Keidanren
Policy & Action

The Examples of Personal Data Utilization

November 15th, 2019
Japan Business Federation

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【Type Ⅰ】

Utilize personal data with consent of relevant individuals and return results back to them and society

1. Sompo Holdings, Inc.

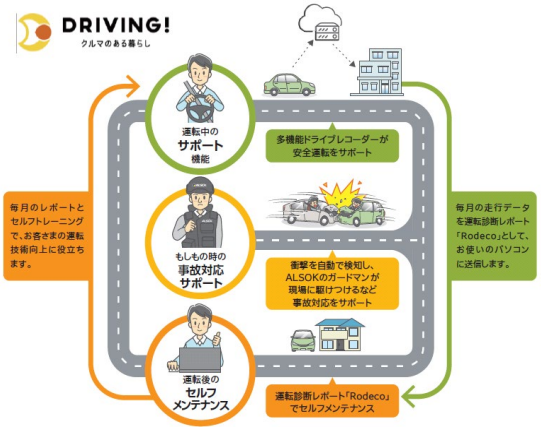
Utilization of driving information

Outline 1

- Uses a free smartphone application to provide functions unique to an insurance company, such as alerts regarding frequent accident points and driving safety diagnosis; also provides an advanced car navigation system.
- Provides a safe driving discount that discounts a first car insurance by up to 20% according to the results of a driving safety diagnosis.

Outline 2

- Contributes to a safe and secure society by providing drive recorders with a communication function.
- Provides total support including safety diagnosis during driving and transfer of video data to a specified destination when an accident occurs, etc.



Expected benefits

- For society: Decreased traffic accidents, accumulation of accident and near miss information, alleviation of traffic jams
- For individuals: Promotion of safe driving, recognition of accident black spots, discount on premiums

Issues to be addressed

- Advancement of an organic cooperative structure between data and AI experts and personnel who plan businesses
- Use of anonymously processed information

2. Tokio Marine Holdings, Inc.

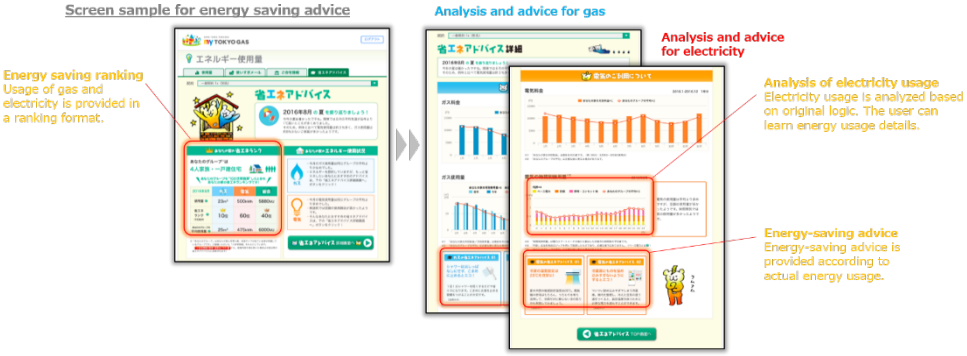
Utilization of driving information and health information
Outline ● Contributes to safe, worry-free car ownership through services using drive recorders with a communication function. Assists safe car ownership with support during driving and following accidents, etc.    ● Offers the industry's first medical insurance using a wearable device, called Aruku Hoken (walking insurance), developed jointly with NTT DOCOMO. If an insurant walks 8,000 steps per day, a portion of the premiums is refunded.       
Expected benefits ● For society: Decreased traffic accidents, accumulation of accident information, curbing of social insurance premiums ● For individuals: Promotion of safe driving, decreased accident rates, health promotion
Issues to be addressed ● Cultivation of specialists in data and AI (data scientists, etc.) ● Use of anonymously processed information

3. Tokyo Gas Co., Ltd.

Utilization of energy consumption data (to provide energy-saving advice and excessive-use alerts)

Outline

- Supports household energy conservation by providing energy saving rankings, analysis of energy usage, and hints for conserving energy based on gas and electricity consumption data and household information entered by the subscriber (energy-saving advice)



- Monitors daily consumption and forecasts total consumption at the end of the month with reference to the monthly target for electricity consumption specified by the subscriber. The subscriber is notified by email when the target is likely to be exceeded, thereby supporting energy saving (excessive-use alerts)

- Both services are offered as free member services by myTOKYOGAS, a free online service provided for residential gas or electricity customers of Tokyo Gas. They help customers to use energy wisely so that they can live comfortably while saving energy.

