

How to Encourage the Utilization of Big Data in Japan



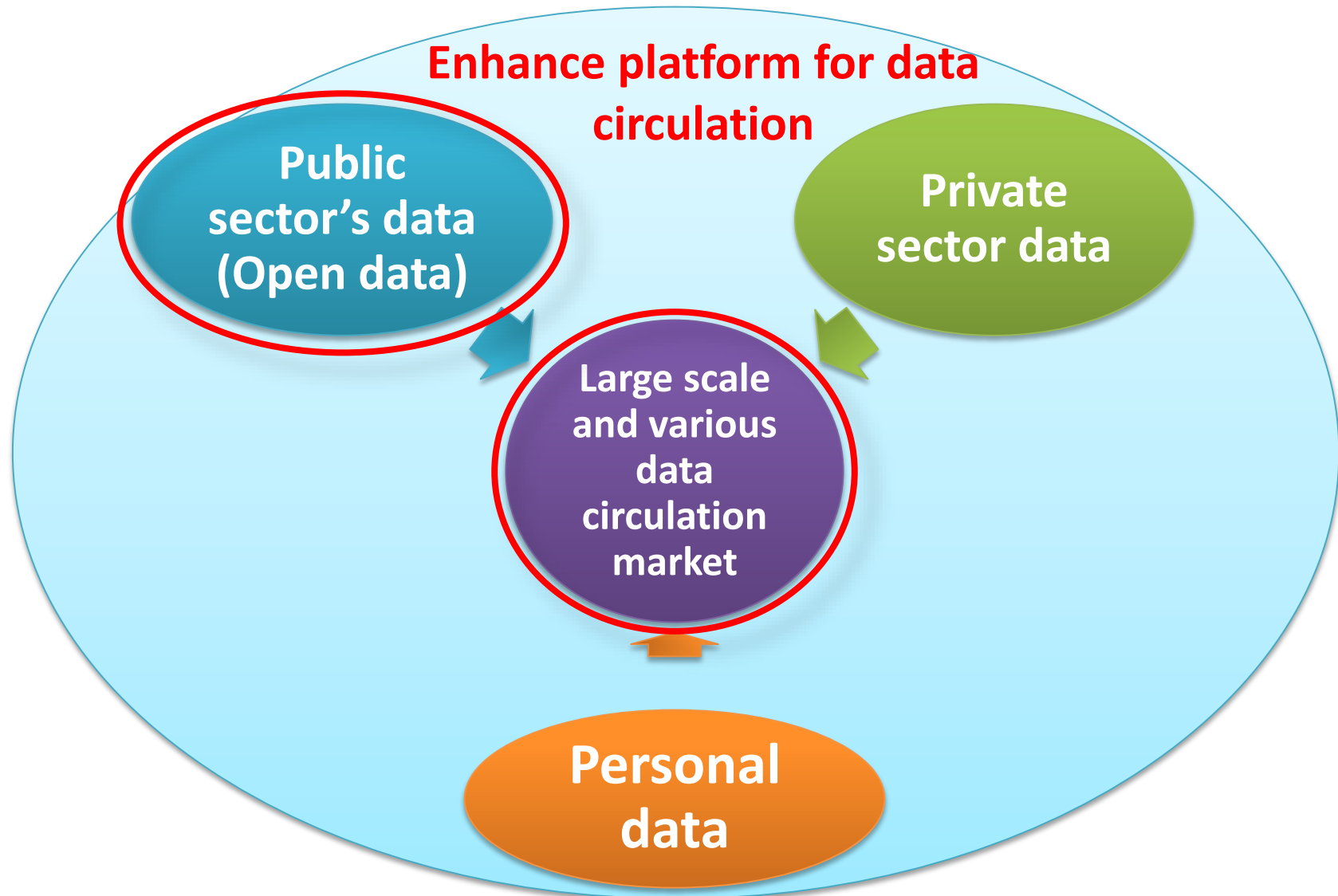
Jul. 7, 2016

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Cabinet Secretariat

National Strategy Office of ICT

Enhance Platform for Data Circulation



⇒ In the era of IoT and AI, it is important to enhance the environment for the smart circulation of data utilizing various mass data.

Data Utilization Use Cases in Japan

Data Utilization Case #1. Disaster IT : Traffic performance map

After the Great East Japan Earthquake (2011), traffic performance map was generated and released by using traffic performance data, gathered from automobiles attached with navigation system.

【Outline】

- Honda provided traffic information based on traffic performance data, automatically collected from automobiles attached with navigation system “Internavi”.
- Right after the earthquake, Google visualized the availability of each road in devastated areas as “Google Crisis Response”.

Utilized data : open data/IoT

【Results】

- Contributed to support people in devastated areas quickly. E.g. helped volunteers deliver relief goods smoothly.
- Same action was taken in the 2016 Kumamoto earthquake.



Driving Data



Data Utilization Case #2. Crime Prevention : Night Street Advisor

College students have created a heat map about street lamp locations by means of street lamp location data owned by local government (open data).

【Outline】

- Akashi college's "Code for KOSEN" team developed the application using street lamp location data provided by the local government (Nagoya City).
- The application indicates street lamp locations on the map and recommends well-lighted route to prevent crimes, based on the fact that crime rate increases in the dark night street.

Utilized data : open data/IoT



【Results】

- Citizens can get to their destinations safely avoiding dark night street.
- The same system is being deployed to Shizuoka prefecture.

Data Utilization Case #3. Regional Revitalization : Eagle Bus, Inc.

Eagle Bus, Inc. became profitable through the optimization of bus routes by using data from sensors attached to buses. Furthermore, this system contributes to revitalize local communities by setting up new hub bus stops, where community facilities are installed.

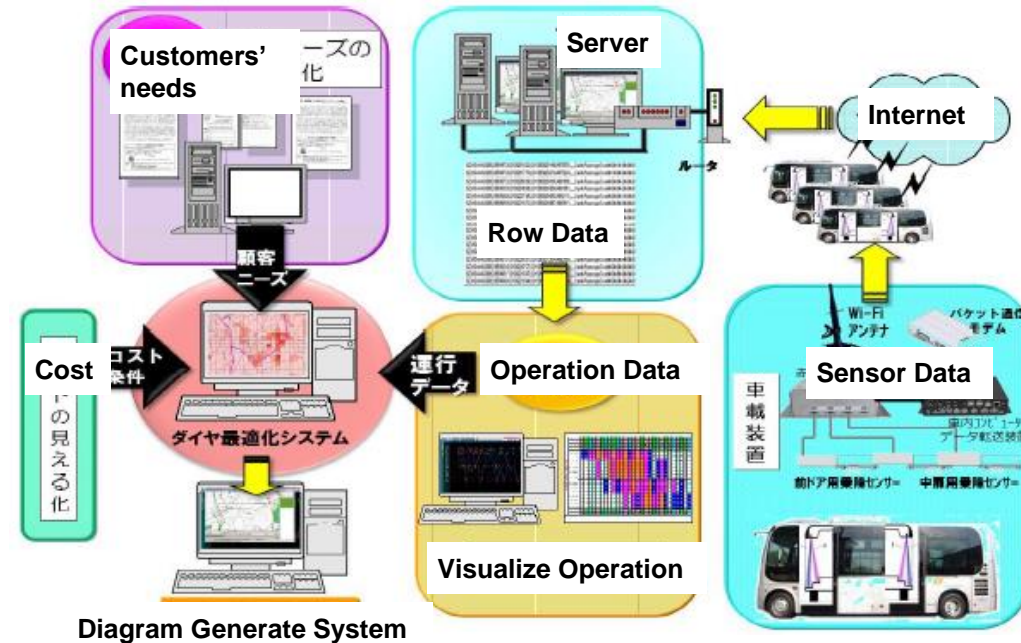
【Outline】

- Attached sensors to buses' entrances and exits to seize vehicle occupancy anywhere anytime. (visualize service status)
- Optimized bus routes and set up new hub bus stops by setting up the best routes and revising schedule from the sensor data.
- Revitalized local communities by installing bank ATMs, convenience stores, post offices at the hub bus stops as well as optimizing its operation and improving its profitability.

