

## Chapter 2 Detailed measures

### **I. The future key areas to tackle and the flagship project as the leading power of reform toward achieving the Society 5.0**

#### **[1] Life and industrial changes**

##### **1. Creation of next-generation mobility system**

###### **(1) The main KPI progress status**

**[KPI] (New) Unmanned automated driving transport service (limited area) is started on public roads, targeting by 2020**

**[KPI] (New) Unmanned automated driving transport services (limited area) to be operated in more than 100 locations nationwide by 2030**

**[KPI] In 2020, Automatic braking on more than 90% of brand-new passenger cars sold in Japan.**

=>Brand-new passenger cars sold in Japan with automatic braking: 66.2% (in 2016)

**[KPI] In 2020, 20% of domestic vehicles (stock on hand) to be equipped with safety driving support devices and system, attaining 30% of world market share.**

=>Domestic vehicles with driving assistance system: 9.8% (in 2016)

Alternative value of world market share: 19.5% (in 2015)

**[KPI] In 2030, Driving assistance device/system originally mounted on all brand-new cars sold in Japan, and even in stock base, it permeates almost all cars**

=>Brand-new cars sold in Japan with automatic braking: 56.9% (in 2016)

Domestic vehicles: 9.8% (in 2016)

###### **(2) Policy challenges and objectives**

In the area of transportation, there are a number of problems, such as the increase of those who have difficulty moving in the region, and labor shortage including drivers. Other parts of the world have already started not only to develop automated driving and to compete among practical implementations, but also to compete among various types of transportation services. Japan will develop measures to achieve the next-generation mobility system, including automated driving and integrated transportation service and platform.

Before the 2020 Tokyo Olympic and Paralympic Games, automated driving systems are now moving from the technical testing stage to the commercialization stage in preparation for practical implementation. In order to continue to aim for the world's cutting-edge technology and commercialization, we will advance the technical and service testings from relatively in simple settings to in more actual business model settings. We will accelerate practical implementations while making technology more valuable and gaining social acceptance.

The "Charter for Improvement of legal system and environment for automated driving systems" (decision by the Strategic Headquarters for the Advanced Information and Telecommunications Network Society (the IT Strategic Headquarters) on April 17, 2018) outlined the guiding principles to develop the system of the government as a whole in order for

unmanned transport services to be viable in 2020. In accordance with the framework, we will carry out necessary improvements of the legal system while playing a leadership role in the international discussions. Furthermore, we will assess not only automated driving but also various types of mobility and the Mobility as a Service (MaaS), which is an integration of these mobility services into a single mobility service.

### **(3) Details of new measures to be taken**

#### **i) Promotion of smooth and efficient project testing**

- To achieve implementation of unmanned automated driving transport services in 2020, we will conduct the following testing experiments to accelerate commercialization: to operate and monitor multiple vehicles from distance, by a remote driver; to collaborate with transport operators who are expertise in local traffic and transportation; and to conduct the testing not only for long-term and in intermountain regions, but also in the so-called Old New Town near urban areas where aging population are increasing.
- Through public and private sector collaboration by actively engaging in dialogue and partnership, the results and data obtained from the public road testing project will be shared among related parties, and we will accelerate the efforts towards commercialization.
- With an eye to the Tokyo Olympic Games and the Paralympic Games to be held in 2020, which the government intend to use to showcase and disseminate the Japan's state-of-the-art automated driving technology both to Japan and the world, and also make it a legacy, we will improve the following environmental infrastructure at Haneda Airport and coastal areas by the next year to enable cutting-edge testing experiments for remote operation and fully automated driving: signal information and communication with vehicles, installation of magnetometer, and road-vehicle communication.
- In regards to commercialize truck driving in platooning on highways, we will launch experiments of unmanned-following-vehicle system during the current fiscal year on public roads, and will aim for the commercialization by 2022 at the earliest. In addition, taking into consideration of the test situation of articulated trucks, by the next October, the government will study business environments in the aspect of infrastructure and the like according to the technology used for platooning, the results of demonstrations, operational rules and so on.
- In order to facilitate the development of automated following vehicle system, we will aim for more realistic commercialization of the project by 2021. During the current fiscal year, public and private sectors will discuss specific issues such as comprehensive verification of technical and business issues, issues that require adjustment including operational rules, and logistic policy issues.

#### **ii) System development towards implementation of automated driving**

- In anticipation of the implementation in 2020, with vehicle safety in mind in conjunction with the driving environment for automatic driving under the "Charter for Improvement of legal system and environment for automated driving systems", we will carry out the following legal system improvements.

##### **(i) Secure integral safety**

- We will assess safety requirements and policies for automated driving vehicles, and we will formulate a guideline by this summer. In regards to specific safety standards for new

technologies, we will formulate standards in stages without hindering technological innovation, yet by leading the international standards formulation.

- Whether to take flexible measures, such as the possibility of easy approval system for commercialization, for those that do not require application in implementing unmanned automated driving transport services (level 4) within the current security standards, we will assess the practical application of relevant services in 2020.
- Based on the testing data obtained in the last fiscal year and the current fiscal year, policies for pattern recognition model of the area environment and requirements will be formulated in establishing the driving environment requirements for automated driving during the next fiscal year. This will assist the development of an objective index for safety confirmation.

**(ii) Traffic rules**

- While continuing to play a leadership role and to collaborate with countries concerned in international discussions, regarding to traffic rules, we will review the obligation of existing vehicle drivers such as what kind of non-driving actions (secondary activities) are allowed while using automated driving vehicle. We will also assess new obligations to be imposed on drivers using automated driving vehicle and whether to impose any penalties on drivers who break the road traffic regulations while using automated driving vehicle. We will assess these considerations at the Investigation Review Committee during the current fiscal year. These considerations include revision of the law at the next ordinary Diet session if necessary.
- In regards to unmanned automated driving vehicle transport service operated in limited regions, the framework of the current testing experiments for using remote automated driving system can be used for commercialization.

**(iii) Responsibilities**

- In regards to responsibilities, in order to ensure the effectiveness of providing civil liabilities for damages, to clarify causality in criminal liabilities, and to ensure vehicle safety, we will assess mandatory installation of data recording devices and data recording functions in anticipation of the implementation in 2020.
- In terms of the business law, we will assess the policies to ensure the safety of unmanned transportation vehicles and the convenience of passengers during the current fiscal year.

**iii) Promotion of technological development and deepening and expansion of cooperative areas**

- We will assess virtual simulation evaluation method to evaluate the safety of automated driving system. We will create a safety evaluation scenario during the next fiscal year, and will develop necessary tools. In addition, we will assess the data sharing of the scenarios pertaining to accidents and incidents.
- For practical application of automated driving maps, we will unify the specifications that extend beyond the boundaries of companies, and we will proceed with map data improvements under public-private partnership.
- For practical application on highways with conditions attached for private cars equipped with automated driving (Level 3), we will put the automated driving highway maps into practice during the current fiscal year.
- In order to commercialize the unmanned automated driving transport service (Level 4) in limited areas, we will decide the domestic maintenance policies pertaining to public roadmaps during the current fiscal year. In addition, we will promote international

collaboration toward overseas expansion.

- We will assess the use of dynamic map system, which is based on an automated driving map and linked with real-time integrated data, for non-automated driving. We will also assess how to utilize, to collect, and to distribute the probe traffic information. We will decide on the policy during the current fiscal year.
- During the current fiscal year, we will develop an evaluation environment (testbed) that simulates the electronic system inside the vehicle to address cybersecurity issues of automated driving vehicle as their network system is connected to outside communication channels. In the next fiscal year and onward, we will use the testbed for human resource development.
- In order to secure human resource with software skills including AI, which is the core of automated driving, we will set a standard for skills with motor vehicle software related to automated driving during the current fiscal year. Furthermore, we will start human resource development courses utilizing the skill standard during the next fiscal year.
- We will further promote advanced safety technology by expanding safety performance evaluation of motor vehicles and setting standards of advanced safety technology.
- From the current fiscal year, we will promote collection and analysis of surrounding road information and videos, and development and testing of distribution technology to vehicles.

#### **iv) New endeavor to create the next-generation mobility system**

- In regards to public transportation and logistics in local communities, we will develop a new mobility service model that meets the needs of urban and regional users. For example, we plan to provide information and route search using open data, ICT for dispatch and payment using smartphone application, utilization of new technologies such as automated driving, introduction of caregiving services and shopping assistance, consolidation of passengers and freight goods in depopulated areas, and policy cooperation with various areas such as MaaS.
- Around this summer, the committee of associated local governments will be established to exchange and share information of creating compact cities. Their activities help promote collaboration between city development and public transportation. They also help accelerate the new technologies such as the next-generation mobility service and ICT as well as the "Compact Plus Network" project utilizing public and private data. We will assess the model cities that incorporate these advanced technologies into their city development.
- In order to provide smooth transportation during the 2020 Tokyo Olympic and Paralympic Games, we plan to enhance the provision of public transport operational information. Therefore, in the current fiscal year, we will carry out testing experiments on information provision by the public-private partnership, led by the Tokyo metropolitan areas. The information provision is based on smartphone applications using open data.
- From the current fiscal year, we will promptly revise the permission and approval procedures in accordance with the aviation laws in order to start full-scale deployment of package deliveries in mountainous areas using small unmanned aerial vehicles. In addition, in order to start full-scale deployment of package deliveries in urban areas in the 2020s, we will assess the requirements for third-party overflights from the current fiscal year. Furthermore, we will assess the use of radio waves, and advance the technological development of navigation control management and collision avoidance of multiple aircrafts using the Fukushima Robot Test Field. We will promote the Fukushima Innovation Coast Plan, and

will accelerate industrial agglomerations and talent development by attracting enterprises.

- Based on the current testing, we will ensure the safety of not only automated driving of the conventional "motor vehicle" but also automated personal mobility devices such as a home delivery robot and an automated wheelchair. We will assess how to apply traffic rules on these automated mobility systems.
- In order to make the world's first "flying car" into a reality, we will establish a committee in which public and private sectors discuss the following issues by the end of current year: technological development of motorization and automation, infrastructure and institutional development such as navigation control management and airworthiness certificate through testing, and improvement in social acceptability of "flying cars." Then, we will develop a roadmap.
- In order to promote mobility as a service (MaaS), which connects various transport services by data and creates new added value, we will assess the service improvements such as on demand, data collaboration and platform such as API, and the manner of corresponding system during the current fiscal year.

**v) Endeavor to implement "automated cargo vessels" for advanced maritime traffic**

- In order to enhance the international competitiveness of shipbuilding and maritime transportation, Japan will lead the international discussions on implementation of "automated cargo vessels" by 2025, and will aim for an agreement during FY2023. We will review the domestic standards for ship equipments. From the current fiscal year, we will start technical testings such as remote operation and automated docking system in inland waterways.
- In addition, during the current fiscal year, we will also formulate safety guidelines for remote-controlled small ships that are expected to be used in the future for marine survey and logistics to remote islands.

## 2. Creating the next-generation healthcare system

### (1) The main KPI progress status

**[KPI] Extending healthy life expectancy of the nations by one year or more by FY2020, extending by two years or more by FY2025 [Male 70.42 years, Female 73.62 years (FY2010)]**

=>FY2016: Male 72.14 years, Female 74.79 years

**[KPI] (New) "Healthy life expectancy surpasses average life expectancy"**

### (2) Policy challenges and objectives

From FY2020, we will aim to create a full-scale operation of a new "health, medical, and long-term care system" that is individually customized and patient-oriented, with the prospect of "100-year life era," through an active introduction and full utilization of technological innovation such as data and ICT. We will steadily promote creation of infrastructure for utilizing various health, medical and long-term care data under appropriate security and cost-effectiveness.

We will promote collaboration of various medical and long-term care occupations and provision of total medical care online, along with utilization of data. Accordingly, we will make it possible to provide optimal services by medical and long-term care institutions in the areas where residents are familiar with.

We will aim for a vibrant society in which even elderly people can maintain their health. In order to do so, we will strengthen preventive health investment in a wide range of generation by taking the following measures through collaboration among industry, academia and government: total preventive measures of dementia from early prevention to life support, and creation and utilization of prevention and health management services. Furthermore, we will revitalize healthcare industry by accelerating the creation of total healthcare solution from prevention, treatment, to care.

Towards we will show entire picture of these measures and accelerate them in optimal form in order to improve the quality of medical and long-term care, productivity, and convenience of the nations, as well as to make medical and long-term care workers and the nations feel the effect.

### (3) Details of new measures to be taken

#### **i) Promotion of data utilization as a foundation of health, medical and nursing care service to meet the individual needs.**

##### **(i) Online Qualification Verification System**

- In FY2020, we will start a full-scale operation of the "Online Qualification Verification" system by which we can use the My Number Card as a health insurance card by converting the health insurance number into an individual number and utilizing system infrastructure so that the data such as certification information will be unitarily managed by the individual number even when an insured person changes insurer due to change of employment or retirement.
- In addition, we will assess how the identification data (ID) is used in the medical area towards utilizing the infrastructure including individualized insurance number. In this summer, we will make prompt decisions, and will promote use of data in the medical area.

##### **(ii) Cooperation and utilization of health and medical information at medical institutions**

- We will establish minimum data set including prescription records and summary information as the data to be shared nationwide and set standards for data sharing. We will also review the effective system to utilize the medical and prescription information for medical treatments.
- Upon building new networks as well as renewing existing networks, we will assist in building of an appropriate size network to link regional medical information by supporting ones that meet above-mentioned standards.
- In addition, while considering the aspect of cost-effectiveness, we will prepare a detailed schedule chart by this summer, and will conduct necessary tests in relation to national healthcare information network to share information about individual medical check-up, medical treatment and prescriptions among medical institutions. We will aim for a full-scale operation from FY2020. In addition, we will include the provision of long-term care information on the healthcare information network in the schedule chart.
- In regards to electronic prescriptions, considering the results of the test, as well as expecting the operation of nationwide health and medical information network, we will assess not only the current guideline but also the system that enables smooth operation from the perspective of improving the convenience of the nations and will draw a conclusion during the current fiscal year.

**(iii) Cooperation and utilization of various long-term care occupations in the long-term care area**

- In order to launch ICT and information sharing in long-term care area, and to enable effective and efficient cooperation among long-term care associates, we will assess the standard specifications for information sharing among in-home long-term care support agencies and home-visit long-term care service providers, and will draw a conclusion during the current fiscal year. In addition, we will conduct testing for medical and long-term care collaboration using ICT. Based on the result, we will assess toward the formulation of the standard specifications.
- Launching ICT in the long-term care area will be promoted integrally with the improvements in efficiency and productivity at long-term care sites. We will assess the comprehensive measures in relation to the introduction of ICT, and will proceed thoroughly with the launch in the next fiscal year. By FY2020, we will aim to enable long-term care area to share necessary data.

**(iv) Creation of PHR**

- PHR (Personal Health Record) is a system for the individual and his or her family to understand the individual's health condition and medication history that help improve lifestyle and health. From FY2020, we will aim for a full-scale provision of data to individuals through Mynportal.
- For that, in addition to vaccination history (provision started in FY2017), we will aim to start provision of medical check-up data such as specified medical check-up and infant medical check-up in FY2020. Furthermore, provision of medical information including medications will be assessed based on necessity and cost-effectiveness. During the current fiscal year, we will draw a conclusion and clarify the necessary process. We will aim to start the provision of data as soon as possible after FY2021.
- In addition, due to the OpenAPI, we will assess the possibility of data utilization by commercial service companies that got permission from an individual. This will promote the

originality of commercial businesses, for example, vital information measured by wearable terminals, daily feedback on long-term care service status to an individual and his or her family, and linking with electronic medication notebook.

- Furthermore, the PHR service model and the information collaboration technology model will be developed and advanced through testing. Not only we will proceed with testing towards the establishment of effective lifestyle and disease prevention services using IoT devices such as wearable devices, but also we will expand them to the areas such as prevention of lifestyle disease except diabetes, and prevention of long-term care. We will support creation and improvement of new services utilizing healthcare information by private companies.
- In regards to health information such as medical check-up and vaccination during infancy, we will aim to create a system that enables unified confirmation. Based on the results from research and study conducted previously, we will assess standardization of provision for infant medical check-up. During the current fiscal year, we will draw a conclusion and promote digitization.

**(v) Establishment of an information analysis infrastructure for health, medical and long-term care as a Big Data**

- In regards to the analysis infrastructure through which the government, insurers, researchers, private companies, and others are able to consolidate and analyze the Big Data of health, medical, and long-term care as a personal history, we will start the design of detailed system from the current fiscal year. From FY2020, we will operate in full-scale.
- Based on the next-generation medical infrastructure law, we will steadily implement measures to promote anonymous medical information that can be utilized in medical R&D by industry, academia, and government, as well as gaining public understanding. We will develop personnel who will build and operate data infrastructure and be able to utilize medical information and aim to expand our country's development and operational method of data infrastructure to emerging countries and developing countries.

**ii) Advance health promotion, as well as the prevention of disease and long-term care both at workplaces and communities**

**(i) Comprehensive dementia action plan, promote social participation by elderly people, prevention of long-term care**

**a) Promotion of comprehensive dementia action plan**

- Through further cooperation between domestic database and registry, we will promote clarifying disease state, and will aim to establish early detection, prevention, and diagnostic methods for dementia.
- Local governments, researchers, companies and others cooperate and create a testing ground to produce new products and services that are "friendly to people with dementia," including life support from ultra-early prevention to establishment of environment for life support and social acceptance after outbreak. From the current fiscal year, we will plant to develop a framework to research on dementia through a public-private partnership.

**b) Promotion of social participation by elderly people**

- We will conduct testing such as "houses to live and work for elderly people" that is to improve health, and to prevent and resist progression of long-term care needs by taking responsibility in society regardless of old age. We will create a social participation example

model with responsibilities such as employment, and will promote social implementation.

- In order to make elderly people and care managers easier to understand and use local prevention and long-term care services, including non-insured services, we will promote utilization of long-term care service information release system.

\* Services not covered by universal health insurance system

**(ii) Advance health promotion, disease and severity prevention, and health management using insurers' data**

- Insurers as a whole will make an effort to prevent the severity of diseases such as chronic kidney disease that may cause diabetes and dialysis. At the same time, companies and insurers will collaborate to promote prevention and health promotion called "CollaboHealth." The "Health Scoring" analyzes the subscriber's health condition, medical expenses, and status of prevention and health promotion, and notifies the management. We will implement it to all health insurance unions and the Federation of National Public Service Personnel Mutual Aid Associations, on a per insurer basis during the current year and on a per employer basis from FY 2020 onwards. We will consider implementing it to other mutual aid associations, and will draw a conclusion in the next fiscal year. We will start implementing it to the National Health Insurance and the Association of Medical Care Services for Older Senior Citizens during the next fiscal year.
- Through collaboration including the provision of expertise in health management award and information sharing by local governments such as the "Community Next-Generation Healthcare Industry Association Alliances", we will plan to expand the health management to small and medium sized-enterprises. In addition, in order to improve the quality of health management, we will re-examine the selection standards of "health management names" and "health management excellent corporations." We will incorporate revitalization of the organization and the viewpoint of women's health management.
- We will create a model that enables local public bodies to analyze data on medical check-up and medical and prescription receipts using AI, and to provide efficient health guidance, then we will expand it to nationwide.

**(iii) Promote the use of non-insured services that contribute to health management and prevention**

- In order to create services that meet the needs of elderly people, we will promote collaboration between local councils, which support local care councils and life support coordinators, and the Community Next-Generation Healthcare Industry Association, as well as the participation of private enterprises. In addition, we will set up the Regional Next-Generation Healthcare Industry Association Alliances, which grasp regional issues, promote regional collaboration, and engage in dialogue with related ministries and agencies during the current fiscal year.
- In regards to the system for quality assessment of non-insured services, we will start assessment during the current fiscal year. We will encourage each business type across the industry to voluntarily adopt authentication system and to formulate guidelines, and will promote continuous quality assessment. We will publish industries that provide systems such as authentication, and will urge local governments, local healthcare and long-term care associates including care managers, insurance companies, and enterprises engaged in health management to actively provide information on high-quality services to users.
- In order for non-insured services to become options for prevention and independence support

as well as to utilize the options to meet elderly people's need, we will provide examples and expertise in the utilization of non-insured services for local governments and care managers. We will also assess methods such as incentives to make it easier for case managers to actively position the non-insured services for care plans.

- While keeping the administration cost down in the healthcare area including the new areas such as long-term care and dementia prevention, we will expand utilization of a performance-linked private consignment agreement method that solves social problems and improves administrative efficiencies through utilizing public knowledge.

**iii) Provision of efficient, and effective, high quality medical and long-term care; promotion of collaboration among various professions involving in local comprehensive care.**

**(i) Implementation of a scientific database of long-term care for independence support and severity prevention**

- In order to actualize long-term care that is scientifically proven its effects such as independence support, we will start a full-scale operation of database to collect and analyze data such as conditions of elderly people and care contents in FY2020. Accordingly, we will evaluate the long-term care services verified by their effectiveness at the long-term care remuneration reform from the next term.
- Simultaneously, we will assess measures that improve the quality of services at long-term care facilities, and will reform the way long-term care workers work using acquired data.
- Furthermore, additional data collection and analysis including those acquired from sensors will be assessed comprehensively, considering the responsibilities of long-term care facilities and technological innovation conditions.

**(ii) Development and introduction of robot sensors and AI**

- Through organizing rules on effective verifications such as data type and acquisition methods that are necessary in evaluating technological innovation including robot sensors and AI, we will create an environment that promotes continuous effective verification and circulation of innovation by businesses. We will apply the gathered evidence to evaluate at the long-term care remuneration reform from the next term.
- Based on the important areas revised last fiscal year, we will promote technological innovation in robot sensors and AI. We will connect long-term care sites including users and developers, will provide development support that meets the needs of the sites, and will provide introduction and application support to the sites. We will also proceed with similar efforts in the area of disabled welfare. Furthermore, in order for Japan's long-term care robots to be launched in overseas markets, we will promote international standardization on safety warrant and collaborate with systems of other countries.

**(iii) Document reduction, work efficiency, and productivity improvement**

- In order to share information in the area of long-term care and to reconstruct and make the fundamental operations more efficient at long-term care offices by using ICT, we will work to understand the current situation of documentation that the government and local government required them, and will review it during the current fiscal year. Thereafter, we will proceed with further review including documentations prepared by themselves, and will effectively reduce document volume by half.
- In addition to the documentation review and the use of robot in long-term care services, we will formulate guidelines for work efficiency and productivity improvement including

enhancement of ICT and use of non-professionals, will distribute them, and will deploy successful practices during the current fiscal year.

- While promoting activities of elderly people, we will expand the base for long-term care personnel. With the Regional Medical and Long-term Care Comprehensively Securing Fund, we will make comprehensive efforts to secure long-term personnel by utilizing various personnel such as long-term care assistants.
- As with area of long-term care, we will apply the same principles in the areas of medical and disability welfare, which will be specified accordingly to the characteristics of each area: documentation review, enhancement of AI and robot technologies, and collaboration among various professionals.

**(iv) Promotion of online medical care and collaboration among various professionals**

- In order to improve convenience of patients, to reform work methods of medical professionals, and to promote the provision of efficient and effective medical care, we will improve complete online medical care including medication guidance and monitoring. We will further improve the current situation from users' perspective including the medical fee revision from the next term and necessary institutional correspondence.
- Online medical care will be tested from a security point of view for safe and appropriate dissemination in line with new evaluation system and guideline, which were added in this fiscal year's medical care fee revision. The technical results will be assessed to reflect on the guideline and the medical care fee revision.
- In order to further improve online medical care, we will collaborate with related institutes and companies, will collect data and samples related to effectiveness and safety of online medical care including those not covered by the current medical care fees, and will push forward understanding of the current situation. Accordingly, this evidence will be accumulated continuously, and will be evaluated at the medical care fee revision from the next term.
- In regards to the use of ICT in rehabilitation in the area of long-term care, we will assess from the viewpoint of active use of rehabilitation professionals, and efficiency and rationalization of work. We will evaluate the valid elements at the long-term care fee revision from the next term. These efforts will lead to independence support and severity prevention.
- In line with the testing of the National Strategic Special Zone, we will consider including the online medication guidance in the next revision of the Pharmaceutical and Medical Device Act.
- In order to enhance collaboration among various professionals at medical care sites including home medical care, we will consider the more active use of nurse, rehabilitation professionals, pharmacists, and others for the jobs that are currently conducted by doctors.

**iv) Development of advanced medicine and medical equipment; the structural transformation of the healthcare industry**

**(i) Infrastructure improvement for development of advanced medicine and medical equipment**

- In order to accelerate the development of innovative medicine and medical equipment through collaboration among industry, academia, and government, we will conduct necessary research and assessment for policy formulation based on evidence gathered. In addition, we will revise the "Health and Medical Strategy" (decision at a cabinet meeting on

July 22, 2014) and the "Medical Research and Development Promotion Project" (decision by the Headquarter for Healthcare Policy on July 22, 2014) during the current fiscal year.

- The "Clinical Innovation Network" is promoting environmental improvement for efficient clinical development through networking systems such as disease registry system. The Medical Information Database (MID-NET) is to improve evaluation and safety action plan on medicine. Through their collaboration, we will promote utilization of larger scale real world data in the process from development to safety action plan.
- Through collaboration among industry, academia, and government, we will assess the key areas in the medical equipment development, and will select and concentrate development support by the AMED.
- In order for R&D ventures including development of new drugs and biotechnology, which initially tend to go into the red, to be valued in the emerging markets from a mid and long-term point of view, and to be able to produce successful outcomes, we will provide start-up ventures with opportunities to transmit information to domestic and overseas institutional investors. Furthermore, in order to support the healthy growth of emerging companies, we will assess the condition of emerging markets in the current fiscal year.
- We will expand comprehensive support, such as assisting medical ventures in matching with major pharmaceutical companies, and securing experts in intellectual property. In addition, we will organize international business matchmaking events to which venture enterprises, major companies, investors, intellectuals, and others attend. We will also strengthen the venture support system in areas of health and medical including collaboration between public and private funding and related ministries and agencies.

**(ii) Utilization of technologies including AI**

- We will accelerate AI development in the area of healthcare focusing on the key six areas. In the current fiscal year, we will clarify the handling of AI that assists in diagnosis and treatment under the Medical Practitioner's Law. In addition, we will formulate evaluation indicators of approval selection and medical equipment development guidelines. We will also collect necessary high-quality data for AI development.
- We will promote genomic medicine in the areas of cancer and terminal illness. In regards to cancer, we will aggregate information including genome, and will develop a system to provide high-quality information on genomic medicine nationwide. We will also develop innovative treatment and diagnostic technologies, including the development of new drugs. In regards to terminal illness, we will aggregate genetic testing research institutions, and will secure the quality. We will also promote the development of early check-up and treatment methods using the genomic information.
- In regards to innovative medicine developed using AI technology and genomic information, we will promote development of an inspection and research system toward early approval.
- We will conduct research on the practical application of endoscopes with high definition video technology including 8K and diagnosis support system.

**(iii) Enhancement of competitiveness and structural transformation of healthcare industry**

- In order to revitalize private investment in businesses that use health and medical information, mutual understanding among citizens, patients, medical institutions, and companies needs to be enhanced. During the current fiscal year, we will assess the measures to visualize companies which comply with necessary regulations and guidelines on handling of health and medical information.

- We will promote the creation of a comprehensive healthcare solution, which aims to improve the quality of lifestyle mainly for patients and individuals, and includes prevention and post-treatment monitoring. For the projects in which medicine and medical equipment manufacturers and IT vendors collaborate and conduct development and testing of healthcare solutions focusing on the outcome, we will organize tasks and will assess other measures for social implementation at related ministries and agencies.

#### **v) International Deployment and others**

- In regards to promoting the Asia Health and Human Well-Being Initiative, we will accelerate international deployment as a pillar of package deployment of Japan's next-generation healthcare system and related industries. By this summer, we will revise the "Fundamental Policies for the Asia Health and Human Well-Being Initiative" (decision by the Headquarter for Healthcare Policy on July 29, 2016) in order to promote system improvement.
- Under this concept, we will support Japan's medical care and long-term care (independence support, severity prevention, etc.), overseas deployment of healthcare industry in relation to prevention and health, and development and admission of overseas personnel as well as the development of Japanese language acquisition environment. In order to build a self-supporting healthcare system in Asia, we will conduct infrastructure improvement of deployment including Japan's medicine as well as R&D, manufacturing, distribution, and safety regulations in Asia.
- In this regard, we will promote the international deployment of medical care mainly through the activities of organizations such as Medical Excellence Japan (MEJ), the Japan External Trade Organization (JETRO). In order to contribute to continuous Japan's sophisticated medical care, we will enhance international patient and foreign traveler admission capabilities by institutions such as Japan International Hospitals (JIH), including improvement of alien handling capabilities by Japan's medical care institutions.
- In regards particularly to foreign travelers, based on the discussions of working groups in relation to securing adequate medical care for foreign nationals visiting in Japan, and the assumption that these tourists are responsible to pay adequate costs by themselves, we will improve the environment where they are able to receive appropriate medical care without troubles even when they become ill or get injured during their trip. We will also apply similar efforts to foreigners residing in Japan on the common points.
- In addition, in order to disseminate at the Nutrition Summit in Tokyo in FY 2020, we will assess measures based on the Asia Health and Human Well-Being Initiative in regards to the provision of healthy food as a core of complete health, including formulation of new meal intake standards, during the current fiscal year.
- Under the collaboration with the Economic Research Institute for ASEAN and East Asia (ERIA), we will conduct comprehensive assessments on talent development in the area of healthcare based on the characteristics of each Asian country, development of infrastructure to promote research and development of medicine in Asia, and strengthening provision of medical care and health services.
- In regards to the action plan on infectious diseases as the global threat, we will strengthen research capabilities and capacities including training of personnel by forming research centers with Nagasaki University as the core base. In the preparation for the 2020 Tokyo

Olympic and Paralympic Games, we will also strengthen outbreak trend survey, examination system, and treatment system, and will expand designated medical institutions.