Expected benefits

- For society: Promotion of energy saving and CO^2 reduction
- For individuals: Reduction of energy costs, improved awareness of energy saving

Issues to be addressed

- Development of an appropriate method of updating customer information

4. Tokyo Gas Co., Ltd.

Establishment of health promotion platform for treatment of presymptomatic diseases

Outline

- In collaboration with Tokyo Institute of Technology, the city of Kakegawa in Shizuoka Prefecture, aiwell Inc., and Osaki Electric Co., Ltd., Tokyo Gas conducted a pilot test targeting senior citizens in Kakegawa.
- When senior citizens engaged in physical exercise to promote health conducted twice a month at the welfare center, Tokyo Gas checked the basic health data (body composition, weight, blood pressure) of participants and conducted an advanced medical test (proteomics) and blood test using micro-blood collection. A smart watch was supplied to each participant to monitor daily exercise; the pilot test also involved collection of various lifestyle data such as energy usage data stored up through a smart meter installed at each household and data detected by physical movement sensors.
- The aim was to establish a health promotion platform for treatment of presymptomatic disease that would enable data collected to be used to support the health of individuals through collaboration between public services and private services.

Expected benefits

- Notification and early handling of changes in health before nursing care becomes required
- Solving various social issues, such as increasing medical costs, individuals without access to nursing care, prevention of solitary death, and medically underserved areas, etc.

Issues to be addressed

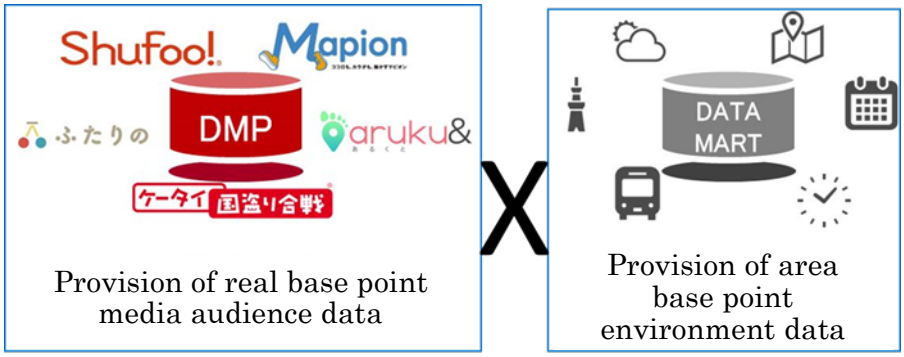
- Creation of services that are continuously used and prompt behavior changes among customers
- Acquisition of new knowledge by using AI to integrate and comprehensively judge data that are difficult to use individually

5. Toppan Printing Co., Ltd.

Shufoo—Digital Flyer Service

Outline

- Digital versions of advertising flyers are delivered to users via a service called Shufoo. The service enables the distribution of effective, targeted marketing by combining data on consumers' purchasing areas with meteorological data, such as differences in weather and temperature in each region.
- Data on the browsing of the flyers is collected, analyzed, and processed to make it anonymous before being provided to businesses as effective marketing data. This data is then used to enable the timely provision of the most useful information to consumers via a service for businesses that use Shufoo.



Expected benefits

- Enhancement of quality of life for consumers and value for businesses: Convenience can be enhanced for consumers by providing high-value-added advertising that combines meteorological data with purchasing trends in each area. Contribution to sales revenue adds value for businesses using the service.
- Actual sales promotion impact seen in purchasing behavior:
  Examples: x1.6 increase in level of awareness of a promotional campaign
  x12.5 increase in number of applications received
  x5 increase in visits to retail stores promoted by manufacturers

Issues to be addressed

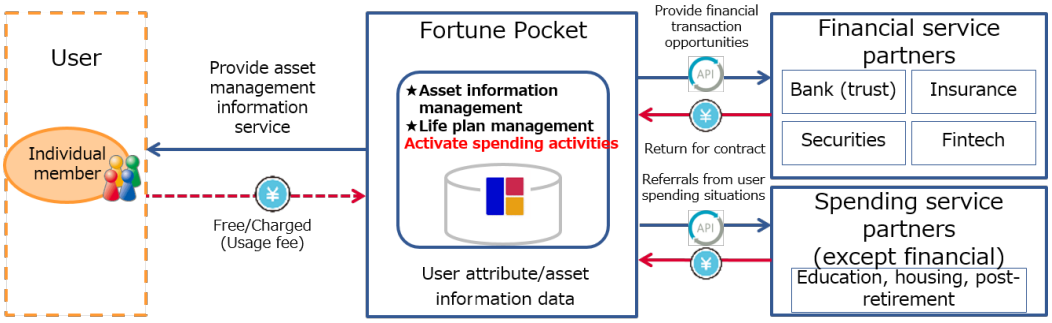
- Use open data and go beyond just meteorological data to link with rail and other transport data, POI data, human movement data, and more.
- Establish appropriate management and distribution standards for personal data protection when conducting targeted advertising. Achieve comprehensive privacy by design and educate on the use of personal data.
- Secure and train talent to make use of data and implement information security training.

