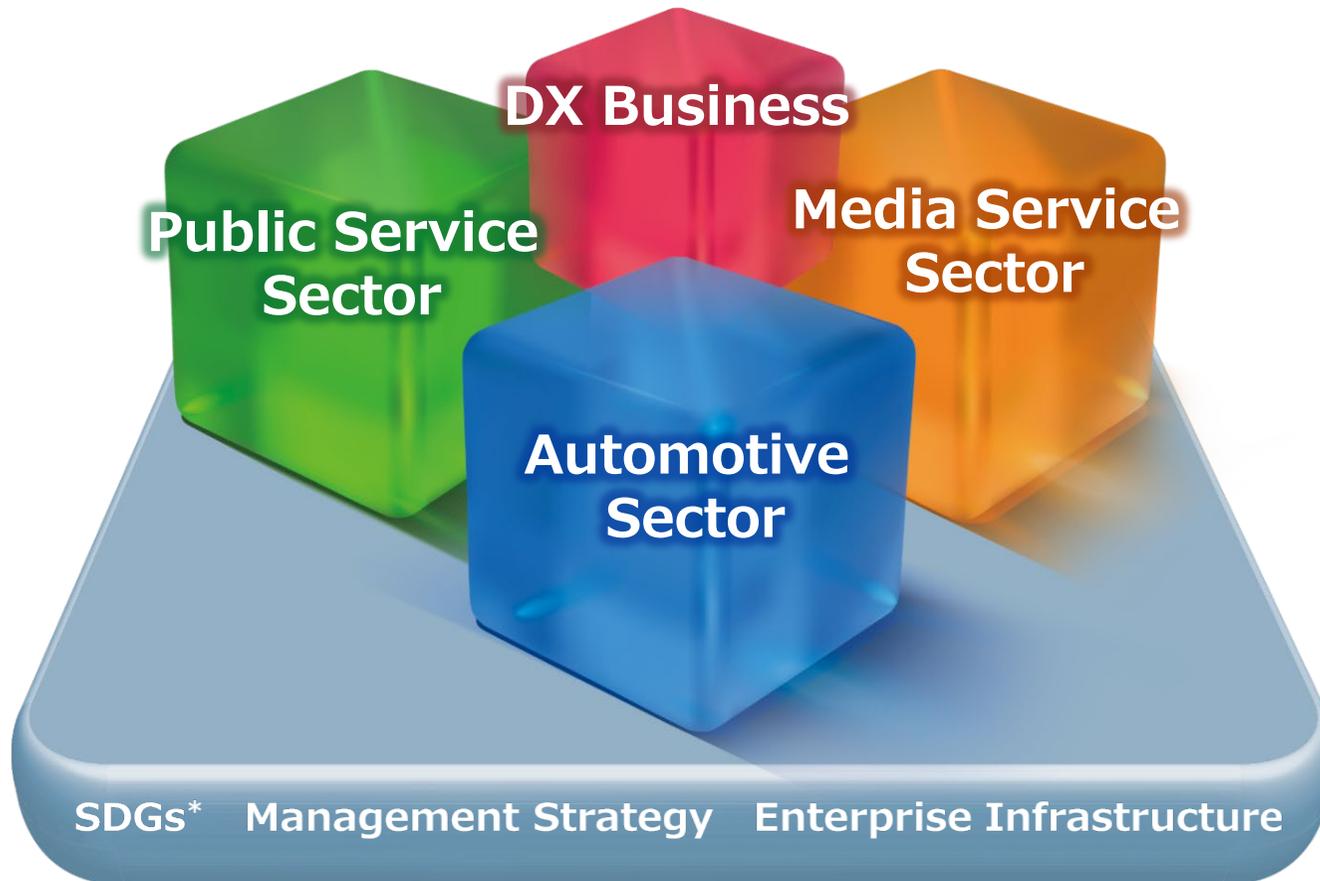
**2. Major Current Businesses**

**3. Growth Scenarios and New Efforts**

# DX Business

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In order to realize “Transform into a customer value creator” in the Vision 2020, we are developing the fourth pillar by creating solutions for customer and social issues utilizing diverse technologies and insight cultivated in the existing three sectors



\*SDGs: Sustainable Development Goals

# DX Business

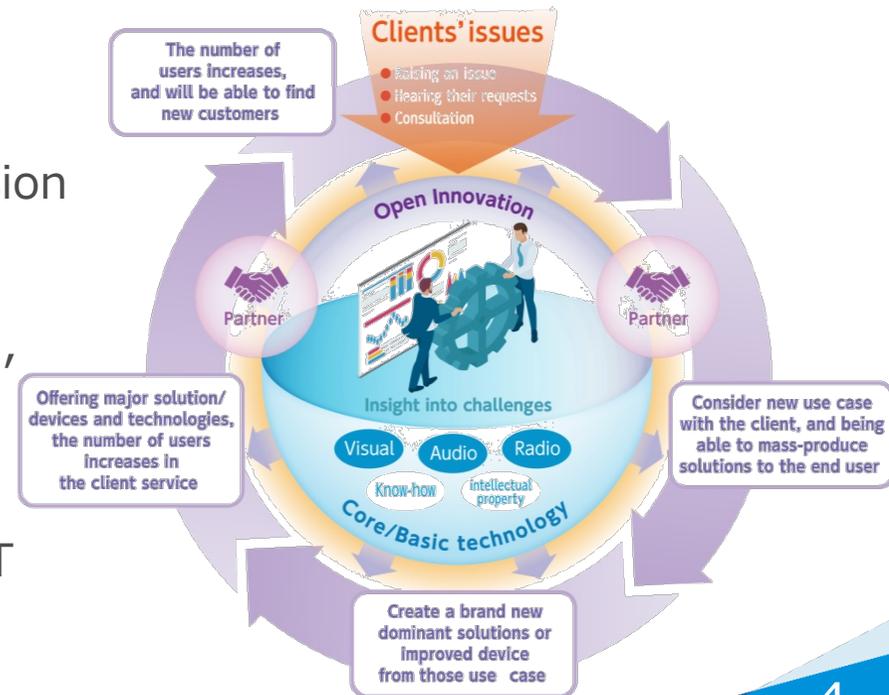
## ■ What is DX (digital transformation)?

