1 Point

Fundamental Ideas

(Where do we stand in our growth strategy and what is expected?)

Under the Abenomics, reforms have been implemented that had previously been considered "impossible to realize". Such reforms include complete liberalization of retail market for electricity and gas in 60 years, reforms of the Agricultural Cooperatives, introduction of regenerative medicine ahead of the world, and reduction of effective corporate tax rates to the 20% level. After the change of power, the number of employed workers in the labor market has increased by almost 1.85 million, thereby creating the best employment situation in 20 years. Companies are achieving the highest level of current profit in history, while capital investment has restored to the level before the collapse of Lehman Brothers. The number of bankruptcy has hit the lowest level since the 1990s. Virtuous cycle of the economy is steadily expanding.

However, private sectors still lack the dynamism due to the following reasons:
(i) On the supply side, growth of productivity has been sluggish for a long period of time; and
(ii) On the demand side, no new demand has been created.
This is a "secular stagnation" common to the developed countries.

The key to break the secular stagnation and achieve mid-and-long-term growth is to realize "Society 5.0[1]" that resolves various social challenges by incorporating the innovations of the fourth industrial revolution (e.g., IoT, big data, artificial intelligence (AI), robot, and sharing economy), which has recently been taking place rapidly, into every industry and social life.

In this respect, Japan is in a superior environment.
(1) Japan was one of the first countries in the world to face the social challenges such as decrease in the productive-age population, aging of local communities, and energy and environmental issues. This means that there is a great potential demand for new things and services resulting from the fourth industrial revolution.

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[1] The history of humankind reveals that the evolution of human society has been fueled by technological advances, with key steps along the way as a hunter‐gatherer society, agrarian society, industrial society, and, today, an information society. "Society 5.0" is next. It will create new values, new services continuously, then make people's lives more comfortable and sustainable.

(2) The fourth industrial revolution may trigger unemployment issues, as they involve fundamental improvement of productivity. This being said, since Japanese labor force will continue to decrease on a long term, with appropriate investment in human resources and shifts in employment, we would be able to avoid the social frictions as experienced in other developed countries.

(3) Unlike the first chapter, where we took advantage of the Internet data (virtual data), in the second chapter, real data will be used in the fields which will be the major battlegrounds in the future, including healthcare, autonomous driving, plant facilities, agriculture, and construction. The keys to the competitiveness are the accumulation of real data from markets, approximation of software and hardware, and approximation of software and fields. Japan can have superiority in each scene.

These strengths may provide a huge opportunity to Japan, which is at a historical turning point.

As the baby boom generation becomes 75 years old and "2025 Crisis" fast approaches, if we do not break the status quo, the burden of healthcare and nursing care would weigh on our shoulders, labor force would decrease, accumulated knowledge and skills would be scattered and lost, and our economic society would lose its vigor.

Under the traditional economic system, where the sources of competitiveness that generate added values were "things" and "money", we created models of success which enabled efficient economic activities as a result of "intensification" and "homogenization". Most of the organizations and social systems had also been designed on this basis.

With the progress of the fourth industrial revolution, however, the sources of value shifted to "human (human resources)" and "data" under the economic system of Society 5.0. In this system, high values are added where various things that exist "independently and dispersedly" are "integrated" through new technical innovation. With the realization of a society where "knowledge" generates value and diversified "uniqueness" is exploited, motivated people from all generations need to take advantage of the technical innovation and "integrate" various knowledge, information, technologies, and human resources that are currently dormant. We could thus establish a system to achieve innovation and resolve social challenges ahead of the world, and realize optimized and high-value-added economic activities as well as a vigorous economic society. They will provide opportunities to everyone across all industries, regardless of age or sex, size of company, or size of community.

On the other hand, caution is required as the innovations of the fourth industrial revolution

have been accelerating with speed and through routes that are unpredictable. Should there be a delay in taking actions or should we hesitate to implement major reforms, we may become a mere subcontractor of companies taking a lead, and the middle class may end up collapsing.

With the progress of the fourth industrial revolution, it seems possible to realize a society that had previously been considered impossible. Things that we had perceived as a distant future dream until recently are now nearly close to touch if we tried hard enough. This is exactly when we should launch our full attempt to operate Society 5.0. We will open up a new frontier in different dimensions with speed by strongly promoting efforts in strategic fields.

(Perspectives for Future Efforts)

While drastic reforms implemented by digital revolution remained only within the computer industry and communications-related industries, the wave of the fourth industrial revolution holds the promise of dramatically changing all industries and social life.

German "Industry 4.0" and American "Industrial Internet" are principally an effort to optimize production management and inventory control of manufacturing industry using IoT, beyond the scope of individual plants and companies. On the contrary, Japan needs to realize Connected Industries, where various things are connected beyond manufacturing industry, including the connections of things and things, human beings and machineries/systems, human beings and technologies, companies which belong to different industries, human beings from different generations, and manufacturers and consumers.

The "Society 5.0" that we aim to operate is an effort to resolve various social challenges by incorporating advanced technologies into all industries and social life and "only providing necessary amount of required things and services at required timing to people who need them".

(Specific Plans)

First of all, we need to choose and focus on the odds-on "strategic fields".

In order to identify and choose the strategic fields, the following perspectives should be taken into account:

- Whether or not it is a field where we can take advantage of Japan's strengths (aptitude for manufacturing things, innovativeness and scope of social challenges, and likelihood of acquiring and using real data);
- Whether or not growth is anticipated for the field in and outside of Japan; and
- Whether or not it is a field appealing to the world which can be used as a model case of a country with advanced challenges.

Based on these perspectives, the policy resources of Japan should be concentrated on the following five fields to promote future investment.

"Extension of healthy lifespan"
- Japan is among the very first in the world to head toward an aging society. However, we do have rich data, as we have a universal healthcare system and nursing care insurance system.
  -> We aim to establish a "new system of health, medical care, and nursing care" with an emphasis on health management, prevention of sickness and nursing, and self-support. With this system, we aim to further extend healthy lifespan and will realize ahead of the world a society where we can be active throughout our lives.

"Realization of mobility revolution"
- Although we are facing the social challenges such as labor shortage in logistics and lack of means of transportation for elderly people in local communities, Japan has strengths in manufacturing for AI as well as approximation of data and hardware. It is also able to acquire mass travel data on automobiles.
  -> We will expand the range and opportunities of day-to-day activities of each individual by streamlining logistics and sophisticating transportation services to reduce traffic accidents, resolve labor shortage in local communities, and eradicate the issue of transportation-vulnerable people.

"Creating of next-generation supply chains"
- We have already had a pioneering approach called Kanban system (just-in-time inventory management system). In addition to the in-depth "approximation", which is one of the strengths unique to Japan, we have abundant data from plants as well as distribution data with a focus on convenience stores.
  -> This will enable us to create innovative products and services which meet demands of individual customers and consumers.

"Building and developing pleasant infrastructure and towns"
- While we have conspicuous problems of aging of skilled workers and labor shortage, there is also a great demand, including construction of Olympic/Paralympic-related facilities, renovation of worn-out facilities, and disaster-prevention measures.。 Our services may feature integration of competitive construction machines and data.
  -> We will balance efficiency and safety without being bothered by labor shortage or cost increase, and penetrate the market with stable maintenance, management and update.

"FinTech"

- We still have higher rate of cash transaction compared to other developed countries, and the use of IT by small and medium-sized companies is still limited. This is why we can expect to have a profound effect by introducing FinTech.

  -> We will use this to tremendously improve the convenience of finance-related services for users and drastically improve the fund-raising capacity of companies as well as their productivity and earning capacity.

Second, we will address the enhancement of a common base aimed at creating value sources.

To start with, we will establish "database (real data platform)", which will be our new social infrastructure. We will be completely open about the public data possessed by government and local authorities in the fields where there is high private demand, including public transportation and autonomous driving. At the same time, with respect to the private data, we will support data coordination that goes beyond individual corporate frameworks. Concurrently, in order to facilitate the use of data, we will realize sophistication of rules, including the rules on intellectual property system and standardization.

In addition, we will invest on human resources who would be able to respond to the fourth industrial revolution, as well as facilitate shift in labor force. As the fourth industrial revolution progresses, it is inevitable to experience drastic changes of industrial and employment structures. The skills and abilities required of each individual must also change significantly. It is not only the IT industry that requires IT human resources but also all other industries. In 2020, we anticipate that there will be a shortage in IT human resources by approximately 370,000 persons, which means that more people will be required to acquire the ability to master the use of IT. For this reason, we will establish an "Intensified Emergency Plan on Enhancement of IT Capacity", and concentrate our policy resources on it.

Furthermore, we will advance reforms on work styles to improve productivity and enhance creation of new values. While addressing to eliminate working long hours and improve working conditions of non-regular employees, we will also challenge to make labor market more fluid. Our efforts will include clarification of working conditions such as job description and abilities as well as realization of matching fair evaluation and conditions, in a form appropriate for the new employment structure focused on knowledge-based industry.

As we shift from capital-intensive economy to knowledge-based economy, we will push forward university reforms to promote industry-university cooperation and enhance management capacity, and promote research and development in the fields where Japan can take advantage of its

strengths. This will be implemented with a focus on universities and national institutes that are the strongholds of knowledge and human resources, and involve industry. The purpose is for the entire society to establish an ecosystem for innovation and ventures where blue-chip researches and developments as well as ventures will be created spontaneously and consecutively.

Third, we will "try first" and shift to "shape policies based on demonstration".

As the innovations for Society 5.0 accelerate all over the world with speed and through routes that are unpredictable, the effective way would be to take a process of trial and error, with the involvement of the society. Should we continue to rely on traditional flat and rigid systems where we can only introduce something with complete data and proof, Japan may not be able to keep pace with the world, and become a mere subcontractor of companies taking a lead or be isolated from rest of the world. Therefore, we will introduce a "sandbox" system for regulations, where participants and period will be limited, thereby accepting trial and error.

With respect to the administrative procedures, we will conduct a thorough review from business perspective. We will thus aim at reducing, in principle, 20% of the cost for administrative procedures in the fields which we focus on. This will be done through integrally promoting regulatory reforms, streamlining of administrative procedures, and online procedures.

Fourth, we will establish a metabolic system aimed at creating an industrial structure for the period of Society 5.0.

