Keidanren
Policy & Action

. The NEW Growth Strategy

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KEIDANREN

Contents

Introduction

A new Japanese government has taken its first steps under the COVID-19 pandemic. Not only has the current pandemic forced the entire global economy into recession in ways that no-one could have foreseen, it has also dealt a major blow to the most vulnerable sections of society and shed light on the disparities that had been growing wider under capitalism. We can no longer hope that merely returning to the way before the pandemic will bring sustainable growth. The greatest mission imposed on the new government is to face squarely those challenges that already existed but that the COVID-19 crisis had laid bare and to pursue a new, sustainable form of capitalism.

As a major player in a capitalist society, the business community also has a duty to co-create and deliver value from interactions with diverse entities through its business activities and to engage more actively than ever in finding solutions to social challenges such as environmental issues and economic disparity. Declaring a basic philosophy of "sustainable capitalism" as a new form of capitalism, Keidanren proposes a growth strategy that the business community should pursue alongside the new government, while placing emphasis on the following three challenges.

As the first challenge, to make capitalism sustainable, it is imperative that we correct the disparities between nations, between generations, between occupations, and between regions. However, we cannot hope for sustainable growth if we merely try to correct those disparities by redistributing the current economic pie. Rather, we should aim to expand that pie through the creation of value and distribute it properly, which should maintain the economic growth and resolve the disparities.

Secondly, the sustainable economic growth will require the focused expansion of investment in the future. This includes the education of children and young people, support for families with young children, support for young researchers, and investment in next-

generation technologies. In the “silver democracy” caused by falling birthrates and the aging population, there has been a tendency to put off such investments in the future, but there is no more time to spare.

Thirdly, this strategy envisages a future vision of the economy and society in 2030, the target year of the Sustainable Development Goals (SDGs)[1]. Backcasting from there, it proposes particularly important actions to realize that vision. In this respect, this is a medium to long-term growth strategy. However, at the same time, by starting with those actions that we can put into effect now, we believe that it will also serve as economic measures that will pull the economy back from the downward pressures and return it to a path of strong growth. The cooperation not only of the government and large corporations, but also SMEs nationwide, start-ups, and each and every one of us as citizens, will be essential.

The title of this policy proposal signifies our strong intention to put a period to conventional growth strategies and to indicate a new one. Recognizing that, right now, we are on the cusp of a period of great change, we are recommending the major directions we should pursue going forward. The business community itself will need to put its heads together with the new government and other various entities to determine the specific ways we should proceed. The road ahead will certainly not be smooth, but we are resigned to the fact that the extension of our current path of gradual reform offers no future for capitalism, and we intend to take bold steps to embark on this new strategy.

The development of this strategy has involved passionate debate by Keidanren’s Vice Chairs and the Chairman and Vice Chairs of the Board of Councillors. I would also like to express my heartfelt appreciation to Kazuto Ataka, Professor, Keio University Faculty of

[1] Sustainable Development Goals: International goals for the period from 2016 to 2030 described in the 2030 Agenda for Sustainable Development adopted at the United Nations Summit in September 2015 as the successor of the Millennium Development Goals (MDGs; established in 2001). Comprises 17 goals and 169 targets for the realization of a sustainable world.

Policy Management/CSO, Yahoo Japan, Yoko Ishikura, Professor Emeritus, Hitotsubashi University, Hiroaki Kitano, President & CEO, Sony Computer Science Laboratories, Inc., and Hiroaki Miyata, Professor, Keio University School of Medicine, for their invaluable opinions.

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I. Sustainable Capitalism

1. Background

Capitalism is entering a period of great change. In the past, in countries all over the world, different ideologies clashed with each other in the bid to fulfil the basic needs of people's lives. Over the years, capitalism has evolved in that process.

One outcome of that evolution is the neoliberalism that has emerged since the 1980s. Securing an environment of free and vibrant competition under a small government contributed, to a certain extent, to the further economic growth. However, we must not forget that extending economic activity into various frontiers with the sole aim of pursuing profit has also resulted in darker consequences, including the aggravation of environmental problems and the manifestation of the problem of disparity.