“In response to rapid changes in the business environment, companies are using data and digital technology to transform their products, services, and business models based on the needs of their customers and the society, as well as to transform their operations, organizations, processes, and corporate culture in order to establish a competitive advantage”

\*Cited from “‘DX Promotion Indices’ and Guidance Therefor”  
(Ministry of Economy, Trade and Industry)

## ■ What is the DX Business Division?

The DX (Digital Transformation) Business Division aims to provide value by not only proposing products and services that contribute to our customers’ business operations, cost reduction, and efficiency improvement, but also working closely with customers to solve their problems together by making full use of state-of-the-art digital and IT technologies including AI and IoT



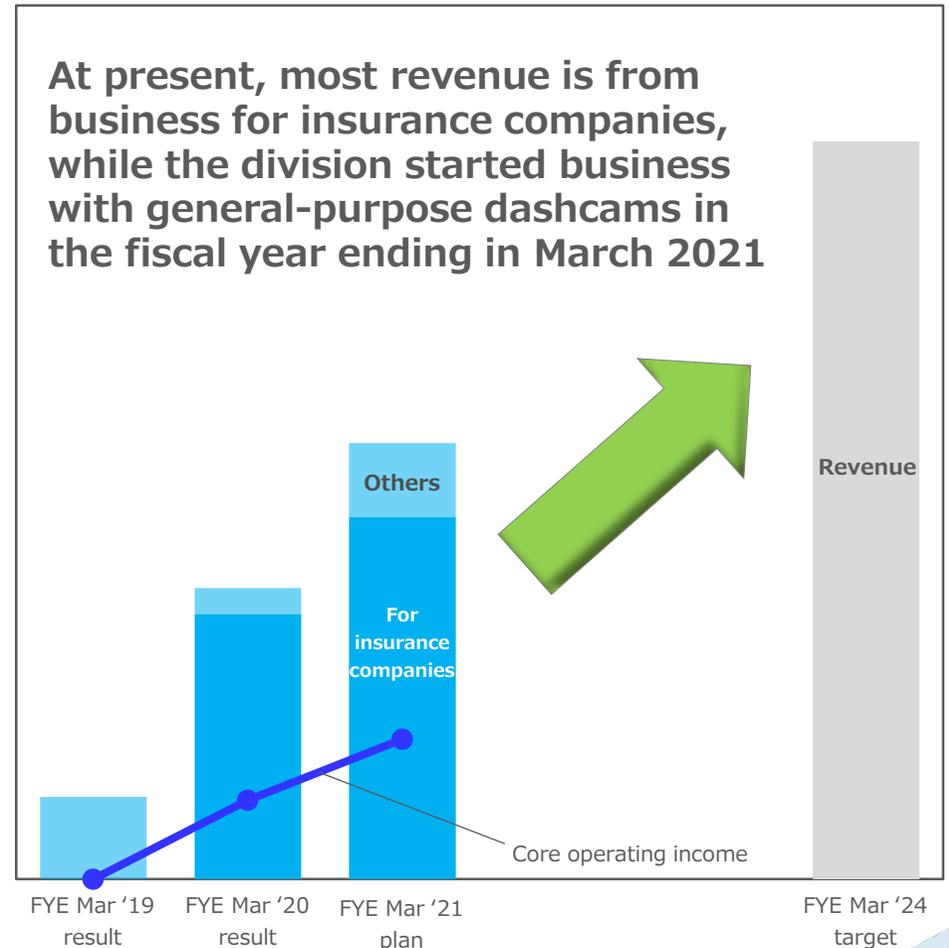
# DX Business Division

## ■ History

- 2016: Established as a team of 4 members within the Corporate Strategy Department
- 2017: Became the Solution Development Dpt., an independent organization under CTO
- 2018: Started the development of lead projects in and before 2017 and began full-fledged sales
- 2019: Established as the DX Business Division.  
Started activities as a full-fledged division.  
Became an organization with about 130 members

## ■ Performance trend of the DX Business Division

**At present, most revenue is from business for insurance companies, while the division started business with general-purpose dashcams in the fiscal year ending in March 2021**



1. DX Business

**2. Major Current Businesses**

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# 1. Telematics Insurance Services Utilizing Dashcams with Communication Capability

**Objective: To provide better insurance services**



Insurance policies  
(optional services for car insurance policies)



- Automatic emergency notification service
- Safe driving support alert
- Continuous recording function
- Driving report
- Watching service

**MS&AD**

Mitsui Sumitomo Insurance

- Cloud system
- Call center

**MS&AD**

Aioi Nissay Dowa Insurance

JVCKENWOOD

- **Manufacturing of devices**
- **Software development**
- **Kitting**
- **Call center**

