WHAT IS TELEMATICS AUTO INSURANCE?
■ Expectations are high for telematics auto insurance and services as an incentive insurance to encourage drivers to drive more safely. Based on telematics technology, the product uses various types of data collected from automobiles.
### Driving tendencies
- Sudden acceleration
- Sudden braking
- Handling
- Distance
- Speeding
- Time

### External conditions
- Rainfall
- Cloudiness
- Temperature
- Sunlight
- Wind speed
- Location, etc.

### Road type
- General roads
- Major roads
- Highways
- Ratio of more dangerous roads

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- **Telematics insurance being developed around the world**
- **Most widespread in the US, UK, Italy, and South Africa**

<table>
<thead>
<tr>
<th>Location</th>
<th>Recent developments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US</strong></td>
<td>- Most developed telematics insurance market</td>
</tr>
<tr>
<td></td>
<td>- Market leader Progressive Auto Insurance has 4mn+ policyholders</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td>- Primarily through use of mounted devices and smartphones</td>
</tr>
<tr>
<td></td>
<td>- Most UK business models are oriented toward younger drivers, with high premiums</td>
</tr>
<tr>
<td></td>
<td>- In Italy, telematics insurance is largely intended to deter theft using mounted devices</td>
</tr>
</tbody>
</table>
BACKGROUND TO DEVELOPMENT OF TELEMATICS AUTO INSURANCE

Aioi Nissay Dowa Insurance Co. was formed in October 2010 from the merger of Aioi Insurance Co. and Nissay Dowa General Insurance Co.

Aioi Insurance was formed from the merger of Dai-Tokyo Fire & Marine Insurance and Chiyoda Fire & Marine Insurance.

Dowa Fire & Marine Insurance and Nissay General Insurance merged to form Nissay Dowa General Insurance.

⇒ Non-life insurance company with strength in automobile insurance.

Offers progressive products and services.

Dai-Tokyo Fire & Marine Insurance
First insurer to offer Road Service

Chiyoda Fire & Marine Insurance
Original products and services for Toyota market

Dowa Fire & Marine Insurance

Nissay General Insurance

Aioi Insurance Co.
Apr 2001

Aioi Nissay Dowa Insurance Co.
October 2010

Strength is automobile insurance, offers progressive products and services
Focusing on Toyota・Nissay market
### Original Products for Toyota Vehicles

**An auto insurance developed from crash tests - Don! To omakase**
- The only Japanese insurer with crash test facilities and with original products developed using the company’s close affiliation with an automobile manufacturer.
- Company crash test facilities are used to assess vehicle durability and ease of maintenance to offer insurance premium discounts.

**Original products developed based on partnership with Toyota**
- A convenient and reasonable auto insurance premium that allows automobile installment payments and insurance premiums to be paid together 「Conbini Plan」
- Auto insurance with no accident incentive, payable with credit card 「Nagaraku Plan」
- Automobile insurance affiliated with T-connect, Toyota’s telematics service 「Tsunagaru Automobile Insurance」

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**WHY AIOI NISSAY DOWA INSURANCE ENTERED THE TELEMATICS AUTO INSURANCE BUSINESS**
The expanding connected car market

Automobile market forecast (unit: 10,000 cars)

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>7.6mn</td>
<td>85mn</td>
</tr>
<tr>
<td>Japan</td>
<td>90,000</td>
<td>12.75mn</td>
</tr>
</tbody>
</table>

*Source: Automobile Dealers Association.*

Approximately 140x bigger

Connected car market forecast

Insurance claim payouts

Promoting safe driving reduces accidents and lowers insurance payouts → Bigger profits

Higher company costs from lower unit cost (discounts) and telematics fee cause profit to decline

Bigger profits

Promoting safe driving reduces accidents and lowers insurance payouts → Bigger profits

Higher company costs → Lower profits

Reduction in payouts go toward profit
Preparing for autonomous vehicle insurance

Who is the responsible party for accidents involving autonomous driving?

Can the cause of self-driving vehicle accidents be investigated?
  System malfunction, cyber attacks • • •

How are accident conditions confirmed when the autonomous vehicle system is in use?