These trends, coupled with the progress of digitalization and globalization, have led to manifest a sense of remorse about the concept of shareholder supremacy and a growing awareness towards social issues. Further, now that the basic needs of people's lives are being met, the value that multiple stakeholders are seeking from corporations has become increasingly diverse and complex, going beyond just the quantity, quality, and product price to include less materialistic concerns.

Against this background, the capitalism pursued by the major nations, including Japan, which follows the trend of neoliberalism, is showing signs of stalling. From the standpoint of corporations, there is a global trend to grow their business for the sake of their very survival, while also satisfying the needs of multiple stakeholders. For example, since the adoption of the SDGs, major corporations in the US signed a commitment to all

stakeholders in the US Business Roundtable (BRT)[2]. The World Economic Forum (WEF)[3] announced the Davos Manifesto 2020, stating that corporations should serve not only their shareholders, but all stakeholders, and that they must achieve business performance in ways that will meet environmental, social, and good governance objectives.

The new Japanese government has established the Committee on the Growth Strategy and is deliberating on a new growth strategy. It must envisage measures that will help to establish the sustainable capitalism that has become a global "surge."

Recognizing that capitalism is about to reach a significant turning point, Japan's business community must also redefine and reaffirm the traditional business principle of "sanpo-yoshi" (that business should benefit buyer, seller, and society) that it has long pursued, and do business in a way that compares favorably with corporations in other countries. We are convinced that the updating of Japanese capitalism and the realization of growth that is sustainable and resilient against various types of risk would make Japan a pioneer in establishing a new vision for capitalism around the world.

2. Increasing Diversity and Complexity of Demands by Multiple Stakeholders

In the past, in coordination with the government's economic and industrial policy, Japanese corporations have earned praise and trust from the world through the production and export of highly competitive products and services. At the same time, from long-term perspectives, they had long strived to manage their businesses in a way that was considerate of multiple stakeholders, as symbolized by the "sanpo-yoshi" principle. However, amid rapid changes in domestic and international circumstances, such as globalization, which includes the rise of emerging nations, progress in digitalization, and population drain from regional

[2] Business Roundtable. An association of CEOs of leading U.S. companies.

[3] World Economic Forum. Non-profit organization established in Switzerland in 1971.

communities, corporations have not been fully addressing the "benefit the society" aspect of "sanpo-yoshi," that is, the increasingly diverse and complex demands of their multiple stakeholders.

To realize sustainable growth, corporations will need to notice the following changes in stakeholders' demands and the gap between those demands and the corporations' approaches to those changes and resolve them.

(1) Changes in consumers

Japanese companies have long engaged seriously in the development of products and services in the belief that the provision of goods and services with outstanding functions and performance at reasonable prices would allow them to meet consumers' needs. However, as digital technologies have made it possible to capture consumers' diverse needs and deliver diverse services, the kinds of goods and services that corporations themselves believed to be outstanding may no longer be fulfilling the needs of consumers. Additionally, consumers are now finding more significance not only in the functions and performance of goods and services, but also in the diverse value that they can offer, including improving their own lives and solving social issues.

To respond to these new needs of consumers, it will be critical for corporations to change their very business models and social systems through digital transformation (DX)[4]. While the COVID-19 crisis has highlighted the lack of progress in DX in not only the business sector but also a whole society, on the other hand, the urgent response to the pandemic has allowed corporations to capture the diverse needs of consumers, resulting in several

[4] Digital Transformation: Revolutionary change from the very foundations of the way society, industry, and everyday life operates by advancing the use of digital technologies and data. It also refers to the major transformation of industries, organizations, and individuals as a result of innovation. See Keidanren's Policy Proposal: *Digital Transformation – Opening Up the Future through Co-creation of Values* – (May 2020).

outcomes that offer an outlook for post-COVID times. The challenge will be how to accelerate the DX momentum, without allowing it to revert to its pre-COVID pace.

(2) Changes in workers

Japanese corporations have considered the assurance of long-term stable employment for their workers to be their top priority. However, workers' lifestyles and values have changed, and today's young people no longer envisage working at the same company until retirement. More of them, when choosing their place of employment, are placing importance on how rewarding they will find their jobs and the contributions they can make to the society through their work. There is now a greater demand on corporations to offer an environment in which diverse personnel can demonstrate their value creation capabilities to the fullest.