## Transformation with DX

### Insurance companies

- Reduced accidents through safe driving
- Reduced costs up to accident assessment and private settlement
- Increased policyholders

### Insured person

- Reduced accidents and safe driving
- Prompt emergency procedures
- More accurate judgment of negligence

# 2. Driver Safety Support System

**Objective: To improve service levels by ensuring driver safety**



## Transformation with DX

### Ride-sharing companies

- Better corporate value
- Better safety
- Better image
- Enclosure of drivers

### Driver

- Ensuring physical safety
- Revenue growth
- Prevention of car theft

1. DX Business

2. Major Current Businesses

**3. Growth Scenarios and New Efforts**

# DX Business Growth Scenario: Deepening Efforts with Partners

Customers

Our company

**MS&AD**

Mitsui Sumitomo Insurance

**MS&AD**

Aioi Nissay Dowa Insurance

**JVCKENWOOD**

1

Insurance policies for individuals  
(Car insurance riders)



Sales of dashcams with communication capability and their peripheral services

**Value creation: Reduced accidents, reduced assessment time, increased contract ratio**

2

To insurance policies for business  
(Car insurance riders)

Evolution of dashcams

**Value creation: Reduced accidents, reduced assessment time, increased contract ratio**

Function addition of the Advanced Driver Assistance System (ADAS) and the Driver Monitoring System (DMS)

3

At the time of accident, automatic assessment, automatic registration

Proposal of new dashcams

**Value creation: Reduce assessment time, cost cut**

AI function, improved camera accuracy

# Engineering Dept.'s Efforts for Growth of the DX Business

- The Engineering Dept., which realizes digital transformation, is currently staffed with about 120 members (including internal and external support staff)
- The AI team was established within the department to provide additional value-added functions
- They are promoting development in a wide range of areas including AI, sensors, biometric authentication, device security, communications, and cloud computing (e.g. Technologies related to dashcams)



Drowsy driving icon

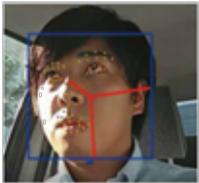


Distracted driving icon



Mobile phone icon

Distracted driving detection screen



Drowsy driving detection screen



## Dashcam + AI

- AI technologies (face authentication, doze detection, mobile phone use detection, looking-away detection, smoking detection)
- Dashcam design technologies (camera video technology, in-car environment support, etc.)

## Dashcam + Cloud server system

- Development of cloud applications
- Mobile communications and networks



## Dashcam + Call/mobile communications

- Sensor technology and communication technology

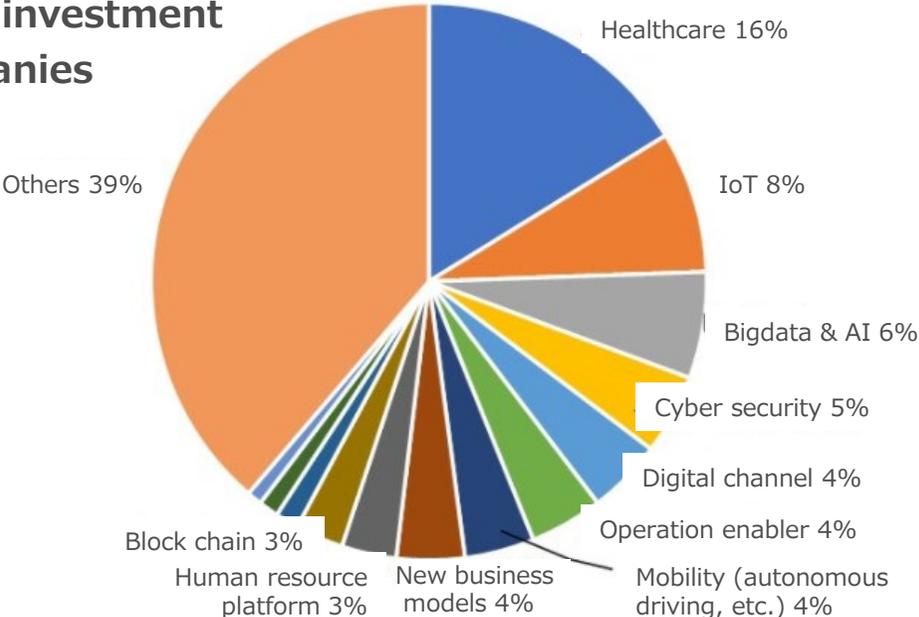


# Insurance Business in the Connected World: InsurTech

## InsurTech = Insurance + Technology

- Digitization is also driving changes in the insurance industry, and many insurance companies are actively investing in InsurTech to develop their insurance-based businesses
- The top investment areas include healthcare, IoT, and big data/AI, indicating that they are interested in topics such as provision of added value and utilization of data in response to changing customer needs