Utilized data : IoT

【Results】

- The number of passengers has doubled or even tripled with the same number of buses.
- Improved profitability and enhance convenience for local citizens.
- Deployed the same systems in Hakodate city (Hokkaido prefecture, Japan) and Yangon city (Myanmar)



Cited from Eagle Bus, Inc. document



Data Utilization Case #4. Childcare Support : Luna Luna (MTI Ltd.)

“Luna Luna” provides those trying to conceive with advice based on clinical thermometer data (IoT devices) collected through smart phone applications. “Luna Luna” has developed a new algorithm based on recorded data and offers personalized advice.

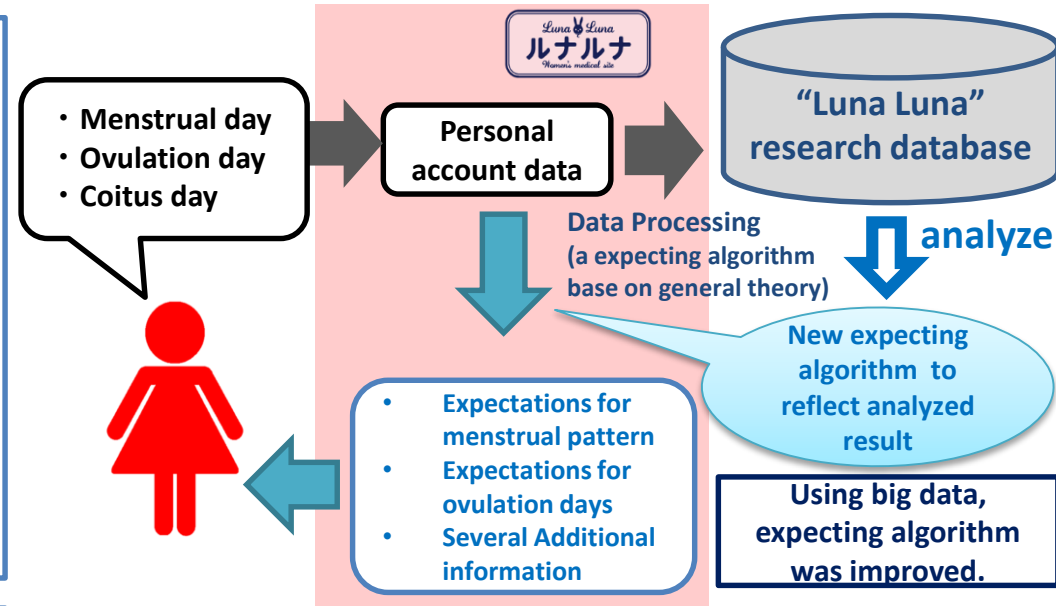
【Outline】

- Developed the application to substitute for the old calendar rhythm method, “Ogino Method”.
- Collect personal data through smartphone applications.
- The original algorithm composed by recorded data helps provide the more accurate advice.

Utilized data : Personal data/IoT

【Results】

- 5.4 million users (2014)
- Some reported that Pregnant rate has risen by more than 10%.



Enhance Various Mass Data Circulation Environment

Enhance Various Mass Data Circulation Environment

- Building Data circulation environment to promote the better utilization of data

※ In light of trend of new services, so to speak “C to C service” or “Sharing Economy”, based on the utilization of various mass data by AI & IoT and etc.

(1) The 1st stage (Oct. 2015~Dec. 2015)

- Interviewed enterprises regarding the promotion of the business with safe and secure use of IT, sharing and utilizing information (5 times in total)
- Dec. 2015 Interim Summary

(2) The 2nd stage (Feb. 2016~)

- Interviewed 56 enterprises※ actively utilizing data to research the current state of various fields of industries for collection, analysis, and utilization of the data in regards to the promotion of the business with safe and secure use of IT, sharing and utilizing information.(17 enterprises participated in the investigative commissions)

※ Intermediate distribution(8), Communication & Information(18), Food & Daily Supply(2), Automobile(3), Services(7), Finance & Insurance (9), Transportation (5), Medical & Healthcare (2), Electronics & Machinery (1), other(1)