We will elevate the reforms on corporate governance from a mere formality to a substantial reform to promote decisive managerial judgments. In order to remove obstacles for this, we will develop systems which enable speedy and flexible business restructuring.

Under the private finance initiative system, private business management approach is introduced into the operation of public facilities. This will enable effective and efficient development and operation of infrastructure under severe financial conditions, thereby creating large market and opportunities of international competitiveness for private companies. With a view to expanding the use of PPP/PFI, we are aiming at resolving tasks for each focused area, while preparing guidelines based on private businesses to develop cross-governmental systems for the promotion.

Fifth, we will establish a system whereby local economies will be in a virtuous cycle.

In and outside of communities, we will strengthen connections among human beings, things, money, and data to facilitate active circulation. We aim at creating growing industries and high-quality employment for the entire sphere beyond the framework of industries, including agriculture,

forestry, fishery, manufacturing, and services (such as tourism, sports, and culture).

In order to facilitate the above, it is important to have a perspective that a particular project, which will serve as a breakthrough to change the status quo, will be strategically promoted by the government and the private sectors. For this purpose, "Public-Private Strategic Project 10" of "Japan Reconstruction Strategy 2016" (as approved by the Cabinet on June 2, 2016) will be developed into an effort under this new growth strategy. It will facilitate self-sustained efforts of private sectors. As the government and the private sectors are appropriately assigned their respective roles, various technological innovations will be introduced into the society to facilitate structural reforms.

In the course of implementing these projects, the government and the private sectors will together set a time limit for giving concrete forms to their efforts, as shown in "2020 Reforms". It is important that we showcase our efforts to the world taking the opportunities when we receive attention, including the 2020 Tokyo Olympic/Paralympic Games. The spirit of the "2020 Reforms" will be spread across the growth strategy, based on which all measures will be taken in line with a road map-style where plans are made and deadlines are set based on how many days are left.

The key to the true success of these efforts is for both the government and the private sectors to break away from a "narrow-viewed" structure, where individual organizations continue to follow the traditional policies without thinking, and to put in place drastic reforms. A leading role in realizing Society 5.0 should by all means be played by the vigorous private sectors. All industries are required to courageously push through and take actions for a drastic transition of business portfolio from traditional systems to knowledge-based industrial structure. The responsibilities lie with the government to draw creativity and ingenuity from private sectors and to develop the best business environment. The government will proactively promote the structural reforms. They will further focus on establishing an integral system to powerfully advance the growth strategy on a cross-governmental basis through social implementation of innovations.

I. Strategic Fields to be Targeted by Society 5.0

I-1. Extension of Healthy Lifespan

Social Vision that We Aim at

Thanks to the maximum use of technical revolution including big data and AI, by 2025, when the entire baby boom generation has become over 75 years old, the "new system of health, medical care, and nursing care" will have been realized, part of which include the best health management and medical care, as well as nursing care with an emphasis on self-support. Healthy lifespan will have been further extended, and a society where we can be active throughout our lives will have been realized ahead of the world.

<Scenes from Life/Spot after the Change>

- (Elderly people/family) An aged father who lives in a place far from urban area uses remote medical care. His once burdensome weekly visit to the hospital has now been reduced to once a month, and he is able to receive medical care from his primary care doctor without effort, using data and AI. A mother in need of care has been offered a care plan prepared by using data and AI, and the level of her care needed improved. She has more time to spend at home, and enjoys time with her family.

- (Medical care/scenes from nursing care) With the consent of patients, doctors check the records of their medical check, treatment, and nursing care that had previously been scattered. The patients' information is used by medical institutes when they first visit doctors or at emergency times, which enables best treatment for each individual anytime, anywhere. On the spot of nursing care, the rugged work environment of care staff including night-time watching has been substantially improved by using robots and sensors. The staff have more time to take advantage of their expertise to provide best care for each user.

Major Items Required for Realization

Establishment of Data Using Base

(Remaining Issues)

- Sharing of information between communities as well as development of database for statements of medical expenses and the like have been advancing. However, data is scattered for health, medical care, and nursing care and sectionalized for each database, with limited user access. We need to establish a data using base whereby each individual

citizen's data on health, medical care, and nursing care is organically connected to allow his/her access over time, and which could be used for research and development of new medicine or the like through big data analysis.

(Major Efforts)

- The "National Healthcare Information Network", a base which allows individuals to follow their own lifelong medical information over time and provides best and individual/patient-oriented health management, treatment, and care is expected to go into a full-scale operation in FY2020. We will launch an experimental business during this fiscal year to examine specific system configuration and the like. Detailed designing will be launched during or after the next fiscal year.

- The "Healthcare Data Platform", a platform which allows researchers, private sectors, and insurers to connect and analyze big data on health, medical care, and nursing care as the history of individuals is expected to go into a full-scale operation in FY2020. We will launch an experimental business during this fiscal year to examine specific system configuration and the like. Detailed designing will be launched during or after the next fiscal year.

- As the Next-generation Medical Base Act was enacted in April this year, we will use anonymously processed medical information for research and development in the medical field through businesses certified in accordance with the said Act while keeping in mind the coordination with the aforementioned data using base.

- The systems of online qualification check of medical insurance and medical IDs will be the basis that supports the above, which we aim at introducing. With an aim of launching a step-by-step operation next fiscal year and full-scale operation in 2020, we will surely start developing the systems this fiscal year.

Prevention and Building of Health: "Full-fledged Change of Individuals' Behavior" by Insurers and Business Operators

(Remaining Issues)

- Although insurers have a pile of individuals' statements of medical expenses as well as data on medical checks, they have not been fully used for the improvement of lifestyle habits (such as exercise and eating habits) or specific efforts aimed at preventing aggravation of diabetes and the like. There is neither sufficient incentive for insurers to reach out to the individuals nor proactive effort of business operators to maintain and enhance their employees' health.

(Major Efforts)

- For the purpose of facilitating the efforts of insurers to encourage changes in the behavior

of insured aimed at preventing disease and building health, we will enhance incentive for the insurers. Starting from the results of this fiscal year, we will also publish the rate of specific health checkups and specific health guidance implemented by all insurers. The rates of both addition and reduction of subvention for late-stage elderly people provided by the health insurance association/mutual aid association will be gradually increased from next fiscal year. The rates will be increased up to the statutory maximum of 10% in FY2020.

- In order to strengthen the data health of insurers and promote coordination with health management of corporations (collabo-health), the Ministry of Health, Labour, and Welfare and Nippon Kenko Kaigi will coordinate to record the health conditions and health investment situation of each insurance subscriber and notify them to business operators. This will start from the next fiscal year.

Medical care: "Drastic Improvement of Quality and Reducing of Burden of Doctors/Patients" by Promoting Introduction of New Methods

(Remaining Issues)

- There are neither sufficient incentives nor rules which allow remote monitoring/guidance based on online data combined with face-to-face medical care by primary care doctors or which promote the use of AI and provide effective and efficient medical care.

(Major Efforts)

- With respect to the remote medical care, something that would contribute to providing effective and efficient medical care by appropriately combining face-to-face medical care and remote medical care will be evaluated at the time of amendment of medical treatment fee that follows. This includes effective guidance to and management of patients of adult diseases such as diabetes by remote medical care combined with online medical care.
- In order to strategically promote the development of AI in the field of healthcare, we have designated the following six areas to focus on the promotion of development and practical application: diagnostic imaging support, development of drugs, support on operations, genomic medicine, support on medical care and treatment, and nursing care/dementia.
- We will establish systems for development and authentication of cloud environment for AI development, and develop rules on evaluation pertaining to the quality and securing of the safety of medical devices using AI. Based on these, we aim at evaluating, at the time of amendment of medical treatment fee that follows, the improvement of the quality of the medical treatment by the appropriate support using AI for the doctors.

Nursing Care: "Promotion of Self-support" by Introducing Scientific Nursing Care

(Remaining Issues)

- Although advanced efforts have been partially expanding to prevent nursing care from occurring or to prevent/improve aggravation of state in need of care, Japan has not been

able to specifically present the form of nursing care scientifically supporting the effect of self-support, which it aims to achieve. Since care payment decreases as the level of care needed improves, there are calls requesting to enhance incentives aimed at self-support.

(Major Efforts)

- At the next amendment of medical treatment fee, we will evaluate the self-support that is effective.

- With the aim of realizing nursing cares such as self-support which have scientific basis, we will establish database to collect and analyze necessary data, and will aim to put in place its full-scale operation in FY2020.

- With respect to the nursing care services the scientific effect of which is supported by analyzing data, we will evaluate them at the time of amendment of care payment in or after FY2021. Further, we will publish on the website of the Ministry of Health, Labour, and Welfare the companies which offer such services, so that the services will be "visualized" to the citizens.

- We will steadily substantiate the effect of the use of robots and sensors at the nursing care scenes. Based on the results thereof, at the time of the next amendment of care payment, we will review the nursing care fee and standards for personnel and facilities.

- In our future development of nursing care robots, our goals are to maintain and improve the quality of life of users through self-support and at the same time to reduce the burden of caretakers. We will thus newly cultivate and assign project coordinators who can truly pick up the on-site needs and turn them into development seeds.

- We will re-examine the development fields to be focused on for the robot nursing care equipment, decide the direction of our strategic development by this summer, and reflect it to the development support goal for the next fiscal year and on.

I-2. Realization of Mobility Revolution

Social Vision that We Aim at

With respect to the transportation of human beings and things, thanks to unmanned auto-driving, delivery of packages by drones and auto-operated ships, logistics has been streamlined and transportation services have been sophisticated by the "mobile revolution". This has led to the reduction in traffic accidents, labor shortage in local communities, and elimination of transportation-vulnerable people. In 2020, over 90% of the new passenger vehicles sold in Japan would be loaded with automatic brake. The social acceptability has been increasing for the penetration of unmanned auto-driving.

<Scenes from Life/Spot after the Change>

- (Logistics site) With the progress of e-commerce, transactions of goods have drastically increased. Although we are facing shortage of drivers and long working hours, mass transportation of freight is available by one single driver driving a truck in convoy. At the same time, as the individual delivery using drone becomes common, we have been able to engage in logistics business without any heavy burden. New delivery services which meet consumer needs have been created on a daily basis.

- (Shipment/Receipt) A package is shipped from a remote island of Shikoku to a friend living in Hokkaido. Thanks to the coordination of transportation which is supported by robot-ticks such as auto-operated ship, truck drive in convoy, unmanned auto-driving, and individual delivery by drone, the package was delivered safely, securely, speedily, and cheaply, despite being in the middle of winter.