### Areas of InsurTech investment by insurance companies

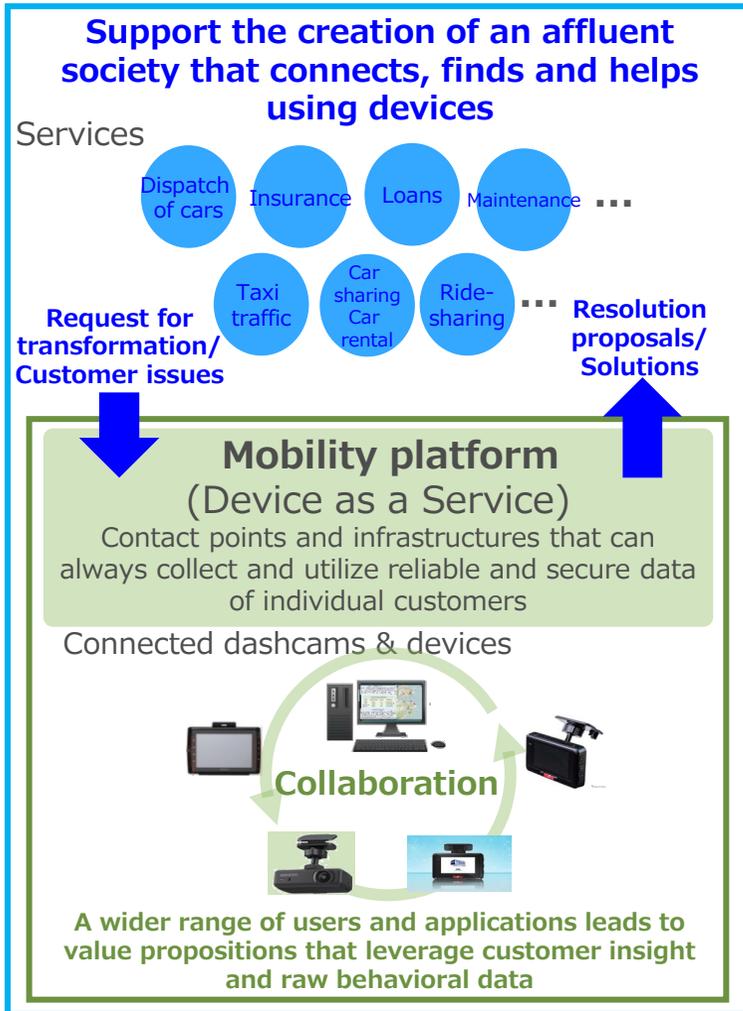


Source: Accenture's analysis of CB Insights data

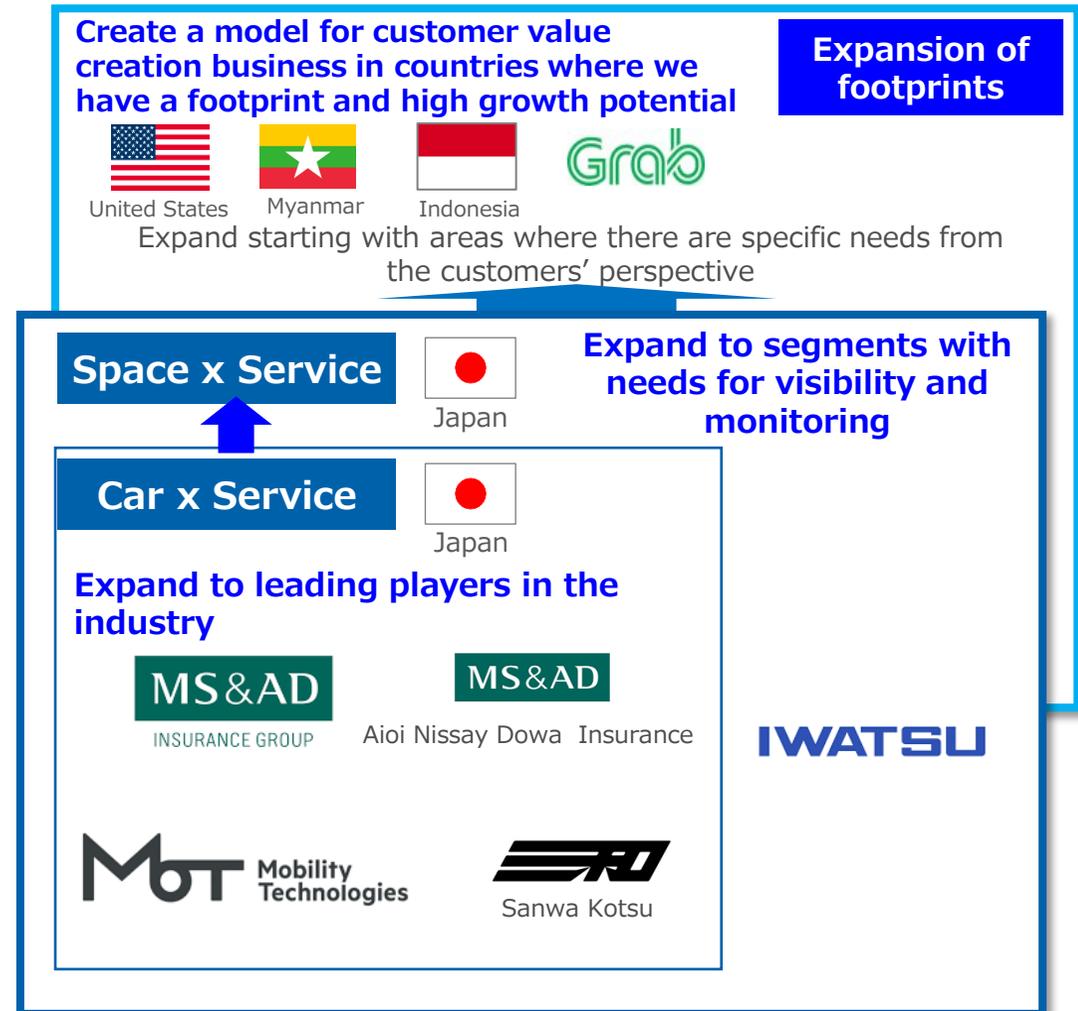
Based on experience gained in the telematics insurance business, we aim to evolve and expand from cars to houses, factories, and other areas