6. Nihon Unisys, Ltd.

Utilization of asset information and life-plan information

Outline

- Contribution to individual asset building and satisfactory life planning through a smartphone application (Fortune Pocket) that visualizes individual asset information and life planning information
- Based on information accumulated in the application, various advice and information about financial/non-financial services are provided according to each customer's asset status, lifestyle, and preferences. Matching will be also provided in future.



Expected benefits

- For society: Promotion of asset building in the era of 100-year lives
- For individuals: Optimum asset building and asset utilization (not only for building assets, but also for using/making the most of assets to enrich one's lifestyle)

Issues to be addressed

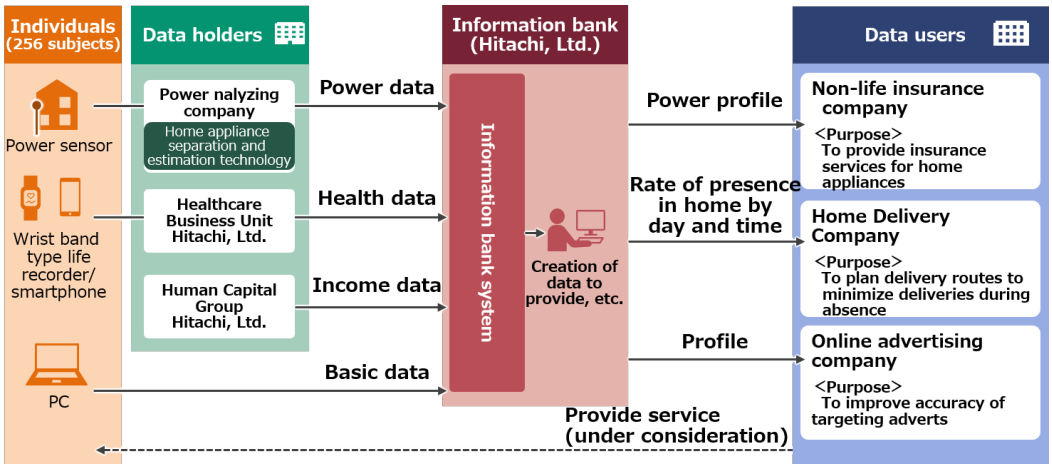
- Cultivation of specialists in data and AI (data scientists, etc.)
- Further promotion of data sharing and linkage with business partners in areas of cooperation

7. Hitachi, Ltd.

Personal Data Trust Bank

Outline

- Pilot testing of the Personal Data Trust Bank was conducted as a project entrusted by the Ministry of Internal Affairs and Communications in FY2018.
- Hitachi, Ltd. tested a system for storing individuals' data with their consent and sharing the data with data users (service providers) whom individuals allow to access their data.
- In addition to general personal data including sex and family composition, IoT data generated by sensors, such as home appliance usage data and health data, was also collected.
- Data was provided to non-life insurance companies, delivery service companies, and online advertising distributors to test the feasibility of a data utilization service and acceptability of data provision by individuals.



Expected benefits

- For businesses: Use of data to create new businesses (e.g., by considering development of insurance services for home appliances based on information relating to home appliances already owned) and promotion of business efficiency (e.g., improvement of delivery routes based on probabilities of customers being at home on specific days and at specific times)
- For individuals: Personally optimized services provided by data users and rewards (points, etc.) in return for providing their data

Issues to be addressed

- Ensuring advantages for data providers (individuals, businesses)
- Ensuring that explanations for individuals are both detailed and easy-to-understand