- (Elderly people and their family) Since the discontinuance of railway and bus services, an elderly person has used a car for shopping and hospital visits as well as for joining a get-together with his/her friends to play a game of go. His/her family, however, were worried and suggested that he/she refrain from driving. An unmanned auto-driving bus which runs on the prefectural road, as well as a transportation service from a rest stop, have been introduced. This has allowed him/her to keep living in a familiar place without causing concerns to his/her family while being able to continue going out.

Major Items Required for Realization

Experiments Ahead of the World

(Remaining Issues)

- Auto-driving skills that have a potential to fundamentally change the current traffic systems as well as the social recognition have been emerging and have been sophisticated. In this situation, we have not been able to fully identify the problems accompanying the change and implement demonstration in the real world that is essential for fostering social acceptability while clarifying the timing of implementation of systems that meet private demand. There is a concern that this may impair the full-scale social implementation.

(Major Efforts)

- We aim to commercialize truck driving in convoy on freeways in 2022 at the earliest. In order to realize unmanned convoy driving for vehicles that follow on freeway (Shin-tomei) in 2020, we will launch experiments of manned-following-vehicle system during this fiscal year and unmanned-following-vehicle system next fiscal year on public roads.

- With an aim to realizing a transportation service of unmanned auto-driving in 2020, we will launch experiments for local communities on public roads this fiscal year, picking over ten locations across Japan for the experiment.

- With the aim of commercialization of auto-driving, where there is no driver in the vehicles, we need to enable experiments of auto-driving on public roads. For this purpose, we will develop necessary systems, including the requirements on electronic traction pertaining to the convoy driving, examination of matters related to inter-vehicle distance, and requirements of space exclusive for the transportation service by unmanned auto-driving.

- Looking ahead to the 2020 Tokyo Olympic/Paralympic Games, we will showcase the cutting-edge auto-driving technology in and outside of Japan and make it a legacy. For this purpose, we will implement cutting-edge experiments in Haneda Airport and the waterfront areas, and develop systems.

- Our goal is to be able to deliver packages in the mountain areas by drone next year. We also aim to engage in safe delivery of packages in the urban areas on a full-fledged basis in the 2020s. For this purpose, we will develop technologies and systems that enable advanced aviation, including unassisted flying without monitoring by pilot and overhead flying.

Strategic Collection and Use of Data, Expansion of Cooperating Fields

(Remaining Issues)

- The "data" which will be the core to realizing the mobility revolution is randomly possessed by related persons and is not fully shared among them. At the same time, there is no system of generating added value by using data.

- We need to further expand the areas of cooperation by each company, so that Japanese companies can devote resources to the competing areas of auto-driving field.

(Major Efforts)

- By the end of the year, we will establish systems for the sharing and collection of information. This includes indexing of complexity of driving environment and clarification of experiment data that needs to be collected in common.
- We will accelerate the research and development to drastically enhance competitiveness of recognition/judgment technologies that are the key to auto-driving. By the end of this fiscal year, we will make up a basic policy on strategic collection and use of data on driving images and accidents.
- By the end of next fiscal year, we will make up the specifications and systems for the dynamic maps where information that keeps changing on a real-time basis is linked.
- As part of the infrastructures to realize auto-driving, we will promote efforts for launching, by 2020, the services of fifth-generation mobile communications system (5G) that enable ultrafast speed, multi-connections, and ultralow-delay.
- With a view to improving the security of auto-driving vehicles, we will compile a schedule by the end of this fiscal year to promote establishment of a system for the evaluation of safety.
- With a view to commercializing the auto-operated ships by 2025, during the next fiscal year and at the initiative of Japan, we will establish an international specification for the data transmission relating to the in-ship equipment. By the end of FY2023, we aim to reach an agreement on the international standards concerning vessel facilities and operation, and establish standards in Japan.

Development of Systems looking to International Inter-system Competition

(Remaining Issues)

- In order to commercialize future advanced auto-driving and provide services related thereto, traditional traffic-related regulations that are made based on "driving by a driver" must be re-examined. With a view to international inter-system competition, we need to accelerate our consideration on a full-fledged development of systems.

(Major Efforts)

- With a view to commercializing an advanced auto-driving (above level 3) by around 2020, by the end of this fiscal year, we will compile a policy (outline) for the development of systems for the entire government. This will include the necessary review of traffic-related regulations, such as safety standards pertaining to the driving by the systems.
- We will enhance the playmaker function of the government, so that it can powerfully

implement the development as a national strategy, together with the private sectors.

I-3. Creating of Next-generation Supply Chains

Social Vision that We Aim at

Acquiring and using of real-time data in every phase including development, manufacturing, sale, and consumption have been realized. This has realized the creation of innovative products and services that meet individual customer's demand, lean supply chain optimized through data coordination, as well as safe and productive manufacturing process in smart factories. Companies have increased that collect data and use it for their management, and labor productivity of the entire manufacturing industry has improved by more than 2% per year.

<Scenes from Life/Spot after the Change>

- (Consumers) On a casual occasion in our daily life, we can input whatever clothes we want to wear into our smartphones. Now, we are able to purchase tailor-made clothes with size, color, and materials of our taste in price and with effort that are almost the same as the ready-made products.

- (Small-and-medium manufacturers) A company consulted a specialist who visits the site of small and medium-sized companies personally, and introduced a low-cost and functional robot and IoT tool that suit itself. In addition to the streamlined manufacturing process, thanks to the coordination of data with suppliers of raw materials and customers of products, manufacturers are now able to take actions in advance based on the operational status and sales plan of suppliers/customers. They have been successful in having transactions with non-associated companies, and have been able to increase their turnover with less fluctuation throughout the year.

Major Items Required for Realization

Creation/Development of Advanced Precedents on Data Coordination Ahead of the World

(Remaining Issues)

- Most of the small and medium-sized companies in Japan have still been slow in data coordination internally and among equipment. Even large companies need to work on the data coordination beyond the framework of factories and corporations. There are neither enough advanced precedents that could serve as a model case nor development of systems/rules that would motivate companies.

(Major Efforts)

- By the end of this fiscal year, we will launch an international experiment of data coordination across multiple companies in and outside of Japan. We will establish a unified format for data description and make a proposal on international standards by 2020.

- We will promote efforts for the establishment of strongholds where small and medium-sized companies can consult "Smart Manufacturing Supporters" for the use of data and introduction of IoT/robot. We aim at establishing around 40 strongholds across Japan in two years.

- In the field of automobile, we aim to enable development of more speedy and accurate "approximation" for the entire supply chains using data. With this in view, we will establish a simulation model concerning evaluation of vehicle performance through cooperation between industries and universities.

- Our goal is to give regulatory incentive to the businesses that are making efforts to achieve advanced industrial security by constant monitoring of facilities using IoT and data. For this purpose, we will diffuse the "Super Certification Business Establishment System" that has newly started based on the High-Pressure Gas Safety Act, and examine, based on experiments, the expansion of fields where advanced safety using IoT needs to be promoted.

- In order to promote coordination and use of data among multiple businesses on supply chains, we need to position "coordinated energy saving", where we can properly evaluate the energy saving achieved not by individual businesses but through coordination among multiple businesses, as the new method of energy saving. To achieve this, we will look into reviewing the necessary systems.

- With the aim of introducing the latest IoT equipment into the manufacturing sites, we will first introduce the latest international standards by the end of this fiscal year in the regulations concerning explosion protection based on the Industrial Health and Safety Act. We will also look into the systems which can respond speedily to the amendments of international standards that follow.

I-4. Building and Developing Pleasant Infrastructure and Towns

Social Vision that We Aim at

With the use of ICTs, robots, and sensors across Japan, productivity of all construction sites including roads, bridges, and dams have improved (by 20% by FY2025). There is no labor shortage, and appropriate infrastructure has been developed and managed. The work environment of construction sites has improved, and the sites have evolved into a more attractive workplace. All of the above are supporting the comfortable and safe daily life of citizens.

\<Scenes from Life/Spot after the Change\>

- (At normal times) With the development and introduction of ICT and 3D data as well as robots which can efficiently provide necessary inspection and repairing requiring professional skills, we are now able to implement appropriate management and detect hazardous spots at an early stage. This has led to the decrease of unpredictable accidents, shortening of construction and repairing period, and reduced traffic regulations.

- (At the time of disaster) A major earthquake occurred and there were damages in infrastructure in broad areas. However, with the help of drones, inspections were implemented in a short period time. Thanks to the auto-construction machines, recovery works at dangerous spots proceeded at a fast speed, enabling daily life before the earthquake to return at an early stage.

- (Construction sites) Thanks to ICT construction machines, it now takes a shorter time to acquire knowhow that we previously needed years. Constructions that previously required even weekends can now be completed without relying on long hours of work of skilled workers, securing workers days off on Saturdays and Sundays.

Major Items Required for Realization

"Social Implementation led by Public Sectors" Tailored to each Characteristics of Infrastructures

(Remaining Issues)
- In the field of construction, where public works have a significant impact, they have just begun using "i-Construction"—the ICT engagement throughout the entire processes from investigation and measurement to designing, installation, inspection, maintenance and management, and renovation. It has not yet prevailed in the field.
- In the fields where private businesses have initiative, such as maritime field, development of public systems has significance. However, neither the internal standards that accompany the development of advanced technologies have been developed nor the international specifications have been standardized.

(Major Efforts)
- By 2019, we will expand the use of ICT to all processes including construction types other than earthmoving and pavement (such as bridges, tunnels, and dams) as well as maintenance and management.
- By the end of this year, we will establish a policy on the use of 3D data, and develop specific rules for the use aimed at making data open by 2019.

- With the aim of familiarizing small-and-medium construction companies that accept orders from local municipalities with the advantages and standards of ICT earthmoving, we will provide a demonstration-type support for actual construction works.

- In order to promote "i-Shipping", where we introduce ICT into every phase from development and construction to operation of vessels, we will establish international specifications for the data transmission relating to the in-ship equipment next fiscal year with the initiative of Japan.

- By the end of this fiscal year, we will establish evaluation standards and test methods for the inspection of infrastructure and disaster-ready robots. "Procedures for the Inspection of Robots" for underwater robots that show procedures of robot use will be established by the end of this fiscal year, and we will further establish procedures for other fields including bridges and tunnels.