If we look back on population trends in Japan, with the population declining at a scale that cannot be offset solely by the active participation of foreign workers in the workforce, the improvement of productivity through reforms of work styles and the active participation of diverse individuals have become challenges for the Japanese society.

(3) Changes in local communities

Japanese businesses have long valued their relationships with local communities and engaged steadily in social contributions to the regions. However, while in some regions, industry-academia-government collaborations that take advantage of the region's characteristics and strengths are bringing life back into those communities, in many other regions, corporations have been unable to create new jobs. This is creating a vicious cycle in which people are leaving the regions, accelerating the decreasing population.

The challenge will be to bring people back to regional areas and create attractive industries

that take advantage of those regions' strengths. This will, in turn, attract more people, creating a virtuous cycle that would contribute to the regions' sustainable growth and development.

(4) Changes in the global community

Japan owes much of its growth and development to the benefits of the free trade system, along with the globalization of the economy. However, in recent times, the conflict between the two economic superpowers, the United States and China, has become an immutable trend, and many countries, including those two nations, are starting to turn inward and adopt stronger stances of national particularism. This situation is putting the survival of the free trade system at risk. Further, international rules lag behind many new kinds of transactions which are emerging with the changes in the economic structure brought about by rapidly expanding technological innovations all over the world .

Under these circumstances, both the Japanese government and Japanese corporations have been experiencing difficulty in their ability to gather and communicate information and their negotiating skills, and this is hampering Japan's ability to demonstrate its value and abilities to its full potential. The challenges will be to enhance Japan's attraction to draw in outstanding talent and abundant funds from around the world and, in collaboration with as many other countries and regions as possible, proactively build an international economic order based on fair rules in a way that will benefit all stakeholders.

(5) Changes in awareness of the natural environment

The development of the human race has progressed in ways that have unconsciously placed an enormous burden on the natural environment. This is now placing the sustainability of the global environment that ought to be passed onto future generations at risk. The impact

of global warming, in particular, is exceptionally severe. Natural disasters around the world, such as droughts, heatwaves, and floods, have triggered a sense of crisis about climate change, and multiple stakeholders are now starting to call on corporations to give more consideration to mitigating and adapting to climate change as a premise of their activities.

In Japan, while awareness of climate change is growing, recognition about the path toward the transformation of the social and industrial infrastructure, which is needed to make a decarbonized society a reality, is not being adequately shared. As a result, Japan has been slow to materialize concrete, immediate measures toward decarbonization.

Under such circumstances, in the international community, countries and organizations such as the European Union[5] are bringing their environmental measures to the fore in ways that are easy to understand and are taking the initiative in fostering momentum toward climate action.

3. Achieving Sustainable Capitalism by Realizing Society 5.0

Based on these changes, the key to the sustainability of capitalism is to include and co-create the diverse value emphasized by multiple stakeholders. In other words, it must be an inclusive form of capitalism (leave no person behind) that embraces the kinds of diverse values that economic rationalism tends to exclude, without exception. These include personal preferences that have been neglected in the shadow of mass production and mass consumption, work styles and lifestyles that do not fit conventional patterns, opportunities for the active participation of women, senior citizens, young people, foreign nationals, and people with disabilities, regions that have declined due to the concentration on large

[5] In December 2019, the European Commission announced its European Green Deal, which advocates the transformation of the EU economy toward a sustainable future. The European Green Deal has been positioned alongside investment in digitalization as a pillar (green recovery) in the €1.8 trillion EU's COVID-19 recovery package.

metropolises, and the neglected global environment. This kind of inclusive capitalism must be co-created with all stakeholders. Stakeholders' needs have become increasingly diverse and complex, and the values that will be realized by fulfilling those needs include things that may not necessarily be suited to quantitative evaluation. The achievement of the physical, emotional, and social well-being of stakeholders through the inclusion and co-creation of diverse values, however, will lead to the establishment of a rich and sustainable economic society.

The only way to accomplish sustainable growth is for corporations to embrace the demands of their multiple stakeholders, not just their shareholders, and to co-create value with them through communications[6]. Therefore, it is vital that they make co-creation of value with stakeholders the goal of their management and incorporate it into their business strategies. The key to this is digital transformation, or DX. While DX itself is a factor in the growing diversity and complexity of stakeholder demands, it also makes the creation of diverse value possible, by making social issues visible and balancing optimization for the whole and the parts.