Auto insurance companies that cover autonomous vehicles need the ability to collect and the expertise to analyze travel data in order to pinpoint the cause of accidents.

One of the first telematics insurance companies to work together with automakers ahead of autonomous vehicle coverage.

TSUNAGARU KURUMA INSURANCE PRODUCTS AND SERVICES
PAYD: Pay-as-you-drive insurance premium reflects actual distance traveled

Vehicle data is collected automatically using telematics technology. Insurance premium paid only on actual monthly distance traveled (unit: 1km).

Japan’s first insurance that reflects driver behavior

“TOUGH-Tsunagaru” Auto Insurance

Telematics auto insurance for Toyota connected cars
“TOUGH-Tsunagaru” Auto Insurance

Provide necessary data to calculate premium, provide service

Toyota Smart Center

Toyota Dealers

Aioi Nissay Dowa Insurance

Provide Insurance and Service

Customer Connected Car

Provide the driving data

Enjoying to drive safe

You can feel that your driving skill is progressing while having fun by Safe Driving Score. we provide 2 kind of advice "Drive Report" & "Monthly Report".

Confirm your drive every time

Drive Report

- Safety Driving Score
- Advice for you
- Drive Report Map
- Alarm Information

You can feel your driving skill is progressing by Safety Driving Score.

Confirm your result every month

Monthly Report

- Safety Driving Score
- Calculated premium
- Advice for you

We will provide New Service to make your driving more fun since Dec. 2018.
“TOUGH-Tsunagaru” Auto Insurance

**Saving by drive safe**
You can get discount spontaneously during enjoying safety driving.
You can get discount by safety driving completely.

- **Premium** is consisted by "Basic Premium" and "Driving Premium".
- **Driving Premium** is calculated by "Safety Driving Score" and "Distance".
  - **Safety Driving Score**
    - **Score Calculation**
      - 80~ score: 80% OFF
      - 60~79 score: 40% OFF
      - 59 score: No discount
    - **Distance for a year**
      - 4,000km: 97,700¥
      - 6,000km: 93,600¥
      - 8,000km: 99,200¥
      - 10,000km: 105,480¥
      - 12,000km: 115,080¥

You will be satisfied with reasonable premium.

**Safely driving point**
It is important to know safely driving’s point for getting high score.

1. **Starting**
   - Soft acceleration
     - You hit the gas pedal calmly when you leave. After that you hit more gradually.
   - Accurate following distance
     - This is the point to keep accurate following distance.
   - Acceleration off earlier
     - You release the gas pedal early when you speed down. As first you hit the brake calmly and hit firmly step by step after it works.

2. **Driving**
   - Sudden acceleration
     - You feel impact like being pulled back when you hit the gas pedal suddenly.
   - Over speed
     - You may speed up unconsciously when you drive at the fast lane for a long time.
   - Sudden brake
     - You feel impact like falling forward when you hit the brake suddenly.

3. **Stopping**
   - You can confirm both monthly and driving premium by using application.

How to confirm premium
You can confirm past data.
“TOUGH-Tsunagaru” Auto Insurance

Supporting for your safety
We call to customer of "TOUGH-Tsunagaru" automatically when the car get big impact.
We support to ask towing service and making accident report. Then we also call to your family.

Emergency Real Time Support
We call you to confirm your safety when TOYOTA connected car gets big impact and inform about it to report reception desk automatically.

Safety For Driver
Worrying about your child who just get car license.
Worrying about your parents who live in far distance.
Worrying about your husband who commute by car.

Safety Watching Support
We send e-mail to your family about accident, injure or not, use ambulance or not.
This service was created by customer's voice.

If you don't need calling from Aioi...
If you don't need calling from Aioi, We send you e-mail.
We will arrange tow service, rent car and report accident after we got contact from you as usual.