- In order to promote the development of robots used for the inspection of infrastructures and disaster-ready robots by presenting targets, starting this fiscal year, we will establish and publish performance required of robots for each situation of use. Further, in cooperation with the managers of infrastructure, we will support the development of advanced technology that supports inspection of infrastructures, such as robots and AI.

- Our goal is to resolve social challenges of local communities by promoting the use of data possessed by local governments. We will achieve this by making things open in the fields focused in the government-private strategic meetings on the promotion of data use and government-private round tables as well as taking advantages of a business proposal system based on the "Act on Promotion of Future Investment on Communities".

I-5. FinTech

Social Vision that We Aim at

While safety and security of users are secured, , FinTech corporations and financial institutions that use advanced technologies such as blockchain cooperate with each other through open API and provide services competitively to users one after another. Cashless settlement is pervasive.

<Scenes from Life/Spot after the Change>

- (Users of service (individuals)) Monthly household accounts can be kept automatically by using an application. One can transfer money to a friend using a smartphone. Identity confirmation that is required when making applications for services can be done online. Sending money to your son studying in the U.S. has become much less costly thanks to blockchain. We do not use cash for shopping.

- (Users of service (corporations)) We do not use bills anymore. Thanks to money transfer telegrams with information on commercial distribution, we are now released from onerous works concerning accounts receivables and tax documents. By using lending service based on big data analysis of commercial distribution, we could avoid fund shortage that we had not been able to predict and avoid before. Arrival of goods and credits can be checked by seconds with blockchain.

- (FinTech companies) A FinTech company that provides money transfer services in API cooperation with financial institutions has been listed. When the company advanced into England, the local authority took the trouble to do a matching.

Major Items Required for Realization

Acceleration of Challenges for Innovations

(Remaining Issues)
- Experiments are still not enough for the innovative FinTech services. Particularly, there are hesitation and concerns against challenges to the experiments over the risks pertaining to the compliance and surveillance. Coordination and cooperation with international human resources and authorities overseas that are essential for keeping up with the international movement for standardization of blockchain are insufficient. When Japanese FinTech ventures expand overseas, coordination with local authorities would be a challenge.

(Major Efforts)
- In order to eliminate hesitation and concerns that FinTech companies and financial institutions tend to have when they try to implement unprecedented experiments (compliance and surveillance risks), we will take measures to facilitate experiments related to FinTech (FinTech experimenting hub (tentative name)). Related government agencies will cooperate to take measures to remove obstacles beside those pertaining to finance-related laws and regulations.
- Using a platform for the experiment of blockchain, we will implement experiments on the sophistication of financial infrastructure including credit transactions, confirmation of identification, and management of settlement/logistics information.
- With respect to the blockchain technology, we will promote joint research in cooperation with international research institutes and will consider financial authorities' participation to an international consortium.
- Taking advantage of frameworks of international cooperation with English and Singaporean authorities, we will support FinTech companies to expand overseas. We will

also consider expanding the frameworks. We will organize a FinTech summit.

Promotion of Open Innovations

(Remaining Issues)

- There is insufficient coordination between FinTech corporations and financial institutions through open API. There is still room for improvement in providing financial services with significantly enhanced convenience for users using a network of Japanese bank systems that are developed to a relatively high level.

(Major Efforts)

- We will enact the law on the partial amendment to the Banking Act and the like and follow up on the number of banks providing API and number of contracts banks entered into with agencies which handle electronic settlement. We will also review additional tasks pertaining to the promotion of open API in meetings for the review of open API.
- Based on the perspective of open innovation, we will look into the challenges pertaining to the bank agency business and the like.
- We need to use new technologies in the finance industry, and allow financial institutions to implement the agile development of services and abilities through IT as well as expand their business opportunities. For this purpose, we will further examine the development of cross-sectoral legislations pertaining to the settlement services.
- We will examine promotion of "RegTech", where government and private sectors take effective and efficient actions pertaining to the regulation and supervision using technologies such as open API and blockchain.

Promotion of Use of FinTech to Enhance Corporate Growth

(Remaining Issues)

- Our task is to connect FinTech with the improvement of productivity of corporations. Particularly, our challenges are the computerization of small and medium-sized companies that maximize the effect of new XML system which starts operating next year as well as the utilization of XML data.

(Major Efforts)

- Based on the "FinTech Action Plan for the Enhancement of Corporate Growth" that originates from the use of financial EDI, we aim to achieve an integral sophistication of the entire processes of finance and settlement.
- We will look into financing services and tax support using data obtained from the new XML system. In and after autumn this year, we will implement experiments on integral management of settlement and logistics information by blockchain.

- We will look into financing services and tax support using data such as new XML systems. In and after autumn this year, we will implement experiments on integral management of settlement and logistics information by blockchain.
- We will look into the transition to electronic bills and checks across Japan through coordination between the government and the private sectors.
- We will promote computerization and clouding of corporate accounting linked to the electronic settlement. We will launch follow-ups for the progress of use of Internet banking by companies.

Promotion of Cashless Society

(Remaining Issues)

- Cashless settlement has yet to progress compared to other foreign countries. Our tasks are to improve safety and convenience of cashless settlement, streamline administrative procedures, and expand sales opportunities using big data.

(Major Efforts)

- With respect to the relaxing of an obligation to present documents when using credit cards at member stores, we will promote cashless settlement by enabling electromagnetic methods such as e-mails to reduce the cost for the settlement by credit card and improve convenience of consumers.
- While promoting API coordination pertaining to the use of credit card data, by the end of this year, we will develop environment for facilitating computerization of receipts, including standardization of formats.

II. Assignment to build horizontal structures in Society 5.0

II-A. Creation of value source

II-(A)-1. Construction of data utilization infrastructure and system improvement for thorough (exhaustive) data utilization

Social Vision that We Aim at

The creation of a new social infrastructure, data utilization infrastructure, is accelerating through public and private partnerships. With the trigger of intensive work periods until 2020, utilization of data possessed by government, municipalities, etc. and data cooperation beyond the boundaries of enterprises have dramatically advanced, and data of the public and private sectors are used with peace of mind. Data published according to the needs of direct dialogue with the private sector is provided in a file format suitable for 100% machine interpretation. The products and services originating from Japan that utilize data have become international standards and spread to domestic and foreign markets.

<Scenes from Life/Spot after the Change>

- (Tourists) Tourists with various needs both in and outside of the country and tourists who will visit Tokyo at the Olympic and Paralympic Games in 2020 will make a transition without difficulty, even in complex Tokyo stations by advanced navigation that combines transportation information and facility information, and they will move smoothly to the venues and accommodations by transportation.

- (National life) Personalized services will be able to be enjoyed in various places, such as appropriate medical and nursing care services according to individual conditions, customized products according to consumer's preference, and education tailored to the degree of comprehension of students.

- (Agricultural site) Even new entrants can harvest delicious and safe crops by making use of various data such as skilled farmer's knowledge, growing conditions and weather without relying only on experience and intuition. Farms can make more revenue by productivity improvements and business growth will increase.

- (Company) Accuracy and speed of marketing will be improved. The transformation will be creating innovative products and services while realizing zero waste and zero lead time throughout the development and production processes including some office operations that are not on job descriptions.

Major Items Required for Realization

Open system of public data

(Remaining Issues)

- Until now, we have promoted environment development for the provision of data possessed by the national government and local governments. Such includes establishing government data catalog sites, developing and providing open data packages to local governments, the disclosure of public data in response to social needs and establishing a data platform centered on public data that involves a whole society have not progressed.

(Major Efforts)

- Public-Private Data Utilization Promotion Strategy Conference is a controller consisting of public and private experts. Based on the Citizen of the world's most advanced IT nation creation declaration · public and private data utilization declaration fundamental plan (Cabinet decision on May 30th, 2017) that is established by the top executive committee consisting of industry, venture, private experts and related ministries at the conference, we carry out comprehensive and effective promotions of public and private data utilization such as online principle, promotion of open data, promotion of IT in administration, promotion of BPR, establishment of data distribution infrastructure and ensuring consistency between government and local measures.

- We will conduct public data disclosure as an intensive work period until 2020, focusing on the following efforts:
  - In order to provide public data in a highly convenient form while in consideration of safety, security and personal information, we will carry out stock picking for grasping the actual state of public data during this year based on Open Data Basic Guidelines (Decision on Public-Private Data Utilization Promotion Strategy Conference at IT Comprehensive Strategy Headquarters on May 30th, 2017).
  - Public-Private Participation Round Table to conduct a direct dialogue with the private sector including venture firms has been held from this fiscal year from time to time. Mainly in the 8 fields*, we will open up data in a way that will lead to the creation of new services and solutions to various issues.

  (* Priority fields indicated in Public and private data utilization declaration fundamental plan. (i) Electronic administration, (ii) Health · Medical · Nursing care, (iii) Tourism, (iv) Finance, (v) Agriculture, Forestry and Fisheries, (vi) Manufacturing, (vii) Infrastructure, Disaster prevention, Disaster reduction etc. (viii) Transportation.)

- Regarding the map data of the registry office, as a part of measures to promote the utilization of public and private data, we will consider to be able to start providing data by 2021, and decide specific conditions and contents during this fiscal year.

- We will promote the utilization of weather information in many industrial fields such as

electric power, tourism, distribution, insurance, agriculture through meteorological businesses promoting consortium by industry, academia and government. In order to create a new solid meteorological business, we will promote the release of basic weather observation and forecast data, and review necessary systems during the current fiscal year.

- While positioning the universe as a big data infrastructure, regarding government satellite data (excluding those pertaining to security uses), we will open it up free of charge and develop concrete disclosure methods etc. from the user's perspective based on international trends and others.

- Regarding oceanographic information which is required wide area coverage, real time property and convenience, we will promote the development of Marine situation display system, which is one of the foundation of aggregation, sharing and provision of marine information in Japan's marine situation grasp (MDA) to promote the use in many industrial fields such as shipping, fishing, development of renewable energy, etc.

- Regarding the corporate information that began the operation in January this year, we will expand the posting information on recognized information and aim for one million postings by the next fiscal year.

- We will prepare for an examination environment where the staff of local public entities can acquire skills necessary for open data, and establish coordination/intermediary function between local public entities holding data and private enterprises utilizing it during the current fiscal year.