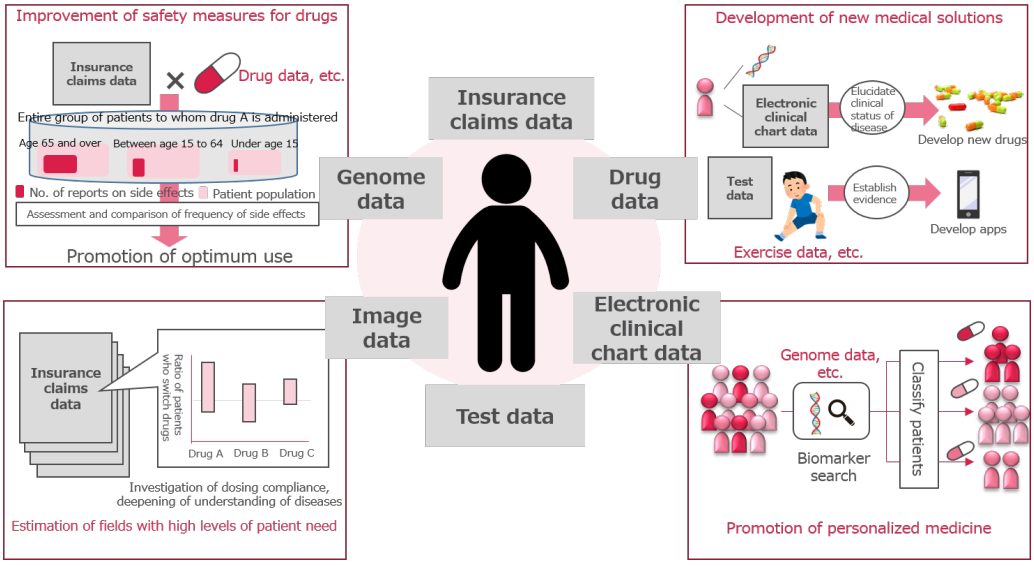
【TypeⅡ】
Solving social issues using statistic or anonymous personal data

1. Astellas Pharma Inc.

Utilization of medical and health data

Outline

- Astellas utilizes a wide variety of medical and health data of individuals for drug discovery research to contribute to health and well-being of people worldwide through the development of new medical solutions including innovative drugs.
- Detailed data such as genome data, laboratory and other test data, etc., are used for personalizing medical care and for understanding the pathophysiological mechanisms underlying various diseases. Anonymized data such as insurance claims data are used to detect drug safety issues.



Expected benefits

- Development of innovative drugs and contribution towards extending healthy life expectancy

Issues to be addressed

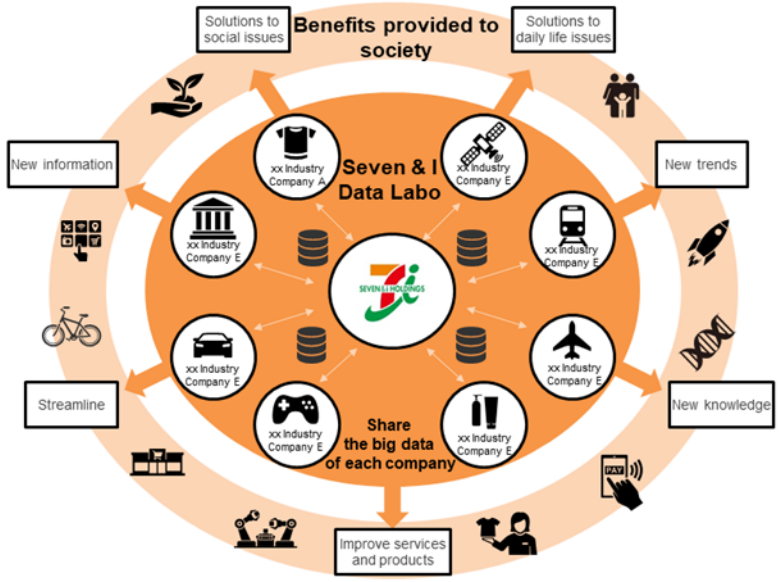
- Establishment of a system to link the life course data of individuals
- Establishment of a system to secure data portability
- Fostering understanding of the individuals providing the data

2. Seven & i Holdings Co., Ltd.

Data sharing among different industries

Outline

- Participating companies in various industries make mutual use of knowledge obtained from their abundant statistical data. Newly obtained knowledge is used to resolve daily life issues and social issues. The project started with ten participating companies (in June 2018).
- Pilot tests are performed to solve the aforementioned issues, share the results within the consortium, and study the possibility of further usage of the data.