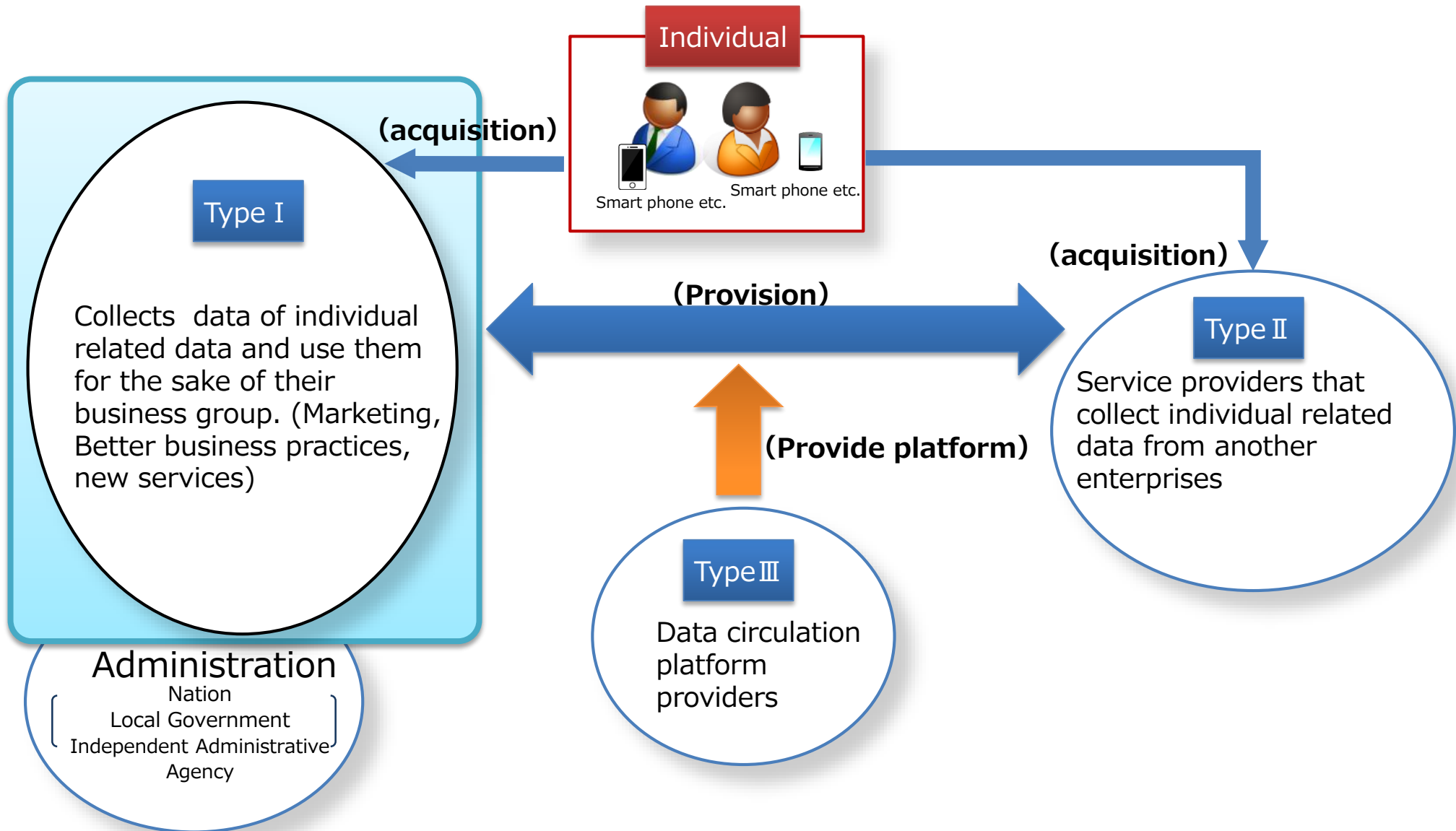
【Subjects】

◎ ① Formation of Data trading market ② Study the mechanism in which an individual transfer his or her data owned by providers to the intended service providers

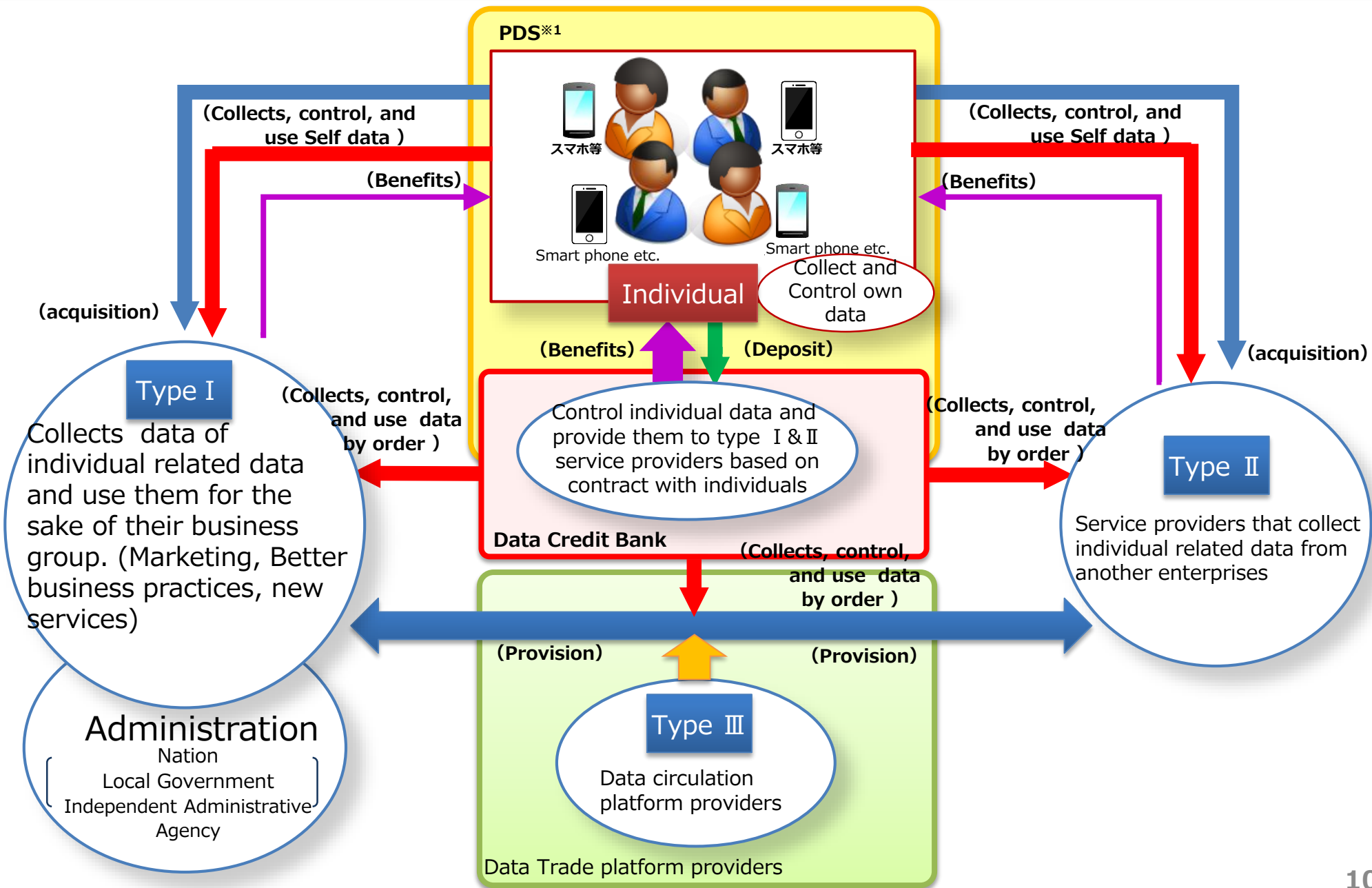
(PDS (Personal Data Store)).

 **Continual study, putting the trend of AI & IoT society into consideration**

Type of Enterprises Utilizing Data Based on the Interviews



Enhance Data Circulation Environment for Coming Future




Issues for Various Mass Data Circulation Environment

- Issue① Often hesitate to provide collected data to another firms or sharing the data within own business groups as they tend to think that may lead to the reputational risk in spite of Act on the Protection of the personal information.
- Issue② Secure standard vocabulary for data compatibility
- Issue③ Build positive social norms for the benefit of data circulation
- Issue④ Promotion of Open Data
- Issue⑤ Secure the mechanism in which an individual transfer his or her data owned by providers to the intended service providers
- Issue⑥ Secure the mechanism while balancing out the competitive business practices.
- Issue⑦ Secure the mechanism for utilizing individual data provided from individual by assignment
- Issue⑧ Form data trading market
- Issue⑨ Countermeasures for safe and secure circulation of data

⇒Set a Working Group under Data circulation environment committee and will come to a conclusion by the end of this December.

Open Private Sector Data as Open Data

Overview of Open Data Actions in the Government

- 
- 2011** ▶ Mar. The Great East Japan Earthquake (Our open data initiative)
 - 2012** ▶ Jul. The e-Government Open Data Strategy was adapted
 - 2013** ▶ Jun. Declaration to be the World's Most Advanced IT Nation / Roadmap for Open Government Data promotion
 - ▶ Dec. Government open data catalog site "DATA.GO.JP" (trial version) was launched
 - 2014** ▶ Jun. Government of Japan Standard Terms of Use (Version1.0)
 - ▶ Oct. "DATA.GO.JP" (full version) launched
 - 2015** ▶ Feb. Open Data Guideline and handbook for local government
 - ▶ Jun. Declaration to be the World's Most Advanced IT Nation revised/ Action for encouraging New Open Data
 - ▶ Dec. Government of Japan Standard Terms of Use (Version2.0) Revised
 - 2016** ▶ May. Open Data 2.0 was adopted