- We will promote the action plan on AMR while supporting the international health institutions, including the World Health Organization (WHO), The Global Fund, the Gavi, the Vaccine Alliance, the Global Health Innovative Technology Fund (GHIT Fund), and the Coalition for Epidemic Preparedness Innovations (CEPI). In addition, we will strengthen talent development to handle global infectious diseases and sending delegations to the international institutions.

### 3. The Next generation industry system

#### (1) The main KPI progress status

**[KPI] More than 2% annual improvement in the labor productivity of the manufacturing industry**

=>FY2016: 2.6% (FY2015: 2.0%)

**[KPI] By 2020, achieving 80% of companies to collect data at their factories, and 40% of them to link their collected data to solving specific management issues.**

=> FY2017: 68% and 22% respectively (FY2016: 67% and 20% respectively)

**[KPI] In 2020, achieving the size of the domestic robot production in the manufacturing area to 1.2 trillion yen and in the non-manufacturing areas such as services to 1.2 trillion yen.**

=>FY2016: 712.5 billion yen in the manufacturing area; 144.6 billion yen in the non-manufacturing areas

(FY2015: 689 billion yen in the manufacturing area; 123.9 billion yen in the non-manufacturing areas)

#### (2) Policy challenges and objectives

In the supply chain, including the manufacturing industry, a shortage of labor is becoming the obvious issue. At the same time, due to the change in needs of customers, not only products but also new services and solutions are becoming the key for competitive advantage.

In order for Japan to achieve its competitive advantage, we need to implement digital technologies, robots, and IoT at the production and service sites, and to improve labor productivity and added value. However, data sharing among devices in factories and with external parties have not been fully adapted. Social implementation of robots is behind especially in the area of services.

The "Period for Productivity Revolution and Intensive Investment" is to support increasing corporate capital spending, to strategically advance human resource development, to aim for more than 2% growth in manufacturing labor productivity, and to achieve 40% of companies to link their collected data to solving specific management issues by FY2020. Through these efforts, the government will accomplish development of innovative products and services, optimized lean supply chain, and safe and productive manufacturing process.

#### (3) Details of new measures to be taken

##### i) The servitization of manufacturing

##### (i) Promotion of supply chain data collaboration

- In order to accelerate further the utilization and distribution of data that is generated in the entire manufacturing process including design, production, and product maintenance, and to lead to a new production system development, the government will conduct testing during the current fiscal year to achieve collaboration among data sharing frameworks that each company develops its own.
- In order to strengthen development and proposal capabilities of material companies by promoting data collaboration and use among domestic companies, the government will assess and carry out necessary environment improvements in the following areas: material development fundamental data for innovative development process in the area of metals, and

platform development for sharing unused technology data in the area of chemicals.

- In order to enhance proposal capabilities for user companies to visualize the value contributed to final products with the technology of industrial fabrication companies through data, and to develop a platform between companies to improve the quality of matching the two companies, the government will assess the method that links technology and value with data from the current fiscal year, and will lead to database improvements.
- In order to enhance Japan's "Integral" in the supply chain as a whole, the government will first build a simple model that can simulate fuel consumption in the area of automobile by the end of the current fiscal year. Then, in the next fiscal year, the government will extend areas and will aim for cooperative areas of an entire vehicle.
- In regards to the supply chain that connects manufacturers, wholesalers, retailers, and consumers, the government will conduct standardization of information format obtained through electronic tags and improvements on rules during the current fiscal year in order to create a system that can share information on products, delivery, sales, and consumption.

**(ii) Social implementation of robot technology**

- The government will verify the implementation status of the "Japan's Robot Strategy" (decision by the Headquarters for Japan's Economic Revitalization on February 10, 2015). At the same time, not only through the use of robots but also through the mutual collaboration among robots and the dramatic expansion of robot application areas by using the latest technologies including AI and IoT, the government will assess and organize the model, at which the society should aim in order to optimize industry sites and human life as a whole, private sectors' effort, and the necessary measure system by the next spring.
- In order to promote international standardization of software and hardware for small general-purpose robots, the government will build a collaborative system among industry, academics, and government in the next fiscal year.
- In order to promote the "Human-Robot Collaboration System" that workers and robots work closely together at sites including manufacturing, the government will organize the necessary components and procedures to secure safety in the current fiscal year, in consideration of the international standard proposal for FY 2020.
- In the preparation for the 2020 "World Robot Summit" that brings together robot technologies from all over the world with the aim of promoting the social implementation and R&D of robots, the government will enhance the summit's contents and accelerate information dissemination through the pre-summit in this October.
- For the realization of a universal future society with advanced robot technologies (the "Reform 2020" Projects):
  - With collaboration with The Tokyo Organising Committee of the Olympic and Paralympic Games, the government will assess the operation of latest robot technology experiment project at the 2020 Tokyo Olympic and Paralympic Games testing event scheduled for the next fiscal year.
  - In order to secure the safety of services using robots in public spaces, the government will organize the components that companies are required to fulfill during the current fiscal year. The government will also adapt the Japanese Industrial Standards.
- The government will tackle the technological development of next-generation robots in order

to achieve mutual collaboration among multiple robots and wireless.

**(iii) Support talents to strengthen on-site capabilities; train and secure digital talent**

- In order for manufacturing workers to acquire digital skills and systematic thinking that support the servitization of manufacturing, the government will formulate a practical curriculum during the current fiscal year and will start the courses from the next fiscal year.
- During the current fiscal year, the "Smart Manufacturing Supporting Team" will expand its base to about 40 locations nationwide. The team will send experts in full-scale to introduce IoT and robots in manufacturing industries and to support their entry into new areas, and will assess deployment in service industries.
- The "System Integrator" supports the introduction of robots to small and medium-sized enterprises. In order to double the system users to 30,000 by FY2020, the government will strengthen the system in matching and developing talents. Simultaneously, the government will formulate skill standards for highly qualified talents who oversee the design of overall robot system during the current fiscal year, and will assess educational programs.

**(iv) Development of rules to promote the servitization of manufacturing**

- In order to make the world's first "flying car" into a reality, in this year, the government will set up a committee in which public and private sectors discuss the necessary matters including technological and system developments, and will create a roadmap.
- From the current fiscal year, the government will promptly revise the permission and approval procedures in accordance with the aviation laws in order to start full-scale deployment of package deliveries in mountainous areas using small unmanned aerial vehicles. In addition, in order to start full-scale deployment of package deliveries in urban areas in the 2020s, the government will assess the requirements for third-party overflights from the current fiscal year. Furthermore, the government will assess the use of radio waves, and advance the technological development of navigation control management and collision avoidance of multiple aircrafts using the Fukushima Robot Test Field. The government will promote the Fukushima Innovation Coast Plan, and will accelerate industrial agglomerations and talent development by attracting enterprises.

**ii) Biotechnology and material revolution**

- We will promote to achieve health enhancement through food, non-disease society, and carbon circulation society with innovative biological materials through R&D and practical application of innovative biotechnology that is a fusion of biological and digital technologies. We will contribute to solve social problems, including sustainable development goals such as starvation, energy, and climate change.
- Food for specified health uses and food listing its functionality are expected to contribute to maintenance and enhancement of health. In regards to these foods, we will accumulate scientific knowledge over the next five years from the current fiscal year, and will aim to implement new indications for health use through immune system improvement.
- From the next fiscal year, we will create and appropriately assess the display and recognition system that evaluate usefulness and environmental performance of innovative biological materials that contribute to implementation of carbon circulation society, and circulation performance of domestic biomass resources.

- In order to achieve smooth and rapid use of genome editing technologies, which can modify genetic information with high precision, in industries, we are aiming by the end of current fiscal year to clarify the scope that does not fall under the current Cartagena Act.

### **iii) Expansion of space business**

- We are aiming by FY2023 to build 7 Quasi-Zenith Satellites, "Michibiki," and steadily to develop and prepare for functional, performance, and operational improvement. Simultaneously, we will steadily promote the development of H3 rockets that aim to enhance international competitiveness (the first H3 will be launched in FY2020), the increase in number of information gathering satellites, the development of technical test satellites (communication and observation), and the important projects related to space exploration.
- In order to achieve use of high-accuracy three-dimensional position information with satellites such as the Quasi-Zenith Satellites, we will tackle from the current fiscal year for prompt construction of a system that expands electronic reference point network using private sector observation points, and constantly corrects the effects of continuous crustal movements.
- We will make steady improvements of platform (open and free government satellite data) that companies can easily use the government satellite data while utilizing analysis technologies such as AI. In the next fiscal year, we will conduct testing to create new industries using satellite data, and talent development to strengthen skills in the use of satellite data.
- From the current fiscal year, we will promote full-scale use of commercial satellite data by the government and public institutions (so-called anchor tenancy).
- In order to enhance competition among commercial small satellites and small rockets that support satellite data, we will develop automated flight safety technology system and expand the use of consumer products and technologies. From next fiscal year, we will provide testing opportunities in orbit for competitive parts and components, and will develop a system to make testing facilities that scattered throughout the country as a single point of contact.
- From this November, we will start operation of high-accuracy positioning service and message function for disaster prevention and reduction that use the Quasi-Zenith Satellite System, "Michibiki." Simultaneously, we will expand testing projects on areas such as automated driving of agricultural machineries and vehicles, distribution, and disaster prevention, and will promote geospatial projects utilizing the geospatial information center.
- We will steadily implement the "New Support Package for Space Venture Development" released this March. The public and private sectors such as the Development Bank of Japan and the Innovation Network Corporation of Japan will collaborate and boost high-risk investments. Simultaneously, from the current fiscal year, we will assist in creation and training of space ventures through a platform development that aggregates specialized professionals of companies such as JAXA and Enterprise OB to enhance talent mobility.
- To enhance commercial vitality, we will support venture companies with an innovative business plan such as the provision of new services on orbit (for example, RemoveDEBRIS) and space resource development on the lunar surface.

### **iv) Expansion of aviation industries**

- We will continue R&D to promote the next-generation aircraft development involving the

cutting-edge technologies such as ceramic matrix composite (CMC), which is a heat-resistance material and the key for next-generation engines, motorization, and automation. At the same time, we will provide high-risk investment funds and standardization for the technical development.

- In regards to the to-be-completed aircraft projects, including the MRJ (Mitsubishi Regional Jet), we will appropriately conduct the safety assessment. By the time the MRJ is in service, we will develop a sales support system after the development completion and a system to maintain safe operation of a mass-produced aircraft.
- In regard to the integrated production system by the 10 small-medium manufacturers of aircraft parts (Matsusaka Cluster), we will support the integrated manufacturing control system development using IoT during the current fiscal year. Furthermore, through the "The Nationwide Network of Aircraft Manufacturing Clusters" established in the last fiscal year, we will apply the "Matsusaka Cluster" model to other regions, and will build a self-sufficient cluster to attract overseas demand.

## [2]Changes in the "basis" of economic activity

### 1. Energy and environment

#### (1) The main KPI progress status

**[KPI] Implement legal unbundling of the power transmission and distribution divisions on April 1, 2020, as the final stage of the power system reform .**

=> OCCTO (Organization for Cross-regional Coordination of Transmission Operators) was established on April 1, 2015. Full liberalization of retail electricity sales was implemented on April 1, 2016.

**[KPI] Aim to increase the proportion of next-generation automobiles to newly sold passenger automobiles to 50 to 70% by 2030.**

=> Proportion of next-generation automobiles to newly sold passenger automobiles is 36.7% (2017)

**[KPI] Establish about 160 commercial hydrogen stations by 2020 and about 320 stations by 2025.**

=> 100 stations have opened (as of the end of April 2018).

#### (2) Policy challenges and objectives

The government aims to drastically reduce domestic greenhouse gas emissions by overcoming energy constraints and challenging energy transformation and decarbonization toward 2050, and makes the utmost contribution to the global reduction of emission, and thereby realizes economic growth. For this purpose, investments in energy and environment will be increased and innovation results leveraged to promote energy and environmental initiatives and sophistication of related industries.

#### (3) Details of new measures to be taken

In order to promote innovation for energy transformation and decarbonization and advance introduction of digital technologies to the conventional energy management and 3R business field, environmental improvement, technology development and demonstration of a business model that promotes accumulation and sharing of data will be pushed along.

"Regional cycle symbiotic communities" which provide mutual complement within a region or between regions utilizing regional resources will be established: especially, self-sustainable distributed energy systems also resilient to disasters will be established, adaptation to climate change will be promoted and energy/environmental industry that will vitalize regional economy will be developed.

Furthermore, international development of Japanese technologies and products for energy transformation and decarbonization will be promoted.

#### i) Promotion of innovation for energy transformation and decarbonization

- In a determination to realize a virtuous cycle of the environment and economic growth and drive the world's energy transformation and decarbonization as Chair of the G20 next year, a long-term strategy will be developed as a growth strategy for development of a greenhouse gas low-emission economy/society in accordance with the Paris Agreement. To this end, a

meeting body will be organized consisting of experts from financial, economic and academic communities, under which related ministries and agencies work together to accelerate examination.

- Based on the "Hydrogen Basic Strategy" (resolved at the Ministerial Council on Renewable Energy, Hydrogen and Related Issues on December 26, 2017) etc. for realization of a hydrogen-based society, approaches for both supply and use aspects will be made in an integrated manner including expanded diffusion of stationary fuel cells, strategic development of hydrogen stations, and regulatory reform for unmanned self-service filling.
- For a reduction in hydrogen supply cost over the medium and long term, research and development of hydrogen production and transportation technologies for establishing international hydrogen supply chains and demonstrative operation from 2020, development of combustion technology for realization of hydrogen power generation, research, development and demonstration for implementation of water-electrolysis technologies with renewable energy will be advanced along with efforts to utilize hydrogen transportation etc. with methane and ammonia.
- In order to expand and vitalize movements for hydrogen uses in the world, Japan will make proposals to foreign countries to strengthen the international cooperation framework.
- With respect to in-car batteries for electric vehicles, research and development with a view to practical use of all solid batteries in 2025 and of innovative batteries in 2030 as well as steady supply of minerals will be advanced.
- We aim for practical use of innovative steel making and chemical processing technologies in 2030.
- Reopening of nuclear power will be advanced by giving top priority to the safety. Through efforts to develop anti-disaster measures and improve autonomous safety, we will endeavor to recover public confidence while initiating enhancement of personnel, technology and industrial infrastructure and technology development will be advanced in pursuit of a reactor excellent in the safety etc. and a solution to back-end problems. Research and development will also be advanced for the future by utilizing test reactors including experimental fast reactors and high-temperature gas reactors.
- Approximately by FY2021, we will make steady progress on technology development for energy transformation and decarbonization and on design and establishment of a mechanism for making investments in power generation and transmission-line networks, including sequential execution of creation of new markets, such as non-fossil value trading market, capacity market and supply and demand coordination market, and review the interconnection line usage rules.
- While encouraging Japanese corporations to set proactive goals and disclose information on ESG etc. we will advance green finance with intensified transmission to and dialogue with financial institutions and investors.

## **ii) Innovation of energy/environment-related businesses utilizing IoT, AI, etc.**

### **(i) Advancement of sophisticated energy management utilizing IoT, AI, block-chain, etc.**

- Energy conservation by business operators will be advanced through promotion of efficient operation of equipment by way of partnership between plural business operators and utilization of IoT, AI, etc., opening of data obtained through regulations, support, etc. with consideration given to trade secrets etc. and support etc. for equipment investment utilizing

leasing.

- For advancement of energy conservation in the private sector, diffusion of self-consumed ZEH etc. will be advanced utilizing sophisticated energy management etc. by 2030, in addition to promotion of energy saving renovation of houses and buildings to aim for the average new residential housing and buildings becoming equivalent to ZEH/ZEB.
- In order to advance energy conservation in the transport sector, automobile alone measures, including diffusion of next-generation vehicles such as electric vehicles and fuel cell cars and development of a new fuel economy standard, as well as development and practical use of more efficient in-car battery will be advanced, an efficient operating system utilizing IoT will be established and energy conservation etc. of railway system will be promoted to sophisticate logistics.
- Approaches will be made to sophisticate operation of power plants using AI and strengthen cybersecurity in the electricity and gas sector and an international standard for operation and maintenance of thermal power plants will be developed roughly within FY2020 to streamline the market environment.
- For commercialization of virtual power plant in FY2021, i.e. adjusting power for the next generation utilizing distributed energy resources including storage cells and electric vehicles (EV) and negawatt as "Establishment of Innovative Energy Management System ("Reform 2020" project)", expansion of available energy resources, demonstration for sophistication etc. of control technology and system development will be advanced.
- In preparation for expanded diffusion of electric vehicles, development of Vehicle to Grid technology utilizing EV in adjusting the electricity supply and demand balance will be advanced to aim for practical use in FY2021. At the same time, battery energy saving technologies as well as reuse and recycling technologies will be developed and a service model will be built utilizing electric vehicles.
- Aiming for establishing a system that creates and trades CO2 reducing value from self-consumed renewable energy at a low cost and freely, demonstration will be performed using the block-chain technology
- A national movement will be deployed with transmission of information (nudge) etc. to encourage behavior modification utilizing big data analysis etc. and a guideline for energy conservation will be developed in an effort to expand markets for low-carbon products, services and lifestyles.
- In order to promote competition in the gas market, a review will be made from this year for a caloric band system, package gas receiving, wholesale supply promotion, etc. in accordance with the new regulatory reform protocol.

**(ii) Innovation of 3R business utilizing digital technologies**

- The fourth Fundamental Plan for Establishing a Sound Material-Cycle Society will be developed by the summer this year to promote creation and diffusion of innovative resource recycling (3R) related businesses (waste loss reducing support services, efficient reverse logistics, high efficiency in the waste sorting process, etc.) to fulfill the new target to set for FY2025.
- In order to ensure a stable supply of useful metals that are expected to increase their international demand due to diffusion etc. of electric vehicles, recycling technologies, including an automatic sorting system utilizing AI and robotic technologies and highly efficient metal smelting technology, will be developed to sophisticate the metal recycling

system from urban mines.

- The collection system will be intensified for electronics (small home appliances etc.) which will become further ubiquitous in association with spread of digital technologies through production etc. of prize medals at Olympic and Paralympic Games utilizing urban mines.
- Sewage treatment business will undergo renovation by enhancing productivity of maintenance and cutting costs utilizing analysis of big data on AI, robots and registry system while making an energy supply base for sewage treatment facilities and advancing centralized conversion of single sewage treatment tank.

### **(iii) Strengthening resource security utilizing innovation**

- Data accumulation capability by upgrading of the geophysical exploration ship and acquisition of innovative technologies with application of AI, IoT, etc. will be promoted for enhancement of competitiveness in the resource development industry.
- Resilience of fuel supply infrastructure will be promoted for its efficient maintenance and next generation, and its safety will be verified with a view to system reforms in an effort to diversify supply methods and create new services utilizing IoT.

### **iii) Optimization of regional energy system and environmental conservation**

#### **(i) Establishing locally-grown and locally-consumed energy systems**

- In order to promote introduction of renewable energy utilizing regional resources with an aim for converting such energy to main power, the feed-in tariff system will be operated appropriately, the existing system operation will be reviewed for resolving grid system constraints and securing the coordination power, technology of batteries will be developed and demonstrated, technology will be developed for cost reduction, and the effective use of renewable energy power will be disseminated upon completion of the period of the surplus power buying system.
- In order to promote establishment of a locally-grown and locally-consumed energy system utilizing renewable energy, an approach will be made to utilize regionally distributed energy efficiently in the region through support for developing a plan for commercialization, for implementation of equipment and launch of a regional energy company involving the local government.
- An environment will be streamlined for expansion of introduction of biomass power generation, including woody biomass through stable and efficient supply of unused materials and waste biomass including sewage sludge.
- Promotion of dissemination and the role of a zoning technique for promotion of introduction of wind-power generation compatible with environmental conservation will be reviewed, and basic information on the environment will be streamlined.
- A regional council will be established to promote information sharing and consensus building for promotion of introduction of wind power and solar power, and the rules for uses of general sea areas will be streamlined.
- For geothermal power generation, geothermal potential survey for reduction in development risk and cost and technology development such as next-generation geothermal power generation will be undertaken.
- Microwave radio transmission technology will be researched, developed and demonstrated and application to various industries will be advanced to strengthen regional energy network.

#### **(ii) Promotion of the Fukushima Plan for a New Energy Society**

- Based on the "Fukushima Plan for a New Energy Society" (September 7, 2016, Decision of the Council for Realising the Fukushima New Energy Society Vision ), the government will advance various measures, for example, enhancing the wind power generation transmission lines in order to expand the introduction of renewable energy.
- The government will transmit the potential of hydrogen and the successful reconstruction of Fukushima to the world by manufacturing hydrogen on a large scale from renewable energy in Fukushima Prefecture under the name of the "Utilization of CO<sub>2</sub>-free hydrogen derived from renewable energy ("Reform 2020 Project") and utilizing it in the Tokyo Olympics and Paralympic Games in 2020. For this purpose construction of demonstration facility will commence in summer this year.

**(iii) Promotion of adaptation to climate change**

- Under the Act for Adaptation to Climate Change, science-based development for adaptation will be enhanced and information infrastructure streamlined to promote adaptation measures on agriculture and disaster prevention so as to lead to creation of a resilient region and development of adaptation businesses.

**iv) International development of energy and environmental industry**

- Broad options for low-carbon technologies should be offered in accordance with the needs of respective countries to drive world energy transformation and decarbonization. Technologies on power plants and systems (including security) will be promoted for international development.
- International development of Japanese decarbonization technologies will be advanced through "Japan's Assistance Initiatives to Address Climate Change 2017 (Initiatives 2017)" (formulated by the Ministry of the Environment on October 30, 2017), "visualization" of global emissions reduction contributing amount by way of products and public finances, and the Joint Crediting Mechanism (JCM) making the maximum use of private sector dynamism.
- Development and introduction of green refrigerant in place of alternative for chlorofluorocarbon and equipment utilizing the refrigerant will be advanced to promote international development of Japan's excellent refrigeration and air-conditioning technologies.
- For international development of the recycling industry and establishment of an optimum resource recycling system, training for development of human resources will be provided and guidelines developed to assist in system development and technology implementation in the waste disposal, recycling and domestic wastewater treatment sector.

## 2. FinTech/Realizing Cashless Society

### (1) The main KPI progress status

**[KPI] Implement open APIs at least in 80 banks (by June 2020).**

=> As of March this year, 130 out of all 139 Japanese banks, which do not include branches of foreign banks, have announced plans to implement open APIs (the 9 banks which have not announced plans for open APIs do not offer internet banking). 122 out of the 130 banks have announced plans to implement open APIs by June 2020.

**[KPI] Double the percentage of cashless transactions to about 40% for the next decade (by June 2027).**

=> 2017: 21.0%

\*The numerator is the sum of payments made by credit cards and by electronic money in 2017. The denominator is the private final consumption expenditure (in nominal terms, second preliminary figure).

### (2) Policy challenges and objectives

With the progress of IT, the field of finance and commercial transactions is facing a big change. With new business operators entering into the field, movements to unbundle functions of traditional financial services into smaller pieces of functions and to bundle several financial and non-financial services are becoming increasingly common. Utilization of data obtained from services offered in such movements and implementation of advanced technologies such as blockchain serve as sources of new value.

Responding to the trend described above, the government will accelerate policy actions to arrange an environment to promote implementation of innovation in the field of finance and commercial transactions. The policy actions include review of related regulations, promotion of practical use of advanced technologies, and development of infrastructure to link financial and commercial information.

In addition, the government will strive to realize cashless society in order to promote accumulation of data, to enhance productivity of business operators through reduction of costs associated with handling of cash, and to enhance convenience of payments for consumers. For this purpose, the government will aim to raise the percentage of cashless transactions to about 40% by 2027, with a goal to further raise the percentage to the level comparable to the other countries in the future.

### (3) Details of new measures to be taken

#### i) Review of regulation based on progress of innovation

- The government will consider revising financial and commercial regulations in order to transform the current sector-based regulations to function-based and cross-sectorial regulations which apply same rules to services with identical functions and risks. The government will draw an interim conclusion on basic concepts of the regulatory reform during this fiscal year.
- Based on a view that identity verification by mail is burdensome for both business operators and consumers, the government will immediately amend the Ordinance for the Enforcement

of the Act on Prevention of Transfer of Criminal Proceeds to allow business operators to adopt methods to complete identity verification solely online by using pictures of faces of consumers and other information.

- In response to a case in which a virtual currency exchange provider has lost customer assets, to incompleteness of internal control systems of virtual currency exchange providers, and to development of new types of transactions with virtual currencies, the government will consider establishing new regulations regarding virtual currency exchange providers and other related matters.

## **ii) Promotion of innovation including implementation of blockchain technology**

- The government will accelerate demonstration tests to implement blockchain technology in the financial sector. As a part of this effort, the government and private sectors will cooperate to perform a demonstration test on a scheme of trade finance which capitalizes on the blockchain technology, in concert with digitization of the entire trade process.
- The government will accelerate joint initiatives of public and private sectors to enhance effectiveness and efficiencies of regulatory and supervisory process through utilizing technologies such as open APIs, blockchain technology and AI (referred as “RegTech”). In particular, the government and related sectors will consider establishing a consortium which capitalizes on technologies such as blockchain and time stamp and enables financial institutions to share the process of identity verification. The government will also consider introducing AI in market surveillance.
- The government will follow the number of banks which implement open APIs, the number of contracts made between banks and electronic payment agencies, and the other figures related to open APIs. The government will properly examine business operators which apply for a license as an electronic payment agency. In addition, the government and related private sectors will share contractual and technological issues business operators encounter when they interact with each other through APIs. The government and related private sectors will also promote interaction between FinTech companies and credit card companies through APIs.
- The government will consider concluding co-operation frameworks about FinTech with additional foreign financial authorities (the government has concluded co-operation frameworks with five financial authorities so far). The government will support international initiatives on FinTech and overseas expansion of FinTech companies through the co-operation frameworks.

## **iii) Development of infrastructure to link financial and commercial information**

- In order to ensure that the Japan Bankers Association (JBA) EDI system starts operation in December this year and that the remittance telegram will fully transform to the XML format by 2020, the government and related parties in financial and industrial sectors such as the JBA and the Chamber of Commerce will work on promotion of the system and dissemination of best practices of application of the system.
- The government will take necessary actions to promote linkage of financial EDI and commercial EDI. In particular, the government will continue to promote standardization of electronized sales orders (commercial EDI) among companies. In addition, the government and financial and industrial sectors will jointly conduct demonstration tests to link payment

information and commercial EDI, using the JBA EDI system during this year.

- In order to digitize functions performed by bills and checks, the "Committee for Digitization of Functions of Bills and Checks", where financial and industrial sectors and the government are discussing on this issue, will consider challenges in digitizing functions performed by bills and checks during this year.
- With respect to payments of taxes and public charges, the government will continue preparation to start operation of the common local tax payment system in October 2019. In addition, in the "Workshop on Streamlining Payments of Taxes and Public Charges", which is jointly supported by financial institutions, related ministries and agencies, local governments, FinTech companies and others, will consider challenges in enhancing convenience of taxpayers and in streamlining the payment process of taxes and public charges during this year.

**iv) Acceleration of efforts to realize cashless society**

- Based on the "Cashless Vision" (formulated by the Ministry of Economy, Trade and Industry in April this year) the industry, the government, and the academia will establish "Cashless Promotion Council (tentative name)" during this year. The council will consider comprehensive policy actions to realize cashless society, including incentive programs available to business operators and consumers.
- The council will also consider and set out an action plan during this fiscal year to standardize formats of two-dimensional codes (QR code, etc.), ensuring simple and secure payment schemes. In addition, the government will follow up initiatives of private sectors related to mobile payment services which capitalize on mobile number, biometrics and other technologies and consider actions to arrange an environment to promote such services.

### [3] Changes in Government and Infrastructure

#### 1. Realization of “Digital Government” (supply system innovation in the administration field)

##### (1) The main KPI progress status

**[KPI] To be within the top 3 developed countries of the World Bank's business environment ranking by 2020.**

=>Japan was 24th at the time of announcement in October 2017 (improvement of two places compared to the previous year)

**[KPI] Reduce the administrative costs in priority areas \* by 20% or more by March 2020.**

(\* Refers to the 9 priority areas indicated in the "Administrative Procedure Group Summary" (29 March, 2017 Decision on Regulatory Reform Promotion Committee Administrative Procedure Subcommittee). Certain areas may be given more time until March 2022, with the exception of national and local taxes that have separate targets, such as increasing the usage of the online tax payment system by large corporations to 100%.)

**[KPI] (New) Increase the number of regions that utilize innovative big data processing technology such as AI and RPA to 300 by the end of 2020.**

##### (2) Policy challenges and objectives

With the dramatic changes in digital environment surrounding citizens' lives and businesses, efforts such as business transformation and organizational reform on the premise of digital (digital transformation) are expanding worldwide. On the other hand, the administrative section of Japan has continued analogue/old-fashioned administration.

As it is, there is concern that the administrative section will become a bottleneck in improving the productivity of the whole country, and thus urgent change is required. Furthermore, it is expected that the data and systems of the administrative section will contribute greatly to productivity and creation of new businesses through increased openness and collaborations with the private sector.

Without lagging behind the shift toward digitalization in the private sector, the government aims to develop infrastructure befitting of the world's most advanced digital society by creating organizations and services that are tailored to the digital age.