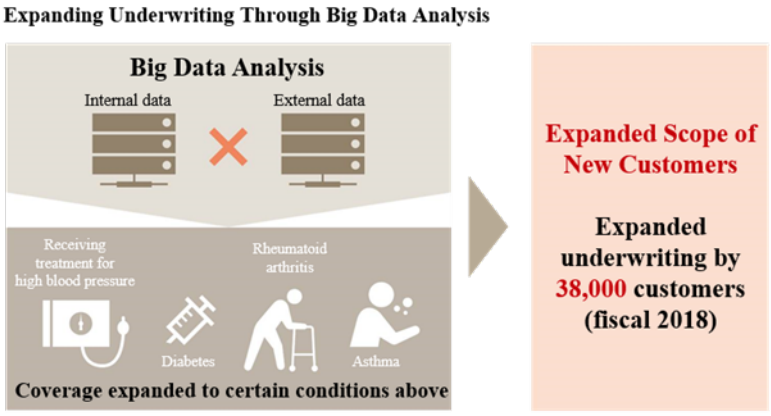
Expected benefits

- Resolution of social issues and enhanced corporate value
  (e.g. Identification of areas with individuals unable to access stores by referring to population movements obtained from the geographical footprint dataset of NTT DOCOMO. -> Help those who have difficulty in shopping.)

Issues to be addressed

- If statistical information and anonymously processed information are combined between companies, new suggestions and findings (inbound/business opportunity analysis, area marketing, etc.) are obtained. However, to provide specific advantages to customers, an additional means is required, such as identifying individuals prior to sharing data.
- Securing and training of data experts, security training, promotion of understanding regarding use of individual data

3. The Dai-ichi Life Insurance Company, Limited

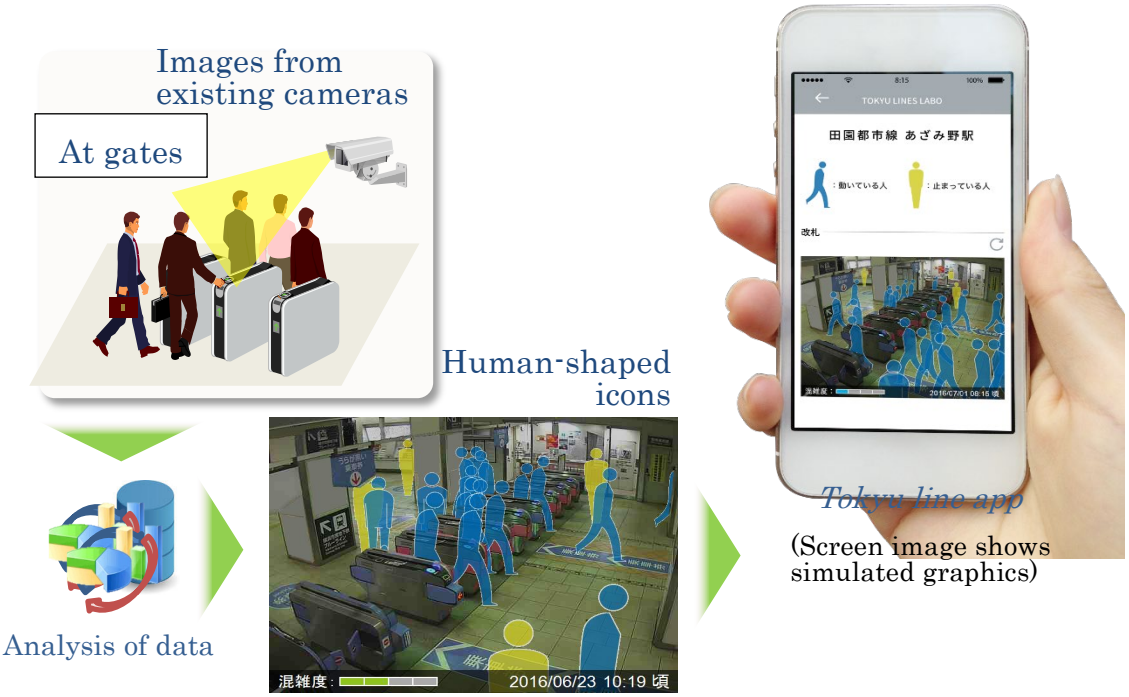
Review of criteria for life insurance underwriting
Outline ● Risks of hospitalization and death from illness are analyzed using internal and external medical big data. ● More customers with certain health conditions will be eligible for insurance depending on these analyses. 
Expected benefits ● Resolution of social issues and enhancement of corporate value: Customers previously denied life insurance due to their health conditions are now eligible (approx. 38,000 cases in FY2018).
Issues to be addressed ● Recruitment and training of data experts ● Unite expertise in life insurance medicine, data science and insurance practices/businesses

4. TOKYU RAILWAYS / Hitachi, Ltd. (joint project)

Use of camera images in Tokyu line stations *Ekishi-vision

Outline *Ekishi-vision is a registered trademark of Tokyu Railways.