TSUNAGARU AUTO INSURANCE SALES THUS FAR
Acquisition of new contracts and reduction of accidents

◆ Acquisition of new contracts

- Among newly registered Toyota’s new-type ‘Crown’ cars in July, ADI acquired a large share of auto insurance contracts above its market share.
- Over 70% of ADI’s auto insurance contracts for new-type ‘Crown’ are ‘Tough Tsunagaru’ PHYD-type contracts.
- Our share of new contracts for ‘Lexus’ exceeded the share in the same period of last year.

◆ Reduction of accidents

- This type of incentive for safe driving in the form of an insurance premium discount attracts good drivers and promotes safe driving awareness. As a result of this, three-quarters of policyholders are receiving the biggest discount.
- Over three-quarters of contracts are those where a discount has increased or stayed at the highest level due to the rising safe-driving awareness after buying insurance.
- Accidents are down sharply over 30% compared to traditional, non-telematics products and distance-based PAYD-type products.
Telematics and mobility businesses around the world

- Creating new mobility field businesses through tie-ups with Toyota Motor and using ITB knowhow
- Telematics and data businesses developing in four poles: Japan, Europe, US, and Asia

Europe
- ITB knowhow
- MaaS Global

US
- Data business linked to Toyota Mobility strategy

Asia
- Business models oriented toward sharing businesses, like Toyota-Grab

Japan
- Expansion and development of insurance and services in telematics, mobility fields

- Establishment of telematics, data businesses
- Creating business opportunities in mobility fields
- Telematics becoming profitable through four-pole system
- Developing new businesses in mobility fields

Europe – Acquired Box Innovation Group

- In 2015, the Insure the Box (ITB) business was expanded and UK telematics insurance company Box Innovation Group (BIG) was acquired
- Total of 900,000 sold, data collected on approximately 6.5bn kilometers driven (equivalent to 16 trips around the earth), end-March 2018
- Known for its original product design and services

[Key data collected]

1. Original device ("Blackbox") is mounted on policyholder vehicles to collect driving behavior data
2. Offers latest products, services in Europe based on driving behavior data
3. Company targets younger drivers, since premium discounts based on telematics are bigger for younger drivers with higher premiums
4. ITB partners with Tesco, the UK’s biggest logistics group with third-highest sales in the world, and has expanded by combining Tesco member data with telematics insurance.

Driving data
Blackbox in policyholder car
Data center
Call center
Europe – ITB product outline

Distance-based prepaid-type auto insurance with safe driving rewards that encourage policyholder safe driving

1. **Buy [Base miles]** at signup (choose from [6,000], [8,000], or [10,000] miles)  
   \(<1 \text{ mile} = 1.6 \text{km} >\)

2. **Get [Bonus miles]** based on driving tendencies (※ up to 100 miles/month)  
   - Collect distance and driving tendency data from Blackbox, give bonus miles to better drivers  
   - Policyholder can confirm distance, driving tendency, and bonus miles data from portal site.

   ![Graph showing monthly distance driven and driving habits](image)

3. **Buy [additional miles]** when miles insufficient  
   - Policyholder can confirm balance of unused miles, and buy more if insufficient through portal site

   ![Mileage balance during policy term](image)

Europe – ITB services

**Emergency service:** Emergency service using data from Blackbox

When an accident appears to be big based on Blackbox data, the call center connects with the policyholder’s cellphone

**When vehicle is stopped after a strong impact**  
- When an accident is expected to be so severe that the car is immobilized, an emergency call is placed to the policyholder to confirm the policyholder’s condition  
- The center helps with the policyholder’s transport as needed

**When there is no response on the cellphone**  
- A serious accident is assumed when there is no response  
- An emergency call is made to the police and ambulance as needed

※ An example of the Blackbox emergency service saving a life (See figure above right, Daily Mail News)

**Stolen vehicle tracking:** Pursue stolen vehicles using Blackbox data → Retrieve

Following a stolen vehicle report by the Policyholder, location data from the Blackbox is used to track and retrieve the vehicle  
- The stolen vehicle is retrieved together with the police, using vehicle location and movement information  
- The Insure the Box Blackbox is mounted in a spot not visible from outside the vehicle, so the retrieval rate for stolen vehicles is very high.
Europe - Encouraging safe driving for speeders

- The loss ratio for dangerous drivers who well exceed speed limits is double the average
- A ‘caution’ message is flashed to speeding drivers, encouraging safe driving

Winner of the Data Analytics Excellence Award at the 2017 Tech & Innovation Awards
⇒ By using travel data from the Blackbox and cautioning the speeder, drivers become more aware of safety, leading to a lower loss rate. This system has garnered positive reviews.