We must not forget that, in the process of digital transformation, it should be humans who will discover the issues, decide on the values and their balance, and make effective use of DX to achieve that balance. Human wisdom will be at the center of sustainable capitalism.

This is none other than Society 5.0[7] for SDGs[8], a creative society that combines the imagination and creativity of diverse people with DX to solve problems and create value. Keidanren advocated this in its policy proposal, *Society 5.0 – Co-creating the future*, in

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[6] Keidanren's Charter of Corporate Behavior (revised November 2017), which sets out the principles of corporate conduct, declares, "The role of a corporation is to take the lead in the realization of a sustainable society by creating added value that will benefit society and generating employment, through autonomous and responsible behavior, on the basis of fair and free competition."

[7] A new, fifth society, following on from the Hunting Society (Society 1.0), Agrarian Society (Society 2.0), Industrial Society (Society 3.0), and Information Society (Society 4.0)

[8] Keidanren is rolling out various activities to achieve the SDGs through the realization of Society 5.0 under the title, *Society 5.0 for SDGs*.

November 2018. As mentioned in the introduction, the COVID-19 pandemic has manifested the stalling of conventional capitalism and is pressing us to transform to sustainable capitalism. However, this is not a rejection of the directions of Society 5.0. On the contrary, we are confident that it is the very realization of Society 5.0 that offers the path to establishing sustainable capitalism.

II. Future Vision for 2030

In this section, we will envisage the future vision we want to realize for Japan and the world in 2030, that is, a vision for a sustainable society by realizing Society 5.0, focusing on the co-creation of value together with the five stakeholders described as challenges in Section I.

1. Value Co-creation with Consumers: New Growth Through DX
—A society that consumers find easy to live in through DX

As the digital space expands globally and activities that are not dependent on time and place become more prevalent, the economy and society will undergo massive change in Japan as well, through persistent digital transformation throughout the whole society, including industry, individuals, and public administration. Unremitting and ongoing value co-creation will enable society as a whole to reap that change and growth, which will, in turn, become the source for the next growth.

In collaboration with diverse entities, corporations will be leveraging digital technologies and data to realize "value co-creation style DX," that is, the creation of new value together. To enable them to present solutions to social issues, the industrial structure will change, and new growth industries will be created.

Individuals will be able to enjoy maximum experience value[9] through the use of digital technologies and data. In particular, society's ability to respond to diverse individual and social needs in areas such as healthcare, education, and public administration will give rise to value that has not existed before.

In public administration, under the Digital Agency that is comprehensively responsible for

[9] In addition to price and functionality, the total value assessed from the excitement experienced, sense of satisfaction, and emotional response.

DX-related operations, government services that suit the needs of individuals will be provided. To ensure that innovative efforts by corporations and individuals are not impeded, drastic reforms of regulatory frameworks will have been realized and citizen-led DX will be promoted throughout Japan.

2. Value Co-creation with Workers: Changing Work Styles —A society that offers flexible work style and opportunities for diverse career paths

The advancement of DX and the COVID-19 pandemic will contribute to major changes in work styles and approaches to one's career. With the development of digital technologies, work will increasingly progress to online, remote, and automated work, and the transition from routine tasks to creative work will enable more flexible work styles, which are not confined to certain times and places, in a wide range of occupations. With this, side jobs and side businesses that use time flexibly, remote work, dual residence, and other new patterns of work will become more popular. Individuals will be living with more satisfaction by demonstrating their own abilities fully and achieving high productivity. Society will change into one where individuals will also be evaluated and remunerated according to their creation of social value, just as corporations are evaluated.

The way of career formation will also change. It will become normal for individuals to forge diverse careers that follow multiple paths. Across their working lives, they will move between various positions in large corporations, SMEs, start-ups, academia, government, NPOs, and other positions, occasionally returning to study. They may even experience different positions simultaneously. This will promote culture sharing through personnel exchanges between entities and expand diversity within individual organizations, which will promote value co-creation by diverse entities and raise productivity across the whole

of society.