Open Data in the Government

Ministries and Agencies	# of Datasets (Mar. 2015)	# of Datasets (Jun. 2015)	# of Datasets (Sep. 2015)	# of Datasets (Mar. 2016)	Increase from Mar. 2015	Increase rate from Mar. 2015
合計	12970	13038	14731	16308	3338	25.7%
Ministry of Land, Infrastructure, Transport and Tourism	3202	3211	3416	3619	417	13.0%
Ministry of Economy, Trade and Industry	1512	1512	2165	2347	835	55.2%
Ministry of Education, Culture, Sports, Science and Technology	1299	1331	1431	1477	178	13.7%
Ministry of Health, Labour and Welfare	1096	1065	1268	1488	392	35.8%
Ministry of the Environment	1025	1035	1035	1037	12	1.2%
Cabinet Office	812	812	1186	1417	605	74.5%
Ministry of Finance	765	745	774	1166	401	52.4%
Ministry of Internal Affairs and Communications	746	748	721	849	103	13.8%
Ministry of Agriculture, Forestry and Fisheries of Japan	536	536	536	543	7	1.3%
Ministry of Justice	531	556	565	584	53	10.0%
The National Police Agency	388	407	463	422	34	8.8%
Ministry of Defense	278	287	307	326	48	17.3%
Financial Services Agency	152	154	163	228	76	50.0%
Japan Fair Trade Commission	129	130	136	145	16	12.4%
The National Personnel Authority	122	124	141	197	75	61.5%
Ministry of Foreign Affairs of Japan	120	122	126	131	11	9.2%
Imperial Household Agency	93	93	96	121	28	30.1%
Cabinet Secretariat	63	65	71	74	11	17.5%
Consumer Affairs Agency	53	57	82	83	30	56.6%
Cabinet Legislation Bureau	37	37	38	43	6	16.2%
Reconstruction Agency	11	11	11	11	0	0.0%

Revise Government of Japan Standard Terms of Use

Revise Government of Japan Standard Terms of Use

Since Many nations adopt CC-BY or the terms compatible with CC-BY、 **CC-BY is practically the international standard.** Therefore, **we have removed paragraph “prohibited use” and show content where other terms of use apply and clarify the compatibility with CC-BY.**

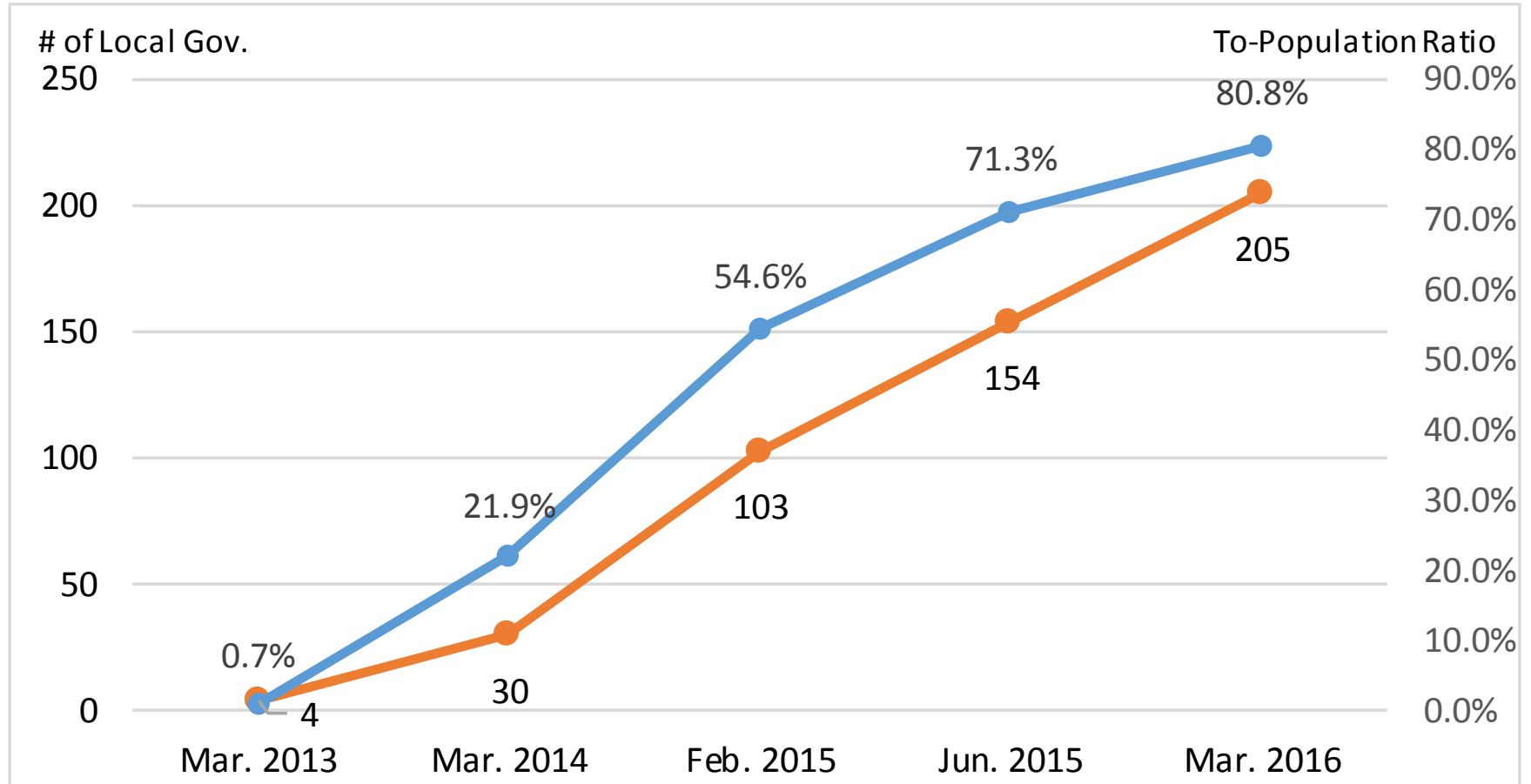
	Terms of Use adopted	Nations
Existing Rule	Public Domain (CC0)	USA, Holland
	Attribute (CC-BY)	Germany, Austria, New Zealand etc.
Original Rule	Compatible with Attribute (CC-BY)	UK, France, Italy (Version 2.0) etc.

Revised our standard terms of use based on the terms in UK Open Government License (OGL) considered Open License

Paragraph	After the change (version 2.0)	Remarks
1 . 3) prohibited use	removed	
2 . Content where other terms of use apply	1 . 4) Content where the Terms of use do not apply	same as UK OGL. List all the content that does not apply in appendix
1 . 7) Other	Clarify the compatibility with CC-BY 4.0	UK OGL shows the compatibility with CC-BY 4.0