Acceleration of data distribution and utilization in industry and individuals

(Remaining Issues)
- Data cooperation and utilization beyond the boundaries of enterprises and industries are not fully advanced due to citizens' vague concerns about privacy protection, difficulty of understanding the merits of data collaboration and utilization, and the lack of clarity of data usage authority.

(Major Efforts)
- To facilitate clarification and sharing of data usage authority through business conclusion of appropriate contracts, we carry out the utilization of contract guidelines and others concerning data usage authority formulated in May of this year. At the same time, we will organize points to be noted for each field through dialogue with the industry during this year and promote development into individual fields.

- To enhance the convenience of data users and promote expansion and revitalization of the data distribution market, we will support the establishment of a framework for democratic guidance during this fiscal year for the formulation and promotion of voluntary rules among private enterprises.

- As for PDS (Personal Data Store), which is a mechanism to promote the distribution and utilization of personal data under individual involvement, information banks, data trading markets, etc., we carry out the Public Private Partnership Demonstration Project. At the same time, we will examine the ways of institutional systems to ensure reliability, fairness and transparency under individual involvement, and obtain conclusions this year.
- We will begin disseminating information to promote data utilization such as the announcement of case examples based on the cases that are from private enterprises and others that concern the handling of personal information and anonymous processing information during this fiscal year.

Intellectual property and standardization strategy that promotes data utilization

(Remaining Issues)

- Since the concern about unauthorized use of data and the response to conflicts over intellectual property use are serious, data collaboration and utilization far beyond the boundaries of companies and industries are not fully advanced, and it is a challenge to construct an intellectual property system that appropriately adjusts to the interests involved in using data.
- The standardization system of public and private sectors has not covered new business model that combines goods and services and the diversification of standardization activities.

(Major Efforts)

- Regarding development of the Copyright Act stipulations that limit copyright with a view to new businesses utilizing big data, prohibition of unauthorized acquisition, use and provision of data, and the establishment of an Alternative Dispute Resolution (ADR) system to adjust the interests of intellectual property and enhancement of evidence gathering procedures for intellectual property lawsuits, we will take necessary measures including revision of related laws as soon as possible. Also, we will further advance the process and product of AI on the intellectual property system.
- We will consider the strategic and organic cooperation methods on standardization between public and private sectors, including the commander tower function (Chief Standardization Officer (CSO)) for acquiring international standards. In the meanwhile, we will strengthen the public and private framework for standardization through rapid international standardization in important areas such as automatic driving, smart factories, IoT, etc., collaboration between international standards and regulations, and a study aiming at the amendment of Industrial Standardization Act.

II-(A)-2. Drastic strengthening of education and human resources

Social Vision that We Aim at

While the required abilities and skills are constantly changing, the thickness of human resources capable of continuing Lifelong relearning is born. With the progress of combining IT with every industry, everyone who works in Japan will be having IT power. All business people will be acquiring IT power according to their needs and the Japanese society will become the one that continues to create added value by utilizing IT power.

<Scenes from Life/Spot after the Change>

- (IT experts) They used to develop a sales management system in an old programming language (COBOL etc.) at IT vendors, but in the mid-thirties they acquired new technology by e-learning (big data such as Python and programming languages compatible with AI). Also, they have led the development of a new system that can provide customized customer services at an IT user company (which is their new workplace) and they are playing active roles at comparable salaries to those of overseas IT human resources.

- (Small and medium-sized companies) The ryokan executive who was suffering from the decrease in sales solicited employees to retrain in the latest customer service techniques by utilizing the data at the social class lecture. By fully utilizing the system that made all information such as the preferences of the visitor visible, they provide courteous service suited to the needs of their customers, and achieve customer satisfaction and increased sales.

- (Youngster) Inspired by programming classes at elementary school, this person went to a college engineering department with an eager to design by himself/herself, a society that is 10 years into the future with automated traveling vehicles and robots integrating into daily life. After studying not only information and mechanical engineering but also other fields such as business administration, he/she founded a venture company. This person has been pushing for collaborative research with major companies.

Major Items Required for Realization

Presenting the compass of what to learn

(Remaining Issues)

- It is necessary for the industry-government-academia to work together to strengthen Japan's IT power; however, since it is not sufficiently visualized as to how much talent is necessary in each field, there is no indication of a compass to which the industry-government-

academia should aim for in common.

(Major Efforts)

- In order to clarify the necessity of human resources and the situation of mismatched labor required under the 4th industrial revolution such as data / AI personnel consisting of security, data scientists, AI · IoT etc., we will establish a mechanism to grasp IT human resources' supply and demand at an early stage.
- To clarify abilities and skills required for IT human resources based on the prospect of supply and demand of human resources, we will revise the indicator (IT skill standard) which clarified and systematized necessary practical abilities. Additionally, we will formulate new skill standards focusing on IT human resources who are capable of responding to new technologies and development methods that are becoming mainstream IT skills during this fiscal year.

Practical education through industry-government-academia

(Remaining Issues)

- There is not a sufficiently established mechanism that provides services based on the needs of the industry from suppliers (university, vocational school, private enterprise etc.) that provide education and human resource development.
- There is no well-developed environment for practical learning due to lack of real data on actual issues faced at the company's offices or work sites, and lack of resources such as lecturers who are familiar with actual business challenges.
- Although ministries and agencies are engaged in education and human resource development for improving IT capabilities, each effort is vertically structured and is difficult to spread them out horizontally in ministries and agencies.

(Major Efforts)

- While continuously grasping the needs of the industry, we work on making efforts of industry-academia cooperation through college consultation bodies by university stakeholders to share information at the practical level with industry representatives and the regional industry core human resource training project by vocational schools. Also in order to make these efforts cross-functional, we will examine the public and private consortium by industry and the educational circles, establish it by the end of this fiscal year and start the approach.

Strengthening university mathematics and data science education, and engineering education reform, etc.

(Remaining Issues)

- In Japanese engineering education, faculty members are assigned to each specialized area of the department and it has become a vertically divided structure. Therefore, it is becoming difficult to build a flexible educational system that matches the modern era, such as education that combines the department of informatics and the department of mechanics.

- The importance and necessity of mathematics/data science education are increasing beyond the field; however, only some students in the sciences have learned and there is little opportunity to learn it without boundaries.

(Major Efforts)

- Regarding engineering education system reform, we will examine the specific way to reform the system such as the drastic review of the vertical division structure of each department or the flexibility of the length of study such as bachelor / master's 6-year continuous education, etc., during the current fiscal year. We will carry out this plan in the next fiscal year and aim for full-scale implementation in fiscal 2019.

- We organize a center in the university which becomes the base for implementing fully-covered mathematical and data science education at the university that goes beyond the special field of the arts and sciences. Then, we prepare a standard curriculum and model teaching materials that will be a nationwide standard and disseminate it to other universities.

- For compulsory programming education at the elementary school level (from fiscal year 2020), endeavors such as utilization, evaluation and further improvement of digital teaching materials that can be learned with enjoyment at school sites with the collaboration between industry and education fields will start from this Autumn and in full-scale deployment from the next fiscal year.

A society where anyone can relearn

(Remaining Issues)

- Even if employed voluntarily attempts to learn for skill development, there are financial and temporal obstacles, and accessibility is not necessarily easy.

- Because abilities and skills which employees have acquired have not been adequately assessed in companies' recruitment and benefits, there is insufficient incentive for relearning.

(Major Efforts)

- Regarding the advanced levels of vocational training courses centering on IT / data fields provided by private business operators for business people, we will establish the

"Certification System for Fourth Industrial Revolution Skill Acquisition Course (tentative name)" certified by the Minister of Economy, Trade and Industry during this fiscal year. Also, we will consider the application of professional, practical education and training benefits for this system.

- Regardless of age and occupation, it is important for various human resources to acquire basic IT / data skills through various opportunities. We will take measures to support individuals in order to enrich "relearning" of motivated business people.

- In order to demonstrate the skills of workers effectively, we will clarify the content of jobs and abilities and promote fair evaluation based on them. Also, we will take measures that can establish the entire benefit system such as wage systems based on the evaluation as soon as possible.

II-(A)-3 A virtuous cycle system that creates innovation and ventures

Social Vision that We Aim at

While changing from a capital-intensive economy to a knowledge-intensive economy, Japanese society will also involve wide range of society groups such as enterprises and investors centering on academic and national research, and development corporations, which are bases of knowledge and human resources. As a result, excellent research, development and venture will be created voluntarily and continuously by the entire society. A virtuous circle will be realized in which the fruits of innovation will be invested into the next creation (R&D investment to 4% or more of GDP by 2020).

<Scenes from Life/Spot after the Change>

- (University · R & D corporation) We will step into new management that is funded by us, leading investment instead of the traditional management that carries on activities within a given financial source under the leadership of presidents

- (Researcher) Researchers who have true motivation and abilities will be appreciated, excellent young researchers will be able to secure research funds and posts, and the research results will be cited by researchers worldwide.

- (Company / Investor) We will quickly obtain innovative technology that is difficult to gain on our own through large-scale collaborative research with universities that are assertive in industry-academia collaboration and investment to R&D oriented ventures.

- (Entrepreneur) Graduating from school and finding employment in a company is not common but options of entrepreneurship will become more common, and a success story connecting creative ideas and seeds to business will be produced one after another regardless of the age group.

Major Items Required for Realization

Promoting incentives and self-acquired resources for strengthening the core function of academia.

(Remaining Issues)

Industry-academia collaboration incentives for universities and researchers are inadequate, and the secretariat system development for collaboration is not progressing. Also, the ways for self-acquired funds necessary for a full-fledged industry-academia collaboration are also limited.

Furthermore, integrated reform of the administrative expense grant and competitive funds are underway. It does not lead to a virtuous circle of voluntary industry-academia collaboration centered on academics, and it is limited to small-scale collaborative on through researchers' individual connections.

(Major Efforts)

From this fiscal year, we will develop the data that can compare and evaluate the activities of industry-academia collaboration at each university. By announcing it annually, it will encourage the companies to consider cooperating parties and lead to investment.

As for the rule that we reflect the results of achievements of industry-academia cooperation based on the quantitative KPI set by each university as a standard to the prioritized allocation of subsidies for operating expenses that will be carried out from this year, we will strengthen the dissemination of evaluation results. Also, we will inform the best practices through evaluating university efforts such as personnel system reform in which faculty and staff engaged in collaborative research are appropriately evaluated and supported regarding benefits and the environment.