# DX Business Growth Scenario: Expansion of Business Areas and Footprints

## Value and products provided by the DX Business



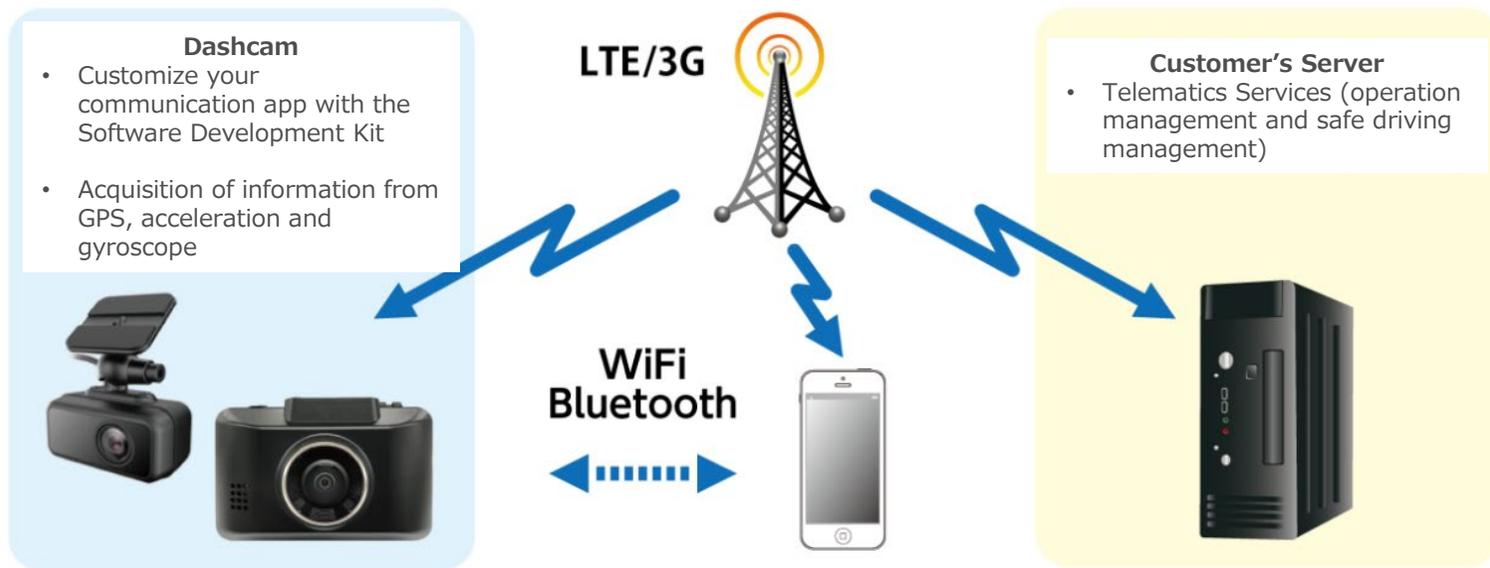
## Expansion from areas where specific accounts exist



# New Efforts in “Car x Service” (1)

## Develop dashcams with communication capability for telematics services

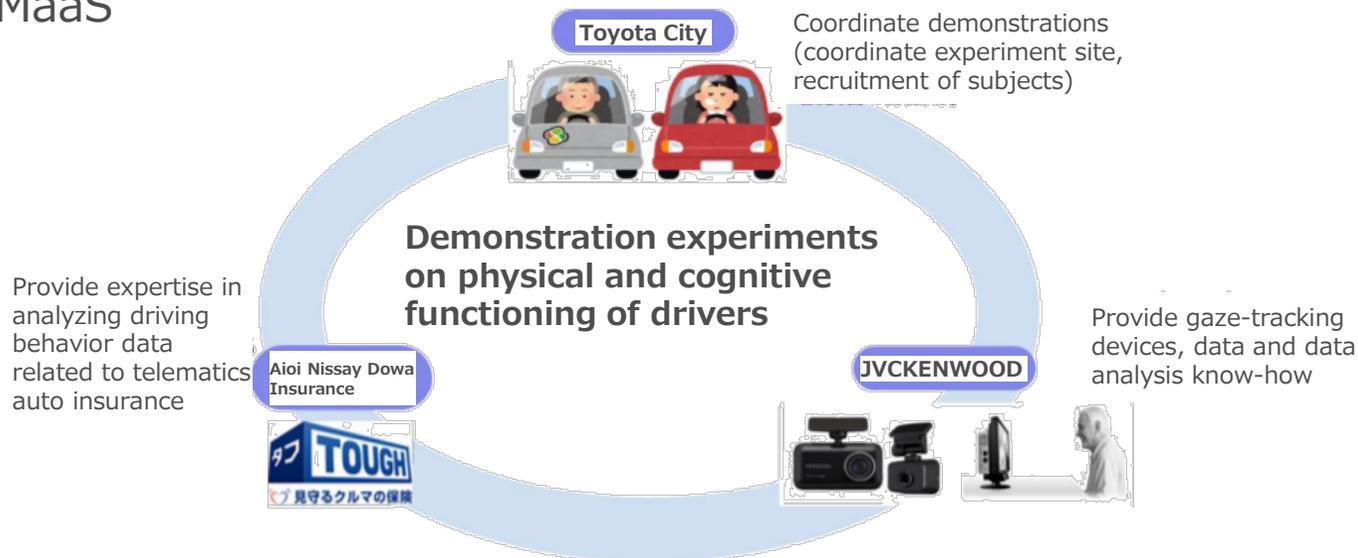
- Dashcams with communication capability for telematics services also focusing on usage as IoT/AI devices
- The adoption of a general-purpose OS enables free customization of dashcam functions and collaboration with external systems according to customer needs, and we will propose it to a wide range of areas