##### (3) Details of new measures to be taken

Ministries and agencies will formulate their mid to long-term measures and policies based on the "Basic Plan for the Advancement of Public and Private Sector Data Utilization" (cabinet decision on 15 June, 2018), as well as the "Plans for the implementation of Digital Government" (eGovernment Council decision on 16 January, 2018), and promote digital reform of administrative service familiar with citizens.

In addition, actions will be taken to lay the foundations for becoming the "World's Best Country for Business" based on the "Measures for Improving Business Environments" (decided by the Committee for Improvement of the Business Environment on 28 May 2018).

##### i) Plans for the flagship project

**(i) Implementation of a one-stop service for citizens**

- Depart from the conventional stand-alone online services, with the thorough user perspective, strongly promote one-stop of administrative procedures for individuals that have a great influence on the citizens' lives.
- Specifically, one-stop services on “moving” and “death/inheritance” which citizens are obliged to make repetitive administrative procedures at several different locations will be started sequentially from FY2019. Moreover, one-stop services on “nursing care” will be started sequentially from FY2018.
- In order to improve and expand the current integrated system for automobile ownership procedures, promote digitalization of automobile inspection certificates, cooperation with one-stop service such as moving and implementation of one-stop service on light vehicle ownership procedures.

**(ii) Implementation of a one-stop service for corporations**

- In order to achieve the world's best entrepreneurial environment, a one-stop online portal will be set up to increase the ease of starting a business. Work will be done on the following matters, with regular progress reports. Necessary measures and revisions are to be completed by the end of 2021.
  - Surveys of the current digital infrastructure and preparations for the online portal for paperwork post-registration will be up by this fiscal year, while the remaining procedures such as the filing of articles of constitution and registration of a company will be online by 2020.
  - The Ministry of Justice will work on renewing its information system by this fiscal year to enable digital operations that process registrations of new businesses within 24 hours, making the system the fastest in the world yet. In addition, measures to improve the efficiency of screening new businesses will be discussed and finalized by the end of this fiscal year.
  - Regarding the establishment of new businesses, verification of articles of constitution via TV phone and other similar methods will be allowed from this year, under specific conditions. In 2020, the process will be conducted simultaneously with online applications to enable the entire process of starting a business be completed within 24 hours nationwide. Continued efforts will be made to achieve a more effective and convenient process of filing articles of constitution for corporations.
  - The Ministry of Justice will tackle the revision of the commercial registration law during the next fiscal year and conduct a system renovation. Electronic commercial registration certificates will be issued so as to remove the need for 'inkans' as a form of verification by 2020.
- Promote efforts on simplification, integration of online procedures and making one-stop procedures on national tax, local tax and social insurance based on the "Basic Plan for Administrative Procedure Cost Reduction" proposed by the Regulatory Reform Promotion Council.
- Regarding social insurance and tax procedures of employees operated by enterprises, online and one-stop system of procedures related to life events will be started from FY2020 and the direction for data-sharing between companies and administrative agencies will be finalized in FY2018 and implemented thereafter.

- Regarding making one-stop services on subsidies and regulatory procedures utilizing “Corporate Information Site” and “Corporate Authentication System”, begin systematization in FY2019 and aim the environment that can be utilized by the whole government from FY2020.

**(iii) Establishment of the “Digital First Law”**

- Submit the bill of the “Digital First Law (tentative name)” including elimination the attached documents required for various procedures by back-office collaboration, review of identity verification methods such as stamping and face-to-face procedures, integration of online payment and the development of API to the Diet in this year.

**ii) Improving the convenience of the individual number (“My Number”) system**

**(i) Improving the convenience of Japanese Public Key Infrastructure. (JPKI )**

- In order to enable the various administrative procedures and the use of various services of private sector utilizing electronic official certificate system by using smartphones, take necessary legal measures for the next ordinary Diet session and realize the installation of the “electronic certificate for user identification” into smartphones as soon as possible. Moreover, consider the installation the function of individual card (called as “My Number card”) into smartphones with respect to safety and data protection.
- In 2020, the insurance system will be simplified to the individual level, allowing for a system that enables the My Number card to serve as a health insurance card. In order to realize that, the input of a Personal Identification Number (PIN) for user certification in certain cases needs to be made unnecessary. The legislation concerning this matter will be discussed in the next Ordinary Diet Session. The scope of the usage of this verification will also be discussed.
- Promote efforts to improve the convenience of application and issuance of My Number card through developing various opportunities of the application familiar to citizens’ lives in the cooperation with municipalities that citizens live in and municipalities that are not address locations such as workplace and the other public offices that operate various procedures.
- Consider new regional revitalization measures including transformation into a regional cashless society through the utilization of mechanism of local government points that is demonstrated as a cloud type settlement infrastructure by My Number card.

**(ii) Promoting the usage of the My Number system**

- Conclude the results of study of the utilization of My Number system in the high publicity fields such as family registering, passport administration, overseas Japanese citizen’s management, investment securities, etc. Based on that conclusion, aim for the necessary legislative measures are to be submitted to the next ordinary Diet session with the understanding of the citizens.
- Furthermore, in order to eliminate attached documents in administrative proceedings and to promote online applications, make efforts to realize the omission of attached documents such as copies of resident cards and online application of passport issuance by utilization of My Number system.
- In FY2018, examine and study the entrance/exit management at the evacuation centre by using My Number card that can be available by the afflicted municipalities immediately as an infrastructure to utilize My Number system when a large-scale disaster occurs.

- In addition, start information-sharing between agencies for the support money for rebuilding of victims' lives by July 2020. Moreover, in order to promote efforts towards improving convenience of users such as elimination of attached documents in various application procedures and implementation of electric application from the evacuation centre or remoted area through the portal site of My Number system, take necessary measures while obtaining public understanding to share morbidity certificate information after the study the utilization of the My Number system considering the cost effectiveness and the needs of local governments during the 3-year-period after amendment of the "Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure".

### **iii) Open data**

- "The Strategic Conference for the Advancement of Public and Private Sector Data Utilization and the Executive Committee for Basic Plan for the Advancement of Utilizing Public and Private Sector Data" will serve as a headquarter and thoroughly publish administrative data in principle based on the "Basic Principles on Open Data" (Decided on 30 May, 2017 Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society and the Strategic Conference for the Advancement of Public and Private Sector Data Utilization).
- Each government agency will continuously and actively publish administrative data with high private needs, such as updating and publicizing inventory results of retaining data, holding public-private round table on open data, actively responding to data disclosure requests with its own initiative.
- Take efforts to publish data which was requested at the public-private round table on open data (related to restaurants, visiting foreigners (immigration, duty-free purchasing, etc.), public transportation, traffic accidents (traffic accident statistics, school streets, etc.), crime occurrence situation, geological and disaster information (hazard map, evacuation centres) based on the "Basic Plan for the Advancement of Public and Private Sector Data Utilization".
- Promote the creation and transplant development of cases concerning the provision of data on administrative organizations of the national government and utilization in industrial fields with starting from companies which perform certain information management after establishment of a system related to the industrial data utilization project certification system and public data provision request system based on the "Act on Special Measures for Productivity Improvement", and it will also lead to open data as needed.
- In order to promote open data efforts by local governments both in terms of quality and quantity, enhance efforts such as matching with private enterprises, training of staff and support to promote creation and dissemination of new services and businesses utilizing data from public-private collaboration.

### **iv) Business reforms using AI • RPA**

- Artificial intelligence technology will be utilized for various administrative tasks such as patent screenings, in order to improve the efficiency of completing such tasks.
- In order to reduce the burden on residents and companies, solve regional issues, as well as standardize business systems of local governments, aim to achieve 300 regions where innovative big data processing technologies such as AI, RPA (automatic processing), etc. are to be implemented by the end of FY2020, and plan the "Guide for Its Implementation within

Municipal Data Agency (tentative name)” in FY2018..

**v) Systems and environment for implementing digital governance**

**(i) Improvement of the lateral promotion system**

- In order to maximize investment effectiveness of the information-related budget of each ministry or agency, develop efforts to enhance unified project management at each stage of execution from budget planning to actual implementation that are possible on the current system, and proceed with consideration to establish a structure that works more effectively evaluating function across organizations, and implement from FY2020 on a trial basis.
- Regarding the procurement of information system related projects, develop feasible efforts to contribute flexible and effective system development through the introduction of latest technology and functions at the time of service provision, study the flexible method of procurement and contract including the utilizing planning competition, and implement from FY2020 on a trial basis.
- In order to promote the flagship project and other above-mentioned efforts and to realize digitalization of whole society including local governments and private sector, promote necessary efforts to enhance the function and structure of the National Strategy Office of Information and Communications Technology of the Cabinet Secretariat.
- For this purpose, from FY2018, obtain contribution of human resources from related ministries and agencies, study the improvement of required circumstances such as improvement of working conditions and nurturing of internal human resources, etc.

**(ii) Improvement of the institutional environment at the local level**

- Under the principle of "cloud-by-default", in order to improve in terms of both quality and cost of administrative information systems and administrative service related to education and healthcare, strongly promote utilization of cloud service through the close cooperation between national and local governments. Furthermore, regarding the information system that is not including My Number, take efforts to promote cloud service used/provided via internet.
- For this purpose, compile cases/examples and publish in FY2018 including:
  - case of abolishment of the provision for separating the system from internet that prescribed in the ordinance of protection of personal information of many local governments while not prescribed in the Act on the Protection of Personal Information Held by Administrative Organs and Act on the Protection of Personal Information Held by Independent Administrative Agencies,
  - examples of local governments which don't establish such provision, and;
  - examples of introducing cloud services under such provision.
- Moreover, in order to provide administrative services that respond quickly to the diverse needs of residents and others, compile case studies that aim to achieve compatibility between utilization of cloud services of local governments including ones using/providing via “Local Government Cloud” or internet and improvement of information security, and consider the necessary measures for nationwide deployment of advanced cases in FY2018.

**vi) Becoming the most business-friendly country in the world**

**(i) Promotion of IT in court proceedings**

While respecting the autonomous judgment of the judicial branch, the government is

aiming for full-scale IT development in civil litigation. The following steps will be carried out in stages.

- First of all, under the current law, the judiciary will begin trials using web conferencing to increase convenience for all parties involved from the next fiscal year.
- Next, to ensure that not all parties involved need to attend oral arguments on a fixed day, new regulations will be finalized by the Ministry of Justice as quickly as possible to enable the laws to take effect in 2022. The judiciary will promptly begin preparations for the new system, and the executive branch will work on necessary measures.
- In addition, necessary environment and legislation will be made and online petitions made possible by the Ministry of Justice, which will seek the expertise of the legal working group to ensure everything is in place by the next fiscal year.
- The Ministry of Justice will discuss the schedule for making online petitions possible based on the current situation of the judiciary office by the next fiscal year.

**(ii) Improvement of trade procedures and port logistics**

- The government, port management, and other related persons will work together closely to shorten the time taken to transport containers and improve the traffic situation at the port. Regularly checks on the situation will be conducted and appropriate actions taken if necessary.
- To promote the use of AI in trade and port logistics, the schedule for implementation is to be clarified as soon as possible. Also, for the digitalization of information and data-sharing among stakeholders in the trade industry as a whole, methods to encourage the move towards IT in businesses will be discussed.

**(iii) Digitization of real estate-related transactions**

A) Reduction of documents needed (certification of sellers by stamp) at the time of registration

- In order to simplify the number of documents needed in real estate registration processes and abolish the need for 'inkan' between different legal bureaus, the Ministry of Justice will identify and resolve any obstacles, to allow operations to begin the next fiscal year.

B) Creation of an environment suitable for digital contracts

As for improving the use of electronic contracts in real estate, the following actions will be taken:

- The Ministry of Justice and the Ministry of Internal Affairs and Communications will issue electronic certificates for corporations and individuals while taking into account the convenience of said certificates.
- The Ministry of Land, Infrastructure, Transport, and Tourism is to finalize the key explanations to be given to corporations using IT in their transactions and improve the environment for IT utilization according to these conclusions.

**(iv) Simplification of construction related procedures online**

- Towards the further simplification and digitalization of construction related procedures, necessary actions will be taken by the next fiscal year. The convenience for business operators will be improved, specifically by creating a common corporate authentication infrastructure and public API.

**(v) Improvement of legal frameworks and registration system concerning assets and property**

- Based on the needs of companies and financial institutions, the Ministry of Justice will consider the development of a legal framework and registration system for movable

collateral security, taking into account possible legal revisions in the future, from this fiscal year.

## **2. Improvement of infrastructural management in next-generation infrastructure, maintenance, and system development**

### **(1) The main KPI progress status**

**[KPI] 20% increase in productivity of construction sites by 2025.**

**[KPI] (New) To increase the percentage of managers with training on technology, such as robots and sensors, for inspections of key infrastructure and degrading infrastructure in Japan to 20% by 2020 and to 100% by 2030.**

**[KPI] Tokyo to be within top 3 of the Global Power City Index (GCPI) by 2020.**

=> 2017: 3rd (2012: 4th)

### **(2) Policy challenges and objectives**

Through the rapid development and utilization of high-speed transportation networks such as high-standard roads, maglev trains, international airports, international container ports, etc., international competitiveness and economic growth in Japan will be stimulated. Strategic management of infrastructure and the implementation of the Compact Plus Network to ensure "wise investments and wise usage" will improve productivity and stimulate private investments. To maximize the multiplier effect of infrastructure, the following measures will be taken:

### **(3) Details of new measures to be taken**

#### **i) Improvements in infrastructure maintenance and management**

Expand the scope to all processes including bridge, tunnel, dam construction, and maintenance by the next fiscal year, in order to further promote i-Construction that aims for the full use of ICT in the construction process. In this fiscal year, in order to expand small businesses and local governments, support by the clients will be improved through the provision of 3-D construction data to contractors. In addition, there will be increased cooperation to meet international standards as well as cooperation among clients themselves.

Starting from the current fiscal year, an infrastructural data platform that can convert and share common infrastructure management and construction records, inspection data, sensor data, and map information will be established. Asset management such as degradation prediction and life cycle cost analysis will be utilized for advanced construction management.

To connect the entire construction process with 3-D data, a system for cloud computing will be constructed in the next fiscal year. This will improve the efficiency of surveying, design, construction, maintenance, and management, streamlining the process of oversight and inspection for contractors.

Further increase the openness of infrastructure related data to allow for open innovation by IT venture companies for developing new technologies.

For new technologies such as AI and IoT, and new construction methods and materials that have yet to reach the stage of practical industrial application, their usage will be expedited with a target of 1000 projects in this fiscal year. In order to promote the introduction of new more labor-efficient practices such as buried formwork and prefabricated reinforced bars, new technical standards will be prepared within this fiscal year.

Expansion of 3D design in large-scale structures such as dams and bridges will begin this fiscal year to increase usage of BIM/CIM. For construction projects of the government office,

the adoption of construction optimization technology including BIM will be designated. The evaluation of BIM utilization, from planning to completion, will be taken into account when drafting guidelines for BIM.

Collaboration with private enterprises to promote the use of BIM throughout the entire construction industry including private orders. Possible issues arising from the application of BIM at each stage of construction, and open-source information of models will be examined and measures to promote the widespread use of BIM will be discussed.

In order to cope with the degradation of infrastructure and the mid to long-term shortage of manpower, a maintenance cycle focused on preventive maintenance, will be established. Support for AI research and development will be increased by improving teaching data. The development and introduction of new technologies are expected to make the process of maintenance more efficient.

Develop and introduce innovative technologies such as robots and AIs with trials and supplementary use to achieve high standards of technological advancement.

A roadmap on the implementation of new technologies, data-sharing, and utilization, and nurturing of talents for the next 5 years will be made based on the suggestions of the Social Capital Maintenance Strategy Subcommittee by the end of this fiscal year. Additionally, an intermediate evaluation and inspection will be conducted for the plans to prolong the longevity of infrastructure during the current fiscal year, and reviews will be made if necessary. New estimates of maintenance and renewal expenses will be made at an early stage.

Increase public-led open innovation with clear standards, promptly develop technical standards that respond quickly to new technologies, etc., and to develop next-generation infrastructure in all fields such as roads, rivers, airports, ports, water supply, and sewer systems. Expedite on-site implementation of new technologies such as robots and sensors, while simultaneously surveying and evaluating the status of said new technologies.

In order to encourage the development and introduction of new technologies in local public entities, the government has selected and ranked model local governments, supporting local governmental efforts to use technology to respond to residents' needs. The Infrastructure Maintenance National Congress will also study best practices and case studies to convey the findings to various agencies and organizations.

For sewer facilities including underground basins, trials for a project to integrate maintenance management information and improve sewer management using data will start this fiscal year. Guidelines will be formulated by 2020 and local governments will be notified.

Water level gauges developed with crisis management in mind will be set up at priority areas in the country within the year. The gauges will be set up in all rivers managed by prefectures by 2020. Water level observation data will be integrated into the nationwide unified cloud service and provided to local governments, residents, private companies from this summer so that it can be utilized for advanced flood prediction and dam management.

In the construction and management of infrastructure and industrial activities, past data will be provided in the cloud during the next fiscal year so that analysis and prediction by AI using weather data can be carried out easily. Case studies will be examined and the findings will be shared at the Weather Business Consortium.

## **ii) Solving regional social issues related to transportation and logistics and improving urban competitiveness**

- In regards to public transportation and logistics in local communities, we will develop a new mobility service model that meets the needs of urban and regional users. For example, we plan to provide information and route search using open data, ICT for dispatch and payment using smartphone application, utilization of new technologies such as automated driving, introduction of caregiving services and shopping assistance, consolidation of passengers and freight goods in depopulated areas, and policy cooperation with various areas such as MaaS. [Mentioned repeatedly]
- Around this summer, the committee of associated local governments will be established to exchange and share information of creating compact cities. Their activities help promote collaboration between city development and public transportation. They also help accelerate the new technologies such as the next-generation mobility service and ICT as well as the "Compact Plus Network" project utilizing public and private data. We will assess the model cities that incorporate these advanced technologies into their city development. [Mentioned repeatedly]
- In order to provide smooth transportation during the 2020 Tokyo Olympic and Paralympic Games, we plan to enhance the provision of public transport operational information. Therefore, in the current fiscal year, we will carry out testing experiments on information provision by the public-private partnership, led by the Tokyo metropolitan areas. The information provision is based on smartphone applications using open data. [Mentioned repeatedly]
- Introduction of regional tourism congestion countermeasures including demand-driven fee adjustments through the utilization of innovative technologies such as ICT and AI to make getting around more enjoyable.
- In order to reduce re-delivery of parcels, improve productivity and work environment of the transportation industry, delivery boxes will be set up at communal residences, and also in offices, hospitals, etc. The size and installation of such delivery boxes will be discussed and finalized by this year.
- The number of swap body freight container vehicles that make cargo handling work more efficient will be increased. A public and private examination council to coordinate technical and management operations among stakeholders will be established and its guidelines formulated during this fiscal year.
- In response to the strengthening of environmental regulations of ship emissions under the International Convention of International Maritime Organization (IMO), we aim to build an LNG bunkering base in East and West Asia in cooperation with Singapore. Private enterprises will be invited to develop the LNG bunkering base this year, and the implementation system of LNG bunkering will be established by 2020.
- In order to develop facilities that respond to the user's needs quickly, the related regulations for subsidies for constructing barrier-free infrastructure for urban railway corporations from beneficiaries will be reviewed and finalized by this summer. The cost of subsidizing congestion and delay countermeasures by beneficiaries will also be investigated and finalized this year.
- Airport passenger service will be improved while responding to increased demand and lack of carriers. This will be done by implementing the ground support labor-saving technology by 2020. Trials and experiments on automated vehicles in the airport will begin this year.
- Conduct maintenance on the three metropolitan area ring roads to maximize the multiplier

effect of the road network for prompt and smooth logistics, as well as to alleviate traffic jams. The utilization of probe data collected by ETC 2.0 will be used to encourage public-private partnerships. A management support service will begin operation this summer and the full-scale high-speed bus location system will be operational within this year at the Shinjuku Expressway Bus Terminal.

- In view of double-trailer trucks and truck convoys running on the expressway, by building upon existing infrastructure such as Shin-Tomei and Shinmeishin Expressway to make six lanes, the stability and efficiency of the double network connecting the three metropolitan areas can be further improved.
- In order to strengthen the international logistics network, we plan to revise the system during this year to make it unnecessary for road administrators to hold a special permit for international maritime container vehicles on important logistics roads in the future.
- To create an AI terminal that will enable world-class productivity at ports, a demonstration project to optimize operations utilizing big data such as cargo information will start this fiscal year, until 2020 and the required system construction, etc. will be performed. The aim is for the introduction of remote control RTG from the next fiscal year based on the demonstration project.
- In order to strengthen international competitiveness in terms of shipbuilding and shipping, Japan is leading the international debate toward the practical application of automatic shipping vessels by 2025, aiming for an agreement to the project by 2023. Domestic standards related to ship's equipment will be considered ahead of time and technical demonstrations of remote operation from local ships and the automatic detachment rail will begin. [Mentioned repeatedly]
- During the current fiscal year, we will also formulate safety guidelines for remote-controlled small ships that are expected to be used in the future for marine survey and logistics to remote islands. [Mentioned repeatedly]
- In order to rectify the overpopulation of Tokyo, the functions of other core cities will be improved upon, corporate activities will be stimulated by attracting investment and encouraging the expansion of local companies. Measures to attract more people and universities to the cities will be studied and implemented within the year.
- Advance urban revitalization projects so as to fully bring out the effect of near-future technology and super megaregions<sup>1</sup>.
- In order to improve urban functions by making effective use of scarce urban space, the installation of parking facilities will be considered within the current year. Also, in order to support civil engineering activities by private organizations, guidelines for disseminating information on the various systems available to secure funds will be formulated. Through these efforts, urban development will be intensified.
- In order to effectively utilize existing building infrastructure, safety and evacuation regulations for fire hazards and evacuation routes will be drafted by summer of next year. Specifically, for instances where office space is repurposed for commercial facilities.
- Establishment of local councils to ensure the effective utilization of real estate in rural areas

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<sup>1</sup> Taking into account the opening of the Linear Chuo Shinkansen, a region for innovation will be created by emphasizing and integrating the individualities of each of the three largest metropolitan areas.

during this fiscal year. This is to improve the property market and to promote the quantitative and qualitative improvement of real estate stock. Guidelines on business management systems and information disclosure will be drafted and regulations pertaining to real estate contracts will be optimized.

- Put in place countermeasures by categorizing the issues based on the guidelines from the "Ministerial Conference for Land with Unknown Owners". Specifically, measures to guarantee proper management and use of land, as well as smoothly and prompt execution of land surveys even in cases where owner of the land is unknown. Mandatory registration after inheritance of land and a system that will reflect that change in ownership will be put in place. The registration of land and the family register will be linked into order to ensure that information is accurately reflected on the register. The procedures for relinquishing land will also be discussed. The aim is to implement necessary reforms by 2020 after the general direction of the measures are finalized by this year. In order to resolve anomalous registration, the aim is to submit necessary bills at the next Ordinary Diet Session and promptly develop necessary systems. The smooth introduction of regulations concerning will storage and the creation of maps for registered areas will be carried out together with the extension of the storage period of certificates of residence.

### 3. Accelerating the introduction of PPPs and PFIs

#### (1) The main KPI progress status

**[KPI] Expand scale of PPPs / PFIs to 21 trillion yen in 10 years (2013 - 2022). PFI projects that utilize the public facilities management system is targeted at 7 trillion yen.**

=>Scale of project from 2013 to 2016

- PPP / PFI project: approx. 11.5 trillion yen
- PFI project utilizing the public facilities management system etc.: Approximately 5.6 trillion yen

#### (2) Policy challenges and objectives

PPP / PFI Promotion Action Plan (2018 revised edition) (Decided on 15 June, 2018, Private Funds Utilization Project Conference. Referred to as "action plan" in this section.) Water supply and industrial waterways such as airports, water supply, sewage, roads, educational facilities, public housing, maritime terminal facilities and MICE facilities, are the conventional priority areas for concession contracts. Further efforts will be made to achieve numerical targets regarding these areas.

Promote the utilization and dissemination of performance-based private contract outsourcing schemes that utilize private expertise to solve social issues and improve administrative efficiency, while keeping administrative costs low.

#### (3) Details of new measures to be taken

##### i) Increase in concession contracts for priority sector

- With regards to the growing forestry industry, the necessary legislation to allow private enterprises to generate revenue through long-term large quantity logging and sale of lumber will be brought up at the next Ordinary Diet Session, while maintaining the public functions of state-owned forests. PFIs will also be considered if necessary for the rights to the management of such public facilities.
- Operators for the management of the 7 airports of Hokkaido (New Chitose Airport, Hakodate Airport, Kushiro Airport, Wakkanai Airport, Memanbetsu Airport, Asahikawa Airport, Obihiro Airport) will be chosen this year in accordance with the five principles set forth in the action plans for public facilities business management and based on the implementation policy announced in March this year, after ensuring that there is a competitive environment.
- Regarding the measures concerning the state funding and equal local taxation, emphasized by the public facilities business management of the 7 Hokkaido airports, related ministries and agencies shall promptly organize and inform local governments.
- With the administration of public facilities like the 7 Hokkaido Airports as a case study, in the event that compensation is paid to the government at the beginning of the contract, a certain portion of that amount will be utilized for long-term future investment for the country.
- In the operation of public facilities such as the 7 Hokkaido Airports, to ensure a smooth and secure handover given the unprecedented number of airports and managing personnel involved, applying operators may request for civil servants based on the PFI Law. Relevant ministries and agencies need only confirm the purpose and length of the dispatch period without any other requirements. Based on the need shown, the Cabinet Office will examine

the status of the dispatch period and, if necessary, revise the guidelines.

- Based on the lessons learned from past projects, and the opinions of the participating companies that were consolidated from a third-party standpoint, a committee consisting of experts who have not been involved in the project will start reconfiguring the objectives of future public facilities management projects and discuss ways to improve the mechanism. These findings will then be compiled for future projects. These improvements shall be promptly implemented. This process will be repeated every 5 years with the same method (the next time being 3 years from now).
- For sewage and the small water supply system, a new roadmap will be made clear and the application of corporate accounting in groups with a population of less than 30,000 will be encouraged.
- Expedite the expansion of PPPs/PFIs, such as public facility operation businesses. The related ministries and agencies, as well as the Cabinet Office, shall take the lead in hiring full-time personnel with extensive experience and expertise related to the field public facility management business projects and place them in positions of influence. In addition, the Cabinet Office will expand the recruitment and involvement of talent from relevant ministries and agencies of the project.
- Regarding the appointment and placement of staff from the private sector all relevant ministries and agencies involved are to be careful to avoid conflicts of interests.
- Concerning national treasury subsidies and local taxation related to these projects, inspections will be conducted by the ministries and agencies from the viewpoint of incorporating incentives to promote reforms and excluding measures that may impede progress.
- The relevant ministries and agencies will conduct case studies of domestic and overseas selection criteria of the first priority stage and the manner of examination and the method of information disclosure until the second stage examination results are obtained Survey and organize on the basis. Based on the results and the opinions of private enterprises, the Cabinet Office will prepare the guidelines.
- Relevant ministries and agencies will ensure the eligibility of the contracts for government subsidies in the case of mixed public facilities operations. The legality of the contract procedure will be reviewed and made known to the relevant local government. Based on the findings from past projects in each field in the future, standard specifications, design guidelines, etc. will be refined so that the successes of the operator will be reflected.
- The relevant ministries and agencies will investigate case studies of corporate tax and other tax exemptions for entities possessing rights similar to public entities such as public facilities in other countries. Based on the findings, the Cabinet Office will confirm the needs of private enterprises who intend to acquire operational rights for public facilities within the year.
- Based on the PFI Law revised at the current Diet session, the Cabinet Office will conduct reports, give advice and recommendations on public projects as necessary, based on the basic policy and guidelines. Also, regarding the confirmation and advice required by local public entities and private business operators, the consultation window at the Cabinet Office will be made clear and an information management mechanism on the content of consultation will be created.
- Cabinet Office's administrative authority, such as related laws, cabinet orders, Cabinet decisions, administrative ordinances, regulations, guidelines, etc., which were established by

the Cabinet Office and relevant ministries and agencies, will be posted on a website in order to make it easy for the public to understand.

- In order to constantly improve the operation rights system for public facilities, opinions will be exchanged with domestic and foreign companies and experts who participated in the project. Advanced case examples overseas will be gathered and required improvement areas will be compiled for study.
- Briefings for businesses and investors concerning systems and individual projects related to the administrative system of public facilities in Japan with respect to cities in the country and overseas. The methods of informing the general public on the policy regarding the management rights of public facilities shall be examined with the aid of private sector expertise and implemented thereafter.
- In addition to these, each affiliated ministry and agency will cooperate with each other on each action related to the administrative right system such as public facilities listed in the action plan.

## **ii) Promotion of performance-based private contract methods**

- The increased utilization of performance-based private contracting which utilizes private expertise to solve social problems can increase the efficiency of administrative while keeping administrative cost low. Thus, the Cabinet Office will expand the number of personnel from relevant ministries and agencies and will develop necessary systems while involving human resources from relevant ministries and agencies of the system.
- The Cabinet Office shall prepare necessary systems and consolidate information on the trends and issues of projects utilizing performance-based private contracts for national and local public entities, and also analyze the composition of these model projects, standardize evaluation indicators, and formulate guidelines for each field. Intersectional guidelines will also be drafted if necessary.
- Consider and implement concrete support measures for local public bodies and intermediate support organizations towards outsourcing projects in the form of performance-based private contracts. Assistance for national treasury subsidies and local taxation measures will be given and inspections will also be conducted.
- When the country enters into a performance-based contract with private enterprises for a model project, the project timeline should have ample time for the execution of the project keeping in mind the KPIs. If the project period is over several years, a multi-year contract will be made by bearing liabilities with treasury funds.
- Regarding the sectors that have been designated for performance-based contracts, local governments should formulate guidelines for each sector, standardize evaluation indicators, apply for treasury liability in case of multi-year contracts and work closely with other local public bodies.