Europe - Insurance anti-fraud measures using telematics technology

- Travel data used to deter fraudulent insurance claims
  ⇒ By confirming map data together with detailed traveling data, the credibility of the testimony (perpetrator and victim) can be assessed

<Example: Denial of fraudulent insurance claim using GPS data>

- Sept 2015: Traveling data from Blackbox used as court evidence for first time
  • Two drivers who pretended to be unknown to each other were involved in a car accident and made personal injury claims
  • ITB Blackbox data showed that the perpetrator had visited the victim approximately 50 times over the six months prior to the accident. ITB rejected the insurance claim.
  • A judge then ordered the two perpetrators to pay ITB £14,000 in compensation for insurance fraud.
  ※Source: This is MONEY.co.uk (FINANCIAL WEBSITE OF THE YEAR), October 14, 2015

- Past travel data shows vehicle fraudulently covered
  • ITB does not cover company vehicles
  • A policyholder applied for coverage, stating the vehicle was not used for business
  • When the policyholder reported an accident, the investigation found that the car was frequently parked at a different location from the home address. The investigator examined the specific location using map and GPS data
  • The investigator found that the vehicle was frequently parked in front of a specific restaurant, and the car was excluded from coverage because it was used for business.
  The fraudulent claim was dismissed.

- Mounted device collects unusual travel data causing accident
  • The policyholder reported he was the victim of a traffic accident
  • There were four passengers in the policyholder’s car, and all four claimed they were injured by the impact (and sought injury payment)
  • The data showed the policyholder’s driving prior to the impact was clearly unusual, and that he had circled the roundabout three times.
  • As a result, the policyholder was found to have deliberately chosen the dangerous location and willfully caused the accident. The fraudulent claim was denied.
Europe – Insurance Fraud Award, Winner for two straight year

- ITB won the *Combatting Fraud Technology of the Year* award at the Insurance Fraud Awards in 2016 and 2017.

US – Toyota Insurance Management Solutions

- Joint stock partnership Toyota Insurance Management Solutions established in 2016 (MS&AD Group 50%, Toyota Connected 5%, Toyota Finance 45%) combining knowhow on data (Toyota Connected Co.), finance (Toyota Finance), and insurance (MS&AD Group) to offer the optimal telematics insurance services to customers.
- Toyota user data is processed using original algorithms. The data is reflected in user services and premium rates and provided to partner insurance companies.

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**TMC connected strategy**

- Preventing vehicle data from leaking
- Monetizing data collected from vehicles
- Using knowhow for connected strategy

**Customer**

- Vehicle data
- DCM data storage
- Big data analysis

**Toyota Connected**

- Vehicle data (for insurance)
- Data usage fee

**TIMS**

- Telematics data analysis
- (Examples)
  - Distance driven
  - Driving time
  - Time of day
  - Brake, accelerator usage etc
- + added value
- Vehicle data (for insurance)
- Data usage fee

**Optimal telematics auto insurance**

- Safe driving advice
- Reasonable telematics premium

**US partner Insurance companies**
Aioi Nissay Dowa Services Asia Pte. Ltd established in 2017 ahead of business creation and development in SE Asia, where telematics and mobility expansion is anticipated.

Main businesses:
- Telematics service and consulting
- Surveys of new areas (InsurTech • self-driving)

Business partners
- AIS Asia
- MSIG SG
- Grab
- TransLog
- CAMBRIDGE MOBILE TELEMATICS

Grab telematics fleet insurance case

- Using data to promote safe driving
- Insurance premium
- Distance data analysis
- Distance data

Investment stake in Grab to collaborate primarily in ride sharing, also joint R&D

Thailand
- First PAYD (distance-based automobile insurance) in Thailand approved in March 2016
- Launched March 2018