# New Efforts in “Car x Service” (2)

## We started various demonstrations in cooperation with partner companies and local government agencies

- To reduce elderly driver accidents, we started a demonstration on drivers’ physical and cognitive functions using dashcams and gaze tracking systems in February 2020 in Toyota City, Aichi Prefecture, jointly with Aioi Nissay Dowa Insurance and Toyota City
- Jointly with Aioi Nissay Dowa Insurance, Sanwa Koutsu, and Miyoshi Town, Iruma County, Saitama Prefecture, we began a demonstration in December 2020 to improve the convenience of public transportation in the town as an effort to promote MaaS\*



\* Mobility as a service. A new concept of mobility that uses cloud computing for transportation with ICT, perceives mobility in all transportation modes except private cars as a single service, and seamlessly connects them together

# New Efforts in “Space x Service” (1)

## We began selling the edge AI camera

We started, as the sole distributor, selling edge AI camera products made by BiZright Technology, a planning and manufacturing venture for open source hardware (OSH)

Useful in various situations by using applications depending on the purpose

Money transfer scam detection

Gaze detection

Specific person detection

Defect check

Missing item check

Analog meter reading

Abnormal behavior detection

Specific object detection

Inventory check

Human body and object count



# New Efforts in “Space x Service” (1) Edge AI Camera

## A solution to prevent money transfer scams using edge AI cameras

At an actual branch of North Pacific Bank, we demonstrated a solution to prevent fraud and money transfer scams related to benefits and subsidies for measures against the novel coronavirus. We aim to commercialize this solution in actual branches in the future



1. Edge AI cameras to detect people who are on the phone for more than a certain amount of time in front of an ATM.

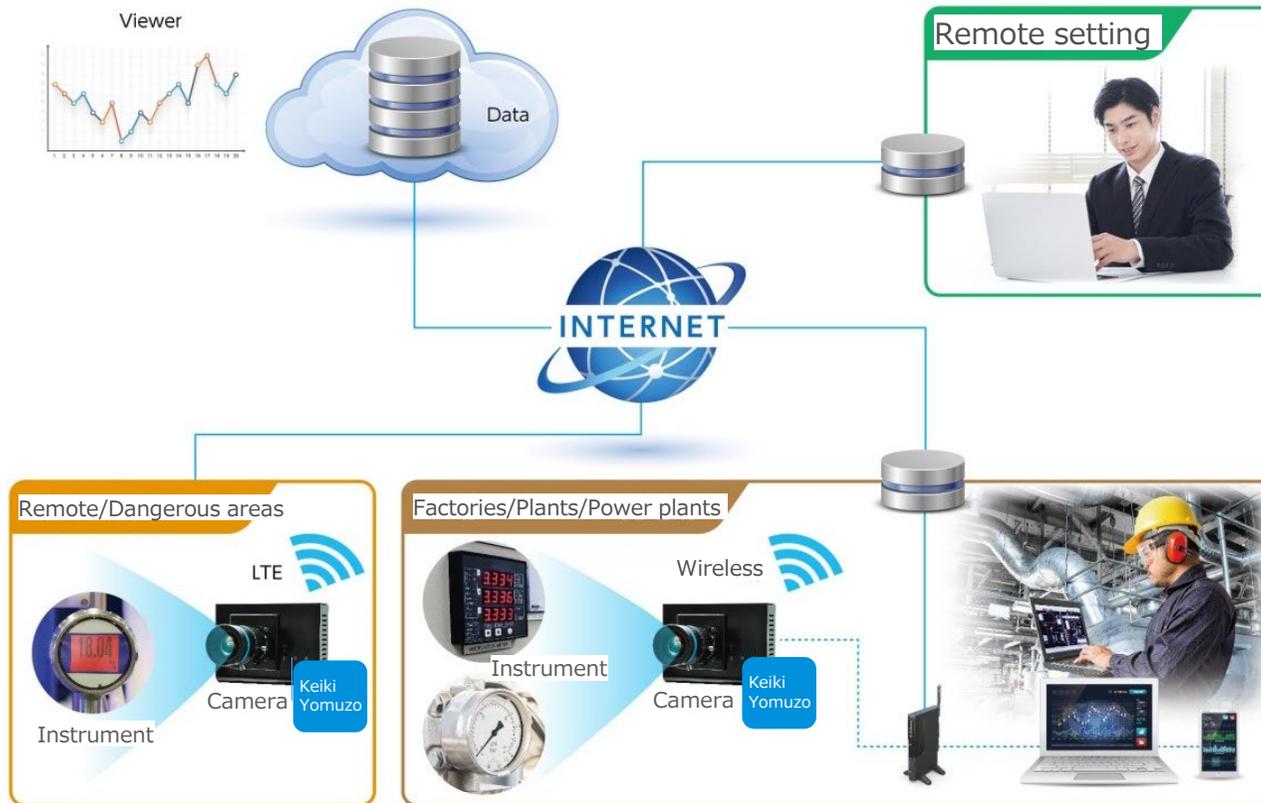
2. Real-time notifications to responsible staff on an incident basis.