#### [4] Changes in the region, community and SMEs

##### 1. Reforms and Smartifications in the agricultural, forestry and fishery fields

###### (1) The main KPI progress status

**[KPI] Almost all the business farmers utilizing data in their workflow by 2025.**

\*Currently preparing to expand the scope of the Census of the Agriculture and Forestry in order to grasp the extent of progress

**[KPI] Increase the ratio of farmland used by business farmers to 80% in the next 10 years (by 2023) (48.7% at the end of 2013)**

At the end of FY 2017: 55.2%

**[KPI] Reduce the cost of the rice production by business farmers by 40% in the next ten years (by 2023) compared with the national average cost in 2011, including efforts of the industry in the materials and distribution (2011 annual production: 16,001 yen / 60 kg)**

=>The cost of rice production by business farmers in 2016

- Individual management<sup>2</sup> 10,900 yen / 60 kg (reduction by 32%)
- Corporate management<sup>3</sup> 11,677 yen / 60 kg (reduction by 27%)

**[KPI] Increase the export value of the agricultural, forestry and fishery products and foods to one trillion yen in 2019(2012: 449.7 billion yen)**

=>2017: 807.1 billion yen

**[KPI](New) Double the added value of forestry and lumber industry with private forests by 2028 (2015: 250 billion yen)**

###### (2) Policy challenges and objectives

In order to cope with the crisis of population decrease that farm, mountain and fishing villages in Japan faced, the drastic improvement in productivity of agriculture, forestry and fishery industry, as the regional primary industries, must be achieved. This will be a more effective response to urgent issues such as labor shortage and increase the appeal of rural villages as a place of residence with income gain.

The technical innovation to realize "Society 5.0" has progressed, and an environment where various businesses can share and utilize data is also being improved. If we incorporate such technologies, we will be able to change the production site of the agriculture, forestry and fishery industry from solely product-oriented to more consumer and market-oriented, increasing profits throughout the value chain.

In order to increase the productivity of the agriculture, forestry and fishery industries under this change, we will further strengthen the various job sites related to the agriculture, forestry and fisheries industry and promptly implement advanced technology in the

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<sup>2</sup> Individually managed businesses (rice cultivation area of 15 ha or more) where the income from rice cultivation is equivalent to income from other sources.

<sup>3</sup> Corporate entity that participates in rice cultivation in which the income is primarily from the sale rice (average area of rice fields about 22 ha).

agriculture, forestry and fisheries industry as a whole. Reformation for it shall be accelerated with intensity.

### **(3) Details of new measures to be taken**

#### **i) Expedite agricultural reforms**

##### **(i) Reinforcement of production sites**

###### A) Training and securing management unit

- Foster farmers with excellent management sense and expand the number and quality of newly emerging farmers by "Agricultural Management Seminar" which is a place to learn management while farming.
- Review the guarantee systems with respect to the agricultural business in order to make them more utilized when farmers have on loan from private financial institutions.
- Follow up on reforms of agricultural cooperatives and agricultural committees.
- Promote economically effective use of farmland and solar power generation over crop field that will contribute to increase income of farmers.
- In addition to steady implementation of the Japanese agricultural direct payment system measures, encourage farmers' proactive efforts in hilly and mountainous areas to improve their incomes by taking advantage of characteristics there.
- Utilize effectively urban farmland and promote urban agriculture.
- Promote collaboration of agriculture and welfare, and advance farming and employment supports in farming for the elderly, the disabled, the needy, and others who are expected to be actively involved in the agricultural industry, which is estimated to suffer from a shortage of workers.
- Implement initiatives aimed at supporting female farmers in childbirth, childcare, nursing, etc.

###### B) Enhancement of functions of Farmland Banks

- In order to accelerate the accumulation and consolidation of farmland for business farmers, the government will review previous efforts, then, take measures such as establish Farmland Banks centered framework and the simplification of the Farmland banks procedures.
- With respect to the land improvement project, farmland will be upsized and multi-functionalized, such as dry fields farming, while accelerating the implementation and reducing its costs. In addition to it, through the collaboration between the field maintenance project and Farmland Banks, the accumulation, the intensification, and the maintenance of farmlands user-friendly for business farmers, will be promoted, while reducing their burden.

###### C) Rice policy reform

- Make rice policy reform take root through the provision of detailed information and support for full utilization of rice paddies so that farmers can choose crops based on their own management decisions.
- Increase demand for rice, including non-gluten rice flour, both domestically and abroad.

##### **(ii) Increasing added value throughout the value chain**

###### A) Structural reform of distribution and processing

- Under the Agricultural Competitiveness Enhancement Support Act, encourage reorganization of the distribution and processing industries, including drastic rationalizations of intermediate distribution in order to conduct structural reforms of

distribution and processing of agricultural, forestry and fishery products.

- Rationalize distribution by promoting efficiency, sophistication of quality and sanitation management, use of ICT, encouragement of new businesses and new entries that correspond to domestic and overseas demand, and improve trade conditions.
- Promote cooperation among wholesale markets, increase their functions, and encourage their creativity, to achieve the optimal distribution system in order to revitalize markets.
- Review standards of agricultural products (the current standards of fruits and vegetables for sale, those of Agricultural Product Inspection Act, etc.) as in line with distribution routes of each product and consumer needs.
- Promote reduction in food loss at the retail/consumption phase, encouraging efforts on improvement of food demand prediction and distribution efficiency by food-retailing and food-service industries in cooperation with non-food industries..
- Establish a safe and secure supply system of wild game by introducing a certification system and by training hunters to have knowledge of hygiene control, increasing hunting of harmful wild animals and developing the demand of wild game. As a result of it, consumption of wild game is to be doubled compared to 2016 in 2019.

B) Further reformation in agricultural input supply

- Promote restructuring of the agricultural input industry, under the Agricultural Competitiveness Enhancement Support Act, with the aim of reducing the prices of agricultural inputs and strengthening the international competitiveness of agriculture and agricultural input industries.
- Introduce a re-evaluation system, enhance the registration and review system on safety of pesticides, and simplify the application for the registration of generic pesticides based on the revised Agricultural Chemicals Control Act. to develop an overseas market for Japanese pesticides, in addition to harmonize the regulation in Japan with international standards in order to ensure safety of pesticides.
- Review systems on fertilizer and feed from point of view mentioned above.

C) Strategic support of intellectual property

- Consider measures for monitoring the distribution of seed/ seedlings and for appropriate control of using them as well as enhancing breed variety registration systems, in order to prevent leakage of seed and seedlings overseas which are important in export strategy and to encourage development of new plant variety
- Advance mutual protection with foreign countries and countermeasures against the infringing use at overseas of Geographical Indications (GI), and brand/ region names, promoting the registration of GIs of agricultural, forestry and fishery products. Regional efforts towards branding will also be supported.

**(iii) Realizing the highest level of "Smart Agriculture" in the world, taking full advantage of data and advanced technology**

In all fields of agriculture, ICT equipment will be widely adopted. Cultivation management and other processes will be optimized by sensor data and big data analysis. Expertise know-how will be explicit knowledge with AI, and robot technology make actual labor unmanned / saved. "Smart agriculture" that upgrade the production fields through optimizing the entire value chain with data-sharing, will be realized.

A) Arrangement of data-sharing platform

- Start full operation of "agricultural data-sharing platform" which will be a basement of

agricultural data-utilization, from April next year. Its scope of data connection, sharing, and provision will be expanded to be the whole of the value chain, from production to processing to distribution to consumption.

- Reviewing constantly the possibility of connection between "agricultural data-sharing platform" and systems in other government measures, formulate data contract guidelines in the agricultural field by the end of this year while consulting to those in other countries, in order to create new services and to formulate / use big data, with utilization of "agricultural data-sharing platform".

#### B) Practical utilization of advanced technologies

- Promote comprehensive research and development covered from advanced technology such as AI, IoT, sensor technology, robotics and drones, to systematic and consecutive technological validation of them at the model farms, to prompt dissemination of them into the field, while collaborating with research institutes, private enterprise and farmers, considering the needs of the frontline, and advancing open-innovation and the connection among industry, academia, etc, with a view from the whole of the value chain.
- Specifically, the following measures will be advanced by forming to-do chart.
  - Realization of unmanned agricultural machinery controlled by remote monitoring by 2020
  - Optimized use of pesticides and fertilizers through combination between drones and sensor technology, along with AI.
  - Promotion of field improvement projects for the introduction and use of automated unmanned agricultural machinery
  - Utilization of ICT technology for increasing efficiency in the use of water for agriculture
  - Introduction of cultivation and livestock management system with smartphones or other devices
  - Sharing of growth data among farmers and improvement of productivity with detailed meteorological data, through agricultural data-sharing platform
  - Optimizing production and shipment planning through sharing of information on marketing and breeding between farmers and corporations, looking ahead to the future functional expansion of agricultural data-sharing platform
- Promote food industries as internationally competitive export industries with development of advanced technologies through open innovation, prompt implementation of them, and cooperation with non-food industries.

#### C) Fostering and training of managers to promote smartization

- Train managers with high managerial awareness to be key persons in utilization of data and advanced technology in all fields consisting of the value chain of the agriculture, forestry and fishery industries (specific measures are described in (i), ii), iii), and(iv)).
- Promote use of consultants with expertise in data utilization and advanced technology to support agricultural managers in making investment decisions and in deepening understanding of smart agriculture, forestry and fishery.
- Expand opportunities to learn smart agriculture, forestry and fishery industries by providing chances of experiences of advanced technology for agricultural high school and college students, who will be the main force of these industries in the future.

## **ii) Promotion of exports**

- Start the initiative this summer that supports producers who have already been or have plans to be engaged in export in order to deliver necessary information such as government support measures to them.
- Based on the idea of consumer-centric production and processing, "global production areas" that respond to overseas needs and regulations, raises the price competitiveness of rice and promotes of high added value production will be made, so that overseas customers can get whatever they need at their desired quantity and timing. Regarding rice export, 2 rice milling factories and 5 fumigation facilities which have been additionally designated for exports to China will be utilized effectively to encourage export efficiently.
- Create the environment that can constantly match-up producers, trading companies, and distributors in order to meet the needs for foreign consumers.
- Continue strategic marketing of Japanese goods with clear targets by the Japan Food Product Overseas Promotion Center (JFOODO).
- Carry out export promotion efforts steadily based on the "Strategy for Strengthening Export Ability of Agriculture, Forestry and Fisheries Industries" (19 May, 2016 Agriculture, Forestry and Fishery Industry · Regional Vital Creation Headquarters) and the "Agriculture, Forestry and Fisheries Export Infrastructure Development Program" (decision on 29 November in the same year).
- Taking the opportunity of Olympic and Paralympic Games Tokyo 2020, the strategic utilization of organic, halal, eco-labels for seafood, JAS (Japan Agricultural Standards) and other international standards and certifications such as GAP (Good Agricultural Practices), HACCP (Hazard Analysis and Critical Control Points; a system that identifies, evaluates, and controls hazards which are significant for food safety through monitoring and recording particularly important steps in manufacturing processes), will be promoted strategically. Processing facilities for meat and other foods will be equipped to meet the standards of export to destination countries.

## **iii) Forestry reforms**

### **(1) Accumulation and expansion of lumber production**

- Establish New System of Forest Management, which accumulates management of forests to highly motivated and competitive forestry business operators, and which makes municipalities to implement management of forests that are unsuitable for business. In the light of establishing the system, as part of tax reforms for the next fiscal year, Forest Environmental Tax (provisional) and Forest Environmental Transfer Tax (provisional) will be introduced to secure the financial resources that are necessary for municipalities to implement the management of the forests.
- Conduct training and securing of human resources for management of forests, and undertake necessary revision of the system related to Forest Owner's Cooperatives from this viewpoint.
- Promote installing forestry road network and introducing high-performance forestry machines in the areas where management of forests are being accumulated, in order to improve the productivity.

### **(ii) Promotion of Smart Forestry**

- Promote collection and publication of basic information such as forest land register and

boundaries of forest estates and of precise information on forestry resources using laser measurement. In addition, forwarding assessment of condition of tree growth with drones. We will also promote efficient forestry through introduction of machines utilizing ICT.

- Build a database where local governments and private companies can share information related to forests by 2021.

### **(iii) Reforms of the production and distribution structure**

- Firmly carry out reforms on lumber production and distribution structure as follows:
  - Promoting the use of domestic lumber in low-rise housing in order to increase demand for wood, and expand the use of wood, including CLT (cross-laminated timber), for non-residential buildings and middle and high-rise buildings, in cooperation with the business community, etc.
  - Encouraging cooperation with related business and enlargement of lumber and plywood factories in order to supply lumber stably in quantity and quality for expanding a value chain whose core is large-scale lumber business through out the country.
  - Promoting measures for data-sharing of the supply and demand among private business operators to pursue the total optimization, including supply of lumbers according to demand side's orders and distribution optimization from forests to housing construction sites, of the value chain based on the market-in concept.
  - Preparing the bill for the next Ordinary Diet Session to allow private business operators to generate revenue through long-term and large-quantity logging and sale of lumber at designated areas of state-owned forests that are administrative assets, while maintaining the public functions of the forests. The PFI laws would also be revised if considered that the utilization of the system for rights to operate the public facilities is preferable and necessary for further efficiency in the new legislation. [Written again]
  - Establish forums to exchange information amongst highly motivated private business operators including local owner and self-forester of a forest and medium to small-sized lumber factories, to discuss matching of players in distribution and cost reduction.

### **(iv) Increasing demand of lumber**

- Promote utilization of woody biomass for heating and other uses as part of a so-called "Local Ecosystem".
- Improve the business environment so as to make Japanese product standards to be accepted in foreign countries in order to promote export of lumber products
- Set up platforms for collaboration among various relevant business operators, business associations, users and administrative agencies in order to advance promptly the dissemination of medium-scale wooden building.

### **(v) Promotion of R&D**

- Enhance efforts for research and its practical utilization based on the on-site needs of the forestry, such as reduction of reforestation costs.
- Promote research for acceleration of dissemination and use of fast-growing tree species and for commercialization and international standardization of cellulose nanofibers and lignin, etc..

## **iv) Fisheries reform**

### **(i) Fisheries policy reform**

Promote the following fisheries reform based on the "Reform of fisheries policy" (decided on 1 June, 2018 Agriculture, forestry and fisheries industry and regional vitality creation headquarters) in order to achieve both proper management of fisheries natural resources and fisheries industrial growth, improve their income and establish proper employment structure in terms of age proposition.

- Make evaluation and management methods more scientific and effective ones compared to international ones in order to maintain, restore and manage appropriately.
- Promote reform of distribution structure based on the idea of market-orientation in order to establish more competitive one of fisheries products in terms of quality, cost and other relevant aspects.
- Review the fishery licensing system together with resource management methods in order to improve the productivity of offshore/ocean fishery and strengthen international competitiveness.
- Revise systems related to effective use of sea areas, promote appropriate effective use and new entry in water areas, and promote aquaculture strategically based on the anticipation of domestic and foreign demand in order to develop aquaculture and coastal fishery.
- Revise the fishery cooperation system according to the direction of the fisheries reform policy.

### **(ii) Expediting reforms**

In order to support these reforms, the following will be addressed:

- Create a system to utilize ICT for resource management and fish distribution
  - Accurately grasp the current pool of resources with the aid of expertise from public-private cooperation like high-tech fish finders etc., and precise resource management with ICT. The data obtained from production to distribution including the aforementioned activities will be the basis of the "Smart Fisheries Database (tentative)" by 2020.
  - Using data from the Smart Fisheries Database to increase the efficiency of the production and distribution of fisheries products, and improving efforts toward the productivity throughout the value chain.
- Promote expansion and improvement of the system for investigating natural resource and gathering information, smooth enforcement of measures on reduction of fishing capacity and fishing effort, reinforcement of function to stabilize revenue in the fishery, installation or renewal of more productive fishing vessels, improvement of aquaculture by expanding good places for it including export, integration of markets and ensure of distribution locations for consumer places, and the certification of sustainable fishery/aquaculture industry.
- In addition, promote intensification of the fishery inspectional system for revitalization of fishing villages, exhibition of the multifaceted functions of the fishery industry such

as border surveillance, reinforcement of securing and fostering people who support and manage the fishery industry and fishing villages, and reinforcement of resource management.

## 2. Creating a Smart City through town planning, public transportation and ICT

### (1) The main KPI progress status

**[KPI] The use of IoT in local communities, promoted by the 800 local governmental organizations, by the end of 2020.**

**[KPI] (New) Implement the Advanced Local Alert System to 15 prefectures and Geospatial Disaster Prevention Information System to 100 local governments by the end of FY2020 in order to improve regional disaster prevention.**

### (2) Policy challenges and objectives

The Fourth Industrial Revolution has great potential for resolving various social issues such as low birth rate, aging population, shortage of manpower, disaster, especially in regions that need solutions to these issues urgently. Therefore, new technology will be used to boost local economies and solve social issues.

The various social issues faced by developed countries are in fact opportunities for the world's first revolutionary model of change that, starting with the regional areas, can contribute to achieving the sustainable development goals (SDGs).

Furthermore, "Society 5.0" shall be brought to all people regardless of age or disability, through the creation of a community that incorporates new technologies of the Fourth Industrial Revolution. An inclusive Society 5.0 platform that is for everyone shall be built.

### (3) Details of new measures to be taken

#### i) New town planning through the next-generation mobility system

- In regards to public transportation and logistics in local communities, we will develop a new mobility service model that meets the needs of urban and regional users. For example, we plan to provide information and route search using open data, ICT for dispatch and payment using smartphone application, utilization of new technologies such as automated driving, introduction of caregiving services and shopping assistance, consolidation of passengers and freight goods in depopulated areas, and policy cooperation with various areas such as MaaS. [Mentioned repeatedly]
- In order to promote mobility as a service (MaaS), which connects various transport services by data and creates new added value, we will assess the service improvements such as on demand, data collaboration and platform such as API, and the manner of corresponding system during the current fiscal year. [Mentioned repeatedly]
- Around this summer, the committee of associated local governments will be established to exchange and share information of creating compact cities. Their activities help promote collaboration between city development and public transportation. They also help accelerate the new technologies such as the next-generation mobility service and ICT as well as the "Compact Plus Network" project utilizing public and private data. We will assess the model cities that incorporate these advanced technologies into their city development. [Mentioned repeatedly]

#### ii) Safe and secure city planning through IoT

- With the arrival of the IoT/AI era, in order to develop an environment that everybody can

benefit from the social implementation of “Society 5.0”, study the structure of "ICT Utilization Promotion Committee (tentative name)" as a familiar presence in the area where elderly people can easily consult about the operation of ICT equipment.

- Take efforts as follows for senior citizens and people with disabilities to enrich their lives regardless of the type of disability and the living environment.
  - Improvement of environment for social participation such as employment support for people with disabilities using AI, IoT, brain science, etc.
  - Enhance the technology development on barrier-free using ICT
  - Implementation of automatic caption system for broadcasting programme by FY2020
- Implement the Advanced Local Alert System to 15 prefectures through demonstration towards formulation of standard specifications of this system awareness raising and implement the Geospatial Disaster Prevention Information System to 100 local governments by the end of FY2020.
- In order to promote the resolution of regional issues by implementation of the “Society 5.0”, utilize the nationwide post office network as a safe and secure base of citizens’ lives and take efforts of using this network such as entrusting function as counters for municipal services, monitors over children and the elderly people, shopping support, etc.

### **iii) New town planning through revitalizing local communities**

- By supporting to plan and implement of regional IoT and by promoting data-utilizing town development through interdisciplinary data sharing to local governments aiming solve regional issues, by the end of FY2020, create efforts utilizing IoT familiar to living such as health promotion and education in 800 local governments that • Take efforts to contribute to regional revitalization and succession of knowledge and experience through the utilization AI/IoT to solve issues such as population decline, aging population and resulting in the lack of successors.
- In order to maximize the effectiveness of data utilization in local governments, implement training of municipal CIOs and training to foster regional open data leaders. At the same time, support local issuessolving through ICT and data utilization through promotion of creating new services using open data and send “regional information advisers”.

### **3. Further strengthen the productivity revolution of SMEs and micro businesses**

#### **(1) The main KPI progress status**

**[KPI] Aim for 2.0% growth in the labor productivity of service industry by 2020**

=>2016: -0.38% (2015: 0.39%)

**[KPI] (New) Aim to promote introduction of IT tools to approximately 1 million firms, equivalent to about 30% of all SMEs and micro businesses in the three years to 2020**

**[KPI] (New) Increase profiting SMEs and micro businesses from 700,000 firms to 1.4 million firms**

=> 2016: 954,546 companies (2015: 923,037 companies)

**[KPI] Aim to achieve start-up rates exceeding cut-off rates and make them comparable to US / UK level (10% range)**

2016: start-up rate 5.6% (2015: 5.2%), failure rate 3.5% (2015: 3.8%)

**[KPI] (New) Make the holding ratio of overseas subsidiaries of SMEs 1.5 times compared to 2015 by 2023**

#### **(2) Policy challenges and objectives**

While SMEs and micro businesses are important economic agents that support regional employment and the economy, the labor productivity of SMEs and micro businesses are lower than that of large enterprises in every industry. Improvements in productivity are indispensable to reform working conditions amidst the harsh business environment.

Therefore, it is necessary to shift the measures for improving productivity from the stage of “creation of best practices” to full-scale “penetration into regional industries”, and SMEs and micro businesses will realize data-sharing with business partners and rationalization of procurement, production and sales, according to the characteristics of each industry, while receiving assistance from familiar support organizations including local industry group.

In addition, in order to solve problems such as management aging and manpower shortage, we will promote healthy metabolism by concentrating on support for business succession and entrepreneurship and securing core human resources who will become management talent and right-hand talent.

#### **(3) Details of new measures to be taken**

##### **i) Encourage investment in cutting-edge equipment such as IT to SMEs and micro businesses**

- The government will promote the measure to reduce property taxes under the Act on Special Measures for Productivity Improvement established in May this year, while taking into consideration the autonomy of local governments, and allow SMEs and micro businesses actively engaging to this measure to exert synergistic effect with support measures such as “Subsidy for Manufacturing and Service of SMEs”.
- In order to strongly support the introduction of IT necessary for improving productivity, the government will strengthen the IT support system in cooperation with management improvement of SMEs through improving IT literacy including cyber security in familiar support organizations, utilizing the “Productivity Strategy Platform for SME Services and

Other Businesses” established in February this year and certified information processing support organization.

- The government will start full-scale dispatch of experts, known as the "Smart Manufacturing Support Team", to support the introduction of IoT and robotics, as well as entry into new markets in the manufacturing industry, and also consider the expansion of this initiative to the service industry. The number of experts supporting the introduction of robots will be doubled to 30,000 by 2020. Evaluation standards for the skill of these experts who will oversee the design of the whole robot system will be drafted by this year and the creation of educational programs will also be taken into consideration.

## **ii) Empowering efforts to improve productivity in each industry**

- In order to strengthen the improvement of productivity according to the characteristics of each industry based on the Act on Enhancement of Management of Small and Medium Enterprises, based on the follow-up the implementation status, guidelines for industries with low productivity will be formulated and the scale of certifications of business plans will be expanded, and the establishment of platforms and systems to allow for cooperation between trade and business associations will also promote.
- In order to exert synergistic effect with productivity improvement according to the characteristics of industry including industrial measures below and the various measures of stated above in i), collaboration structure of ministries/agencies, the government will strengthen the collaboration structure of affiliated ministries and industry group, and increase the effectiveness of productivity improvement measures in each industry category.
  - [Construction] The government will consider conducting thorough participation of social insurance, rationalization of placement requirements of field technicians, clarification of responsibilities of both the customer and the orderer, including revision of related laws and regulations, and promote the standardization of work periods and set up the construction career up system in the autumn of this year.
  - [Transportation] Based on "Government Action Plan for Reforming Working Conditions of the Cargo Automobile Transport Business", the government strongly promote improvements in labor productivity and optimization of trading environment through developing the Citizen Movement for Realization of "White Logistics" (provisional name), which will be used to promote the introduction of a truck reservation system for shipping companies, and informing operators of the revised standard freight car service agreement.
  - [Nursing Care, Sanitation Industry] The government will create model cases of productivity improvement through implementation of IT and robots, and formulate guidelines to apply to similar things by this fiscal year.
  - [Food Service Industry] The government will provide consulting on necessity of utilization of IT implementation subsidy as well as system revision, and create case examples of productivity improvement model, and apply these models to similar things through seminars and workshops, collaborating with industry groups.
  - [Wholesale and Retail Industry] The government will develop rules for the data analysis in the supply chain utilizing RFID tags and standardize information formats.

### **iii) Increase business metabolism with smooth business succession and entrepreneurship support**

- To improve productivity through smooth business succession of SMEs and micro businesses, the government will strengthen our efforts as intensive implementation period in the next 10 years. In addition to the drastically expanded business succession tax system, the government will implement seamless support before and after succession, including strengthening M&A support. The government will promote comprehensive support for budget and tax related to the succession of small and micro businesses, and cooperate with large and medium-sized companies.
- Through the implementation of business plan for entrepreneur support with a focus on municipalities based on the Act on Strengthening Industrial Competitiveness revised in May this year, the government will expand our efforts to raise awareness about entrepreneurship towards indifferent people, as well as through side work. The government will also promote lateral development of best practices for solving problems such as business establishment and business succession, utilizing founding support network including financial institutions.

### **iv) Increasing support for SME associations**

- In order to further advance the "visualization" of support organizations such as Chamber of Commerce, Commerce and Industry Chamber, professional experts, regional financial institutions, Yorozu support base and business transfer support center, the government will construct mechanisms for introducing concrete measures and results into "Mirasapo", and set up a search system for supporting organizations by this fiscal year and start operation from the next fiscal year.
- In order to maintain and improve the quality of management support activities by SME support organizations, the government introduce certification validity period (5 years) of management innovation support organizations based on the Act on Enhancement of Management of Small and Medium Enterprises amended in May this year. The government will evaluate the results of the Yorozu Support Base from the current fiscal year, taking into consideration the number of issues solved in collaboration with other organizations and the degree of the awareness in the area.
- The government will urge financial institutions to properly demonstrate financial intermediation functions through the following measures in order to fully support management for business value evaluation and productivity improvement without excessively relying on collateral or personal guarantee
  - In order to promote the financial advice and provision of financial advice by financial institutions that contribute to the value of client companies, the government will establish the drafts of the Key Performance Indicator (KPI) by which financial institution's intermediation efforts can be objectively evaluated, including the utilization of "Guidelines for Personal Guarantee Provided by Business Owners" (5 December, 2013 decided at the Study Council on State of Personal Guarantees for Loans and Other Issues), which can also be utilized for business succession. This will allow for the "visualization" of financial institutions.
  - The government will further promote the above guidelines as loan practices by revising the Q&A of the above guidelines. The government also take measures to support SMEs toward appropriate dialogue with financial institutions.

- The government will promote corporate support through collaboration between private financial institutions, government-affiliated financial institutions and regional revitalization funds.
- The government will conduct a survey in this year about the actual situation of the personal guarantee provided by business owners in SME lease contracts. Based on the results, the government will discuss the "visualization" of the industry efforts and the formulation of guidelines for personal guarantee provided by business owners at the time of the contract.

**v) Increasing support for human resources and expertise**

- In order to promote measures to secure core human resources in SMEs by means of diversification with side jobs, concurrent work and dispatching, and to establish a sustainable matching scheme, the government will develop model cases laterally across the country while creating the model cases during the current fiscal year, collaborating with related ministries, SME support agencies, financial institutions, universities and NPO corporations.
- With the extension of three years of the support and investment decision deadline of the Regional Economy Vitalization Corporation of Japan (REVIC) based on the law revising a part of the Regional Economy Vitalization Corporation of Japan Act established in May this year, in order to improve corporate support capacity of financial institutions, the government will focus on the support for human resources and expertise such as joint management of funds, dispatching of experts, and introduction of management talents through the Japan Human Resources, and further promote the utilization of them.

**vi) Strategic measures to increase investment and productivity of regional core and growth companies**

- The government will aim for supporting about 2,000 companies in 3 years by utilizing the Regional Future Investment Promotion Act. The government will identify and follow up on regional core companies such as “Driving Company for the Regional Future”, and focus on support measures such as budget (including subsidies for the promotion of local recreation), tax systems, finance and special regulations, and further develop measures including strengthening regional support functions.
- In order to revitalize central urban areas and shopping districts, the government will promote developing tourism resources, strengthening promotion system related to town development, securing and fostering human resources, and stimulating private investment for the purpose of revitalizing the central urban area and shopping districts.
- Collaborating between industry, academia and government officials, together with loans from regional financial institutions, the government will promote regional revitalization, utilizing subsidies for businesses that create circulation in local economy to encourage founding utilizing regional resources and development of existing businesses in new fields.
- The government will support for overseas deployment of SMEs through marketing development by the "New Big-Exporter Consortium", strengthening support system by regional support organizations and Japan External Trade Organization (JETRO), and supporting overseas expansion of SMEs with assistance from Japanese embassy.
- In line with the discussion about the revision of the "Basic Plan for Activation of Small-Sized Businesses", the government will strengthen and establish a regional unified support

system in cooperation with prefectures and municipalities, discussing how the support for maintaining small businesses which tackle regional issues should be, such as the support for growth companies, maintenance of supply chain, regional branding, revitalization of production industries and provision of public issues.