With strong authority under top management, we will organize excellent researchers beyond the department, and build a new system in the next fiscal year to centralize management of industry-academia-government collaboration with specialized human resources such as commercialization and intellectual property.

To spread new application models for further effective use and improvement of the appeal of university-owned assets, we will formulate a system review policy within this year. Also, in order to activate donation of land and stock to universities, we will examine concrete measures and systems based on the results of grasping the actual status of acceptance during the fiscal year.

Focused investment in bases and human resources that support Japan's major industries

(Remaining Issues)

- Japan is relatively weak to investing actively in research and development compared to other countries. To maintain our technological innovation capabilities at the world's top level, with securing R&D investment, the keys will be concentration on high priority areas and secure core resources such as investment in information communication infrastructure accompanying the rapid increase in data volume and human resources who are responsible for innovation.

(Major Efforts)

- Regarding government investment in R&D, we aim to make it 1% of the GDP, while maintaining consistency with the economic and fiscal rehabilitation plan. Also, based on Public/Private R&D Investment Strategic Expansion Program (tentative name), which was

decided to be established in the next fiscal year, we will guide each ministries' measures towards areas which promote private R & D capital.

- Aiming to become the center of excellence of the world, we are gathering top domestic and overseas researchers under the superior management of an organization leader. In order to create innovation in collaboration with industries including ventures, we will concentrate on resources to a small number of bases in the next fiscal year. Moreover, we will examine current efforts and consider organizing bases in industries that can aim for the world's top in the future.

- We are considering strengthening an internationally dominant, academic information communication base that includes a supercomputer capable of accelerating AI development and big data processing. We also make it possible to utilize companies and others working on collaborative research beside universities.

- We will secure a stable research environment for young researchers by promoting excellence young researcher projects so that aspiring talent can aim to become researchers. Also, we will establish measures to accelerate the improvement of human resources and human resource system reforms at universities during the next fiscal year.

- The living and working environment of foreigners has been improving and the immigration system concerning highly-skilled foreign professionals is becoming very open. Under the slogan Open for Professionals, we will make external communication while collaborating with diplomatic missions abroad, JETRO, etc.

Acceleration of voluntary and continuous creation of venture

(Remaining Issues)

- Since the risk money supply system (money invested in high-risk, high-return by investors) to ventures is weak, large-scale funds to compete globally are lacking. It is also difficult for ventures to gain access to government procurement and it has not been able to boost their growth.

(Major Efforts)

- We consider strengthening fund functions such as M & A of ventures by large enterprises. Also in order to further increase innovation development results of national research and development agencies, we will consider the way of further utilizing their investment businesses after paying attention to ensure sound operations and finances. We will draw conclusions during this fiscal year.

- To promote investments by institutional venture capital investors and improve the investment environment, we will develop intellectual infrastructures such as guidelines on funds market value evaluation and investment model contracts, and we will start the demonstration during this fiscal year.

- In order to make use of patents in flexible collaborative research and lead to the creation of venture, we will build a model to be owned independently by universities during this fiscal year.
- We will start trials to promote the utilization of R & D oriented SMEs and ventures in government procurement in this fiscal year.

II-B. Mechanism to boost maximization of value

II-(B)-1. Establishment of regulatory sandbox

Social Vision that We Aim at

A society that enhance the convenience of daily life through generates innovative products & services and by securing opportunities to test the products of innovation including rapid development of AI, Big Data, Distributed Ledger Technology, automatic flight, automatic traveling.

<Scenes from Life/Spot after the Change>

- (Companies) A startup company with an idea of innovative business model will test a new business model utilizing AI, Big Data, etc., under the framework of sandbox. Since its test has been successful, regulatory reform is realized, and new services and products will be offered.

- (Households) A local venture company will devise a service that makes life easier based on a new communication method. For instance, this service mutually refers to recipe data and daily usage data accumulated in refrigerators and microwave ovens in the home. It suggests new recipes according to your preferences and order missing ingredients automatically from a supermarket in the neighborhood. Even though current regulations did not assume a new communication method, it will immediately start the test because of the sandbox. We will also check the empirical data together. The service will be delivered promptly due to our corporation.

- (Seniors) Lifestyle support robot will check health condition data of seniors. If there is any abnormality, the data will be automatically sent to the family doctor, and it will realize older adults to manage their health easily.

- (Finance) Usage costs of electronically recorded receivables and the time for bank visits compared to the usage of bills will be lower due to distributed ledger technology. Small and medium-sized companies' financing will also be smoother.

Major Items Required for Realization

Establishment of regulatory sandbox by each project

(Remaining Issues)

- In order to link the results of innovation to the creation of new added value, it is indispensable to accumulate the actual proof for trials. However, unless actual proof is done,

it is not possible to acquire necessary data, and the reality is in a vicious circle that we cannot sufficiently prove to the regulatory authorities the specific needs of success methods to follow.

(Major Efforts)

- As an effort on a project basis, based on the agreement of participation after limiting participants and periods and explaining the contents of demonstration and risks, we will establish the new framework that allows to try first as a fundamental idea that is not bound by the existing framework.

Efforts to promote demonstration of near-future technology such as automatic traveling and small unmanned aircraft in national strategic special zones

(Remaining Issues)

Many institutional restrictions are imposed on individual demonstration projects. Also many complicated procedures are required for preliminary regulation on verification and prior adjustment with related organizations.

(Major Efforts)

To carry out demonstration experiments of near-future technologies such as automatic traveling, small unmanned aircraft (drone) etc. promptly and smoothly in the National Strategy Special Zone, we will quickly realize the creation of a regulatory sandbox system to fundamentally review relevant preliminary regulations and procedures.

II-(B)-2. Regulatory reform, Simplified administrative procedures, integrated promotion of IT

Social Vision that We Aim at

According to Basic Program on Reducing Administrative Burden (March 29, 2017 Subcommittee for Administrative Burden Reduction, Council for Promotion of Regulatory Reform）, the administrative procedure cost will be reduced more than 20% in principle by March 2020 and the business environment that is the most flexible to perform in the world for domestic and foreign companies will be provided. Companies will be relieved from unnecessary concerns due to administrative procedures and will be concentrating on added value creation activities that are main businesses. Administrative procedures will be brought online in a way that is easy for operators to use, font and formats will be shared, and the information which was submitted once cannot be required twice (once only).

In addition to establishing a corporation, paying social insurance premiums, etc., procedures to multiple organizations will be unified (One-stop procedure system).

<Scenes from Life/Spot after the Change>

- (Small and medium-sized companies) With regard to the information submitted to a ministry, agency, etc., the same information will not be requested from another ministry or agency, so that it will not be troubled by vertically-divided administration. For example, even when people apply for multiple subsidies, it will be enough to fill in the same matter once.

- (Entrepreneurs) When an entrepreneur creates a venture company, as long as they enter important matters for establishing a corporation on a smartphone by Q&A method, all application information that is for the legal affairs bureau, the tax office, the labor standards supervision department, the pension office, etc., will be sent by online.

Major Items Required for Realization

Transition from administrative procedures of administrative perspective to public service of business person viewpoint

(Remaining Issues)
- Many current procedures have been simply replaced with online procedures, and there is a possibility that new systems such as big data, corporate numbers, national identification number, AI and other technological innovations, have not been fully utilized. Since the horizontal structure is not developed in ministries to carry out projects, improving the convenience of users has not been worked on yet, and the one-stop (unified) procedure system is not carried out either.

(Major Efforts)
- We will reduce the time (administrative procedure costs) that business operators work in order to conduct administrative procedures by 20% in principle, in areas with substantial business burden such as procedures for licensing and social insurance by March 2020.
- Each ministry and agency will formulate plans for the promotion of medium and long term e-administration including the on-line administration of administrative procedures by the first half of next year. It will include the direction of response to cross-cutting issues such as collaboration between government offices systems and corporate information.
- To enable users to process online and one-stop at the time of establishment of the corporation, considering utilization of private cloud services, we will examine from all viewpoints. These viewpoints include the way to confirm the articles of incorporation, the seal stamp notice, the external cooperation API, etc., with public and private unity, and obtain a conclusion during the current fiscal year.

- Trade procedures regarding the total optimization to realize shortening of the residence cargo time, we will set up a public-private consultation system that government officials and private enterprises meet to examine from a general point of view such as institutional and technical aspects. We will draw a conclusion during the current fiscal year.

- In order to realize a prompt and efficient trial with a general point of view such as a guarantee of procedure at court, we will promptly consider the measures to promote IT conversion. Such includes procedures related to judgment from the user's perspective while considering the circumstances of other countries, and will draw conclusions during the current year.

- Regarding Blockchain Technology, we will begin verification in fields such as government procurement by the end of this fiscal year. We will investigate from the operation rule aspect toward utilization of a sandbox system and the promotion of efficiency by smart contract. We will formulate plans for the realization of innovative electronic administration by the next fiscal year.

- We will operate a one-stop application system (venture support platform) that can speedily utilize government support measures by thinking in an entrepreneurial perspective from this fiscal year. We will examine the once-only function of basic corporate information that collaborates with corporate information and development to subsidies. We will obtain direction in this fiscal year.

- We will reduce the test burden on chemical substance assessment, promote a super certified office system with high-pressure gas security and encourage i-Construction to utilize ICT at construction sites. Then we will realize the shortening of inspection days (1/5) of construction work and reduction of inspection documents (1/50) by the on-site implementation of state-of-the-art technology.

II-(B)-3. Strengthening earning power (Transformation of corporate governance reform from a plan to reality)

Social Vision that We Aim at

Companies properly deal with changes in the business environment under a strengthened management system and are managed from the viewpoint of improving corporate value over the medium and long term, without regard to overly short-term perspectives. Investors conduct deep and constructive dialogues with companies and encourage sustainable growth. As a result, dynamic enterprise management becomes possible and the capital market will be vitalized as a place to raise funds.

<Scenes from Life/Spot after the Change>

- (Corporate and institutional investors) A considerable number of companies that adopt their fiscal year-end at the end of March hold general shareholders meetings in July, and our company held a general shareholders meeting in July for the first time. The schedule enabled us to do a financial closing duty comfortably with margin time. Contents of the disclosure documents could be communalized and the documents could be electronically provided. As a result, we could interact more with investors towards the general shareholders meeting and felt strong response.