The Transition of Local Governments Tackling Open Data

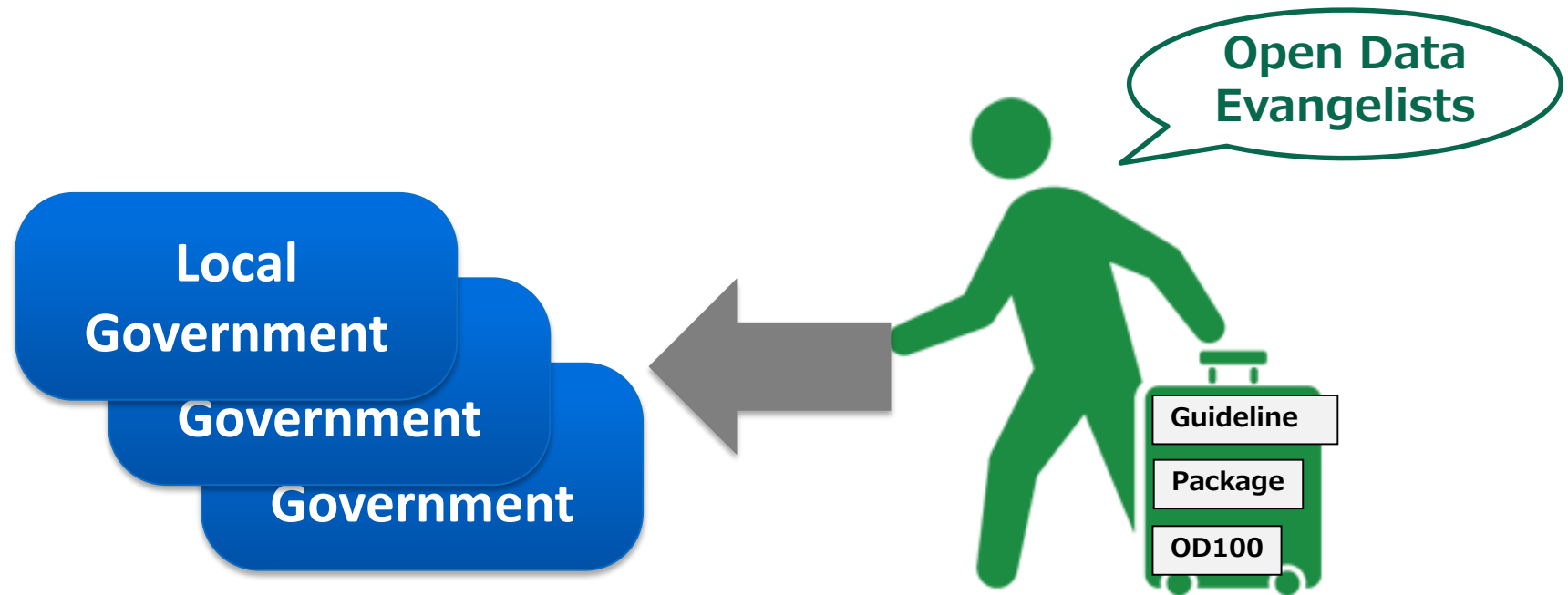
The Number of Local Governments Tackling Open Data and To-population Ratio



※Based on the study in National Strategy Office of ICT, Cabinet Secretariat
All the prefectures and municipal governments are targeted.

Open Data Evangelists

- Appointed eight experts as “Open Data Evangelists” and started to send them to local governments this year.
- Each evangelist promotes the utilization of Open Data and helps local governments set up Open Data portal sites together with “Open Data Guideline and handbook for local government”, where national initiatives are summarized, “Open Data Package for Local Governments” and “Open Data 100 (Use Case)”.

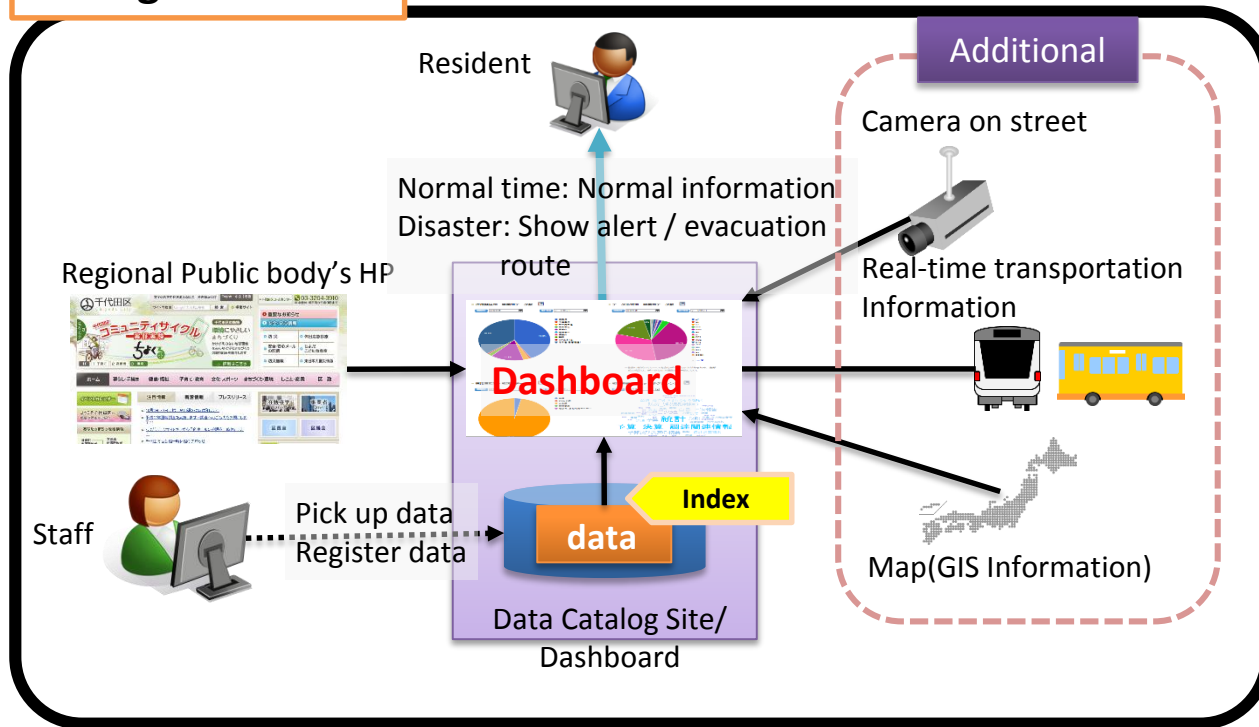


Open Data Package for Local Governments

Provide Package to Accelerate the Action of Open Data in Local Governments

To support local governments that do not know how to take a first step toward open data, we will provide package that consists of open data catalogue and dashboard application using this open data. **We will assist local governments to take action for open data and have the fundamental to apply this package to other local governments.**

Package Contents



Included in this package

- Data Catalogue for open data
- Dashboard using open data


Effect expected


- Help solve problems faced by regional public bodies by opening data related to regional issues such as disaster prevention, decreasing birthrate and aging society etc.
- Make it easier to start open data by providing package focusing both on the availability and the use of data
- Provide example of standard format for registering data


⇒ **Translating into English to deploy globally.**


Open Data Catalog Site





 [ダッシュボードサイトはこちら](#)


 **人口・世帯**
町別の世帯数・人口、高齢者比率等の統計データなど

 **防災・安全**
交通事故発生状況の月別リスト・避難施設の一覧など

 **福祉・医療**
AEDを設置している施設一覧・介護サービスを行う施設の一覧など

 **子育て・教育**
小中学校の生徒数、教員数を

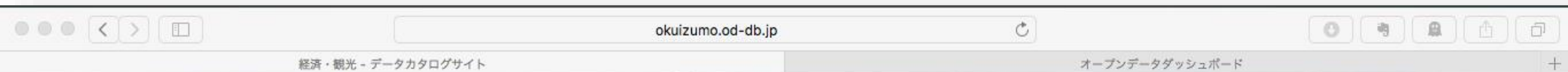
 **環境・ごみ**
ごみの種類別に年間処理量

 **経済・観光**
産業別の経済情報や、観光

Economics, Sightseeing



Open Data Catalog Site



検索

🏠 / 経済・観光



経済・観光

産業別の経済情報や、観光情報など

データセット
2

並び順: 名前で昇順 ▾

_id	産業名称
1	農業、林業
2	漁業
3	鉱業、採石業、砂利採取業
4	建設業

産業中分類別統計表 ▶

産業中分類別統計表

XLSX

プレビュー: [表形式](#) [棒グラフ](#)
[折れ線グラフ](#)