- Considering drastic changes in economy and social structure, such as decline in demand due to population decrease in regions and intensifying global competition, from the viewpoints of securing fundamental services indispensable for regions, strengthening corporate management in regions, ensuring fair and free market, and improving utility for public users, the whole government will discuss how the competition policy should be and reach a conclusion by the end of this fiscal year.

**vii) Improving the environment for the productivity revolution of SMEs and micro businesses**

- In order to improve transaction conditions of subcontracting SMEs, the government will promote the steady expand implementation of the "Voluntary Action Plan" and expand the formulation, as well as rigorous implementation of the Act against Delay in Payment of Subcontract Proceeds. The government will thoroughly grasp actual situation by surveying more than 4,000 cases a year, strengthening the structure of subcontract G-men. The "Standards for Promotion" of the Subcontract SME Promotion Act will also be revised based on the possibility of negative consequences to subcontractors due to the Work Style Reform.
- The government will extend the "System of Authentication of Entities Contributing to the Strengthening of the Country", which is certification system for enterprises actively engaged in business continuity, to include the viewpoint of social contribution in order to demonstrate the function of mutual aid in by this summer, and promote efforts of private sector to strengthen the national land by improving the business continuation know-how collection for SMEs.
- The construction of one-stop service platform that allows SMEs to access support information will be started in this fiscal year and the sequential service will be started.
- The government will continue to discuss measures to increase the flexibility and elasticity of the the execution of budgets for SMEs.

#### 4. Tourism, Sports, Culture and the Arts

##### (1) The main KPI progress status

**[KPI] We aim to increase the number of international visitors to Japan to 40 million in 2020 and 60 million in 2030.**

=> 2017: 28.69 million (2012: 8.36 million)

**[KPI] We aim to increase the amount of consumption by international visitors to Japan to 8 trillion yen in 2020 and 15 trillion yen 2030.**

=> 2017: 4.4162 trillion yen (2012: 1.0846 trillion yen)

**[KPI] We aim to expand the market size for sports to 10 trillion yen by 2020 and 15 trillion yen by 2025 (5.5 trillion yen in 2015).**

=>2015: 5.5 trillion yen

\* Design a sustainable method of estimating the size of the sports industry in comparison to international markets with the cooperation of Development Bank of Japan Inc..

**[KPI] We will establish twenty more stadia/arenas across Japan by 2025 as interaction bases where diversified generations get together.**

=> A few projects have entered the design and construction phase in March 2018. In addition, there are 50 other stadiums and arenas in the concept / and planning stages nationwide.

**[KPI] We aim to expand the cultural GDP to 18 trillion yen by 2025 (about 3% of GDP).**

=> 2016: 8.9 trillion yen (2015: 8.8 trillion yen)

##### (2) Policy challenges and objectives

In realizing a virtuous circle in regional economies, the value of regional resources such as tourism, sports, arts and culture will be expanded and used as a tool for increasing the population and stimulating private investment. This will consequently improve productivity and profitability, and lead to higher quality employment and wage increase.

However, in the region, there remain many issues that need to be tackled, such as the need for further capitalization of local resources, the lack of new business models and the lack of private investment and data analysis for effective use of local resources for business. The shortage of talented personnel and the lack of an environment accepting of new people are also challenges to be faced.

In order to respond to these challenges, the following measures will be implemented for tourism, sports, arts and culture to achieve a virtuous circle for regional economies.

##### (3) Details of new measures to be taken) Tourism

Tourism is the decisive factor towards achievement of regional revitalization and the pillar of the growth strategy toward a GDP of 600 trillion yen. Based on the "Tourism Vision to Support the Future of Japan" (adopted by the Council for a Tourism Vision to Support the Future of Japan on March 30, 2016) and the "Tourism Vision Realization Program 2018" (adopted by the Ministerial Conference on Promotion of Tourism-oriented Country on June 12, 2018) etc., the Government will promote efforts toward the realization of a world-class tourism destination. In

doing so, the Government will utilize the "Tourism Vision Promotion Regional Block Strategy Council," the "Tourism Regional Development Consultation Counter," which is a one-stop consultation window for tourism administration in the area, mainly located at the District Transport Bureaus, and the "Collective Menu for Tourism Regional Development" and work cross-ministry in an inter-agency manner.

**(i) Increase the appeal of attractions and lay the foundation for local innovation**

A) Opening of attractive public facilities and infrastructure to the public

- The Government will provide high-quality services through utilizing private entities and collecting toll to improve satisfaction with public facilities and infrastructures that are particularly high in potential.
- In addition to planning further more attractive events and reviewing the visiting fee for the public opening of the State Guest Houses in Akasaka and Kyoto, the Government will also proceed with the construction of the facility, including cafe in the park in front of the State Guest House in Akasaka.
- The public display of the collection at the Museum of the Imperial Collections will be further enhanced, with collaborations with other museums, and expansion of the building of the Museum of the Imperial Collections will be implemented in stages.
- The public opening of the Katsura Imperial Villa will be further enhanced, such as introduction of guided tours.
- The Government will promote infrastructure tourism, which utilizes dam and other infrastructure as tourist attractions for the purpose of revitalizing regions.

B) Developing cultural properties for tourism

- The Government will provide advanced multilingual commentary on cultural properties and the promotion of Japanese culture through advanced technology such as VR. The Government will also collect and disseminate information on leading examples of the "Living History"<sup>4</sup>, which provides the realistic experience of the past, promote introduction and explanation of Japanese culture by curators, and review the system of protection of cultural properties.
- The Government will implement approximately 1,000 projects, such as overall improvement of regional cultural assets, and develop about 200 tourist bases which focus on cultural properties including Japan Heritages.

C) Branding "National Parks"

- In order to achieve the goal of increasing the number of annual foreign national park users to 10 million by 2020, the Government will enhance multilingual commentary and experiential contents, invite attractive high-quality accommodation facilities, improve landscape around key facilities, and introduce fee-based conservation systems. In addition, examples and findings from leading 8 national parks will be used for the development of other parks.

D) Improvement of Attractiveness of Tourist Destinations by Conserving and Utilizing Tourism Resources with excellent Landscapes

- The Government will promote landscape-conscious town development, including through

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<sup>4</sup> The initiative that aims to raise added value of cultural properties by reenacting historical events and reproducing the lives of the people during the specified time period so that visitors can experience history first hand.

promotion of landscape planning at major tourist destinations throughout the country by 2020, and proceed with removal of utility poles, according to the plans for removing utility poles, while taking low-cost methods into account.

E) Establishment and formation of residence-type agricultural and fishing villages

- The Government will create 500 areas for farm stays by 2020 with a viable business model that allows for tourism at farms and fishing villages in rural areas.

F) Promotion of tourism town planning utilizing historical resources such as Japanese traditional houses

- The Government will promote efforts to renovate and utilize local Japanese traditional houses as core tourist attractions through the relaxation of ryokan (Japanese inn) industry regulations and optimization of building regulations etc., with an aim to put in place this initiative in 200 regions nationwide by 2020.

G) Development of new tourism attractions

- The Government will develop new experiential contents through an effective use of night time, facilitating international visitors' visits on spectator sports events and promoting the usage of the beaches. The Government will also implement, among others: improvement of the environment for smooth implementation of projection mapping, flexible utilization of public spaces, optimization of building regulations for entertainment venues, expansion of appreciation opportunities on entertainment and using the latest technologies such as VR/AR.

H) Increasing tourism in rural shopping districts and the consumption of traditional crafts

- The Government will promote efforts to increase the number of tax-free shops in rural areas, to develop systems for electronic tax-free procedures, and to increase the number of traditional craft producing areas capable of catering to international visitors.

I) Improving wide-area tour routes to meet global standards

- The Government will support effort by regional stakeholders such as DMOs to widely cooperate to promote visits and stays of tourists, and in order to attract visitors to local areas, create networks of those regions that promote thematic tours such as sake breweries and shrines and temples.

J) Promotion of formation of "Tourism Nation Showcase"

- Relevant ministries and agencies will cooperate to provide prioritized support for promoting private investment to Kushiro City, Kanazawa City and Nagasaki City, and the Government will disseminate their practical cases to other areas.

K) Tourism revitalization in Tohoku

- In order to increase the number of international visitors throughout the 6 Tohoku prefectures to 1.5 million guest nights (three times as many compared to 2015) in 2020, the Government will improve existing tourist attractions. Emphasis will also be placed on revitalizing urban tourism, with greater support for domestic tourism in Fukushima Prefecture.

**(ii) Innovating the tourism industry and enhancing international competitiveness to become a key industry in Japan**

A) Comprehensive review of tourism regulations and systems

- Based on the revised Tour Guide-Interpreter Act, experiential tourism such as bicycle guided tours will be enhanced and guides with highly-specialized skills will be trained.
- In order to stimulate innovation in the accommodation industry, the Government will promote adaptation for inbound guests, separation of meals and accommodation, and improvement of productivity through the use of ICT and collaboration among

accommodation facilities.

B) Response to the private accommodation services

- The Government will ensure provision of the good renting of private houses and rooms through the appropriate operation of the Private Lodging Business Act and the review of *ryokan* industry regulations.

C) Alleviation of shortage in accommodation facilities and provision of accommodation facilities for various needs

- Information on Japanese inns that provide high-quality services will be advertised overseas with an international visitors' perspective, and barrier-free conversion of accommodation facilities etc. will be promoted.

D) Cultivation and enhancement of managerial level human resources based on the needs of tourism industries

- In order to cultivate and enhance human resources in tourism industries, the Government will take measures including use of professional and vocational university system and use of foreign talent.

E) Formation and development of world-class DMOs

- In order to create attractive destinations nationwide, the Government set the goal to establish 100 world-class DMOs by 2020 through the following measures: developing DMO management mechanisms by involving various stakeholders, improving multilingual notation and regional tourism promotion from the perspective of international visitors, as well as enhancing consultation by JNTO.
- The Government will publish regional tourism statistics that will clarify the actual condition of the number of visitors and travel consumption at the prefectural level during this fiscal year.

F) Continuous development of "Funds for Recreation and Vitalization of Tourist Sites"

- The Government will promote recreation and vitalization of tourist sites by tourism-related funds etc. formed by Regional Economy Vitalization Corporation of Japan (REVIC) and Development Bank of Japan Inc..

G) Utilization of funds to promote tourism

- The revenue of International Tourist Tax will be used to promote tourism, in accordance with the "Basic Policy etc. for the Use of the International Tourist Tax (provisional name)" (adopted by the Ministerial Conference on Promotion of Tourism-oriented Country on December 22, 2017).

H) Strategic promotion of visits to Japan and the promotion of Japan's charms overseas

- Reform of JNTO's structure will be conducted to enhance: global campaigns mainly in Europe, the United States and Australia, strengthening measures specifically targeting high-income groups, sophistication of promotion through digital marketing, revamping of the JNTO website, and oversea communication cooperating with overseas diplomatic establishments coupled with country-specific strategies.
- The Government will promote Japan to overseas audience through "host towns".

I) Attracting MICE

- The Government will comply measures to boost the international competitiveness of MICE in cooperation with public and private sectors during the current fiscal year. In addition, a MICE branding campaign aimed at attracting MICE will be conducted.

J) Strategic relaxation of visa requirements

- The Government will promote visa relaxation targeting mainly China, Philippines, India and Russia, which are required to obtain visas for visiting Japan and included in the top 20 priority countries for the intensive promotion of inbound tourism. These measures are taken in collaboration with the improvement of environment for receiving international visitors under the initiative of the government as a whole.

K) Increasing outbound tourism among the youth

- In order to encourage young people to travel from the viewpoint of promoting international mutual understanding, the Government will built a platform to provide travel information to travelers from travel agencies during the current fiscal year and promote educational travel. The Government will also promote international flights such as LCCs to regional airports. In addition, immigration examinations will be expedited.

**(iii) Environment where all travelers can enjoy stress-free sightseeing**

A) Innovative immigration procedure using state-of-the-art technology

- In addition to the systematic improvement of physical and human systems necessary for CIQ, such as facial recognition automated gates and bio-cart in airports, electronic customs procedure gates and CT and 3D image manipulation X-ray Cargo Inspection System, inspections and procedures related to boarding of passengers including aviation screening will be made seamless at airports and harbors to realize "FAST TRAVEL · SMOOTH VOYAGE".

B) Improvement of gateway functions at regional airports

- The Government will increase the annual capacity of Tokyo metropolitan airport to around one million, which is the world's highest level. Measures against noise and falling objects will be put in place, along with careful information provision, toward flight route review of Haneda airport. In addition, route selection for Haneda airport will start focusing on the increase of inbound demand and international competitiveness. In order to expand the capacity of Narita Airport, based on the local consensus, facility development in the surrounding area will be promoted, new runway will be constructed, and the operation hours will be extended pursuant to the Act on Special Financial Measures for Narita Airport.
- The Government will upgrade local main airports' facilities such as runway expansion in Fukuoka and Naha Airport.
- The Government will promote airport concession projects such as the Hokkaido bundled 7 airport project.
- The Government will promote training of pilots and other, labor-saving / automation of ground support services, improvement of the environment for operating business jets, etc., and respond to increase and diversification of aviation demand.
- The Government will support regional airports designated as airports that help encourage travel to Japan through reduction of landing fees and construction of boarding bridges, thereby promoting an increase of international flights and upgradind passenger reception environment.
- The Government will improve infrastructure for hospitality and implement measures to create fun atmosphere at airports.

C) Increasing capacity for cruise ships

- The Government will encourage "zero refusals" on cruise ships with the improvement of infrastructure such as maintenance of docking pole etc. and adaptation to inbound passengers at terminals to increase satisfaction and spending of cruise passengers.

- The Government will promote formation of international cruise hubs through public-private partnerships, using the scheme that allows preferential use of quayside walls by cruise ship companies that invest in passenger facilities.

D) Fully equipped "regional innovation corridor" via a high-speed transportation network

- The Government will enable international reservation of all Shinkansen / Conventional Limited Express lines during this fiscal year, possibly with a common reservation website page. A system for tourism train operation by independent private operators will be considered and the convenience of the Japan Rail Pass will be improved.
- The Government will develop better cycling environment in cooperation between private and public sectors and expand the rail service that allows passengers to take their bicycles on train in order to attract international and domestic cyclists and promote use of bicycle.
- The Government will improve *Michi-no-Eki* (Roadside Station) services for international visitors, expand Japan Expressway Pass, expand use of Expressway Numbering System, utilize ETC2.0 for spot safety improvement, and consider introduction of more flexible toll rates for traffic demand management on expressways.
- The Government will improve convenience for acquiring Japanese translations to be attached to foreign driver's licenses necessary for driving rental cars by international visitors, such as those from Germany and France.

E) Innovation of an environment for the use of public transportation

- To revamp transport infrastructure from the traveler's point of view and achieve world-class transportation service, the Government will promote efforts such as development of Wi-Fi environment including the launch of Wi-Fi service for all Shinkansens during this fiscal year, development of payment system, multilingualization, installation of Western-style toilets, improvement of excursion passes, installation of luggage storage areas and provision of barrier-free accessibility. The Government will also promote provision of traffic information through smartphone applications.

F) Shift towards a cashless society

- In order to enable 100% cashless payments and 100% credit card payments with IC terminals at major commercial facilities, accommodation facilities, tourist spots frequented by tourists by 2020, the installation of terminals will be expedited.

G) Improvement in communication infrastructure and creation of an environment where everyone can get around independently

- In addition to strengthening measures to address radio wave shielding sections of Shinkansen tunnels, Wi-Fi connections for approximately 30,000 disaster prevention centers and other places will be set up by the end of FY2019.
- Related ministries and agencies are to cooperate and work on multi-lingual speech translation systems, specifically improving the accuracy, conducting technical demonstrations, and holding trials for nationwide utilization.
- The Government will increase the number of international visitor information centers to around 1,200 during this fiscal year, improve guidance functions through VR technology, and promote conversion of public toilets to Western style, etc.
- The Government will improve the dietary and worship environment for Muslim travelers and strive to further enhance promotional activities to them.
- The Government will enhance efforts to create sustainable tourism areas, for example by mitigating congestion through the visualization of congestion information.

- The Government will establish a consumer affairs consultation offices for international visitors at the National Consumer Affairs Center of Japan.
- H) Enhancement of the patient acceptance system capable of responding to emergencies for international patients
- In order to respond to the increase of medical consultation by international visitors in Japan, the Government will work on improving multilingual support and promoting insurance coverage for international visitors to Japan.
- I) Vacation reform
- In order to ensure that parents and their children can spend time together, "Kids Week" will be created while taking into account local situations and ensuring that the education of children is not affected, to create diverse opportunities for activities with both the public and private sector.
- J) Universal design for the Olympics and Paralympics.
- In accordance with the "Universal Design 2020 Action Plan" (Decided on 20 February, 2020 at the Universal Design 2020 Relations Ministerial Conference) and the amended Barrier Free Law, town development with barrier-free accessibility and barrier-free mindset will be promoted. The main railway stations, vehicles, areas around airports and tourist attractions, and the roads connecting the stadium and surrounding stations will all be made more barrier-free in light of the upcoming Olympics and Paralympics.

## **ii) Future development of the sports industry**

### **(i) Regional revitalization with sports**

- Regarding stadiums and arenas, the Government will share categorized issues and cooperate with related ministries, agencies and organizations based on the individual needs of the region, especially in establishing a unified consultation window relating to governmental support and considering support for human resources to secure local consensus. The discussion will also be started to design a measure to reflect the needs of private business operators which have contents outside of sports and a verification method to evaluate the effect that stadiums bring to these areas.
- Empirical research on progressive school athletic club activities will be conducted in collaboration with schools, sports organizations and enterprises. Also, empirical research for constructing a new business model effectively sharing and utilizing sports resources such as facilities and sports instructors through utilizing ICT.
- An action plan for increasing the sports participation rate of citizens will be formulated by the summer of this year, and measures for raising awareness of citizens and efforts according to characteristics of each layer such as business people, women, children, the elderly people and people with disabilities will be promoted.

### **(ii) Foundations for the industrialization of sports**

- To cultivate talent for sports management, curriculum and teaching materials will be developed to provide an academic department (Sports MBA) and educational program that imparts skills specific to sports business management, and a conclusion will be drawn during the current fiscal year on the measures to promote matching strategies of external

human resources such as specialized human resources and the way to develop a training system. Also, training for female executive candidates of sports organizations as well as the promotion of sports organizations' efforts to secure sports integrity will be conducted.

- Cross-university and cross-sport management organization (Japanese version of NCAA) aiming for appropriate organization management and establishment of healthy university sports business will be established during this fiscal year. Also, in order to promote student sports activities, the government will increase universities which endeavor to provide departments and human resources for overseeing sports club activities in the university and integrating career formation, regional contribution and fund procurement, with an aim for increasing such universities to 100 by 2021.
- To establish a sports open innovation platform, the Government will set up a forum for gathering companies, researchers and sports organizations, and promote matching to realize the utilization of big data and IT in the sports field.
- Based on the "Sports Tourism Demand Expansion Strategy", the government will provide information such as marketing data and good practices to local governments, sports organizations and tourism officials, and support organizations to improve sports tourism such as sports commission. Also, promotional videos that showcase the appeal of Japanese sports tourism to foreign audience will be distributed during this fiscal year.

### **(iii) Promotion of overseas expansion of sports**

- A "Sports International Strategy" will be formulated by this summer, and in order to promote overseas expansion of sports content which have advantage of Japan's unique strengths (physical education, school club activities, sports festivals and professional sports leagues), Japan Sports Agency, Ministry of Economy, Trade Promotion Organization of Japan and Japan Sports Promotion Center will cooperate to collect and disseminate information, as well as support for promotion.

### **iii) Economic revitalization through culture and art**

#### **(i) Creating a virtuous circle economically through arts and culture based on the 'Basic Plan on the Promotion of Culture and the Arts' and the 'Strategic Plan on Culture and Economy'**

- The government will establish a forum, where cultural officials and the industry can discuss with each other about broad issues and their direction of solution, with culture as a starting point, and promote creating greater added value in the market, innovation of business using culture and art resources and related technologies, and promotion of overseas expansion of cultural-related services and contents including performing arts. In theaters and music houses, the Government will aim for the enhancement of functions and viewing environment while encouraging them to increase their own income. With these efforts, the government will achieve establishment of a national brand strategy and expansion of cultural GDP.
- The government will develop new ways to discover cultural resources related to living culture such as food culture, and raise its attractiveness and create opportunities for citizens to become more aware of them.

- The government will establish a forum for public and private consultations by this fiscal year to discuss the creation of a database of collections of museums, enhancement of the museum's value creation function by encouraging collecting works of art, improvement of art market infrastructure and international dissemination of systematic understanding of Japanese arts, and achieve improvement of the asset value of arts and its sustainable development through activation of the art market in Japan.
- The government will increase the self-income of the National Art Museum, and certify the profits as management effort based on "Promoting management efforts and strengthening management in independent administrative agencies" (30 March, 2018 noticed by the Ministry of Internal Affairs), and utilize the profits for purposes including unique venue, multilingualization, enrichment of content for foreign tourists and extension of opening hours, and repair of collections.
- The Government will promote art education by making effective use of new art and culture activities such as media arts, and resources of local art museums. The Government will also take measures including support for cultural and artistic activities of persons with disabilities and create an environment in which persons with disabilities can enjoy arts and culture on a regular basis in their localities.
- Utilizing regional cultural and artistic resources, the Government will support the formation of international dissemination bases focusing on large-scale events, and promote cooperation between artists and various industries, leading to creation of new culture. The Government will also contribute to national branding by projects to disseminate Japanese culture through international cultural exchanges such as art and cultural projects conducted in conjunction with diplomatic anniversaries and large-scale sports events, as well as the International Council of Museums (ICOM) Kyoto 2019.

**(ii) Regional revitalization centered on cultural and artistic resources**

- While encouraging participation in the “beyond 2020 program”, the Government will implement the "Cultural Programs" triggered by the 2020 Tokyo Olympic and Paralympic Games not only at the game venues but also throughout the country, and showcase the appeal of Japanese culture and the beauty of Japan both domestically and overseas, which will lead to, with the know-how of the private sector, regional revitalization through attraction of visitors and formation of a symbiotic society.
- The government will support local governments that actively promote comprehensive preservation and utilization of cultural properties in the area and utilize them to create attractive areas, through public communication and personnel training based on their regional plan for conservation of cultural properties. Also, in order to improve the value of cultural assets, the government will conduct repairs and beautification work at appropriate intervals, while having viewpoints of securing raw materials and tools, and for the purpose of preventing dissipation and loss of cultural properties, the Government will conduct information gathering related to national designation and registration systems, and, while encouraging voluntary efforts of local entities, provide support for disaster prevention and crime prevention measures and purchase and utilize cultural properties,.

**(iii) Reinforcement of cultural industry centered on content**

- Promote efforts toward the full-scale operation of the cross-sectoral integrated portal "Japan search (tentative name)" that will become the center of the Digital Archive Japan.
- The Government facilitates efforts to build archives by providing support for archiving media art content at art museums and universities and sharing expertise. Also, with the "National Film Archive" founded in April this year playing a central role, preservation, collection, utilization and digitization of films and related materials will be promoted.
- Strive to promote media arts domestically and overseas, and to create entertainment that utilizes advanced technology and nighttime.
- With regard to the Cultural Heritage Online, archiving of unpublished information, improvement of conditions for the secondary use of posted cultural property information and multilingualization will be implemented.

## **II. Establishing the Foundation for Structural Innovation of the Economy**

### **[1] Common Infrastructure Building for Data-Driven Society**

#### **1. Promotion of Investment for Infrastructure System / Technology**

##### **(1) The main KPI progress status**

**[KPI] Aiming at increasing the enrollment of over 30,000 information security specialists by 2020.**

=> April 1st, 2018: 9,181

**[KPI] (New): Creating 30 examples for introducing data sharing across industries/operators by the end of FY2020.**

##### **(2) Policy challenges and objectives**

The whole concept of society and economy is changing dramatically from the real economic sphere based on visible things to a cyber economic sphere abuzz with invisible things such as data and idea. This would bring a substantial change to the concept of safety/security and necessary technology/infrastructure as well as existing business fundamentals of enterprises. Therefore, we will promote advanced utilization/distribution of data which has become the new resource and environmental improvement for bold digital transformation in private-sector enterprises.

As digital infrastructure to support the promotion, we will also accelerate the development of infrastructure such as enhancement of ever-increasing serious cyber security, proactive introduction of new technologies such as blockchain or 5G to bolster vast amounts of data.

##### **(3) Details of new measures to be taken**

###### **i) Building Infrastructure for Data Interaction and Utilization**

###### **(i) Interaction/Utilization of industrial Data**

- With developing a system for industrial data utilization business authorization based on the Act on Special Measures for Productivity Improvement established in May 2018, expand the case studies on sharing and collaboration of industrial data in cooperative areas regard to map data, material data, security data, etc. which are centering on priority fields of “Connected Industries” such as “autonomous driving / mobility service”, “manufacturing / robotics”, “bio / material” etc., and enhance assistance for those implementation”.
- Aiming to collaborate all the scattered data among administrative agencies and private sector, develop cross-sectional data utilization platform within 3 years using data standards and infrastructure for multilayer interoperability (IMI).
- In order to improve the character information infrastructure of the government toward the establishment of administrative data standards, the Cabinet Secretariat shall develop guidelines on the current status of letter information including kanji (Chinese characters), alternative letters, furigana (Japanese pronunciation in katakana characters) and Roman script and review operational issues including the way the cooperation with the private service sector should be.
- Formulate and promote the usage of guidelines necessary for consolidation of systems etc. for injunction against the improper data acquisition etc. in the Unfair Competition Prevention Act.

- Promote the usage of the "Contract Guidelines for AI / Data Usage (established by the Ministry of Economy, Trade and Industry on June 15th, 2018)" including collaboration with overseas organizations and expand specific examples of data use through subsidiary enterprises etc.

#### **(ii) Usage and Utilization of Personal Data**

- Regarding a function of information trust that provides personal data to third party after judging appropriateness on behalf of individuals based on personal instructions or pre-specified conditions, aim to start operation of arbitrary accreditation scheme by private institution by the end of FY2018, and put together necessary guidelines through demonstration projects etc.
- Enhance the efforts of consultation response for new establishment of an institution authorized personal information protection mainly in the field which its institution is not established yet. In addition, in order to make operators provide/utilize personal data at ease, enhance the publication of information on appropriate utilization examples based on the consultation response etc. from business operators.
- In order to improve the environment for smooth international data circulation, continue to promote strategic efforts on a framework to promote mutual smooth transfer of individual data between Japan and EU, and continue to promote expansion of affiliated countries, regions, and enterprises using the APEC Cross-Border Privacy Rules (CBPR) system.

#### **(iii) Private-Sector Promotion of Digital Transformation**

- Study effective system design based on the actual situation of each industry such as "visualization" of IT systems to renovate aging corporate IT systems and promote digital transformation.
- Promote development of next-generation computing technologies which process field data that is the strength of our country in real time such as AI chip's edge processing and quantum technology and development of advanced cryptographic technology including confidential computing technology.
- Regarding the cross-border provision of digital services for consumers in Japan, study effective extraterritorial application and enforcement to foreign business operators from the viewpoint of user protection.

#### **ii) Ensuring Cyber Security**

- In the next cyber security strategy which will be released in this summer, clarify the basic policies and structures on cyber security through incorporating "cyber security for sustainable development" as a basic principle with promoting efforts from the 3 perspectives of "mission assurance," "risk management," and "participation, coordination, collaboration".
- Then, under the next cyber security strategy, the government will work together to establish information sharing system, develop and secure of human resources, disseminate information to citizens, improve the readiness on the 2020 Tokyo Olympic and Paralympic Games.
- In accordance with the amendment law of the Telecommunications Business Act and National Institute of Information and Communications Technology Law passed in May 2018, in FY2018, start to take efforts on enhancement of security measures of IoT devices under the framework of public-private partnership and efforts on promoting enhancement of security measures for IoT devices under the framework of public-private partnerships and

efforts on promoting eradication of internet bot through information sharing among operators.

- Formulate the basic framework on clarifying security risks in connecting various systems and devices and consolidating measures to be implemented, and develop the framework in each industry field.
- In order to enhance security measures throughout the supply chain (value creation process), promote necessary study and development the structures to create reliability by confirming the individual devices and services filled the security requirements, creation of a list of devices/services proved to be reliable, and securement of traceability.
- Promote the development of reliable information infrastructure that will serve as a platform for the entire services provided by government and important infrastructure operators. For this reason, study verification for evaluating reliability and operational improvement of government procurement.
- In order to allow both public and private sectors to adopt and continuously utilize safer and securer cloud services with diversification and sophistication of cloud services, in accordance with the importance of the information assets, with referring to examples of other countries, from the pointview of securement of reliability, commence studies on evaluation of safety of cloud services from FY2018.
- Commence studies based on the actual conditions survey at home and abroad from FY2018 to study the best form of mechanism to adequately protect important data in cloud services possessed by important infrastructure operators, from the aspect of technology and legal systems.
- Raise awareness of management and promotion of investment in cyber security and consider measures to facilitate the spread of cyber security insurance or miscellaneous services to enhance cyber security measures at private companies including small-to-medium sized enterprises (SMEs). Also consider security enhancement measures integrated with IT introduction such as promoting utilization of cloud services with ensured security.
- Strengthen assistance to the security business from FY2018 by clarifying various security technologies which become essential in controlling IoT system etc., establishing a mechanism that enables matching between corporations, evaluation of products and services, supporting overseas business expansion.
- Develop human resources with the ability to handle a series of measures to deal with a cyber-attack from incident detection to response, reporting, and recovery through Cyber Defense Exercise with Recurrence (CYDER) etc. for information system officers in the local governments or others or core human resources such as important industrial infrastructure with extensive information/control-related knowledge.