In a society where such flexible work styles and opportunities for diverse career paths have become the norm, a more diverse range of people will be participating actively in the workplace, regardless of age, gender, nationality, or disability.

Such flexible work styles will make work-life balance that fits individual circumstances a reality, and people who have until now had no choice but to give up their jobs due to child care or nursing care commitments will have more opportunities to work and earn higher incomes. This will have created a society in which it is easier to have and raise children. Policy-driven encouragement will also assist in a dramatic recovery of the birthrate, underpinning the sustainable growth of Japan's economy and society.

3. Value Co-creation with Local Communities: Regional Revitalization —A society that leverages the regions' strengths to continually create value

The way "cities" and "regions" look will also change. With the possibility of work styles that are not confined to certain times and places, people will be starting to return to regional areas from the cities. The abundant natural surroundings and comfortable living environments that only the regional areas can offer, combined with the shrinking gap between the cities and regions in government services, education, and healthcare due to DX, will make living in regional areas relatively more attractive. Talented people will create value in the regions by living in the city and working for a regional area, or living in the regional area and working for a metropolitan area while engaging in side jobs or businesses in their local area.

Ecosystems for continuous value creation will be built for the sustainable development of the regions. Regional industries and universities, which will be the lead players in those ecosystems, will become drastically more competitive as the result of restructuring and

amalgamation, as well as DX.

Ecosystems composed of diverse entities including not only large corporations but also regional SMEs, start-ups, regional banks, and local governments will be built, with the technologies owned by regional universities at the core of those ecosystems. Leveraging the strengths that are unique to their respective regions, these ecosystems will be creating new attractive industries that will solve regional issues and create value. They will also strive to add value to existing industries such as agriculture, forestry and fisheries, and tourism. These developments will naturally draw people back into the regions, creating a virtuous cycle.

Strong, resilient infrastructure and decentralized supply chains will have been developed to allow daily life in the regions to be maintained even in the event of disasters that cause damage to core national infrastructure such as energy, transport, and logistics. There are frameworks for the sustainable maintenance and updating of infrastructure that is essential to daily life in the regions in secure, safe, and steady ways, even amidst population decline, through the use of digital technologies and data.

4. Value Co-creation with the Global Community: Rebuilding the International Economic Order

—A society that collaborates globally through Japan's proactive involvement

From a global perspective, a stable international economic order will have been built, supported by a virtuous cycle of diverse entities that share and act towards the common goals of bringing solutions to global issues and at the same time realizing growth. Under this new order, corporations and individuals will engage in co-creation on a global scale with diverse entities, continuously creating innovation.

In the absence of an overarching power that maintains the stable international economic

order, Japan will be playing a leading role in building constructive and cooperative relationships with many countries and regions, on the axis of the Japan-US Alliance, and in the reconstruction of the international economic order, including the realization of the Free and Open Indo-Pacific Strategy (FOIP)[10]. The maintenance, expansion, and deepening of the free and open trade and investment system remains Japan's most important diplomatic policy.

An international financial center will have been built in Japan, attracting talented people and ample funds, which are essential to the realization of growth through the creation of new value. It will be playing a central role in creating a global virtuous cycle through the realization of Society 5.0.

Japan will position as key policies the development of technologies of strategic value and the securing of supplies that are essential to the realization of rich, convenient, and secure everyday lives for its people, and will be deploying strategic diplomacy from the perspective of economic security. In other areas, cross-border trading will be brisk. Corporations will have built resilient and diverse supply chains to ensure they can continue their business activities even in the event of changes in the international environment or natural disasters.

Even once the SDGs have been achieved in 2030, many people will want to see the continuation of a sustainable world. Diverse entities will be working collaboratively to solve global issues, and global partnerships will have been formed. Japanese corporations will be rolling out the excellent solutions that they have cultivated in their businesses in and out Japan to the world, particularly the Asia-Pacific region, and will be contributing to the solution of global issues.

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[10] Free and Open Indio-Pacific Strategy. A strategy proposed by the Japanese government to be realized by three main pillars, namely (1) Promotion and establishment of rule of law, freedom of navigation and free trade, etc., (2) Pursuit of economic prosperity, and (3) Commitment for peace and stability.