- The flow of passengers is analyzed using images captured by cameras in Tokyu line stations, and images containing human-shaped icons indicating passengers' locations and movements are distributed to smartphones (via the Tokyu Line app). The congestion level at the gates of all 85 stations of the Tokyu lines can be viewed.
- Data obtained from camera systems within the stations is processed for privacy protection, and information distributed to the Tokyu Line app is not personal information, but anonymous information. In this way, privacy is fully protected.



Expected benefits

- For passengers: Based on the congestion level information, passengers can adjust the time they get on a train and select an alternative route when a train operation failure occurs.
- For the railway company: Improved convenience and safety of service lines

Issues to be addressed

- Consideration of additional services (promotion of dispersed train boarding, etc.) and further scheduling of train operation by combining images taken at gates with images showing the congestion level on platforms, concourses, and in train cars
- Development of a congestion forecast service that analyzes data by station and time using AI and takes into consideration events, weather, and operating status of other lines

5. Nippon Telegraph and Telephone Corporation

Business to establish Sapporo City data utilization platform

Outline

- The company has established a Sapporo City ICT utilization platform (DATA-SMART CITY SAPPORO"), which enables data in various fields to be used to solve local issues in the Sapporo economic area. Collection and utilization of data and creation of open data (local production and consumption of data) are promoted through cooperation between industry, government, and academia.
- To make the aforementioned efforts to utilize data sustainably, Sapporo city will continue creating new value, having taken the lead in establishing an operating organization called Sapporo Area Regional Data Utilization Organization (SARD) on July 17, 2019, in cooperation with NTT and local companies.

Expected benefits

- For Sapporo city: Resolution of social issues of local tourism, transportation, and infrastructure maintenance (more money spent by foreign tourists in the local economic area, etc.)
- For businesses: More money spent by foreign tourists and entry to new business fields through utilization of data

Issues to be addressed

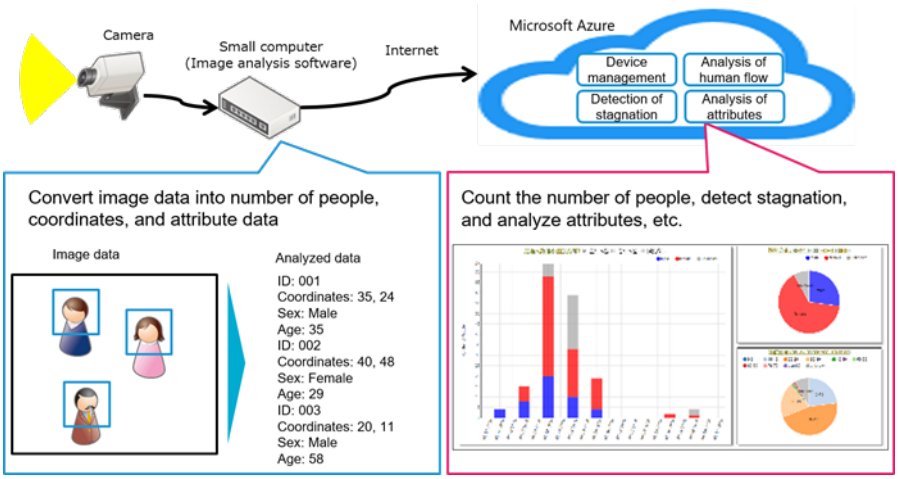
- Increase companies participating in SARD
- Further expansion of fields in which data is utilized

6. Nihon Unisys, Ltd.

Human flow analysis service

Outline

- Information on individuals is obtained by analyzing video images captured by a camera.
- Images are analyzed by a small computer installed on the camera and data on flow paths and attributes of individuals is created. Only post-analysis data without video images is visualized and examined in the cloud.



Expected benefits

- Retailers' marketing

  Retailers can acquire information on the number of customers, age, sex, flow paths, and behavior, etc., and evaluate the effectiveness of measures at stores.
- Safe operation of transportation services and security measures for facilities

  Detection of intrusion into specific areas
- Improvement of work at factories

  Work efficiency can be improved by identifying sections lagging behind.