### **iii) Response to New Technologies/Businesses**

#### **(i) Utilization of Blockchain Technology**

- Proceed with demonstration on transactions in the environmental field and utilization in the field of business such as digital content transactions to create new business utilizing blockchain technology.
- Demonstrate the blockchain technology for precedent implementation in the administrative and highly public field, and develop action plans during FY2018.

#### **(ii) Accelerating the Spread of IoT Technology/Services**

- Establish IoT common platform technologies such as technology to promptly and efficiently connect an enormous amount of IoT devices and technology to connect and accommodate IoT devices with different wireless standards and different services to network efficiently and securely, make proposals for global standardization during FY2018, and promote efforts to popularize and deploy such technologies in diverse industrial fields.
- In order to respond to the increase of foreigners visiting Japan and create new business, promote demonstration on utilization of deep learning technology based on the social needs and accelerate the accuracy improvement of multilingual speech translation technology and the efforts among ministries and agencies on social implementation through services provided by private sector.

**(iii) Promotion of Sharing Economy**

- Sharing Economy Promotion Office of the Cabinet Secretariat will further enhance the response to consultation and information provision from private enterprises, local government, etc. through providing necessary hands-on assistance in collaboration with related ministers or ministries for business operators attempting to utilize special measures to facilitate new business / the system to eliminate regulatory gray zones.
- In order for C2C services to be appropriately evaluated by consumers and to eliminate uncertainty concerning about sharing economy, enhance the model guidelines by formulating user guidelines early FY2019 in conjunction with demonstration at the Office of Consumer Policy Frontiers.
- Continue to participate in establishment of international rules etc. in public-private collaboration, and contribute to international consensus formation through dissemination of information on practical examples in Japan.
- In order to solve social problems and revitalize the economy in the community, promote the utilization of sharing economy such as use of unutilized or low usage space or creation of working places through support for model efforts by local government and others.
- Double the number of utilization examples announced as "Share Nippon 100" in March 2018 by the end of FY2018.

**(iv) Dissemination of Telework**

- In order to promote telework that contribute to the improvement of productivity of enterprises nationwide, carry out "Telework Days" in cooperation with relevant ministries and agencies, take efforts on planning support for introducing telework for each "town" by municipality and chamber of commerce, etc., and formulate the "Introduction Model (Know-How Practice)" for companies which have not introduced telework yet.
- Promote creation of cross-regional telework model through designation co-creating regions where solve problems by utilizing IoT or AI and enhancing support for regional business creation making full use of regional charm.

**(v) Development of Communication Environment Supporting "Society 5.0"**

- In order to accelerate the social implementation of "Society 5.0" in local area, take efforts as follows:
  - Promote advancement of communication environment such as expansion of 5G and fiber optic network etc. to regions, development of Wi-Fi environment, conversion of Cable TV network to fiber optics
  - Develop technology and improve environment to realize the next generation wireless system such as "Beyond 5G"

- Human resource development, and;
- Overseas expansion of superior wireless system.
- Promote prompt dissemination of 5G in region through establishing necessary technological standards by the summer of 2018 and frequency allocations by the end of March of 2019, and study the best approach to develop fiber optic network etc. to support advanced wireless environment such as 5G or IoT and obtain conclusion by around the summer of 2018.
- In order to deal with the explosive growth of traffic with IoT development, establish innovative AI network integration infrastructure technology that automatically optimizes network resources by utilizing AI by FY2020, and establish innovative optical network technology allowing large capacity communication by FY2021.
- In order to promote smooth introduction of wireless communication at production sites such as smart wireless plants, conduct research and development on technologies to optimally control wires communication in such factory, and establish the technology and global standardization by 2020.
- In order to deal with the shortage of IP address due to the rapid increase of IoT devices and to accelerate the development of IPv6-compliant system applications significantly delaying as compared to communication device or communication infrastructure, develop standard specifications and operation procedures necessary for the introduction of IPv6.

**(vi) Promotion of 4K/8K**

- Promote the provision of 4K/8K broadcasting and advanced video distribution services and take efforts to expand the utilization of technologies combining 4K/8K with AI/IoT in the medical field etc.
- While further integration of communications and broadcasting is progressing, broadband network will be prepared all over the country. In addition, in order to support the creation of new services utilizing broadcasting data such as viewing history, study the standardization of vies history, etc.

**(vii) Promotion of Efforts in Anticipation of the Future in the Broadcast/Content Business**

- Promote building of the business model transcending the framework of communication and broadcasting such as promotion of internet distribution of broadcast contents, global expansion / effective utilization of broadcast contents, further environmental improvement of production sites such as production-related transactions or working styles, and promotion of content distribution, etc. through the course of technological innovation and further integration of communication and broadcasting, in light of the situation where international competition has begun beyond the conventional frameworks such as communication/broadcasting/contents, and in anticipation of the future where broadcasters will provide more diverse, quality contents and fulfill social functions.

## 2. Development and Optimal Utilization of Human Resource Responding to the AI Era

### 2-1. Human Resources Development/Utilization Required in the AI Era

#### (1) The main KPI progress status

**[KPI] (New) Double the number of Brush up Program (BP) related accreditations to the AI field etc. by FY 2023.**

=>FY 2017: 7 Courses

**[KPI] Facilitate Wireless LAN 100% in ordinary classrooms by FY 2020.**

=> 2016: 33.2%

**[KPI] (New) Set up Personal Computers for learning corresponding to the size of a class every three classes by FY2020.**

=>2017: 1 PC per 5.9 children

**[KPI] (New) Achieve 500,000 examinees of new IT passport examination by FY2023.**

=>Developing new examination (during FY2018)

**[KPI] (New) Certify 100 courses as Fourth Industrial Revolution Skills Courses by FY2020.**

=>2017: 23 Courses

**[KPI] Achieve 1 million adults who take courses in university/college, etc. by FY2022.**

=> 2015: Approx. 490,000 adults

#### (2) Policy challenges and objectives

In "Society 5.0," business will change through AI implementation from mass production of the same quality to individual production utilizing AI and data utilization. The AI era requires human resources who create value with abilities that are not replaced by AI such as goal setting / problem solving ability or the ability to combine disparate things in addition to the ability to understand and use AI/data thoroughly with strong math and science skills and the quality and quantity of such human resources will determine the future of Japan.

On the other hand, while Japan is one of the world's best countries in strong math and science skills, such skills are not always sufficiently developed thereafter. Although the world is now competing for the best talent, the human resource utilization among Japanese firms is not competitive in the position / compensation package, etc. in the AI era.

To break through such situation, we will mobilize every possible means for education reform and industrial development/utilization reform. Improve students (and adults)' math and science skills University entrance exam reform or enhancement of statistical/information education etc. from elementary school to university, and construct cross-sectoral as well as practical curriculums in university etc. beyond the vertical division of school/faculty. Also promote recurrent education or improved compensation package of excellent human resources and expand human resource utilization in both quality and quantity in the business community etc.

#### (3) Details of new measures to be taken

##### i) Expansion of AI Talent Supply in University etc.

- Commence studies toward the adoption of examination subjects compliant with the new educational guidelines such as the compulsory subject of "Information I" in standardized university entrance exam from FY2024, during FY2018 and offer a direction early on. Conduct necessary study on a method etc. of administering an examination such as computer-based training (CBT).
- Conduct a review on the vertical division of school/faculty in the industrial fields including AI or amendment in the standards for establishment of university regarding major/minor requirements (curriculums combining non-engineering fields of specialization) and implement accordingly from FY2019. Also implement engineering education reform such as development of model core curriculums providing information education etc. in fundamental engineering education.
- Conduct amendment in the standards for establishment of university etc. for institutional positioning of "academic degree programs" providing multi-disciplinary human resource development defying the boundaries of conventional organizational frameworks such as integration of engineering (information etc.) and physics (mathematics, physics, etc.) in the first months of 2019 to implement the amendment from FY2020 in each university.
- Work to secure members or professional instructors with a high degree of specialization in AI/IT in schools/faculties, etc. of the Curriculum Collaboration Association in collaboration with the business community to develop curriculums etc. allowing practical education by ensuring human resources with developing human resources specializing in AI/IT in professional universities etc.
- Enhance the deployment/popularization functionality of human resources specialized in AI in university etc. through deployment and popularization of efforts at professional AI human resource development centers such as the development of human resources specialized in AI or data science education for human resources specialized in each field.
- Accelerate preparation of curriculums or instructional material at universities that serve as a development center and popularize curriculums etc. in sequence at each university from FY2019, to spread all-university math/science and data science education etc. that do not matter whether majoring in humanities or science in university etc. throughout Japan.
- Support efforts at each university etc. or in the region such as introduction of a notification/recognition system to disseminate excellent work all over Japan or development/staffing of professional human resources building/managing highly educational programs, to provide better mid-and-long term, practical internship in both quality and quantity, in line with studies at public-and-private consortiums.
- Considering the current situation where the world is now competing for talent especially in the AI field etc. or international internship trends, encourage appropriate environmental improvement to increase the effectiveness in proper provision of occupation or workplace information, helping students to choose a right profession commensurate with his/her specialties etc., through long-term, practical internship.
- Secure opportunities for Japanese university students etc. to experience top-class overseas AI research/education through the category of future technology human resources in "TOBITATE! (Leap for Tomorrow) Study Abroad Initiative." Build a network for dispatched personnel after their return to Japan to promote efforts increasing desire/interest in human exchange of problem solving type or studying abroad with the involvement of students or enterprises interested in AI etc.

- Offer support including the establishment of several-year research assistance programs intended for young researchers such as postdoc primarily in the IT/data fields or concentrated funding for internship or research fund, to allow young researchers in mathematics, physics, informatics, etc. to be successful as AI leading human resources in the business community etc.

## **ii) Enhancement of AI Education at the Primary/Secondary Level of Education**

- Implement development of instructional material or improvement in the quality of teaching staff training, through future learning consortiums' activities etc., in collaboration with education committees, schools, or enterprises, etc., utilizing their portal sites etc., to conduct effective programming education at all elementary schools from FY2020 allowing teaching staff to master instructional material or teaching method, etc. from FY2019.
- Utilization of AI or big data, etc. in a school setting (EdTech) is effective for drastic improvement such as guidance depending on subjects etc. or children's learning level or school management. Create examples of or conduct experimental study on the concrete method in EdTech and develop guidelines for the development/popularization of technologies / instructional material based on the effective utilization of EdTech and needs in the actual school situation.
- Accelerate the development of ICT environment in local governments such as through dissemination of the functionality of ICT devices etc., efficient procurement method, or clearly 'visualized' status of development etc. for each municipality etc. based on the development policy on ICT devices indicated at the end of 2017 not only to education committees but also to governors or mayors, to provide the full form of ICT environment necessary for wireless LAN or PCs for learning by 2020.
- Promote the use of cloud computing system in the ICT environment at school and establish a secure collaboration method between the system with classwork/learning function and the school administration system by FY2019.
- Implement amendment of educational guidelines consistently in the actual school situations throughout Japan such as significant enhancement of contents regarding practical statistics etc. focusing on the relation to daily life or society or data science etc. to give students a fundamental education for AI utilization. To this end, work on the enhancement of effective teaching staff training using e-learning etc. or instructional material or the use of outside personnel etc.
- Promote the development of environment allowing children/pupils etc. who wish to learn a higher level of programming to learn continuously and expansively in the "regional ICT club" or "extracurricular activity" etc. at the junior/high school computer clubs, regardless of sex or disabilities.
- Implement efforts such as presentation of diverse role models at local governments / schools, etc. all over Japan and lessons at demand targeting schoolgirls, to encourage schoolgirls etc. to choose a path to science courses and promote the success of women in cutting-edge fields etc. including AI.
- Strengthen efforts such as Global Science Campus promoting further talent growth among children with excellent potential in math and science and implement efforts to provide opportunities to further enhance the qualifications and abilities by encouraging those with especially outstanding qualifications and abilities such as high school students who achieved

excellent results at Science Olympics such as the Japanese Olympiad in Informatics to learn about the cutting-edge fields including AI.

**iii) Expansion of Development/Utilization of AI Human Resource etc. in the Business Community**

- Promote recurrent education for and optimal utilization of human resources who used to promote renovation of aging corporate IT systems and engage in its maintenance and operation in the AI/data fields etc. and promote organizing for utilization of AI in business innovation and enterprise.
- Develop "IT literacy" standards for all members of society during FY2018, expand the IT passport examination to administer an examination to certify the "IT literacy," and encourage enterprises to reflect such AI/IT skills in employment screening and employee compensation package.
- Offer focused support through expansion of extended payments of General Training and Education Benefits such as raising the benefit rate in Training and Education Benefits for courses highly effective in career advancement, to promote "IT literacy" acquisition etc.
- Related government ministries and agencies to commence studies from FY2018 on "visualization" of course history in university etc. or its utilization etc. so that learning history etc. can be properly reflected thereafter in corporate employment screening or compensation package etc.
- Promote effective reviews on human resources and payment systems to implement compensation package at the same level as overseas in a wide range of enterprises, universities, or research institutions, etc. including popularization of cross-appointment system or introduction of annual salary system based on appropriate performance evaluation in university etc. to proactively secure advanced AI human resources at home and abroad.
- Especially at specified national R&D agency and specified national university, promote proactive utilization of an extraordinary exception in compensation/salary, etc. of executives and regular employees with internationally transcendental abilities who engage in works utilizing advanced professional knowledge at the top international level to implement securing/utilization of the world's most advanced human resources.
- Support Japanese enterprises' efforts such as submission to job fairs in Asia or establishment of endowed chairs at universities abroad to attract excellent AI human resources from abroad. Also work on a detailed study of the best approach to support matching utilizing information etc. on jobs in Japan in the overseas onsite recruitment process such as Asia.
- Carry out outstanding talent discovery/development in the AI fields through significant increase in AI-related themes in "Untouched IT Talent Discovery and Development Business" or nomination of top researchers or businessmen at home and abroad in the AI fields as project managers and develop human resources who will create a software market in the quantum computer era utilizing quantum annealing machine etc.
- In the "Innovation" program, advertise for ideas on and discover technological issues that will create disruptive innovation in the fields such as AI to support challenges to technological issues.

**iv) Crystallization of Education in Industry-Academia Partnership through Public-and-Private Consortiums etc.**

- Implement full-fledged efforts in public-and-private consortiums by the summer of 2018 with representatives etc. of the business community, universities, technical colleges, and specialized training colleges as its members, to get cross-sectoral performance out of practical education in academia-industry partnership such as by sharing information on the know-how etc. for practical education through industry-academia partnership including problem-solving-type learning or internship.
  - In public-and-private consortiums etc., share information on the needs of human resources in the AI/IT fields of the business community and strengthen efforts related to AI human resources development in university etc. Share information also on the points or cases, etc. that lead to compensation package etc. in enterprises etc. and promote learning among students or employees about the AI/IT fields.
  - Make studies on and give shape to a mechanism etc. for education through academia-industry partnership such as building of the system to inspire enterprises' cooperation on the education in academia-industry partnership and match universities and enterprises at the university consultative body or council for human resource development at specialized training colleges, in line with discussions in public-and-private consortiums.
- v) **Expanding the Range of Necessary AI Human Resources etc. Utilizing Recurrent Education etc. in University etc.**
- Significantly enhance recurrent education such as short-term, adult education program at universities or specialized training colleges, etc. or online courses utilizing the Open University of Japan or MOOCs, etc. and develop a system for conducting recurrent education in university etc. such as establishing the recurrent center etc., securing quality professional instructors including educational ability, or building collaboration between professional graduate schools and business community.
  - Professional Practical Training and Education Benefits to be administered to courses such as at professional university etc. Promote expansion of courses that are covered by benefits to have students acquire skills etc. required in the AI era in collaboration with “Brush up Program for Professional (BP)” at universities, “Special Course for Practical Vocational Training ” at specialized training colleges, or “Certification of Fourth Industrial Revolution Skills Courses” etc. in the AI/IT fields etc..
  - Work on “Cyber Defense Exercise with Recurrence (CYDER)” for information system officers in the government agencies, or work to develop young players or core human resources such as important industrial infrastructure with extensive information/control-related knowledge, as cyber security human resources. Complete the development program for network operation human resources with software/virtualization technologies in the IoT era by FY2019.

## 2-2. Labor Market Reform toward Optimal Human Resource Utilization

### (1) The main KPI progress status

**[KPI] 2020: Turnover Rate 9.0%**

=> 2016: 8.0%

**[KPI] (New) 2020: Rate of women of directors in listed companies 10%**

=> 2017: 3.7%

**[KPI] (New) 2020: Rate of women of managers in private companies 15%**

=> 2017: 10.9%

**[KPI] 2020: Rate of women who continued working before/after giving birth to the first child 55%**

=>2015: 53.1%

**[KPI] (New) 2020: Triple the number of enterprises that introduce telework as compared to FY2012**

=>2017: 13.9% (2012: 11.5%)

### (2) Policy challenges and objectives

Through the course of social implementation of “Society 5.0,” AI is able to replace some of the business as usual, while skills required to individuals will be dramatically sophisticated/specialized. To handle such change, we need to break away from internal labor market-oriented human resource utilization, promote optimal human resource utilization in the labor market as a whole, allowing all human resources to maximize their productivity in their work that suits themselves.

Therefore, we shall disseminate clarification of specific duties or abilities, etc. and mechanisms for fair evaluation / compensation package based on clarified duties or abilities accordingly and work to expand the stage for women, elderly people, foreigners, etc. The range of alternatives shall be expanded to allow individual human resources to select the workstyle depending on his/her lifestyle or life stage so that he/she can demonstrate maximum productivity.

Also, as popularization/progress of ICT expands new workstyles different from conventional “full-time employee” such as telework, crowdsourcing, auxiliary/concurrent business, the work rule shall be developed to bolster such trend.

In addition, we will go ahead with infrastructure building to promote independent career formation for human resources, which leads to optimal matching, such as “visualization” of jobs that exist in the labor market, required skills, or enhanced career consulting.

### (3) Details of new measures to be taken

#### i) Promotion of Diversity

##### (i) Promotion of Diversity Management

- Promote corporate governance reform etc. and strike a balance between diversity including gender and optimal size of the board of directors, to promote practice of diversity management that leads to mid-and-long-term corporate value. Also make amendments to “Diversity 2.0 Action Guide (compiled by the Study Group for Ideal Approaches to Diversity

Management (Diversity 2.0) in March 2017)” such as addition of information disclosure items promoting proactive dialogue between companies and investors etc., which will be reflected in the criteria for selecting the “Nadeshiko Brand” etc.

**(ii) Further Expansion of Success of Women in the Workplace**

- In line with the amendment etc. to Corporate Governance Code, promote the announcement of the status of female directors in listed companies and also status of utilization of the information regarding the success of women in ESG investment. Also, strengthen/enhance the female director development training and human resource bank for those who have completed the course, and study the mechanism for certification etc. of human resource development training in related ministries, to develop human resources for female directors.
- Consistently promote provision of childcare arrangements or securing of childcare human resources based on “Childcare Relief Plan .” Also, develop a new plan in the summer of 2018 such as promoting further expansion of clubs for after-school activities of children by the end of 2023.
- Get to work on the “review 3 years after the enforcement” of the Act on Promotion of Women’s Participation and Advancement in the Workplace based on its bylaw and draw a conclusion during FY2018. In the review, numerical target setting, expansion of information disclosure, or enhancement of incentives for enterprises depending on the status of efforts, etc. shall be considered with respect to the appointment of women in managerial positions, introduction of diverse and flexible workstyle, work and family-life balance, or support for career formation, etc.
- Toward the eradication of sexual harassment, work on the thorough performance of privacy protection for victims, strict action against offenders, implementation of training programs etc., and arrangement of inquiry counter etc., based on the “strengthening of sexual harassment countermeasures (approved by the Headquarters for Creating a Society in which All Women Shine on June 12th, 2018)” etc.
- Promote participation of men in childcare/housekeeping such as efforts to give men a sense of ownership over childcare, presentation of patterns for being around children, encouragement by companies to male employees to take childcare leave, to allow women to continue their career even after delivery and take comprehensive measures to rectify the current situation where the burden of childcare/housekeeping duties mainly fall on women.

**(iii) Promotion of the Elderly/Disabled, etc. Labor Force Participation**

- Work to enhance promotion of extension etc. of retirement in companies or support for reemployment in the job-reemployment office, and expand diverse choice of alternative employment through workstyles such as freelance not based on employment, including promotion of matching utilizing Silver Human Resources Centers. Also, consider the best approach to treat elderly people who keep working for the same company after retirement using continued employment system.
- Work to strengthen/enhance support depending on each and individual disabled person’s characteristics or build etc. models for workstyles utilizing ICT such as satellite office, to expand employment further or provide better working environment for the disabled, with the increase in statutory employment rate from April 2018.
- Conduct necessary study on "social farm" to promote employment of those with "difficulty in entering the workforce" such as the disabled, released prisoners, or needy people.

## **ii) Implementation of Workstyles Allowing Maximum Productivity**

### **(i) Rectifying Long Working Hours and Ensuring Health**

- Rectify long working hours such as through introduction of season designation of overtime cap or annual paid leave by users or popularization and promotion of interval regulations, in which workers are given a minimum amount of rest between working days Also support etc. SMEs required to secure human resources for workstyle reform.
- Promote enhancement of the industrial physician / occupational health functionality such as requiring business operators to provide industrial physicians with necessary information to appropriate carry out duties.

### **(ii) Securing Fair Treatment Regardless of Employment Status**

- Develop provisions to eliminate unreasonable differences in treatment through amendment of the Part-Time Workers Act and Worker Dispatching Act, etc., and enhance etc. accountability for treatment of workers, to secure fair treatment regardless of employment status.

### **(iii) Minimum Wage Increase**

- Raise the minimum wage with the annual rate of 3%, with due considerations also to the nominal GDP growth rate, aiming to reach the nationwide weighted average of 1,000 yen. Support for increase in wages/productivity such as promotion of capital investment etc. contributing to productivity growth in SMEs etc., and promote seminars etc. on greater profitability for life hygiene-related businesses.

### **(iv) Expansion of Diverse Selection/Recruitment Opportunities**

- Promote penetration of the policies based on the Youth Employment Promotion Act or "policies for promoting acceptance of people changing career / seeking reemployment regardless of age" in the financial circles, and encourage enterprises to implement on efforts based on the policies such as introduction of year-round or autumn recruitment with due considerations to new graduates' individual circumstances and acceptance of people changing career / seeking reemployment.
- In addition, encourage large enterprises etc. with regional hubs where new graduates etc. can build mid-and-long-term career to introduce recruitment mechanisms enabling new graduates etc. to envision future career prospects in the desired region such as a working system with a predefined region limitation, in line with the policies based on the Youth Employment Promotion Act.
- Rebuild subsidies for supporting labor movement etc. such as expansion of subsidies for enterprises recruiting middle-aged and elderly people, focusing on bolstering career advancement/change.
- Develop labor intermediation support institutions etc. as environmental improvement facilitating labor movement from large enterprises etc. toward ensuring core human resources at SMEs etc..

### **(v) Promotion of Diverse and Flexible Workstyle**

- Sort out evaluation or treatment according to duties or abilities, etc. and the best form of employment security in line with the latest status of utilization, and study on efforts such as reflection to "Consideration for Employment Management" designated as the reference material by both management and labor or development of the model employment regulation, to promote utilization of "diverse full-time employee" with limited job types, regions etc. as arrangements etc. to accept professional human resources in companies.

- Promote the management's reform awareness such as by disseminating the effect that telework brings on the improvement growth through "TELEWORKDAY ," promoting appropriate labor time management toward popularization of telework.
- Seek to disseminate the guidelines and amended "model employment regulation" toward the promotion of auxiliary/concurrent business, conduct necessary study at the Labor Policy Council etc. on the best form etc. of workable labor time management or workers' accident compensation in line with the change etc. of workstyle, with due considerations also to ensuring workers' health or the predictability of enterprises, and draw a rapid conclusion.
- For national government employees, encourage the environmental improvement for promoting smooth operation of the system regarding concurrent business to conduct public-interest activities etc.
- Conduct necessary mid-and-long-term study at the Labor Policy Council etc. including the necessity of legal protection, on issues such as clarifying rules such as determination of tactual coverage, ensuring the contract fulfillment, appropriate compensation, upskilling or career advancement regarding workstyle not based on employment relationship, such as freelance or crowdsourcing, also drawing on legislative trends etc. in foreign countries.
- Fair Trade Commission shall collaborate with related government ministries and agencies to promote dissemination of the information that acts unjustly depriving the contractor of appropriate income such as excessive obligation of confidentiality, unreasonably low compensation, reception refusal / use restriction, etc. of deliverables could be regarded as potential antitrust hurdle pursuant to "Abuse of Superior Bargaining Position" etc. in the event that an enterprise orders anyone who works as an individual (freelance etc.) to industry organizations.
- Establish the advanced professional system to support workers to ensure their health, work self-sufficiently, and maximize their creativity.

**(vi) Support for Balance of Medical Treatment and Work**

- Promote the enhancement of enterprises and medical institutions' know-how to support patients such as by developing human resources to serve as a hub in the collaboration between primary physician and enterprise to provide considerate support for patients and preparing manuals for enterprises / medical institutions aiming at balancing treatment of sickness and work, and promote building etc. of the consultation support system in the region for patients etc. with cancer or intractable diseases.

**iii) Building Infrastructure Supporting Independent Career Formation in the Labor Market**

**(i) "Visualization" of the Labor Market through Establishment etc. of the Japanese Version of O-NET**

- Promote necessary study toward the operation of "Japanese Version of O-NET," the occupational information services website, from 2020 on its specific design/development such as data collection, analysis, or update, user interface, or linkage with the "comprehensive information services website" etc., gaining insight from experts in the AI/data fields and eyeing the possibility of data interaction with private human resources businesses or enterprises, etc. or utilization of AI / big data.
- Develop a vocational assessment tool through collection/analysis on job cards or recruitment information, etc., collaborating with private human resources businesses, to clarify abilities

required in white-color posts (knowledge, skills, competency, etc.) for effective matching etc.

**(ii) Support for Independent Career Formation**

- Work to popularize the mechanism to be able to receive career counseling inside/outside the company at the turning point of age, years of service, official position, etc., promote utilization of job cards, enhance the career consultants' qualifications, and promote the environmental improvement that contributes to relearning such as support for implementation of long-term leave systems for education and training, to allow workers to obtain opportunities for "awareness" for independent career formation.
- Support career advancement tailored to life stage through public vocational training or Training and Education Benefits System, such as women's return to work after having broken in their career due to childbirth/childcare, etc., career advancement from non-regular employment, relearning at university / specialized training college, by senior high-school graduates who got a job.

**(iii) Redesigning Corporate Human Resource Function Utilizing HR Technology**

- Study the direction of the "human resource functionality" operating with management strategy, and present and review measures to popularize and support the direction or examples, etc. of HR technology utilization useful to implement such functionality, to allow enterprises to address various business challenges such as workstyle reform, productivity growth, human resource development.

**(iv) Study on Monetary Relief System When Dismissal Is Nullified**

- Conduct professional study as soon as possible on legal technicality-related issues on monetary relief system when dismissal is nullified, draw a final conclusion at Labor Policy Council also in line with outcomes of the study, and take required actions system-wise accordingly.

## **2-3. Promotion of active participation by highly-skilled foreign professionals**

### **(1) The main KPI progress status**

**[KPI] Aim to recognize 10,000 highly-skilled foreign professionals by the end of 2020 and further recognize 20,000 highly-skilled foreign professionals by the end of 2022.**

=>A total of 10,572 foreign nationals have been recognized as highly-skilled foreign professionals since the introduction of the Point-based System (May 2012) until December 2017.

**[KPI] The number of foreign students' acceptance will be doubled from 140,000 to 300,000 by 2020 (implementation of "300,000 Foreign Students Plan").**

=>The number of foreign students at higher educational institutions such as universities / graduate schools, etc. in Japan is 188,384 (as of May 2017)

\* If 78,658 foreign students enrolled in Japanese language schools for learning Japanese are added, the number of foreign students comes to 267,042 (as of May 2017).

### **(2) Policy challenges and objectives**

With tightening worldwide competition for highly-skilled human resources under the fourth Industrial Revolution, it is essential to promote the acceptance of foreign professionals with advanced knowledge and skills from overseas. Especially, in order to improve the employment ratio in Japan of the excellent foreign students who are the "eggs" of the highly-skilled foreign professionals, the Government will establish the system / structure which make the consistent follow-up from the invitation to the employment based on the needs both from the students and from the industrial sector.

Also, workforce shortages particularly in small and medium enterprises and small-scale entrepreneurs (SMEs) is intensifying and may prevent sustainability of the economic and social base in Japan. To solve this problem, the government will continuously and strongly promote productivity improvement through capital investment, technical innovation, and work -style reform, etc. and securing human resources domestically. Additionally, it is necessary to construct a system that enables wide acceptance that foreign human resources who have a certain level of professional knowledge and skills can contribute immediately, by eliminating the traditional limitation of only accepting foreign human resources having special professional and technical skills.

In conjunction with these approaches, the Government will promote the cross-government environmental improvement to accept foreigners to make living and working conditions or immigration and residence control systems, etc. in Japan attractive to foreign professionals pursuing employment or starting up a business outside their countries.