- (Board of Directors · Corporate management team) The management functions and supervisory functions of our Company's board of directors dramatically improved by scouting the person who served as the president and chairman of another company as an outside director. As a result, our company could decide to sell the business that could not have been divested while being positioned as a non-core business under the new management strategy because the business was from the department to which the former CEO used to belong. On the other hand, our company could acquire the other company's healthcare business to enhance its core business.

- (Citizens) In addition to adequate information disclosure on business results and strategies, citizens' interest in companies that actively participate in providing ESG (environment, society, governance) information that indicates efforts to protect the global environment has increased. As a result, citizens invested a part of an asset portfolio in these companies.

Major Items Required for Realization

Promotion of constructive dialogue between companies and investors

(Remaining Issues)

- Effective stewardship activities by institutional investors are not necessarily carried out. Publication of exercise results of voting rights by institutional investors is insufficient. Also, there are indications that there is concern about the transparency of the exercise of the right to vote and stewardship activities by the asset owner are not sufficiently done.
- Regarding the disclosure that is the basis for dialogue between companies and investors, it is pointed out that the information necessary for discussion is not disclosed enough and that disclosures are spread over multiple documents, making it difficult for investors to understand. It is also pointed out that quarterly disclosure is one of the factors that cause companies and investors to be too short-term oriented. The general meeting of shareholders, which is the central place of dialogue, also concentrates in a short period of time, making it difficult for investors to talk about the general meeting proposal with

sufficient information and time. The importance of providing information in response to changes in the business environment surrounding enterprises is also increasing.

(Major Efforts)

- Through discussion and examination at the follow-up meeting of stewardship code and corporate governance code (hereinafter referred to as "follow-up meeting"), we will encourage institutional investors to implement measures for effective stewardship activities, including strengthening governance and control of conflicts of interests, enhancing disclosure of the exercise results of voting rights, and monitoring of investment companies by asset owners.

- Regarding electronic provision of documents dispatched to a notice of calling of a shareholder's meeting, we will examine at the subcommittee established at the Legislative Council and obtain a conclusion.

- We will also promote information dissemination, dialogue and investment methods including the disclosure that contribute to improving corporate value in the medium- and long-term with ESG elements in mind.

- Regarding the integrated disclosure of business reports and securities reports, the relevant government ministries and agencies will accelerate their joint discussion on institutional arrangements, clarification and dissemination of the way of standardization, law interpretation and any other necessary measures for items that have similar or related contents and can be standardized among different disclosure schemes. They will set forth a plan within this year.

- In the Financial Council, listening to opinions from diverse related parties, we will consider comprehensively issues about the way of information disclosure that not only ensures adequate and fair disclosure of information, but also contributes to constructive dialogue between listed companies and investors, including management strategies and governance information of listed companies. Efforts will be carried out sequentially from this year and from the issues for which we develop an actual plan.

- Regarding quarterly disclosure, while examining the pros and cons of mandatory disclosure, we will investigate issues and measures for further elimination of duplicate disclosure and for further enhancement of its efficiency and obtain an interim conclusion around next spring.

Strengthening the management system

(Remaining Issues)

- There are indications that corporate governance reform has remained in perfunctory response to principles such as the corporate governance code.

- Board of Directors meeting faces challenges such as insufficient discussion about the

future management strategy and occasional difficulty in finding appropriate candidates for an outside director. In addition, there are indications that fairness and objectivity are not sufficiently secured in nomination of management candidates and training of successors and that appropriate incentives for managements including performance-linked rewards are insufficient.

- There is a practice that retired presidents/CEOs act as counselors/advisors and take particular roles in their companies. There is a case that the retired presidents/CEOs exercise an opaque influence on corporate management, and there are concerns that it may impede proper governance function.

(Major Efforts)

- Through discussions and examination at the follow-up meeting, we will encourage listed companies to leverage their efforts in relation to election and dismissal of CEOs in the objective, timely and transparent manner. We will also encourage the organization of board of directors with necessary qualities and diversity, management of the board of directors focusing on strategies, appropriate evaluation for these efforts, etc.

- We will promote dissemination of Practical Guidelines on Corporate Governance Systems (CGS Guidelines) (drawn up by the Ministry of Economy, Trade, and Industry, March 31, 2030). We will analyze and publish the status of utilization of nomination and remuneration committees at companies, the status of recruiting of former managements as outside directors and the status of introduction and disclosure of incentive rewards, etc. during this fiscal year.

- We will create a system to disclose name, position, status, etc. of directors/CEOs who take office as counselors, consultants, etc. at the Tokyo Stock Exchange Co., Ltd. around this summer. The new system will be implemented at the beginning of next year.

Facilitation of business restructuring

(Remaining Issues)

- Bold business judgment is not necessarily done sufficiently in companies, and companies concentrate their efforts on maintaining present status rather than on making changes. As a result, companies have continued to hold businesses with low profitability and have not made progress in reviewing their business portfolio and shifting management resources to business segments that are likely to have growth potential and to be profitable.

(Major Efforts)

- We will examine related systems for measures to promote bold business restructuring such as agile shift of business portfolio and take institutional measures next year.

II-(B)-4. Public services and Private liberalization of assets

Social Vision that We Aim at

Through the utilization of the Concession System (The scale of PPP / PFI is expanded to 21 trillion yen in the decade of 2013 to 2022. Of these, the utilization of the Concession System is 7 trillion yen) that entrust management to the private sector while the country and local governments are holding ownership of public facilities, private participants that have diverse knowledge on all infrastructure in Japan such as roads, airports, water supply and sewage systems will constantly enter on the premise of public-private dialogue. As a result, Japanese society will have succeeded in achieving both improvements on the service level and efficiency.

<Scenes from Life/Spot after the Change>

- (The airport) Due to the free layout of the airport facilities, it will be reborn as a more comfortable and convenient service such as being able to enjoy eating and drinking/shopping after security check-in until right before departure with a send-off guest.

- (Water supply and sewage system) While financial resources and staff of local public entities are short, the aggressive introduction of state-of-the-art technologies such as sensors and systems by the private sector, cost prevention and long-term appropriate renewal investment improvement services, etc., are being conducted on the premise of appropriate monitoring by local governments.

- (Road)There will be improved attractiveness in the parking area, and the number of new users is increasing due to the knowledge of private enterprises, the setting up of restaurants that use local resources, the exhibition of goods, and the holding of various kinds of events.

Major Items Required for Realization

Expanding the introduction of Concession System in a growing field where demand is growing

(Remaining Issues)

- As for the Concession System, bold reforms progress in a short period of time including various law amendments, clarification of legal interpretation and formulation of guidelines.
- As a result, the airport field has achieved the goal which had set up during the concentration strengthening period until last year; however, in the future, issues on institutional and operational aspects will emerge to expand horizontally further based on precedent cases and expand introduction in new fields such as passenger terminal facilities for cruise ships.

(Major Efforts)

- We will plan to select concessionaire of around seven airports in Hokkaido (New Chitose Airport, Hakodate Airport, Kushiro Airport, Wakkanai Airport, Memanbetsu Airport, Asahikawa Airport, Obihiro Airport), by 2019 by considering the viewpoint of sightseeing strategies such as wide area tourism round route formation.

- Regarding the Concession System, we will newly establish Passenger Terminal Facilities and MICE Facilities for Cruise Vessels as a priority area that we put intensive effort in, and will formulate precedent cases.

- To make Concessionaire who is not a designated manager possible to allow certain third parties to utilize within the scope of the purpose of establishing public facilities, we will take necessary legal measures at the next ordinary Diet session.

Expanding the introduction of the Concession System in maturity fields where demands are decreasing such as the declining population

(Remaining Issues)

- For local public entities that utilize the Concession System such as public facilities, the merit is not necessarily realized by switching from the conventional ordering method, and the horizontal deployment has not progressed.

(Major Efforts)

- This is regarding special support for municipal bonds pertaining to projects that introduce the Concession System. When we carry out the advanced redemption with the aim of operating rights, we will take necessary legislative measures at the next ordinary Diet session to support project formation by municipality in the field of water supply and sewage.

- To organize a precedent case in the water supply business, we will consider measures such as providing grants and subsidies only for certain projects that we work on before domestic achievements of the Concession System are confirmed. Also regarding the introduction of these mechanisms to eliminate the new burden of municipality, we will consider it in parallel with the enforcement situation of the supplementary budget for 2016 as well.

Development of the promotion structure and measures for the operation

(Remaining Issues)

- In promoting a mechanism for transferring essential elements of business between public and private sectors, there is a need to be trusted by private enterprises that will be the leaders of the government. Although it is required that a system that should be improved and refined based on private enterprises' opinion as well as government, it is insufficient.

(Major Efforts)

- At the time of contract with the burden of warranty collateral, the refund of consideration of operating rights, and the purchase of necessary assets at the expiration of contract, we will consider the way to be present by the end of July this year. This consideration is so that the manager of the facility can promise a certain payment to the concessionaire when certain conditions are satisfied and will take necessary measures by the next ordinary Diet session if necessary.
- In promoting PFI business, we will consider the functions and authorities of the Cabinet Office and the appropriate way of organization to exercise its authority (including the composition of external neutral specialized agencies) based on examples from other countries. We will take necessary measures by the next ordinary Diet session if necessary.

III. Construction of a regional economic virtuous circulation system

(Medium-sized enterprises Small and medium enterprises, Service Industry, Agriculture, Forestry, Fisheries, Tourism, Sports, Culture and Art)

Social Vision that We Aim at

With the active circulation of people, things, money and data inside and outside the region, small and medium-sized manufacturers, agriculture, forestry and fishing industries, service operators such as tourism, food and beverages, retail industries and the like, sports, culture, and Art-related industries, will have increased added-value and productivity. Companies that lead the region will have become the foundation of a virtuous circle in the entire region, and growth industries taking advantage of the characteristics of the region and the employment of good quality, etc. will have been created. In this way, the virtuous circle of the regional economy will have been materialized. The number of small and medium-sized enterprises and small enterprises that generated profits will have doubled to 1.4 million, while the growth rate of labor productivity in service industry will also have doubled (2%) by 2020. In this way, the improvement of value-added and productivity of individual business operators and the virtuous cycle of regional economy will have been progressing at the same time.

<Scenes from Life/Spot after the Change>

- (Agriculture, Forestry and Fishing Industries) These industries will have been performing optimum operations and direct transactions with end users making use of data related to the growth situation, weather, market conditions, and the like, without relying on the experience or intuition. High productivity will have been realized.