5. Value Co-creation with the Earth's Future: Realization of Green Growth —A society that balances the sustainability of the global environment and an abundant lifestyle

There will have been a steady accumulation of actions toward ensuring sustainability of the global environment that will be passed onto future generations.

"Carbon Neutrality by 2050" (net zero CO2 emissions) has been declared as the vision for society to aim toward, and the entire nation will be tackling the challenge of creating innovations, which will be critical to achieving that goal. Many and varied innovations will continue to emerge that have the potential to contribute to decarbonization, including energy and environmental technologies such as renewables, nuclear energy, hydrogen, energy storage, and CCUS[11], and digital technologies. These innovations will have paved the way to the affordable, abundant supply of zero-emission electricity and hydrogen and the dissemination of practical technologies that will enable a major transformation of social and industrial infrastructure, bringing the early arrival of a carbon-neutral society.

In terms of Japan's social and industrial infrastructure, even in areas beyond the adoption of innovative technologies, transitions that will lead to decarbonization through the active circulation of investments in energy industries and so forth will be progressing, while incorporating the vitality of the green market toward which the world is increasingly leaning. As well as the expansion of the supply of non-fossil-fuel energy, energy efficiency will be improved with the introduction of digital technologies, and the electrification of homes, offices, and transport will be progressing.

[11] Carbon dioxide Capture, Utilization and Storage

Competition to profit from the cross-border green market will be intensified, and as individual countries compete with each other in technological development and international standardization, Japan will be leading countries that share common values and contributing to global green growth by disseminating technologies and solutions that will help in decarbonization under a free and open trade and investment system.

III. Action Toward 2030: Growth Strategy

In this section, we will recommend actions in the five different areas to be taken under the initiative of the government and the business community, in order to achieve the future vision for Japan in 2030 described in Section II. These actions, which can be started immediately towards the goal of 2030, signify a growth strategy that will lead to the recovery and growth of the Japanese economy post-COVID-19.

1. New Growth Through DX

(1) Common foundations that will realize new growth

To achieve new growth that is generated by diverse entities, including consumers, working together to create value with the use of digital technologies and data, industry, academia, and government will unite to conduct concentrated investment in the following:

Promotion of data use and AI-readiness:

Of critical importance is the use of data. In addition to the digitization of individuals' experience value (health, educational background, etc.; discussed later in this proposal), we need to standardize and secure the interoperability[12] of the varying data formats of different domains. As for the individuals' data, the infrastructure that will connect various personal data with respect to each individual needs to be constructed, in which the individual can access and use their own data at any time. At the same time, we should promote AI-readiness, which means preparing for the thorough use of AI[13] by individuals,

[12] Interoperability: When multiple systems are connected and used in combination, ensuring that they operate correctly as a whole.

[13] Artificial Intelligence

corporations, and society, on data platforms[14]. In addition, it is essential to form a social consensus about the use of data, by conducting a national debate about the balance between public interests and privacy issues.

Also, in all domains, we should promote the establishment of next-generation telecommunications networks for the exchange of high-quality data, the construction of data centers for safe and affordable data storage, and the reinforcement of cybersecurity to ensure the safe, secure distribution of data.

Expansion of investment in young talent and R&D:

Expanding investment in young talent and attracting competent young people from all over the world will be crucial for Japan's future. In school education, systems should be created that will further extend the talent of students who show outstanding talent from an early stage.

Japan's research and development environment, which could not be described as particularly well off compared with that of other countries, must be immediately improved as a matter of urgency, too. The diversification of career paths for researchers and regeneration must be encouraged. An environment in which young researchers, such as those in doctoral programs and post-doctoral positions, can devote themselves to their research without economic concerns should be created.

In addition, it is crucial that the government strive to transform the quality of government R&D investment[15]. Research assistance funds set up by the government must be used to enhance support for diverse talent, including young and female researchers. It is also important to ensure the diversity of examination and appraisal systems and to promote

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[14] For more details about AI readiness and how it will be promoted, refer to Keidanren's policy proposal, *AI Utilization Strategy* (February, 2019).

[15] In the area of R&D investment, Keidanren organizes R&D aimed at solving national problems as "strategic research," and R&D that has no specific issue or short-term goals, but that can be expect to create disruptive innovations as "emergent research," and recommends that priority be placed on these two types of R&D.

interdisciplinary and integrated fields. Further, strategic research aimed at solutions to national problems will require the enhancement of government support at the social implementation stage.