Table Format

_id	観光名称
1	藤ヶ瀬城
2	三沢城
3	亀嵩城
4	布広城

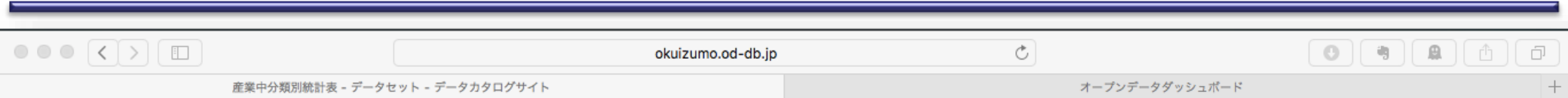
観光地一覧 ▶

奥出雲町の観光地一覧

XLSX

プレビュー: [表形式](#)

Open Data Catalog Site



産業中分類別統計表

Statics table of industrial category

産業中分類別統計表

表形式

棒グラフ

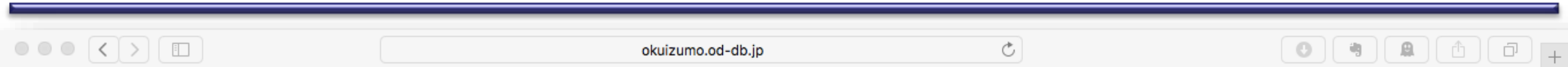
折れ線グラフ

Graphical Format

</> 埋めこみ

_id	産業名称	事業所数	従業員	製造品出荷額[万円]	備考
1	農業、林業	23	318	-	
2	漁業	0	0	-	
3	鉱業、採石業、砂利採取業	2	56	-	
4	建設業	109	644	-	
5	製造業	80	1165	2836798	
6	電気・ガス・熱供給・水道業	5	19	-	
7	情報通信業	4	29	-	
8	運輸業、郵便業	14	162	-	
9	卸売業、小売業	222	929	-	
10	金融業、保険業	7	46	-	
11	不動産業、物品賃貸業	15	24	-	
12	学術研究、専門・技術サービス業	8	44	-	
13	宿泊業、飲食サービス業	75	463	-	
14	生活関連サービス業、娯楽業	52	105	-	
15	教育、学習支援業	22	215	-	