- (Tourist destinations) Town development companies established by local volunteers and DMOs (Destination Management/Marketing Organization) will have improved the landscape and regenerated regional resources, including empty shops and Japanese traditional houses by obtaining funds and management support from regional banks and funds. Personnel who have work experience in IT area as well young workers will have been playing active roles, successfully revitalized the city and improved the productivity of individual business operators by analyzing tourist data. The city will have been bustling with tourists from home and abroad throughout the year.

- (Provincial cities) In a collected effort from local governments and local enterprises, a concept of "stadium-arena" will have been developed, which serves as an exchange base where various generations gather, not only for watching fascinating sports but also for concerts, health promotion and other purposes. Provincial cities will have utilized private investment and expertise to efficiently develop and operate attractive facilities. Provincial cities will also have brought in the users of the stadium-arena to shopping districts and tourist facilities by introducing coupons from the town walking application.

- (Retailers) Retails business owners who have little knowledge about IT will have introduced cloud services encouraged by their external tax accountants (from several thousand yen a month). Sales and purchase data will have automatically generated from the POS cash register and order receiving/ordering system via the cloud service, which will have made their accounting and tax returns tasks easier. Retail business owners will have reorganized items and optimized prices through data analysis and AI, which will have led the development of new services with higher customer value.

Major Items Required for Realization

Advancement of introduction of IT and data utilization, etc. to improve added value and productivity in the industries in the region

(Remaining Issues)

- There are issues such as installation cost or lack of human resource and expertise related to the introduction of IT and the utilization of data. Furthermore, there is a delay in the development of a business environment and opening useful data that encourage workers to create ingenuity at the work site and also to allow an added-value of the entire value chain to be improved.
- Consequently, the delay has caused a lack of the advancement of the introduction of IT and the utilization of data and a lack of initiatives to increase added value and productivity of small and medium-sized enterprises and industries of agriculture, forestry, fishing, tourism, sports, culture and art, and the like. This lack has caused a failure of local business operators to fully exert their "original strengths" of being capable of making business decisions that are flexible and rooted in the region.

(Major Efforts)

\<Medium-sized enterprises, Small and medium-sized enterprises, Small enterprises and Service Industry\>

- Promoting the utilization and introduction of IT, IoT and robots in work sites by providing professional support to more than 10,000 companies by the end of this fiscal year aiming at creating new services and value-added making use of data of small and medium-sized enterprises and other entities.
- Studying methods for further dissemination of IT cloud services among small and medium-sized enterprises and other entities, and reaching a conclusion by the end of this year in view of collaboration with management innovation support organizations and other organizations.

\<Agriculture, Forestry and Fishing Industries\>

- Launching the "Agricultural Data Platform" by the end of this year to enable farmers to utilize and share various data by opening up information held by public institutions and other organizations, including agricultural data, maps, and weather information. Promoting this initiative for the implementation of data-oriented agriculture of high added-value and high productivity.
- Advancing reorganization of the production material industry and other activities, with an aim at reducing prices of agricultural production materials and strengthening the international competitiveness of agriculture and production material related industries. Advancing the reorganization of the businesses and industries that includes drastic rationalization of intermediate distribution, in order to restructure the distribution and processing of agricultural, forestry and fishery products and the like.

\<Tourism, Sports, Culture, and Art\>

- Conducting statistical surveys on a full scale beginning next year on the number of visitors and the amount of consumption by prefecture, aiming at increasing the level of sophistication of tourism marketing utilizing data. Promoting the conversion of existing business models of the accommodation industry through utilization of ICT and collaboration among accommodation facilities.
- Constructing a "Sports Open Innovation Platform (tentative name)" to advance demonstrations at sports sites and commercialization related to the utilization of AI, IoT, big data and vital data in the sports industry.

Supply of funds for growth and utilization of human resources and expertise

(Remaining Issues)

- When regional business owners work on a new project or management improvement, it is difficult for them to introduce IT and to utilize and obtain necessary human resources and expertise within their capacity in terms of management resources and knowledge.
- Due to the shortage of human resources, business owners can hardly cope with new business development and demand increase or meet diversifying needs, and so on. With the aging of business owners, smooth business succession is an urgent issue.
- In order to support the initiatives of business owners such as identifying issues and improving the management, it is a challenge for regional financial institutions and other institutions to enhance their financial intermediary function further, for example, by providing business operators with support in term of funds, human resources and expertise that are necessary for the growth of such businesses, according to the needs and issues of such business operators.

(Major Efforts)

<Medium-sized enterprises, Small and medium-sized companies, Small enterprises and Service Industry>

- Advancing the supply of equity funds as well as hands-on support through joint venture funds of regional financial institutions and the Regional Economy Vitalization Corporation of Japan (REVIC) or the Development Bank of Japan Inc. (DBJ).
- Strengthening the initiatives, including the supply of risk money through collaboration between DBJ and regional financial institutions, the transfer and the penetration of expertise by dispatching experts from REVIC to regional financial institutions, and the human resource support through the use of Japan Human Resources Co., Ltd.
- Advancing the dissemination of "Benchmarks for the Banks' Financial Intermediary Function", "Benchmarks for Local Companies" and "Guidelines for Personal Guarantee Provided by Business Owners" among business operators, and the disclosure of the usage situation by financial institutions, in order to promote loans not excessively dependent on collaterals or personal guarantees, and to encourage the initiatives to improve productivity of both financial institutions and business operators.
- Providing support to business operators in preparation for early and systematic business succession (pre-support) and providing support to business successors in management innovation triggered by business succession (post support) for the next 5 years set as the intensified implementation period. Furthermore, introducing a method of making a comprehensible diagnosis of business succession.
- Creating model cases in the region to promote side jobs or side businesses that will lead the securing of diverse human resources and the establishment of businesses.
- Studying issues faced by companies that dispatch or accept human resources, workers and the market with a view to utilizing human resources of large companies and other entities with abundant latest knowledge, and reaching a certain level of conclusion by the end of this fiscal year regarding necessary implementation policies including incentives and acceptance know-how.

<Tourism, Sports, Culture, and Art>

- Installing academic courses in about 30 graduate schools and universities by 2019 by providing assistance in the development of programs specialized in service management such as tourism. Establishing MBA programs in tourism at two graduate schools in the next fiscal year. Educating human resources specialized in management as well as professionals through these measures.

- Working on the planning and sales promotion of destination-based optional tours as well as the establishment of a "Regional Guide System" through the revision of the Licensed Guide Interpreters Act and Travel Agency Act.

<Agriculture, Forestry and Fishing Industries>
- Advancing management improvement and human resource matching, etc. in cooperation with the economic world of the region in the agricultural sector, and launching Agricultural Management Seminar, which provides the opportunity to learn business management in earnest while working on a farm, in around 20 prefectures in this fiscal year..

Regional revitalization, and spread thereof to the entire region

(Remaining Issues)
- From the viewpoint of "regional revitalization" and "spreading the regional revitalization to the entire region", there is a lack of policy support targeting a wide range of businesses including not only the manufacturing industry but also the service industry. This has prevented the creation of highly feasible industries and high-quality employment to some extent.
- Domestic and foreign tourists are concentrated in specific areas and not sufficiently distributed and expanded all over the country. Amid the situation, the challenge is how to increase the current level of preservation and utilization of tourism resources.
- In each region, involvement of a wide range of stakeholders from such as culture, art and sports industries is inadequate to create attractive tourism destinations utilizing a wide range of resources in the entire region.

(Major Efforts)
<Medium-sized enterprises, Small and medium-sized enterprises, Small enterprises and Service Industry>
- By utilizing the Regional Future Investment Promotion Act, focusing on support measures to the projects that lead the regional economy for advancing the supply of risk money making use of the regional creation promotion grant scheme, the taxation system, the Regional Economy Vitalization Corporation of Japan (REVIC), the Organization for Small and Medium Enterprises and Regional Innovation and other measures, and also for advancing data utilization in the region, at the same time further advancing the measures that include new support measures. Furthermore, establishing a collaboration framework among related ministries and agencies, for example, by excavating projects in a collected effort therefrom, aiming at providing support to about 2,000 companies in 3 years.

<Tourism, Sports, Culture and Art>
- Realizing the stadium-arena concept at 20 additional locations by 2025, which will become an initiator of economic revitalization making use of the bases where a community or bustling is created, by holding not only sports events as the core but also music events and health promotion events.
- Promoting initiatives to increase the appeal of tourism resources, including the opening of charming public facilities and infrastructure such as the Akasaka Palace and the Kyoto State Guesthouse and the Katsura Imperial Villa to the public in a bold manner, the regeneration and utilization of Japanese traditional houses and other old buildings in 200 locations by 2020, branding of national parks including 8 major national parks, the multilingualization and night programs of traditional performing arts and sports events.
- Providing support in terms of information, human resources and finances in order to form 100 world-class DMOs nationwide by 2020 which will serve as the control tower of tourist destination management along with the above-mentioned powerful tourism resources, and promoting the formation of a tourism region from all the aspects. Improving the

environment to receive foreign tourists in terms of accommodation, CIQ, transportation, communication, payment settlement, medical treatment and other aspects, at the same time working on the sound diffusion of vacation rental services. Working for the greater inbound tourism demand by strategic relaxation of visa requirements and development of promotional activities based on the strategies that vary depending on target country.

- For making time that adults and children can face each other, considering the actual situation of each region, and considering the way to escape confusion in teaching field, promoting diversified school holidays by designating "Kids Week" for each district beginning next fiscal year, promoting the acquisition of paid vacation during school holidays, and securing diverse activity opportunities at the same time advancing the initiatives to promote collaborations between public and private sectors.

- Working on the improvement of the function being the center to provide cultural property owners and administrators with consultations in a centralized manner, and also reviewing the cultural asset preservation system from the view of sustainable utilization of thereof, in order to advance further public opening and utilization of cultural assets.

<Agriculture, Forestry and Fishing Industries>

- Achieving 1 trillion yen in export value of agricultural, forestry and fishery products and food by2019 through promoting the export of agricultural, forestry and fishery products and the like by the Japan Food Product Overseas Promotion Center (JFOODO).

- Developing 12 bushmeat model districts nationwide that incorporate a series of processes from capture of birds and beasts, transportation to processing next fiscal year.