### **(3) Specific measures to be newly taken**

#### **i) Promotion to accept highly-skilled foreign professionals**

##### **(i) Cross-Government approaches to promote the employment of foreign students etc. in Japan**

A) Organic coordination of the government policies to accept foreign professionals such as foreign students

To promote the acceptance of foreign professionals such as foreign students based on the Japanese companies' needs, the Government will deepen the partnership among the related government ministries and agencies and build the system for integrated implementation of the following various policies etc. by the related ministries and agencies:

- The Government will build the system to provide foreign students Japanese education before immigration in close coordination with the Embassies, overseas offices such as Japan External Trade Organization (JETRO), Japan Foundation, Japan Student Services Organization (JASSO) and overseas bases of universities in Japan, to comprehensively transmit the attractiveness of studying in Japan including career paths such as educational research at universities etc., employment after graduation, and then to send over foreign students into Japan with a comprehensive set of measures.
- In coordination with universities, companies and local governments, etc., the Government will build a mechanism to have foreign students acquire professional education based on the needs of SMEs in the region and skills required to find employment in Japanese companies such as Japanese business language / career education in college, through utilization of the experts having seasoned knowledge about the situation with both foreign students and SMEs and to encourage their employment in Japanese companies through internship, matching services, etc. In addition, the Government will promote matching the foreign students with the Japanese companies by increasing the number of employment service centers for foreigners in order to provide a match-making opportunity for foreign students and Japanese companies.

B) Provision of easy-to-understand information transmission and one-stop services through JETRO's Platform

JETRO's platform will be launched in FY2018 and go into full-scale operation from FY2019, as a mechanism to promote organic coordination of each policy in coordination with related government ministries and agencies.

- The government will build a portal site to transmit a series of information such as life/working environment in Japan, Japan's immigration control system, SMEs interested in employment of highly-skilled foreign professionals and universities where foreign students seeking employment in Japan are enrolled along with miscellaneous event information such as internship, job fairs, seminars conducted by the related ministries and agencies in an easy-to-understand manner from the perspective of both foreigners and Japanese companies after summarizing those information on JETRO.
- The Government will provide one-stop services to reply to inquiries on employment from Japanese companies, highly-skilled foreign professionals, and foreign students in an integrated fashion.
- The Government will provide accompanying style support such as SMEs for employment procedures or problem-solving, developing working environment allowing foreign professionals to perform their talents, supporting them to get settled in Japan, utilizing experts with seasoned knowledge of highly skilled foreign professionals.

**(ii) Improvement of Immigration/Residence Control System, etc. toward Expanded Acceptance of Highly Skilled Foreign Professionals**

- For further expansion of the acceptance of foreign entrepreneurs, the Government will initiate the "Start-up Program (provisional name)" in 2018 to take measures in immigration control system-wise such as granting a period of stay up to 1 year for preparation to start a

business as well as supporting entrepreneurial activity such as confirmation of entrepreneurial activity status, implementation of control/support measures including building etc. of consulting system.

- To support foreign students to find employment in Japan, the Government will promote simplification of documents to be submitted for the application when changing the status of residence for foreign students who got a job in a company meeting certain standards and provide consulting service dedicated for supporting foreign students to find employment at Regional Immigration Bureaus to handle various preliminary consultations related to the application to change the status of residence. In addition, the Government will also add more universities that are qualified to the special addition in the “Points-Based System for highly-skilled foreign professionals.”

## **ii) Acceptance of new human resources from overseas**

The Government will expand the current system and create a new status of residence to accept more foreign human resources who have a certain level of professional and technical skills that can contribute immediately, focusing on the areas that really need foreign human resources, with the understanding that such actions are not an immigration policy:

### **A) Accepting industries**

Accepting foreign human resources with the new status of residence will be allowed for industries that need foreign human resources for its survival and development even after conducting measures for improving the productivity and recruiting domestic people (such as promotion of labor force participation by women and the elderly and measures for improving employee treatment based on workforce shortages).

### **B) Government basic policy and acceptance policy in each industry**

The government will establish a cross-industrial policy for accepting foreign human resources as a government basic policy in the Cabinet, and ministries responsible for regulations such as the Ministry of Justice and those for operations will determine acceptance policy by industry in light of the characteristics of each industry, based on which foreign human resources are accepted.

### **C) Technical level and the level of Japanese proficiency required for foreign human resources**

When issuing the new status of residence, the required level of technical skills for foreign human resources who are accepted under the new status of residence is knowledge and skills that are necessary for properly working in the relevant industry that is checked by an examination determined by the ministries and agencies with jurisdiction over the work. Basically, the level of Japanese proficiency should be checked by the test such as the Japanese Language Proficiency Test to ensure that the person can speak Japanese sufficiently to lead a daily life without problems in Japan in principle, and further criteria is determined by each industry to account for the Japanese proficiency level required in such industry. However, foreign people who completed three-year technical internare are exempted from the above-mentioned examination and deemed to have a sufficient level of technical skills and Japanese proficiency.

### **D) Measures to gain talented foreign human resources**

In order to have talented foreign people work in Japan, it is necessary to take measures for preventing malicious intermediators that force foreign people who seek work in Japan to pay a deposit. Outside of Japan, the government will disseminate information on foreign human resources acceptance, enhancing Japanese language education in foreign countries, and make

requests to foreign countries at the government level as necessary, for the purpose of ensuring that skilled foreign human resources will be sent from foreign countries.

E) Support to foreign workers and management of working visa status

For protecting and smoothly accepting new foreign human resources, the government will conduct appropriate management of foreign human resources who reside in Japan and their employment conditions. The relevant company or a registration support organization authorized by the minister of Justice is responsible for supporting foreign human resources in areas such as living guidance, accommodation, Japanese language study for daily life, providing consultations and responding to complaints, and providing information on various administrative procedures. At the time of giving a residency permit and the status of residence, it is necessary to check that a salary equivalent to that of an equivalent Japanese worker is ensured, which is also necessary for people entering and living in Japan with other types of working visa. Additionally, as a labor administrative effort, the government will provide consultation services and instructions for proper employment management pursuant to labor laws and regulations. To take these actions, the government will enhance the status of residence management system, etc. that enables effective and detailed residence status management and employment management.

F) Accompanying Family Members and Upper Limit for Period of Stay

As the above-mentioned policy is different from the immigration policy, the period of stay for the foreign human resources under the new status of residence is limited to a total of five years, and no family members are allowed to accompany the worker in principle. However, the government will consider a system to upgrade the visa status. For example, if a foreign human resource who is proved to have a higher professional skill such as by passing a certain examination during his/her stay with the new status of residence, such a foreign human resource is qualified to switch his/her visa status to the current professional/technical status of residence that has no limit of the extension of the period of stay and allows his/her family members to reside in Japan.

**iii) Improvement of the environment to accept foreigners**

**(i) Improvement of the living environment**

A) Enhancement of Japanese Teaching Activities for Foreign Children and Pupils

- The Government will develop and promote the “model program” summarizing training contents etc. to be implemented by Education Board / universities, etc. to encourage improvement in expertise among teaching/supporting staff in charge of Japanese teaching / guidance in daily life, etc.
- The Government will promote smooth communication with foreign children/pupils or their guardians through promotion of ICT utilization such as multilingual translation system for meticulous school counseling or enhanced Japanese teaching activity, etc.

B) Improvement of Japanese language education as a Whole

- To raise Japanese language education level through improvement in the quality of Japanese teachers, the Government will develop and promote the programs to be conducted by Japanese teacher training institutions as well as considering the establishment of qualifications to prove skills as a Japanese teacher.
- The Government will get to work on the development of ICT instructional material in FY2018 for foreigners living in the region with difficulty in providing a Japanese classroom, allowing self-teaching Japanese according to life scenes, and promptly provide the material

from FY2019.

**(ii) Improvement of the working environment**

- The Government will promote a list of successful examples that will serve as an index for employment management improvement efforts leading to highly-skilled foreign professionals' exhibition of their expertise or fair evaluation/treatment, encouraging development of attractive working environment.
- The Government will promote improvement in the employment of highly-skilled foreign professionals through consultation on human resource / labor management, etc. by advisors for foreigner employment management and experts for the "Consortium for New Export Nation".

**(iii) Strengthening residence control infrastructure for facilitating/expending of procedures for the status of residence**

A) Facilitating/expending of procedures for the status of residence

- The Government will initiate online applications for procedures to acquire the status of residence from FY2018, allowing sub-organs properly employing foreigner(s) and fulfilling the obligation to give the Report on the Employment Situations of Foreigners etc. to perform the procedure on behalf of the employed foreigner.
- The Ministry of Justice will identify the status of foreign nationals residing in Japan (the working status, changes of status, etc.) accurately and definitely through information sharing among governmental organizations utilizing various identification numbers and consider an appropriate way of the system to further reduce the burden of application procedures such as eliminating the necessity of submission of miscellaneous certificates currently required for application procedures to acquire the status of residence.

B) Strengthening residence control infrastructure

- From the summer of FY2018, the Government will initiate the mechanism allowing Ministry of Justice and the Ministry of Health, Labor and Welfare to share information between them and have business operators steadily fulfill the obligation to give the Report on the Employment Situations of Foreigners in the event that the employed foreigner's information identified by the Ministry of Justice does not accord with the information on notification of foreign human resources' employment status identified by the Ministry of Health, Labor and Welfare, or a business operator does not apparently fulfill the obligation to give the Report on the Employment Situations of Foreigners. Also, the Government will consider the utilization of various identification numbers to promote enhancement of residence control infrastructure such as further enhancement of thorough identification and take necessary measures according to the conclusion.
- The Government will consider the mechanism to accurately identify the working status related to accepted foreign professionals per business category / profession / status of residence, etc. and draw a conclusion during.

**(iv) Radical overhaul of comprehensive countermeasures**

In addition to accepting more foreign human resources under the above-mentioned measures, as it is expected that the number of foreign people will further increase in the future, it is important to develop a living environment for foreign people who live and work in Japan, such as providing a life-issue consultation service in multiple languages and enhancing Japanese language education. For this purpose, the government will thoroughly review the Comprehensive

Measures for Foreign People Leading a Daily Life in Japan that was established in 2006 and instruct the Ministry of Justice, which is responsible for the overall arrangement function and acts as a control tower for collaboration with other related ministries and agencies and local governments. Through such actions to prepare for accepting more foreign people, the government will strive to realize a society where the human rights of foreign people are protected and in which they can comfortably coexist.

In collaboration between the Ministry of Justice, the Ministry of Health, Labour and Welfare, and local governments, the government will enhance the visa status management system and eliminate people who stay in Japan with illegal/fake residence status or abuse/misuse the immigrant qualification system.

### **3. University Reform Producing Innovation and Industry-Academia-Government Collaboration / Venture Support**

#### **3-1. Building Independent Innovation Ecosystem**

##### **(1) The main KPI progress status**

**[KPI] Aim at tripling the investment by enterprises in universities, national R&D agency, etc. by FY2025.**

=>124.4 billion yen (FY2016)

**[KPI] Raise the public-private investment in R&D against GDP to 4% or more by FY2020.**

=>3.42% (FY2016)

##### **(2) Policy challenges and objectives**

As economic structure changes from capital intensive economy to knowledge intensive economy through development of the Fourth Industrial Revolution, the role of universities and national R&D institution, which serve as a hub for amassing human resources and knowledge, to create innovation is increasing importance.

Though the past reforms enhanced the governance of universities and creation of innovation, it is also necessary that the industry, academia, and the government cooperate in building the innovation ecosystem in which the outcomes of innovation would be invested in the next research and development to compete on equal footing with the world.

To this end, universities are encouraged to deploy unique research/education activities by concentrating investment in the fields that the universities have strengths, under the governance based on the leadership of presidents, pillars of the reform, and to accelerate transformation into management to attract and obtain private capitals by promoting the “visualization” of such efforts. The industry, academia and government are to liaise to promote these efforts in light of “Integrated Innovation Strategy (approved in the cabinet meeting on June 15th, 2018)” summarized by the Council for Science and Technology Policy / Innovation, Cabinet Office, as the command center.

##### **(3) Details of New Measures to Be Taken**

###### **i) Creation of Knowledge Intensive Industry through University Reform etc.**

###### **(i) Improvement of University Management Environment**

- The University Governance Code will be developed by FY2019 including the division of roles between President (Chief Executive Officer) and Provost (Chief Education and Learning Officer) in research universities, revitalization of deliberations at management council, formation of management career path, and it will provide guidelines for implementing governance to expedite transparent/fair and yet prompt/accurate decision-making in line with university’s autonomy/characteristics.
- To extensively incorporate the voice from outside in university management and to accelerate the incorporation of methods used in the private sector, the government will promote formulation of rules such as amendment to the National University Corporation Act toward appointment of several external directors with business and other background. Also, the government will establish the “industry-academia-government university reform support

forum (tentative name)” from FY2019 as a place to enhance/organize the horizontal cooperation among concerned parties involved in university reform/management and provide information / exchange opinions on management issues or solutions.

- The government will carry out tasks with an eye on introduction to the next ordinary diet session of a bill to amend the National University Corporation Act for one-institution multi-university system in national university management and the division of roles between management and education/learning to reinforce business bases and promote efficient management.
- To national universities centering on research universities, according to securing private funds and such, the government will study within fiscal 2018 about incentive schemes distribution of the operating grants through evaluation, introduce experimentally in no time.
- The government will study on the mechanism during FY2018 for the incentives such as distribution of management expense grants through evaluation depending on factors such as the private capital obtained, and experimentally introduce the mechanism as soon as possible.
- The government will reinforce the function to create innovation at national R&D institutions, through promotion of collaboration with private enterprises using an organization to support the utilization of research outcomes or expansion of the scope and providers of investment toward the utilization of research outcomes.

**(ii) Improvement in Mobility of Human Resources / Creation of Opportunities for Youth to Be Active**

- The government will promote personnel and remuneration management reforms to increase mobility of human resources and creation of opportunities for youths; by implementing step-by-step effort toward full introduction of annual salary system for teaching staffs of national universities based on appropriate and effective evaluation and by developing a mechanism<sup>5</sup> where the prolongation of the period of service has no effect on advantageous treatment for senior teaching staffs. In addition, proactively utilize the cross-appointment system making a flexible use of private capital through measures such as the incentive in terms of salary.

**(iii) Improvement in Research Productivity**

- The government will get to work on the integrated review on competitive research grants from FY2019 to promote improvement in research productivity.
- More focus on categories related to young researchers and promote challenging research that contributes to pioneer emerging/interdisciplinary research areas regarding Japan Society for the Promotion of Science (JSPS)’s Grants-in-Aid for Scientific Research (KAKENHI) and Japan Science and Technology Agency (JST)’s Strategic Basic Research Programs.
  - Also study introduction or enhancement of mechanisms focusing on development of or support for young researchers regarding other competitive research expenses provided by each ministry and agency.
  - In addition, sort out concepts during FY2018 regarding requirements when young researchers who are employed using project-based competitive research expense conduct research activities other than the relevant project.

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<sup>5</sup> For instance, review on the best form of retirement allowance, introduction of fixed-term employment system, review on the salary level reflecting the examination regarding raising of the retirement age for national government employees, and so forth

- The government will implement the plan to accelerate the improvement of research capacity from FY2019 which contribute to; promoting concentrated devotion of resources and system reforms towards programs with high research productivity, including pioneering of emerging/interdisciplinary research areas or enhancement of challenging research, with a focus on young researchers; strengthening overseas special research fellows program for young researchers, which contributes to improvement of research capacity and building of researchers network; or enhancing joint use and joint research system.
- The government will ensure young researchers a place for activities and improvement of research management ability through policy measures such as implementation of a program to develop distinguished research fellows so that young researchers can devote themselves to research activities to build their own career in the competitive environment.
- The government will promote development / common use of cutting-edge research facilities such as high-performance computer facilities, synchrotron radiation facility, radiation facilities with neutron rays, and development of the post-K computer, to support industry-academia-government collaboration and to provide infrastructure for dramatic productivity improvement. The government will deploy a system within research organizations to effectively share research facilities/instruments possessed by them in up to 100 organizations by the end of 2020, and build a network for mutual utilization of research instrument combining several universities, higher professional schools, or public R&D institution.

**(iv) Borderless Challenges (Globalization, Large-Scaled Industry-Academia Collaboration)**

- The government will develop guidelines related to collaboration with foreign enterprises during FY2019 at the Council for Science, Technology and Innovation, regarding obtainment of funds from overseas or collaborative research between Japanese universities / national R&D institution and foreign enterprises, which contribute to an increase in foreign funds, with due considerations to security export control.
- The government will promote the development of the open innovation center and “visualization” of technological seeds possessed by universities, to proceed with enhancement of industry-academia collaborative management system. In addition, start efforts aiming at building of the open innovation network from FY2019 such as promoting the network for universities, the business community, and TLO.
- The government will promote establishment of a team producing businesses featuring core characteristic technologies at regional universities, enhancement of intellectual property strategy and optimal technology transfer. Promote creation of new industries and formation of innovation ecosystem in the region, with participation of various entities under the local government leadership, through regional social problem solving with design thinking.
- The government will promote internationalization of universities through supports for studying abroad, promotion of the acceptance of foreign students/researchers, or strategic information transmission. Also, in the distinguished graduate school program starting from FY2018, promote development of highly skilled doctoral talents playing key roles in “Society 5.0”, through joint research with enterprises or top universities abroad, utilizing external funds from enterprises. in addition to prioritizing resource within universities.
- The government will promote further sophistication/globalization of education at higher professional schools from FY2019, which contributes to the development of engineers in the

fields such as IoT, robotics, cybersecurity, which would bear the “Society 5.0” era, through complementary collaboration with universities based on the uniqueness in of engineer education.

- The government will reinforce the fact book for comparing efforts in industry-academia-government collaboration at universities across Japan in light of “Guidelines for Enhancement of Joint Research through Industry-Academia-Government Collaboration (developed by the interactive conference for promoting innovation through industry-academia-government collaboration on November 30th, 2016)” in FY2018, and consider measures to expand joint research by the end of FY2018 such as matching between universities and the business community.

## **ii) Concentrated Investment in the Fields where Japan Has Strengths**

- The government will continue steady promotion of the Cross-ministerial Strategic Innovation Promotion Program (SIP) which aspire initiatives from R&D to social implementation under a strategy with a comprehensive set of measures, with an eye on fundamental research, practical use and commercialization, toward the implementation of “Society 5.0,” and in full coordination with system reform. The government also will promote Public/Private R&D Investment Strategic Expansion Program (PRISM) which accelerate research in the fields attracting investment from private capitals. In addition, the government will promote social implementation of the outcomes and horizontal application of the R&D management methodologies of these programs to the related government ministries and agencies.
- The government will promote high-risk, high-impact R&D proactively that produce intermitted innovations, triggering private investments, challenging new attempts, to contribute to productivity revolution through creation of new values or services.
- The government will steadily promote formation of the top world-level research centers serving as a hub of global brain circulation and gathering human resources active in the front lines in the world, or the “Innovation Platform” aiming at the implementation of “Society 5.0” through the promotion of information science and technology, toward creation of world-leading economic/social values, by maximizing Japan’s strengths in fundamental scientific capability and human resource foundation.
- Research bases or research infrastructure, aiming at the formation of knowledge intensive society, will be developed utilizing globally dominant academic ICT infrastructure and information accumulated in the past, and mobilizing internal/external top researchers and resources beyond the industry-academia-government framework and under the organizations’ top management, through building of the ecosystem for innovation ventures.
- The high brightness 3GeV-class radiation light source for soft X-ray (next-generation synchrotron radiation facilities), which will contribute to strengthened ability to research and productivity growth in Japan and will be used not only for academic research but also by industry, will be developed through regional public-private partnership including financial contribution.
- Strategic efforts such as building of a base to enhance industry-academia-government collaboration will be promoted to contribute to productivity revolution, on quantum science and technology which attract expanded R&D investment worldwide as a field to bring about disruptive innovation to society/economy.

- The government will develop and steadily implement a new R&D strategy on the fields of nanotechnology and materials, which Japan has an advantage in, and which support industrial bases, in light of domestic and international movements and the paradigm shift through development of cyber technology, robotics technology, by the autumn of FY2018.
- The government will develop AI technology strategy action plan by the summer of FY2018. The plan is to clarify measures to promote social implementation of technology development combining AI technology with the fields Japan has an advantage such as implementation technology of sensors or real data including health/medical/nursing care and manufacturing through industry-academia-government collaboration, and AI basic technology to overcome weakness of the current AI technology such as AI learning from the quality, minimum amount of data.
- The government will draw a conclusion during FY2018 on development measures in the field of information communication technologies such as IoT network basic technology and AI network optimal control technology, in light of discussions on new research support measures to attract private R&D investment. The measures may include the ones to promote development of utilization technology in parallel with the basic technology and new systems to utilize vitality of the private sector such as contest type R&D for the achievement of a challenging theme/goal.

### 3-2. Enhancement of Venture Support

#### (1) The main KPI progress status

**[KPI] Aim at doubling VC investment amount in venture enterprises to Nominal GDP by 2022**

=>3-Month Average from 2014 to 2016: 0.025%

**[KPI] (New) Create 20 unlisted venture enterprises (unicorn<sup>6</sup>) with enterprise value or market cap of 1 billion dollars or more or listed venture enterprises<sup>7</sup> by 2023**

#### (2) Policy challenges and objectives

Although venture enterprises playing a key role in innovation are an important factor in social implementation of “Society 5.0,” the number of unicorn businesses in Japan remains low with tightening competition for venture ecosystems among countries/regions.

Enterprises leading Japanese economy must be created by strictly focusing policy resources on youths who produce promising ventures and candidate entrepreneurs capable of winning at the world level, driven by a sense of crisis that Japan could be left behind the global growth and now is the time to concentrate the wisdom to produce venture enterprises growing globally.

Therefore, we will accelerate building of Japanese venture ecosystem and produce global venture enterprises, by utilizing Japan’s strength and mobilizing every possible policy through the unified public-private efforts.

#### (3) Details of new measures to be taken

##### i) Creation/Development of Globally Successful Venture Enterprises

- In order to create globally successful venture enterprises, the government will collaborate with JETRO and NEDO to initiate the public-private intensive program (J-Startup) for certified startup enterprises such as overseas expansion support, and expand the participant ministries and agencies to the program during FY2018. Also the government will promote supports for the development of entrepreneurs/startups and measure to attract entrepreneurs from overseas by applying ecosystems abroad such as the one in Silicon Valley.
- To attract foreign entrepreneurs, the government will take measures related to the immigration control system such as granting foreign entrepreneurs up to 1 year of stay for preparation to start a business based on “startup program (tentative name)” supporting entrepreneurial activity, and commence operations during 2018.

##### ii) Innovation and Business Launch

- The government will promote improvement of earning structure of public-private investment funds through reinforcement of collaboration among governmental circles and the funds, or merge of the funds, as well as commence studies on mechanisms to support challenges to a concept difficult to implement.

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<sup>6</sup> Number of Unicorn Enterprises 114 in United States, 62 in China (data at the end of February, 2018, CB Insights)

<sup>7</sup> Will target enterprises not yet established or less than 10 years since establishment at the beginning of FY2018

- The government will collaborate with related ministries and agencies to expand the targeted policies under the “venture support platform” that reduce application cost for ventures for venture-related policies across the ministries by setting an integrated consultation window, during FY2018.
- Strengthen efforts to promote utilization of R&D oriented SMEs / venture enterprises in public procurement in light of specific needs of government institutions, and develop guidelines for ministries and agencies during FY2018 to promote introduction of advanced technology or utilization of SMEs / venture enterprises government-wide.
- To reflux people, goods, money, and knowledge possessed by large enterprises or venture capitals (VCs) to R&D type ventures and set a voluntary virtuous circle in place, the government will build mechanisms to promote their collaboration, tie-up and joint research. Specifically, support financially the commercial development and support launch/growth of R&D type ventures through measures such as provision of business guidance by experts at VCs.
- In line with the shortage of risk money for innovation, the government will promote supply of growth fund at home and abroad, by enhancing of risk money supply through investment business at Development Bank of Japan or by establishing new funds in Innovation Network Corporation of Japan based on the investment policy that will be decided by autumn of FY2018. Especially, the government will enhance efforts to promote circulation of funds from urban areas to rural areas by supporting building of innovation ecosystem.
- The government will promote facilitation of fund procurement for university-oriented ventures including the ones at pre-foundation phases through support by gap funding or utilization of license with stock acquisition rights by universities.
- The government will build a system to match and support candidate entrepreneurs with no technology seeds and researchers with technology seeds in a timely manner.
- In order for R&D venture enterprises including ones for drug discovery and biotechnology, which lack capitals at the beginning, to be valued in the emerging markets from a mid and long-term point of view and to become successful examples, the government will provide these venture enterprises befor/after listing opportunities to transmit information to domestic and overseas institutional investors. Furthermore, the government will analyze the condition of emerging markets to support the healthy growth of emerging companies in the current fiscal year.
- The government will initiate “ICT Startup Challenge (tentative name)” from FY2019 for sequential supports for challenges through over from discovery/development of seeds technology to their commercialization and global expansion in the ICT fields. Specifically, the government will promote programs such as “異能 vation” (pronounced “inno-vation”, which supports challenges to disruptive technology that generates global innovation ) with the cooperation of private sector to enhance team matching and mentoring, and to support bridging a valley of death.
- The government will develop the system by the autumn of FY2018 to make it a general rule to notify the results of primary examination for patent within a month (“super-early examination”) for venture enterprises’, and commence efforts to support acquisition of easy-to-use rights for venture enterprises by, conducting interviews to allow direct face-to-face communication with the examiner.
- From 2018, supports will be provided to venture enterprises at the early stage of the

entrepreneurial process in building an appropriate intellectual property strategy tailored to venture business by a team of experts with experiences in supporting venture enterprises.

**iii) Creation of New Industries**

- The government will develop top talents leading software development in the quantum computer era, aiming at creation of new technologies/markets from Japan, and establish the several-year research support system for young researchers engaged in fundamental research etc. primarily in the IT/data fields to produce next disruptive innovation in AI or big data.

#### 4. Intellectual Property / Standardization Strategy

##### (1) The main KPI progress status

**[KPI] Shorten the time required to acquire patent rights in half over the next 10 years (by 2023) to 14 months on average.**

=> The average for FY2016 was 14.6 months

**[KPI] Have the ratio of patent applications submitted by SMEs to be approx. 15% by FY2019.**

=> The actual result in FY2015 was 15%

**[KPI] Standardize 100 excellent technologies and products from SMEs and medium-sized companies by 2020.**

=> The actual results until May,2018 were 12 cases

##### (2) Policy challenges and objectives

The progress of utilization of IoT, big data, AI, etc. necessitates new intellectual property strategy based on pro-innovation strategy self-producing desirable change not only promptly adapting to the change of time.

To this end, we will develop a new intellectual property strategy vision, and based on the vision, promote development of human resources / businesses tailored to the age to come, new challenges / creation activities, and designing of mechanisms in new fields.

##### (3) Details of new measures to be taken

- To implement economic growth in the “Society 5.0” era thorough utilization of data or AI, approve “Intellectual Property Promotion Plan” every year based on “Intellectual Property Strategy Vision (determined by Intellectual Property Strategy Headquarters on June 12th, 2018)” presenting mid- and long-term outlook for society and the best form of intellectual property system, and promote intellectual property / standardization strategy.
- Study the best form of or measures to encourage the system that contributes to “design management” including reviews on legal systems related to the design system and other intellectual property rights from the perspective of encouragement of “design management” to promote social reform (innovation) through new technologies such as IoT, AI, big data, and protection etc. of design that contributes to brand formation, and take necessary measures.
- Promote efforts for enterprises to evaluate the value of intellectual property and envision future business through popularization of "Management Design Sheet (Intellectual Property Strategy Headquarters on June 12th, 2018 on May 9th, 2018)" etc. and promotion of utilization in the report for investors or business performance evaluation etc. by financial institutions.
- Take necessary measures such as development of guidelines, popularization of / enlightenment for copyright, and development and promotion of licensing environment, to develop appropriate law application environment based on the development of flexible clauses restricting the user’s rights in the Copyright Act.
- Take necessary measures such as development of guidelines, popularization of /

enlightenment for the Unfair Competition Prevention Act to develop appropriate law application environment based on the development such as establishment of prohibition of illegal acquisition etc. of data in the Unfair Competition Prevention Act.

- Enhance support for private international standardization activities and rule-makings, and promote study on the best form of the command center function (CSO (Chief Standardization Officer) of the government), and study the best form of international standardization to disseminate "Society 5.0" as Japan's initiative to the international society through public-private collaboration.
- Study measures including the best form of necessary legislation, national copyright education, or website blocking, besides expanded distribution of the regular edition, based on "Emergency Measures against Piracy Sites on the Internet (determined by Intellectual Property Strategy Headquarters / Ministerial Meeting Concerning Measures Against Crime on April 13th, 2018)."

## **[2] Bald Regulations / System Reform**

### **1. Utilization of Sandbox System and Conversion from Vertically Segmented Regulation /Rule-Makings Tailored to Emergence of Platformer Type Business /Best Form of Competition Policies**

#### **(1) The main KPI progress status**

**[KPI] (New) Create 20 unlisted venture enterprises (unicorn) with enterprise value or market cap of 1 billion dollars or more or listed venture enterprises by 2023 [Mentioned repeatedly]**

#### **(2) Policy challenges and objectives**

Dramatically improve productivity by early implementation for practical use of innovative technologies or business models including AI / IoT / big data / blockchain and incessant creation of innovative products/services.

To this end, promote the smooth introduction of the system for demonstration of new technology etc. (so-called "regulatory sandboxes") to encourage business activities using such new technologies or business models, based on the Productivity Growth Strengthening Act.

Also, promote cross-sectional system reform of mechanisms like so-called industry laws based on the vertical segmented way of thinking, reinterpreting the system with a novel idea focusing on services or functions, as innovative businesses beyond conventional industry classifications emerge one after the other, with an eye on utilization of the regulatory "sandboxes."