Promotion of start-ups:

Start-ups are becoming increasingly significant as the creators and deliverers of new growth industries. A look back at Japan's growth shows that, at all times in its history, start-ups were at the center, capturing the needs of the time and driving growth.

There is a need to promote the construction of a start-up ecosystem, that is, a mechanism in which start-ups can form partnerships with multiple corporations, universities, and other entities and co-exist and co-prosper with them, under industry-academia-government collaboration. To this end, the business community will strengthen collaboration between large corporations and start-ups by holding matching events and other initiatives. The government is being called on to assist start-ups in reputational improvement and market entry through the expansion of public procurement from start-ups.

Deployment into global markets through rules formation:

In the creation of new growth industries, business deployment that sets its sights on expanding global markets will be imperative. To achieve this, in areas such as healthcare, education, and supply chains, there is a need to actively lead the formation of international rules, such as international regulations and system standards, while placing priority on value creation through problem-solving. In addition to the development of human resources that will be involved in such rule-making, it is essential that the government and corporations strengthen their involvement in rule formation in the international communities.

Promotion of individual inclusion:

DX should be promoted in ways that will leave no person behind, while envisaging and

sharing the vision we want to realize across society as a whole. To this end, it is important for industry, academia, and government to cooperate with individuals to raise individual data and technological literacy and foster citizens' understanding about the use of technology and data. In this event, the government must establish reliable systems in which individuals can make use of data without any concern.

In addition, corporations will provide value to society through the development of attractive services, systems, and interfaces that are easy for anyone to use, while promoting the inclusion of all individuals.

(2) New healthcare that will maximize individual well-being

Existing practices and healthcare systems should be reformed to mitigate the burden on healthcare workers while improving individual well-being and raising healthy life expectancy. At the same time, appropriate medical expenses should be ensured and aim to secure the sustainability of the social security system. Further, aiming for the global deployment of a Japanese style of well-being model will result in making healthcare a new growth industry while improving the quality of and access to medical care in Japan and overseas.

Promotion of individual-focused healthcare:

One's own life course data (data generated throughout the course of an individual's life from gestation to death) should be accessible for individuals in close to real time, by which they can share it with healthcare workers to receive medical care, manage their own health, and take preventive and pre-disease actions that are tailored to their individual situations.

To achieve this, first, the government must take advantage of the My Number System, to establish mechanisms that will connect the life course data of different entities, including corporations, while paying due caution to issues such as the protection of privacy and

security. In addition, while building mechanisms for placing a wide range of medical data, such as medical test results, on medical practitioners' receipts for health insurance claims, the government should urgently coordinate with corporate PHRs [16] through the Mynaportal's API[17]. Also, under industry-academia-government-medical collaboration, it is important to build a database of all genome data and to engage in the development of new treatments and initiatives aimed at personalized medicine.

As well as promoting behavioral changes and preventive actions by individuals, by making use of various types of data, AI, and mobile devices, corporations will aim to create new services that will also contribute to mental health and well-being. The government must promote the design of systems that will accelerate the development of new healthcare services.

Popularization of digitalized medical and nursing care:

To ensure that all people are able to receive equitable medical and nursing care, despite the place they live, digitalization of medical and nursing care provision frameworks in a single stroke should be promoted with the support of the government. Although it would depend on the symptoms or type of disease, it should be realized to perform all steps, from consultation to prescription, online.

In collaboration with the medical sector, the government must outline the scope of online medical care and medication guidance, using a negative-list format and expand the use of that list. At the same time, with government support, it is also important to promote the expansion of equipment, to ensure that multiple medical institutions in a primary medical care zone can provide online services. Data obtained in the course of online medical care

[16] Personal Health Record: Mechanisms that accumulate the life course data of individuals and enables it to be viewed by the individuals themselves and shared with medical institutions.

[17] Application Programming Interface: In this context, it refers to the mechanism/interface that enables data accumulated in the Mynaportal to be linked to and used by systems owned by other entities.

and medication guidance should be used to improve the quality of those services and to prevent their abuse.