Open Data Catalog Site



産業中分類別統計表

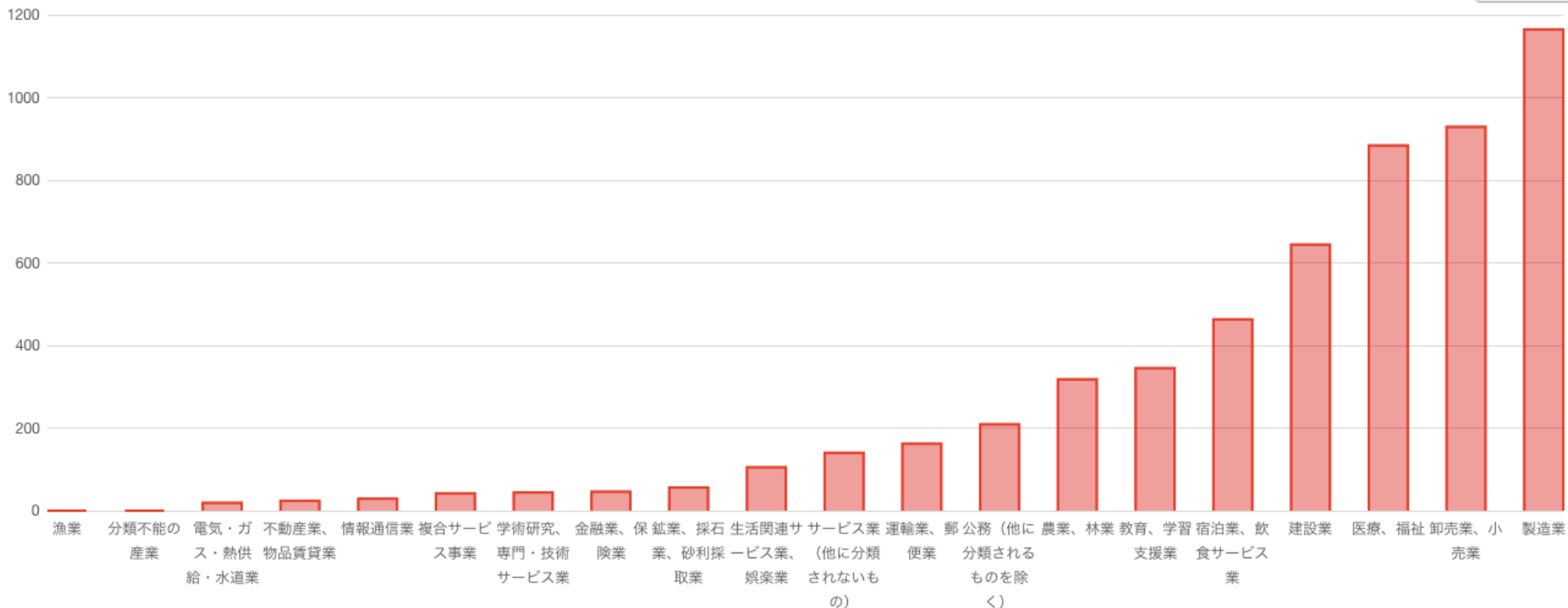
産業中分類別統計表

表形式

棒グラフ

折れ線グラフ

</> 埋めこみ



Open Data Dashboard

産業中分類別統計表 - データセット - データカタログサイト

オープンデータダッシュボード

OPEN DATA JAPAN

od
open data dash board

■ 人口・世帯 ■ 防災・安全
■ 福祉・医療 ■ 子育て・教育
□ 環境・ごみ □ 経済・観光
■ 行政・財政 □ その他

すべてON すべてOFF

高齢者 × 医療施設 × 避難所

町別子ども人口 × 学校別生徒数 × 医療施設一覧

町別子ども人口 × 投票率

町別子ども人口 × 学校別生徒数 × 観光施設一覧

高齢者 × 避難所 × 介護施設

観光地 × 避難所

観光地 × AED

観光地 × 医療

人口 × 医療施設 × 介護サービス施設

奥出雲町

オープンデータを掛け合わせて、発見する。

1. データを選ぶ 2. 組み合わせる 3. ダッシュボードはオープンデータを掛け合わせる事により、課題やひらめきを可視化するウェブサイトです。

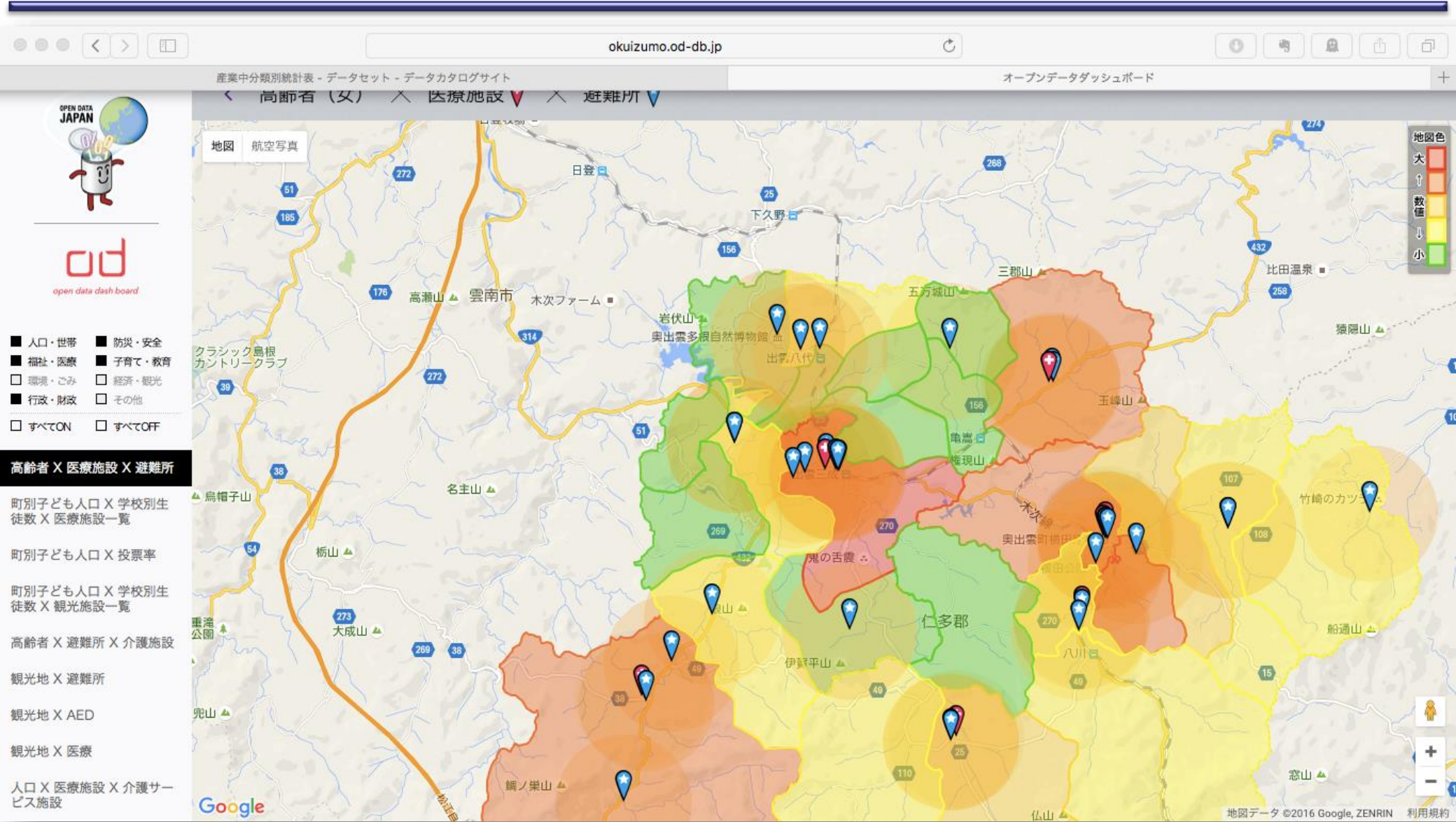
高齢者 × 医療施設 × 避難所

Elderly People x Medical facilities x shelters

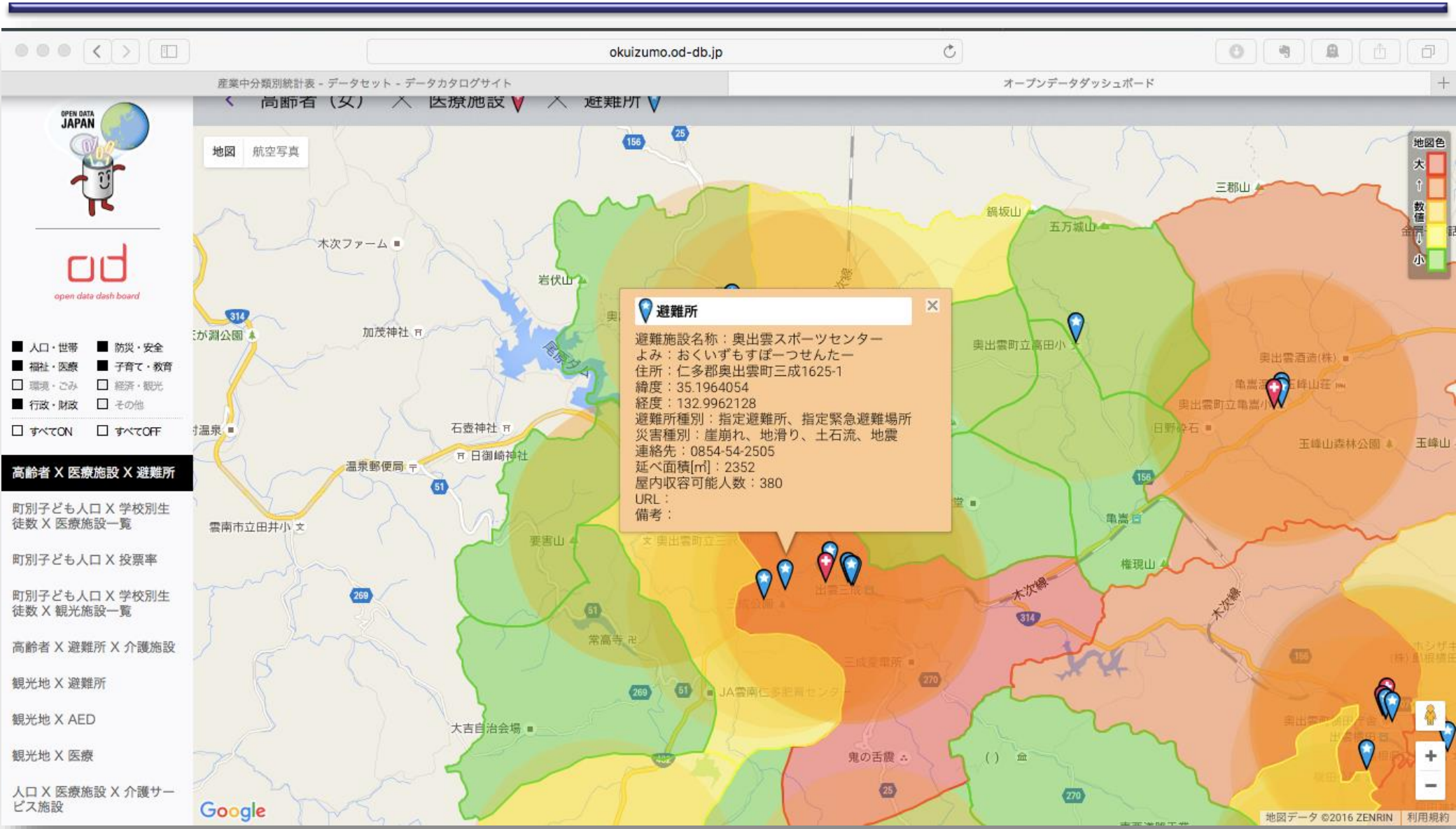
町別子ども人口 × 学校別生徒数 × 医療施設一覧

町別子ども人口 × 投票率

Open Data Dashboard



Open Data Dashboard

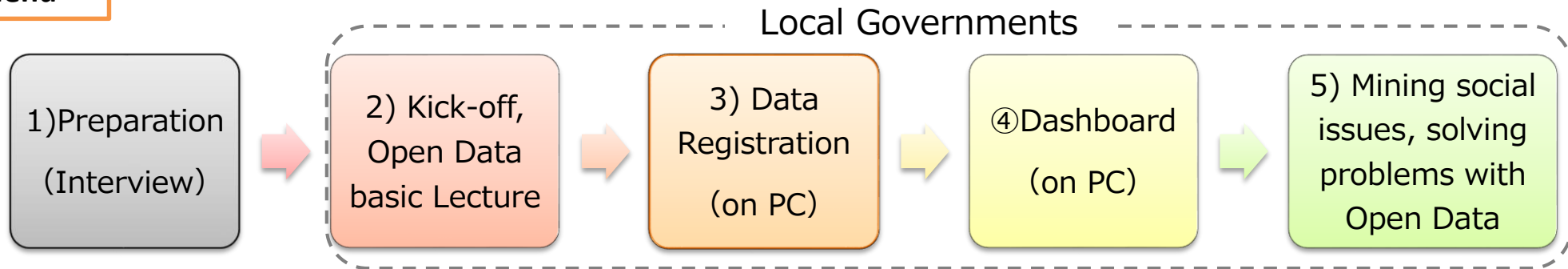


Deploy Open Data Package to Local Governments

Workshop for solving social issues with Open Data

Workshop is held so that each staff in a local government can experience the process of solving issues. The scenario of workshop is composed based on the social issues in a local government.