In addition, conduct study on the best form of so-called platform business operators playing a significant role in the progress of the Fourth Industrial Revolution to prevent them from distorting fair and free competition.

#### **(3) Details of new measures to be taken**

##### **i) Development of Cross-Government/Integrated System for Social Implementation of New Technologies etc.**

- Cabinet Secretariat shall collaborate with Cabinet Office to set up an integrated consultation window (new technology's social implementation promotion team (tentative name)) to handle a wide range of applications by those who try to utilize the regulatory "sandboxes" to implement "demonstration of new technology etc.," and conduct meticulous preliminary consultations (confirmation of innovativeness of new technology etc., confirmation/arrangement of provisions related to new technology etc., confirmation by the competent minister, etc.) for applications by private business operators.
- Related government ministries and agencies shall build a system in advance to rapidly examine the plan for the demonstration of new technology etc. submitted via the integrated consultation window. Also, respective ministries and agencies, etc. shall establish a promotion bureau to handle the demonstration of new technology etc. outside the relevant regulatory bureau.

##### **ii) Development of Platform Selection Environment**

- Study efforts to allow users to select an easiest-to-use platform and to secure an environment for fair and free competition including SMEs and ventures, in order to develop the

environment where new platform type businesses are created one after the other for active competitions.

- To this end, study among related agencies and agencies on the issues such as development of environment for fair, free, and transparent competitions, easing of regulations to promote innovations (easing of entry requirements etc.), digital platformers' social responsibility, securing of fairness for the benefit of users, including the best form of conversion from existing vertical segmented industry regulations to the regulation system focusing on services/functions, data portability allowing users to transfer from a specific platform, or Open API etc. allowing open connections, determine basic principles during FY2018, and promote concrete measures in line with those principles as soon as possible.

**iii) Study on the Best Form of Competition Policies Tailored to the Change of Economic Social Structure**

- From the decline in demand due to the declining population to intense global competition, society is undergoing many major changes. Therefore, there is a need to study and evaluate the effects of competition to secure basic services in the rural areas, strengthening regional business management capabilities, to ensure a fair and free market. The government will review these concerns as a whole and reach a conclusion by this fiscal year. [Mentioned repeatedly]

## **2. Promotion of Investment / Corporate Governance**

### **(1) The main KPI progress status**

**[KPI] Improve ROA of large Japanese companies (TOPIX500) to the level which is comparable to those of large western companies by 2025**

=> Japan (TOPIX500): 4.0%

United States (S&P500): 5.4%

EU (BE500) 4.7%

\* These numbers are calculated in late May this year based on yearly financial results of the companies between April 2017 and March 2018.

### **(2) Policy challenges and objectives**

While corporate profit has reached to the record high level, in order for the Japanese economy to grow sustainably, Japanese companies need to make further investments in research and development (R&D), human capital, etc. to improve their productivity.

For this purpose, the government will improve a business environment to encourage companies to make capital investment and to raise wages more proactively. The government will also proceed with corporate governance reform so that companies will take initiatives to achieve sustainable growth in corporate value in mid- and long-term through proper cooperation with various stakeholders including shareholders, employees, customers, business partners and the local community.

In addition, in order to promote smooth supply of fund through vibrant capital markets, the government will take necessary actions such as promotion of financial services which match needs of aging society and enhancement of market environment.

### **(3) Details of new measures to be taken**

#### **i) Corporate Governance Reform**

Following the revision of the Stewardship Code in May last year, the government has revised the Corporate Governance Code in June this year. The government has also formulated the “Guideline for Dialogue between Investors and Companies” (“Guideline for Dialogue”) which summarizes issues the government expects investors and companies to intensively discuss in their dialogue.

Based on these efforts, to strengthen corporate governance and to promote decisive decision-making and bold business restructuring in Japanese companies, the government will take following actions:

- The government will follow up status of issues such as decision-making which takes into account changes of business environment, strategic and systematic investment, objective, timely, and transparent appointment and dismissal of CEO, diversity of board members (including perspectives of gender and internationality), reduction of cross-shareholdings and fulfillment of functions as asset owners by pension funds. The government will also consider measures to allow each party in an investment chain to fulfill its full functions.
- The government will formulate a code of practice about governance of a company group. The code of practice would include perspectives such as how to build effective corporate governance system to ensure proactive and solid management in a company group and how to optimize its business portfolio.

- In order to promote companies to utilize their own stock in M&A, the government will promote related preferable measures about taxation and the Company Act which were established by the amendment of Act on Strengthening Industrial Competitiveness. The government will also consider creating new rules in the Company Act about M&A in which acquirers utilize their own stock at the committee established in the Legislative Council of the Ministry of Justice. The government will draw a conclusion on the new rules during this fiscal year.

## **ii) Improvement of quality of corporate disclosure, accounting and audit for constructive dialogue**

Information necessary for investment decision should be provided for investors in a sufficient, fair, and easy-to-understand manner. For this purpose, related ministries and agencies will **continue to** work on the following issues to continue cross-regulatory and cross-ministerial discussion in order to realize the most effective and efficient corporate disclosure by international standards and to arrange an environment which encourages companies to schedule shareholder meetings and voting record dates in a reasonable manner:

- With regard to disclosure of information such as corporate strategy and governance, which contributes to constructive dialogue between listed companies and investors, the government will take actions recommended in the report from the Financial Committee by around the first half of the next year, as well as will continue comprehensive study on corporate disclosure.
- The government will consider and draw a conclusion on a new rule which in principle requires listed companies provide shareholders with attachments to invitation letters for shareholder meetings electronically at the committee of the Legislative Council of the Ministry of Justice during this fiscal year.
- Based on the “Policy Actions to Realize Integrated Disclosure of Business Reports and Annual Reports” (formulated by the Cabinet Secretariat, the Financial Services Agency, the Ministry of Justice, and the Ministry of Economy, trade and Industry on December 28<sup>th</sup>, last year), the related ministries and agencies will support experimental efforts for integrated corporate disclosure by companies. They will publicize the summary of the discussion during this year and take necessary actions immediately afterwards.
- In order to increase the number of companies which voluntarily adopt IFRS, the government will take further actions to allow companies to adopt IFRS more easily. In addition, the government will consider further actions to enhance disclosure of information about auditing and conduct a study on rotation of audit companies.

## **iii) Promotion of Mid- and Long-Term Investment**

In order to minimize negative externality and to ensure steady growth of corporate value and the entire economy, it is important to properly take into account issues about sustainability such as environment/society/governance (ESG). This concept is also recognized as a global trend. For this purpose, the government will work on the following issues to disseminate concepts of strategic investments by companies and of information provision, dialogue and investment methods which take into account the ESG factors and contribute to mid- and long-term growth of corporate value:

- In order to attract domestic and foreign capital to companies which generate sustainable value, the government will further disseminate the “Guidance for Integrated Reports and Dialogue

for Collaborative Value Creation –ESG/Non-financial Information and Investments in Invisible Assets–” (formulated by the Ministry of Economy, Trade and Industry on May 29th, last year) and promote the use of the guidance through establishing a system and a forum which enable companies to publicize their use of the guidance during this fiscal year.

- The government will publicize the revised Environmental Reporting Guidelines which are based on an international trend for disclosure of environmental information such as the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board (FSB) during this year. The government will also publicize a guidance and a manual which supplement the guidelines. In addition, the government will select companies which try to adopt recommendations from the TCFD and provide the companies with necessary supports such as advisory.
- With regard to disclosure of environmental information, the government will continue the development pilot project of the “Environmental Reporting Platform” with a goal of starting full operation of the platform by 2021. In addition, taking into account international trends, related ministries and agencies will promote effective disclosure of environmental information such as the amount of reduced greenhouse gas emissions.
- The government will promote efforts to increase corporate value and green finance, which weave environmental factors into consideration of investment and loan financing, through presenting specific images of companies which strategically take environmental factors into management (“environmentally sustainable companies”) to markets and starting full operation of the Green Bond Issuance Promotion Platform during this fiscal year.
- In order to promote ESG investments in the mid- and long-term, the Panel for ESG Finance will set forth recommendations about policy actions to disseminate consideration of ESG factors to the entire capital markets in Japan. The government will take policy actions such as to enhance literacy for ESG information based on the recommendations.

#### **iv) Promotion of Smooth Fund Supply through Vibrant Financial/Capital Markets**

In order to pursue economic growth and enhancement of national life, it is important to allow financial and capital markets to fulfil their full functions with providing high-quality financial services. For the same purpose, it is also important to make financial assets of households, which are original provider of funds, more balanced portfolios.

In order to achieve the goal described above, it is important to realize a more balanced and better environment in which risks and returns are evaluated more properly through each player in capital markets fulfilling its responsibility by taking advantage of its own expertise under mutual supervision.

For this purpose, the government will take the following actions:

##### **(i) Establishment of "Customer-Oriented Business Operation"**

- Based on the “Principles for Customer-Oriented Business Operation”, in order to disseminate a concept of customer-oriented business operation to sales fronts of financial institutions, the government will make efforts to further visualize initiatives of financial institutions through monitoring them and publicizing common KPIs which are based on results of the monitoring and enables people to compare financial institutions.

##### **(ii) Promotion of Stable Growth of Household Assets**

- In order to promote the installment-type NISA, which started in January this year, the government will consider policy actions to enhance convenience of the system and promote

adoption of the installment-type NISA at workplaces of both public and private organizations (adoption of “installment-type NISA for workplaces”). In addition, in order to effectively advertise the installment-type NISA to young people who typically obtain information from smartphones and other new interfaces, the government will take initiatives to take advantage of new information channels.

**(iii) Provision of Financial Services Tailored to Aging Society**

- With regard to defined contribution pension plans (DC), the government will disseminate the plan to allow owners of small and medium sized companies to pay pension premiums and the simplified corporate pension plan which were implemented in May this year. The government will also allow sales officers of financial institutions which manage DC assets to provide information about the DC for participants in the DC. Through these efforts, the government will disseminate and enhance private pension plans.
- The government will encourage provision of financial instruments and services appropriate from a perspective of effective use of assets in old ages including investment and dis-saving. The government will also enhance a system to protect assets of adult wards. Through these efforts, the government will arrange an environment which allows old people to make efforts to make effective use of their assets comfortably.

**(iv) Enhancement of Convenience and Vitality of Financial/Capital Markets**

- The government will strengthen its effort to realize a comprehensive exchange as soon as possible and to ensure smooth and immediate establishment of an electricity futures market based on the accommodation with electricity suppliers and other related parties.

**(v) Promotion of Tokyo Global Financial Center**

- In order to attract foreign financial companies, the government will accelerate “fast entry” by making use of the Financial Market Entry Consultation Desk in partnership with the Tokyo Metropolitan Government, which is making efforts to materialize the vision for “Tokyo as a Global Financial City”. In doing so, through enhancing efficiency, speed, and transparency of examinations of applicants for registration and permission, the government will make efforts to register asset management companies who have established records in foreign countries smoothly and fast.
- The government will proactively help the International Forum of Independent Audit Regulators (IFIAR: established a headquarter in Tokyo in April last year) fully operate its headquarter through efforts such as proactive participation in discussion to enhance audit quality globally.

**(vi) Promotion of Supply of Risk Money from Private Sector to Enhance Growth Potential**

- The government will consider more effective management of government subscription (industrial investment). The government will also consider strengthening investment function of the Development Bank of Japan, which provides risk money under the initiative of private sectors by making use of funds from the industrial investment as incentives for private sectors, and utilization of new funds under the Innovation Network Corporation of Japan.

### 3. Promotion of National Strategic Special Zones

#### (1) The main KPI progress status

**[KPI] Japan shall place Top 3 in the World Bank's Business Environment Rankings by 2020 [Mentioned repeatedly]**

=>Japan was 24th at the time of announcement in October 2017 (improvement of two places compared to the previous year)

**[KPI] Tokyo to be within top 3 of the Global Power City Index (GCPI) by 2020 (4th place in 2012). [Mentioned repeatedly]**

=> 3rd place in the announcement in October 2016 (rose one spot year-on-year)

#### (2) Policy challenges and objectives

It is absolutely necessary to continue and further promote the reform of "bedrock" - like regulations to promote improvement in Japan's economic society's revitalization and sustainable development, and efforts on National Strategic Special Zones shall be promoted all the more as powerful gateway.

Conventionally, the designation of National Strategic Special Zones has been implemented by the designation of Special Zones intensively utilizing several menus with either (i) Large area type metropolitan area, or (ii) Local government addressing innovative reform. Among the special measures, there were some menus other than Special Zones with particularly strong needs, which will be tackled in horizontal collaboration with an increased number of experimental regions.

#### (3) Details of new measures to be taken

##### i) Utilization of Virtual Special Zones Type Designation System

- Adopt the "virtual special zones promoting regional revitalization" type designation for National Strategic Special Zones, allowing experiments for specific menus in horizontal collaboration beyond the existing Special Zones areas. Also, study on designation system for near-future technology type virtual special zones, and draw a conclusion during FY2018.

##### ii) Regional Regulatory Reform

- Work on implementation of the following regulatory reforms, in light of requests from the National Strategic Special Zones territories or results from projects in National Strategic Special Zones:
  - Establish and support "registration/transfer facility promoting local discretion (tentative name)" utilizing "childcare nursery," one of the local governments' efforts, as measures for the zero childcare waiting list in National Strategic Special Zones. Identify, analyze/evaluate the status of implementing the "quality of childcare" promoted by the Ministry of Health, Labor and Welfare, with cooperation from local governments, aiming for contributing to multidisciplinary study on securing/improvement of the "quality of childcare."
  - Online drug administration guidance shall be studied based on experiments etc. in National Strategic Special Zones, with an eye on incorporation of the next amendment of the Medical Products and Equipment Act.

- Study on the possibility of introducing wage payment to an account other than a bank account and general securities account (remittance to an account opened by a fund transfer business operator) currently authorized, from the perspective of facilitating wage payment to foreign laborers having a hard time opening a bank account, with due consideration to protection of laborers such as ensuring wage payment.

### **[3] Taking in Overseas Growing Markets**

#### **(1) The main KPI progress status**

**[KPI] Aim to raise FTA ratio to 70% (2012: 18.9%) by 2018**

=> As of the end of FY2017 : 40.3%

\* The share of trade value in total Japanese trade value with countries with which EPA/FTA has entered into force or signed as of the end of FY 2017 (based on 2017 trade value)

\* Negotiations on 6 EPAs are under way with a view to an early conclusion (If the share includes those 6 EPAs, it would be 85.8%)

**[KPI] Double the inward foreign direct investment (FDI) stocks to ¥35 trillion by 2020 (as of the end of 2012: ¥19.2 trillion)**

=> As of the end of 2017: ¥ 28.6 trillion

**[KPI] Double the value of export and overseas subsidiary sales by SMEs by 2020 compared with the level of 2010.**

=> FY2015: ¥23.1 trillion (FY2010: ¥ 12.8 trillion)

\* This KPI has been modified to include overseas subsidiary sales.

**[KPI] Raise overseas infrastructure project orders received to approximately ¥30 trillion by 2020 (2010: approximately ¥10 trillion)**

=>2016: approximately ¥ 21 trillion

\* KPI figures include “income from business investments on overseas infrastructure, etc”.

**[KPI] Raise overseas sales of broadcast contents to ¥50 billion by 2020**

=> FY2016: ¥ 39.35 billion

#### **(2) Policy challenges and objectives**

The Government will promote taking in the demand of the world economy which is now recovering mainly in the emerging countries to our country's region and at the same time promote overseas expansion of Japanese companies' vitality in the world market, which leads to the growth of Japanese economy.

While international movement to achieve the Sustainable Development Goals (SDGs) has become active, the Government will, as a distinctively Japanese endeavor, promote international expansion of the "Society 5.0", working together with private companies, which aims to solve the social issues by implementing the technologies of the Fourth Industrial Revolution in the society and contribute to achievement of the SDGs.

Facing the increase of the protectionist and the market-distorting trade policies in the world, by promoting the Economic partnership negotiations, the Government contributes to construct a free and fair economic order based on rules which leads to a sustainable growth of the world economy.

#### **(3) Details of new measures to be taken**

##### **i) International expansion of the "Society 5.0" and achieve the SDGs**

The realization of the "Society 5.0" which aims to solve the social issues by implementing the technologies of the Fourth Industrial Revolution is one of the routes to achieve the SDGs. The promotion of the international expansion of the "Society 5.0", as Japan's distinctive endeavor, contributes to achievement of the SDGs in the world.

For that purpose, the Government promotes creation of global networks of private

companies, cooperating with Japan Center for the Fourth Industrial Revolution and World Economic Forum to be established in July this year, and promotes formulation of projects for the international expansion of the "Society 5.0" private sector-led. The Government will also support the effort of the private sector in international standardization related to the "Society 5.0".

The Government actively publicizes such endeavor at Forum on Science, Technology and Innovation of the United Nations, G20 to be held in Japan next year and the High-Level Government Forum of the United Nations (especially the summit level meeting).

**(i) Support for implementation by private companies and other entities**

- The Government promotes establishment of leading private sector projects for realizing "Society 5.0" abroad with participation of large, small and medium and SMEs, venture companies and foreign companies if necessary, and supports these projects by the measures of government agencies.
- The Government promotes creation of new businesses by constructing a platform which matches intellectual assets such as technology seeds of private companies in Japan and needs for solving issues inside and outside of Japan.
- For the purpose of solving tackling challenges in developing countries etc., the Government promotes introduction of innovative technologies of private companies in Japan through ODA projects like technical cooperation projects and frameworks such as the private-sector partnership programs or the overseas loans and investment of Japan International Cooperation Agency (JICA).
- The Government contributes to achievement of the SDGs through "the quality infrastructure investment". Especially, by the promotion of demonstration of advanced technologies and of research and development, such as development of advanced ICT such as IoT, AI, etc., the Government endeavors to expand the overseas infrastructure investment by the companies in Japan.
- Based on the "Guiding Principles on Business and Human Rights of the United Nations" etc., the Government formulates a National Action Plan for respecting human rights as basic principles of companies behavior and encourages progressive undertakings by companies in Japan.

**(ii) The international standardization of the "Society 5.0" [Mentioned repeatedly]**

- The Government enhances support for private international standardization activities and rule-makings, and promotes study on the best form of the command center function (CSO (Chief Standardization Officer) of the government), and studies the best form of international standardization to disseminate "Society 5.0" as Japan's initiative to the international society through public-private collaboration.

**ii) Supporting overseas business expansion of Japanese companies**

**(i) Expansion of infrastructure exports**

- The Government implements the priority measures of the "Infrastructure System Export Strategy (Revised Edition in FY2018)" (approved by the Ministerial Meeting on Strategy relating Infrastructure Exports and Economic Cooperation on June 7, 2018) in cooperation with private sector.

A) "The international standardization of quality infrastructure", and coordination with diplomatic strategy

- Taking the opportunities such as G20, TICAD and APEC, the Government contributes to the

promotion of the SDGs and enhances Japan's international presence by leading the "the international standardization of "the quality infrastructure".

- By actually advancing establishment of "the quality infrastructure" in the third country in compliance with the international standards such as openness and transparency, in coordination with the countries concerned under the "Free and Open Indo-Pacific Strategy", the Government strengthens the ties among regions and contributes to strengthening of the social and economic infrastructure and to the stabilization and prosperity of regions.
- The Government establishes a new facility in Japan Bank for International Cooperation (JBIC) which widely supports the establishment of "the quality infrastructure" that contributes to the purpose of conservation of the global environment.

B) Strengthening competitiveness through government-private cooperation

- The Government improves the yen-loan system and expedite its procedure. The Government also strengthens public finance support for international business expansion of various entities such as the Electric and Gas Utilities and for infrastructure development that contributes Japan's energy security. By utilizing overseas diplomatic establishments and local networks, the Government improves collection, delivery and sharing of information.
- The Government takes consistent measures that covers through stages from formulation/development to running/maintaining of facilities, so as to obtain orders as a total package. In doing so, the Government utilizes knowledge of Japan's Incorporated Administrative Agencies and other entities under the Act for Promotion of the Participation of the Japanese Business in Overseas Infrastructure Projects.
- The Government seeks to tackle issues which are difficult to solve through public-private cooperation only in Japan, by working together with local governments and companies and other foreign companies.

C) Expansion of investment through the support on soft infrastructure

- The Government enhances support on various soft infrastructure and, at the same time, in order to increase the orders received and business investment by Japanese companies in private-public partnership projects in developing countries, promotes improvement of legislative system and investment environment of partner countries and enhancement of problem management capabilities of Japanese companies.
- By providing continuous support and risk management and security measures after receipt of orders, the Government establishes an environment in which the Japanese companies can expand their investment with a sense of security.

D) Contribution to establishment of low-carbon societies

- The Government expands winning of projects and thus contributes to energy conversion of the world, by utilizing superior low-carbon infrastructure technologies of Japanese companies, such as in renewable energy or in hydrogen, and by formulating strategic alliances among Electric and Gas Utilities in Japan, trading companies, and other companies inside and outside of Japan.

**(ii) Establishment of a rule-based, free and fair economic order**

A) Economic partnership negotiations

In order to expand a free and fair markets not only in Asia-Pacific region, but across the world, the Government makes efforts to the early entry into force of TPP 11 signed on March 8 this year and furthers the discussion on expansion of its member countries/regions. Moreover, the Government aims at early signing and entry into force of the Japan-EU EPA whose

negotiations were concluded in December last year. The Government promotes strategically and expeditiously the economic partnership negotiations including RCEP and Japan-China-Republic of Korea FTA. Playing central roles in building such wide-area new economic order, Japan, as the standard-bearer of free trade, aims to take the lead in establishing comprehensive, balanced, and high-level global rules.

B) Investment-related agreements

It is expected to cover ninety-two countries/regions in total, if those that are currently under negotiation are counted. The Government will aim to launch new negotiations with 6 additional countries by the end of this year, through mutual consultations.

C) Tax treaties

The Government will expand tax treaty networks, both in terms of quality and quantity, that is necessary for supporting sound overseas business expansion of Japanese companies, through concluding new treaties with countries/regions where investment relations with Japan are expected to develop, as well as amending existing treaties.

D) Promotion of government-to-government and private sector dialogues

The Government coordinates with respective countries for securing level playing fields and tightens the economic ties through government-to-government and private sector dialogues at bilateral and regional levels. In that occasion, overseas diplomatic establishments, Japan External Trade Organization (JETRO), and other organizations, in a coordinated manner, emphasize the contribution by Japanese companies to local societies and underscore mutual benefit of free trade.

**(3) Establishing common international understanding and rules concerning distribution and use of data**

- Utilizing international frameworks such as WTO, OECD, G7, G20, APEC, etc. the Economic partnership negotiations, and bilateral frameworks such as between Japan and the US, between Japan and EU, etc., the Government implements policies related to improvement of credibility of the internet, such as ensuring security and protecting personal information, and establishes a framework for promotion of free and reciprocal cross-border data distribution, in order to counter digital-protectionist movements and to establish a free and fair digital market.

**(4) Supporting overseas business expansion of SMEs**

A) Supporting development of overseas markets, human resources and financial aspects

- With the “Consortium for New Export Nation” at the core of the efforts, the Government expands the operation of overseas-based experts and provides the consistent support etc. throughout from Japan to abroad. In that occasion, the Government supports mainly the Driving Company for the Regional Future and actively invites such companies which are not the member of the consortium to become members.
- For promoting utilization of cross-border EC which is useful in grasping the market needs, the Government strengthens support measures, such as matching with platformers, and setting up a special website by JETRO for the marketing of Japanese products on overseas EC websites.
- The Government supports capacity development of personnel in charge of overseas operation in private companies.
- By holding the "Block Meeting" composed of supporting institutions in the respective region, such as regional financial institutions, chambers of commerce, societies of commerce etc.,

the Government strengthens networks of supporting institutions, shares successful cases, and gains better understanding of supporting measures of Nippon Export and Investment Insurance (NEXI), Japan Bank for International Cooperation (JBIC) etc.

- Under the coordination of the relevant ministries and government agencies, JICA, JETRO, etc. the Government promotes the overseas expansion of the products/technology of the SMEs of Japan in the world market utilizing the ODA etc. and supports their endeavor of making business opportunities.

**B) Strengthening the supporting system**

- At the overseas offices of JETRO, the Government strengthens their activities of consultation at overseas offices, public communication on the contribution of Japanese companies at respective regions and collection/provision of the regional business information.

**C) Supporting starting operation overseas**

- Under the coordination of overseas establishments, JETRO, legal practitioners, etc., the Government meets the needs for solving troubles at regions by the consultation on the legal/labor/tax affairs etc. The Government implements measures on promotion of international arbitration through public-private cooperation.
- The Government strengthens the support for measures against the terrorism, by awareness campaign on safety measures utilizing safety measure manual, the video, etc. and by the ODA. Moreover, the Government strengthens the educational function at overseas educational institutions.

**(v) Promotion of Active Participation by Highly Skilled Foreign Professionals [Mentioned repeatedly]**

- In order to improve the employment ratio in Japan of the excellent foreign students who are the "eggs" of the highly-skilled foreign professionals, the Government will establish the system/structure which make the consistent follow-up from the invitation to the employment based on the needs both from the students and from the industrial sector including the small and medium-sized companies/SMEs.
- The Government starts within this year the "Start-up Program (provisional name)" which supports the entrepreneurial activity for the expansion of the number of overseas entrepreneurs.

**iii) Measures to utilize attraction of Japan**

**(i) The promotion of the inward foreign direct investment**

- In order to promote the inflow of new management resources to regions by investment of foreign companies, the Government starts the "Support Program for Regional Foreign Direct Investment in Japan" which closely supports the activities of the local governments etc. for inviting the overseas companies (formulating plans to attract foreign companies, providing the information, attraction of respective projects, etc.) under the coordination with the related ministries and agencies and JETRO.
- The Government holds the Regional Business Conference from one year earlier than planned, i.e. from this year to 2020, in the regions that are active in attracting foreign companies.
- Toward the Global Venture Summit in 2020, the Government takes measures including strengthening connections with start-up related events abroad and promoting dialogues with foreign governments which participate in and cooperate with matching events inside and

outside of Japan.

## **(ii) Cool Japan**

- Based on the "Intellectual Property Strategy Vision" (decided by Intellectual Property Strategy Headquarters on June 12, 2018), the Government identifies public communication measures, based on narratives such as cultural background of regions, deepens analysis on the difference of preference and marketability according to countries and segments, and utilize the outcome. The Government coordinates organically the efforts, such as utilization of the overseas establishments, the Japan Houses, the Japan Foundation and JETRO, the formation of new businesses through the Cool Japan Public-Private Cooperation Platform and the funding by Cool Japan Fund Inc. and strengthens the overseas expansion of the product/services, the promotion of the inbound sightseeing consumption and inbound business activities.
- The Government takes measures for the establishment of the institutional framework and the creation of a platform among industry, academia and government, for developing professional personnel, highly-skilled design personnel and high-level management personnel, and for accepting foreign personnel, promotion of Japanese language learning in overseas, and creation of an environment that allows local organizers, including foreign personnel, can play active roles. Moreover, the Government continuously reaches out to the fans of Japan and promotes their extended stay in Japan, by utilizing advanced ICT etc., learning from cutting-edge examples from overseas.
- The Government constructs a new system for promoting use of content by utilizing the block chain technology etc. and strengthens the measures against piracy.
- The Government supports broadcasting stations in Japan and overseas to jointly produce broadcasting content which introduces the attraction of Japan for the purpose of revitalizing regions, and supports its broadcasting overseas.
- The Government establishes appropriate environments for sound development of electronic sports, which are attracting attention as a new field of growth.
- The Government improves the environments for shooting films, both Japanese and foreign, develops basis for international co-production of films, and cultivates interests for Japanese films through film festivals.
- The Government further expands export of Japanese alcoholic beverages, through such measures as promotion by the Japan Food Product Overseas Promotion Center (JFOODO) etc., utilization of the geographical indication system, and promotion of sake brewery tours.

## **(iii) Promotion of "Japanese IR" (Integrated Resort) development**

- The Government materializes the internationally competitive and attractive extended-stay style tourism by the Act on Promotion of Development of Specified Complex Tourist Facilities Areas submitted to the present session of the Diet and implements the measures to eliminate completely the concerns to the IR by the world's highest-standard regulations over casino.
- From now on, the Government implements the preparation of related Cabinet orders and ministerial orders and establishes adequate administrative systems necessary for the world's highest-standard regulations. The Government brings out the effect of the above-mentioned policy as soon as possible and takes thorough and sufficient measures to address various concerns including addiction.

## **(iv) Invitation of 2025 World Exposition**

- At the site of the international exposition in 2025, the Government does trial and showcases the future society and lifestyle which innovation brings about, and demonstrates real-world application of the "Society 5.0" to the world.
- The Government materializes that Osaka/Kansai hosts the exposition, by the lobbying activities of the Government, the municipal governments, the business communities, members of the Diet, etc., by the dispatch of special envoys to each country, by holding events in and outside of Japan, etc. toward the voting to decide the host city to be held in November this year.

**(v) Taking in growing markets through collaboration with communities of Japanese immigrants and descendants (“Nikkei”) overseas**

- Taking the new program to receive fourth-generation Japanese into consideration, the Government promotes invitation of the young Nikkeis through the invitation program in order to taking in their vitality to the economy and society in Japan and improves receiving environments through Japanese language training before or after their arrival etc. The Government also promotes measures to enhance network with Nikkei communities in coordination with local governments.
- While making use of the ODA, the Government promotes overseas business expansion of Japanese companies through coordination with Nikkeis, such as supporting formation of business matching networks inside and outside of Japan.