Issues to be addressed

- Data sharing and linkage between companies in areas of cooperation
- Training of data experts

7. Fujitsu Limited

Data sharing among different industries
(Virtuora DX Data Distribution and Utilization Service)

Outline

- Using block-chain technology, Fujitsu has developed a system to safely distribute and use data possessed by companies, realizing co-creation by different industries.
- Communication for data distribution and utilization is facilitated by sharing the "Data Jacket," which describes the value of the data without disclosing its contents.
- A pilot test was conducted in the Otemachi, Marunouchi, and Yurakucho areas for 8 months from May to December 2018 with the theme of "Presenting the charm of the Otemachi, Marunouchi, and Yurakucho area to the world." Mitsubishi Estate, SoftBank, Tokyo Gas, and others participated in this test. In the tourism field, human flow data and SNS data were combined and analyzed to investigate the areas and traveling routes where foreigners are concentrated. A marketing plan to enhance the attractions available for foreign tourists was created.
- In FY2019, the participating companies were increased, and the activities were expanded, including a series of test runs of information bank services that safely use personal data with individuals' consent.

Expected benefits

- For society: Increase in foreign visitors, more money spent by foreign visitors
- For businesses: Improved local (city) value, creation of new businesses using data coupled with other companies' data

Issues to be addressed

- Expansion of services using data including the safe use of personal data (a system to obtain consent from individuals, study of acceptability of services, etc. [to be conducted by the end of FY2019])
- Establishment of a system to exchange data (including data trade) among companies

8. Yahoo! JAPAN

Support for various business activities using big data (data solution business)

Outline

- Insights obtained from statistical and analyzed big data of Yahoo! JAPAN are provided to companies and municipalities.
- The aim is that various business activities including planning, development, and distribution of products and services of companies and municipalities are more closely tailored to consumers' needs.
- Firstly, the following two features are provided, and a consulting service is also provided so that these features will contribute to businesses:
  (1) Tool to visualize consumers' interests that enables potential needs and trends to be identified in real time
  (2) Tool to visualize area characteristics and human flows that shows areas and people's movements in connection with consumers' interests
- Features such as a recommendation engine and demand forecast will be considered in the future.

Expected benefits

- Resolution of social issues through use of big data
  (e.g., Alleviation of rush-hour train congestion, improvement of comfort)
- Product development based on potential needs of consumers
  (e.g., Development of fashion merchandise that satisfies the demands of mothers with small children)

Issues to be addressed

- Further privacy protection of users and information security measures for that purpose
- Linkage between customers' user IDs and Yahoo! JAPAN IDs to enable more accurate analysis (linkage of IDs requires the prior consent of users)

【TypeⅢ】
International programs involving transfer of personal data across data

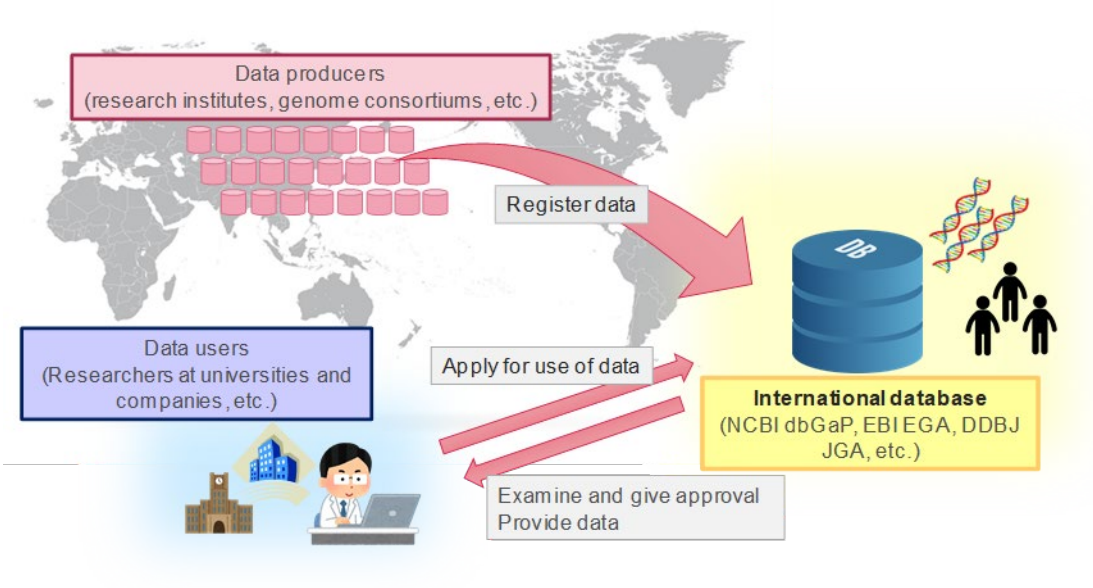
1. Astellas Pharma Inc.