3. Customer service staff talks to customers to prevent billing fraud.

# New Efforts in “Space x Service” (1) Edge AI Camera

## A solution for linking edge AI cameras and automatic meter reading software

In collaboration with Iwatsu Electric, we started offering a solution for factory automation (FA) that links our edge AI cameras and Iwatsu’s automatic meter reading software “Keiki Yomuzo”



# New Efforts in “Space x Service” (2) Bathroom Safety and Security System

## An emergency alarm system for reducing risks of fatal accidents in a bathroom

We propose this to various sectors including house manufacturers, bathroom and bathtub manufacturers, and security companies that rush to the scene in response to an alarm

Accidental deaths in every life  
Sudden death while bathing/Traffic fatalities

Approx. **19,000**<sub>people</sub> >> **3,904**<sub>people</sub>

19,000 = Estimated sudden deaths while bathing\* 3,904 = Annual traffic fatalities (2016)

Aim to prevent the sudden loss of a family member  
Aim to protect distant parents from bathroom accidents  
Aim to create a community free of lonely deaths

Turning a bathroom more dangerous than the road into a safe and relaxing space

**Aiming to promote bathroom safety and security systems**

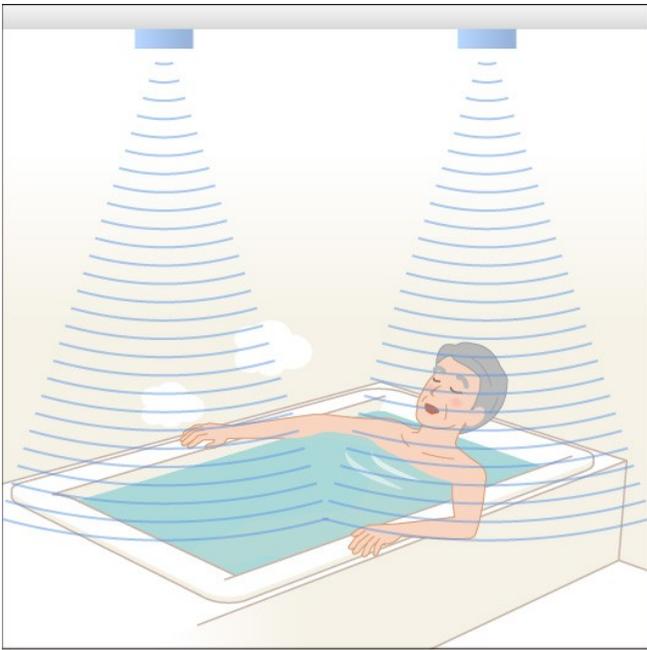


\*Estimated 4,866 emergency transport deaths in 2014 according to the Ministry of Internal Affairs and Communications, plus non-emergency transport deaths

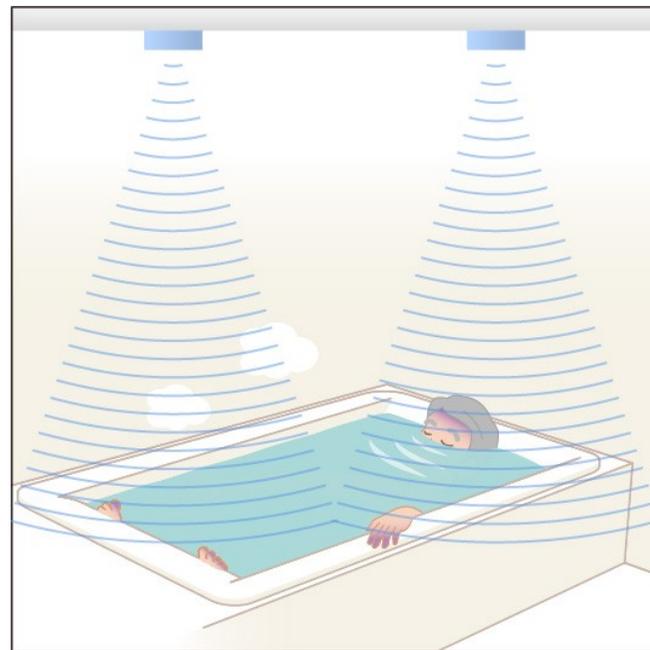
# New Efforts in “Space x Service” (2) Bathroom Safety and Security System

## Reduce risk of bathroom accidents by measuring the position of the bather’s head with ultrasonic technology

- Changes in the position of the bather’s head can be detected in about three seconds with proprietary sensing technology mainly using ultrasonic waves
- After confirming consciousness with an audio alarm, an alarm is issued to the outside in about 18 seconds to enhance the possibility of early life saving activities