Menu



Example of the schedule at local government

	DAY 1	DAY 2	DAY 3
A M	2) Kick-off, Open Data basic lecture	3) Data Registration	5) mining social issues, solving problems with Open Data
P M		4) Dashboard	

※Schedule and content are to be changed depending on the request from local governments

Future Action of Open Data

We will take a further step to implement “Solution-oriented Open Data” (built Open Data step in the process of making measures in the ministries and agencies, etc.) to shift from “Open Data to the public” to “solve social issues utilizing Open Data”.

During the intensive period through 2020, the main focus will be “Promoting Dynamic Engagement of All Citizens”, “Tokyo Olympic Paralympic 2020” to deepen our action of Open Data.

Open Data 2.0

Policy

① **Designate prioritized areas based on policy issues**

Promote “Open Data Cycle”, where the needs of new data further open data to the public while finding and solving social issues.

② **Promote private sector open data initiatives within a defined range of areas**

Not in competitive areas, but in cooperative

③ **Actions in local governments**

Promote **voluntary actions based on regional characteristics** as well as **the cross-regional actions** such as disaster preventions

Prioritized areas

- ① **Promoting Dynamic Engagement of All Citizens**
Robust Economy, Childcare, Social security
- ② **Tokyo Olympic Paralympic 2020**
Smooth preparation and operation, create new image of Japan through Olympic and Paralympic

Others

- ① Deploy our initiatives at the regional level and overseas (especially in Asia)
- ② Enhance the structure to promote open data (Set up a structure with Deputy Directors-General for Cybersecurity & Information Technology)
- ③ Standardization, Promote Open Data • **Develop Human Resources** etc.

How to Globalize in the Future

Utilization Index and enhancement the collaboration in Asia

- In collaboration with OECD (OURdata Index※) or the Asian countries that are active to Open Data, we will design new index focusing on the social issues common to each country such as disaster-prevention etc. or the utilization.
 - ※ OUR(Open, Useful, Reusable)data Index : The international open data index developed by OECD. This index is self assessment by each government, and is different from other indices given by some of the private sectors.

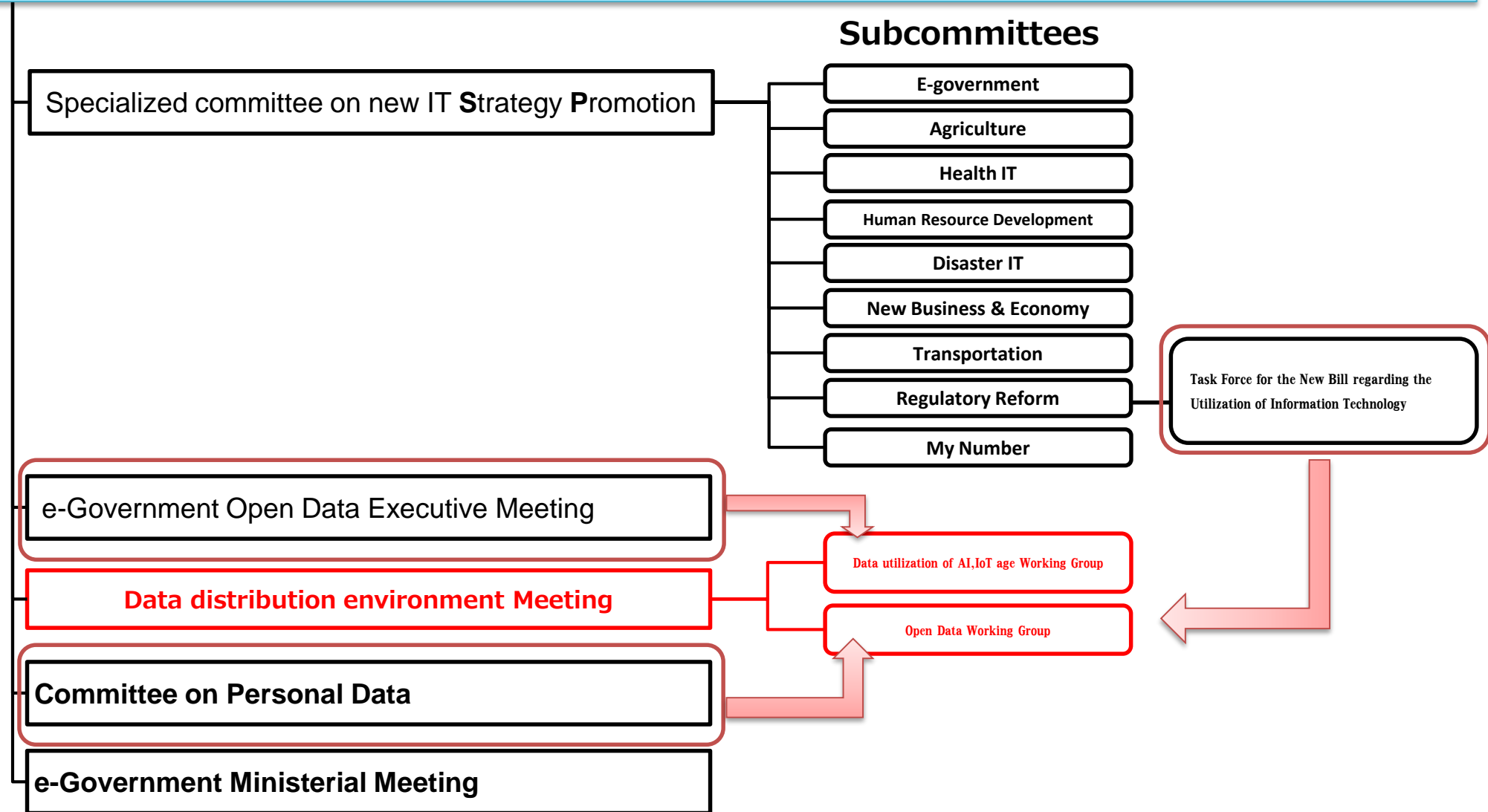


- In order to promote open data utilization, we will consider how to build and deliver the new index focusing on the open data utilization.
 - To globalize the designed index, we will collaborate with the organizations involved.
 - We will design the index structure to seize the environment and situation of utilization.
 - We will consider how to expand this index globally.
 - Schedule
 - We had the preliminary study with experts to discuss future plan on March 28th.
 - Based on the arguments in OECD or Asia Open Data Partnership, we will decide the direction and contents cooperating with Asian countries.
 - If necessary, we have the actual investigation and wrap it up by the end of this year.

Framework for Smart Data Distribution

IT Strategic Headquarters

(The Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society)



⇒ **Set a working group under data circulation environment committee**