Utilization of international databases

Outline

- Aiming to make innovative drugs, Astellas is conducting the researches such as drug target identification or patient stratification biomarkers exploration by using publically available human genome databases that have been established by academic research institutes.

  * Human genotype and phenotype databases: NIH/NCBI database of Genotypes and Phenotypes (dbGaP) (US), EMBL-EBI European Genome-phenome Archive (EGA) (Europe), DDBJ Japanese Genotype-phenotype Archive (JGA) (Japan), etc.



Expected benefits

- Development of innovative drugs and contribution towards extending healthy life expectancy by increasing success rate of drug discovery research

Issues to be addressed

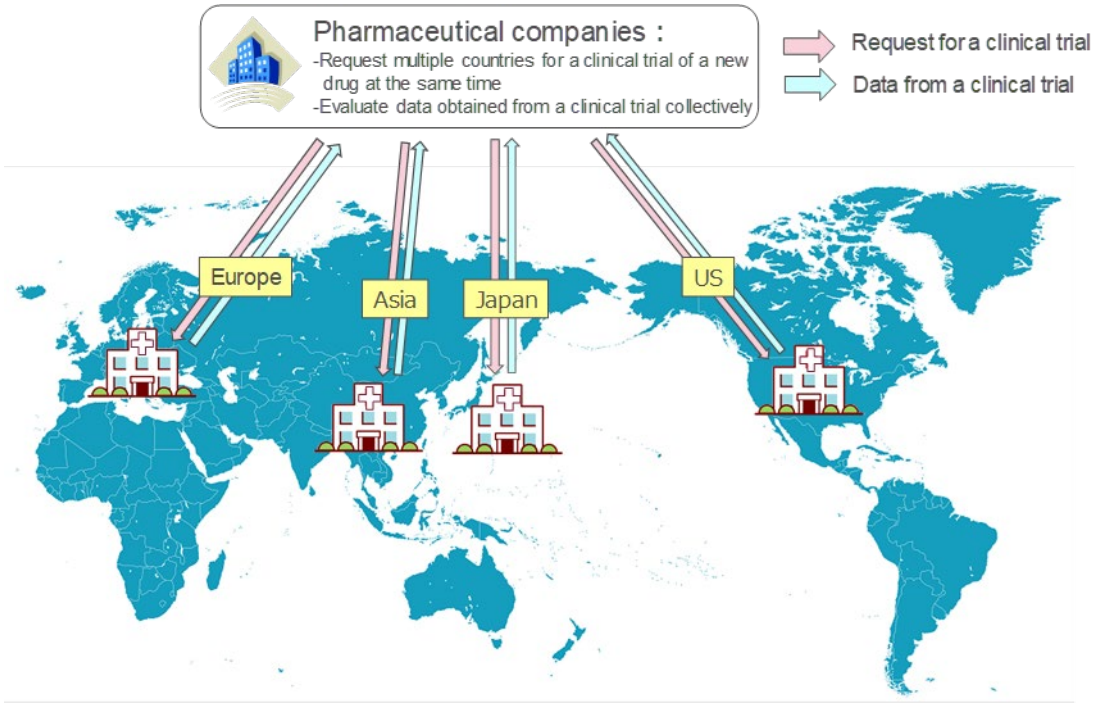
- International harmonization of regulations and systems for cross-border data transfer.

2. Astellas Pharma Inc.

Multi-regional clinical trials

Outline

- Pharmaceutical companies conduct multi-regional clinical trials—clinical trials of new drug candidates conducted simultaneously in multiple countries or regions—to provide new drugs to patients quickly.
- Personal information using pseudonyms, including the clinical data that is required for the evaluation of clinical trials, are collected and assessed with the consent of the patients.



Expected benefits

- Early provision of innovative drugs through the promotion of effective drug development
  (A multi-regional clinical trial enables the early completion of clinical trials for diseases in which numerous cases are difficult to collect in a single country.)
- Elimination of drug lag*
  *Time lag until drugs that are used overseas are approved and become available in Japan

Issues to be addressed

- International harmonization of regulations and systems regarding cross-border data transfer.