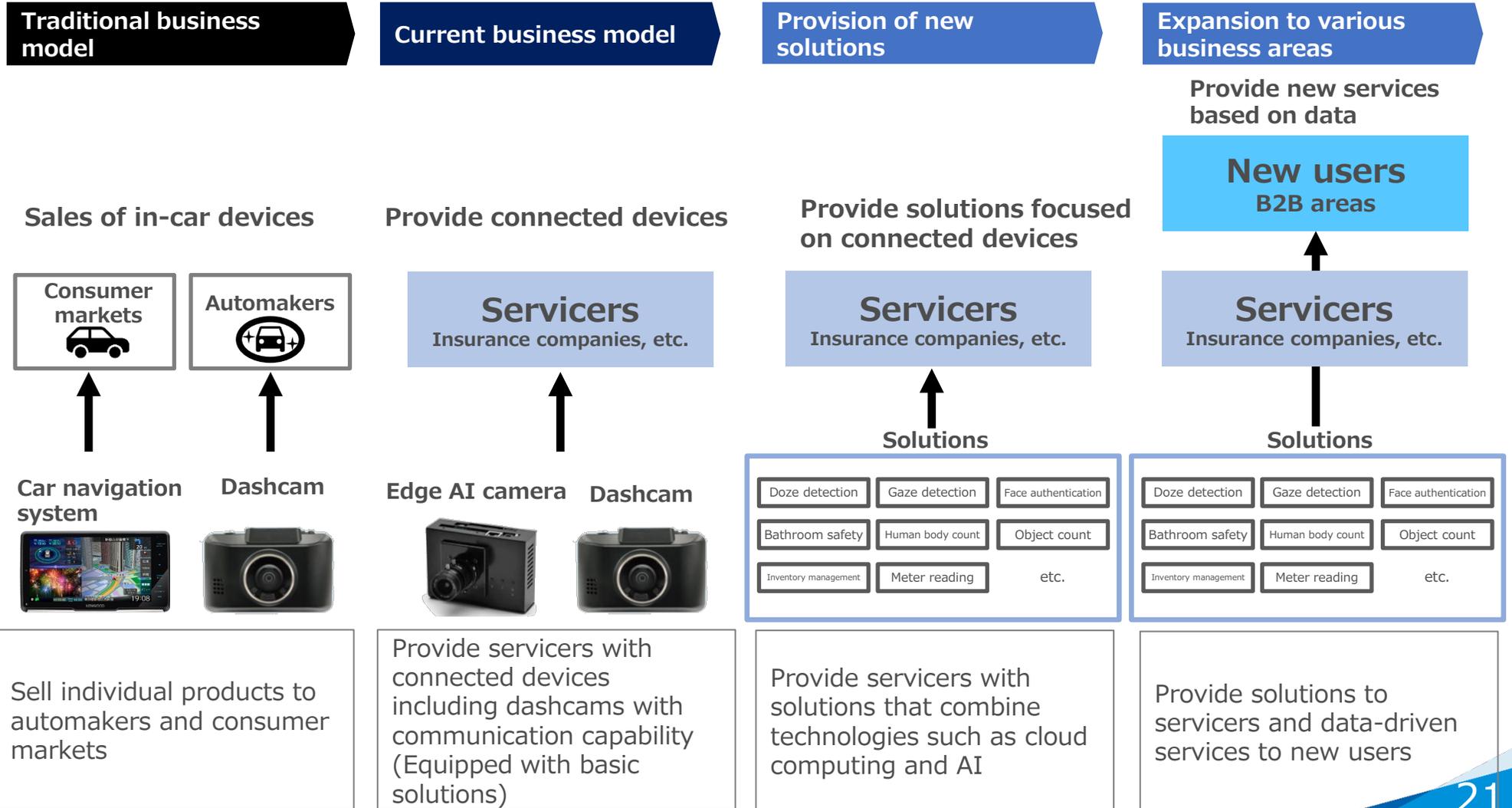
The ultrasonic sensor measures the position of the bather’s head



If the position of the head changes, the system determines whether there is drowning, notifies the person by an audio alarm, and then notifies outside

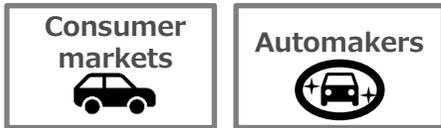
# DX Business Growth Scenario: Summary

We aim to expand into various business areas, from cars to spaces, by installing more intelligent functions primarily in connected devices including dashcams with communication capability



## Traditional business model

Sales of in-car devices



Sell individual products to automakers and consumer markets

## Current business model

Provide connected devices



Provide servicers with connected devices including dashcams with communication capability (Equipped with basic solutions)

## Provision of new solutions

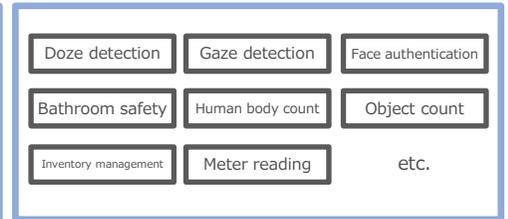
Provide solutions focused on connected devices



Provide servicers with solutions that combine technologies such as cloud computing and AI

## Expansion to various business areas

Provide new services based on data



Provide solutions to servicers and data-driven services to new users

# Reference

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## **Commercial video for Mitsui Sumitomo Insurance's GK Mimamoru Car Insurance**

GK Mimamoru Car Insurance (Dashcam Type): Video judgment  
<https://www.youtube.com/watch?v=bQ3gmq7dKwU>

The advent of service for company-owned cars (fleet contract) "F-Dora"  
<https://www.youtube.com/watch?v=RxQUaw8n01E>

GK Mimamoru Car Insurance (Dashcam Type): Advent of the rear camera!  
<https://www.youtube.com/watch?v=eNQqqogYXE0>

## **Promotional video for Driver Safety Support System for Grab Indonesia (in Indonesian)**

[Kata Mitra] Lengkapi Keamanan Berkendara dengan Layanan Kamera Grab Siaga  
<https://www.youtube.com/watch?v=kAwdRVJIW9k>

[Jakarta] Layanan Keamanan Grab Siaga untuk Mitra GrabCar Jakarta  
<https://www.youtube.com/watch?v=unsXx6vdNuQ>

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