In addition to further promoting the use of AI and other digital technologies, such as telemedicine, it is also vital that healthcare workers play a part in easing the concerns of patients about the use of digital technologies.

Corporations will strive to develop and popularize new products and services, including testing devices used in telemedicine, AI diagnosis systems, and online elderly telecare services. The government will collaborate with the medical sector to promote the design of systems that will enable such equipment and services to be used in a home-care setting.

Development of data-driven healthcare services:

Data and digital technologies should be leveraged to accelerate the development of new vaccines, therapeutic drugs, and treatment methods, as well as healthcare services for prevention and recuperation. To achieve this, the government must establish public databases. It needs to connect the various databases, including the National Database (NDB)[18], the Nursing Care Database, and the Intractable Diseases Database, and turn them into a mechanism that the national government, local governments, and companies can make use of in a safe cloud environment.

Industry, academia, government, and the medical sector will collaborate to connect government databases with data held by corporations and medical institutions and develop new services that will benefit the public.

[18] National Database: Database that includes data related to medical practitioners' receipts for health insurance claims and specified health checkup information.

(3) New learning that will unleash future talent

Human resources should be developed in a way that people have the ability to update their own knowledge and values constantly in an era of intense change, identify the challenges and demands of society accurately, and discover solutions. To achieve this, digital transformation of the systems, content, and frameworks for learning, centered on Japan's school-based education system that has continued unchanged since the Meiji Period (1868–1912), should be promoted so that diverse people, regardless of location or age, can effectively study the content that best suits their needs and individual characteristics at any given time. In addition, through the global dissemination of new forms of learning that have been cultivated in Japan, education will be developed into a growth industry while delivering learning to children in various countries who have not been given sufficient education opportunities..

Promotion of personalized education using data:

The direction of education will change from the aim of uniform improvement of the skills of the group toward the delivery of learning that is tailored to each individual and that extends their individual characteristics and qualities. To this end, the government and the education sector must collaborate to promote the digitization of data such as study records and learning progress in the school, adult, and lifelong education segments. At the same time, there is a need to develop an environment in which each individual's learning data can be connected and used across different educational institutions.

This data can be used by individuals as evidence of their educational history when changing jobs and for lifelong and recurrent education, and by national and local governments in educational policy planning. Corporations would base their recruitment, remuneration packages, and personnel appraisals on data related to individuals' study content and recurrent education records. This will encourage individuals to make active use of their

own learning data, creating a virtuous cycle.

Provision of education that will nurture the skills needed for the coming era:

In school educational system, education that will nurture the skills needed for the coming era should be provided in a way that is tailored to each individual student's learning progress, abilities, and individual characteristics by making use of their data. To this end, it is important that the government and education sector collaborate to promote the establishment of STEAM[19] education and double major/minor degrees, in a departure from the traditional separation of humanities and sciences. They should also work together to deliver curricula that focus on extending skills such as problem identification and solving, leadership, entrepreneurship, and mathematical thinking.

Corporations will deliver education through the dispatch of instructors to schools and support the development of inquiry-based learning[20] content, as well as build education platforms. They will also promote the adoption of AR and VR[21] into educational processes and develop education that is almost as effective as hands-on experience even when delivered online. In addition, through dialogue and collaboration with the education sector, corporations will strive to clarify and communicate the type of people and skills they seek.

Securing diversity and equal opportunity in education:

Dissemination and use of online education and digital textbooks, which are essential to the diversification of educational content and the improvement of access to that content, should be promoted and the equal educational opportunity at times of emergency should be assured. The government must complete the establishment of one-student/teacher-one-device

[19] Education in the five domains of Science, Technology, Engineering, Art, and Mathematics.

[20] A learning method in which individuals, both independently and through team cooperation, gather and analyze information about problems that have no answers, such as social issues, to foster problem identification and solving skills.

[21] Augmented Reality and Virtual Reality.

programs and internet environments in schools and pursue the relaxation of copyright systems and other institutional impediments to online education and digital textbooks.

(4) New resilient supply chains that will create value

Digital transformation of supply chains, including SMEs and the agriculture, forestry, and fisheries industries should be promoted. In normal times, by diversifying supply chains, while adjusting the supply-demand gap in real time, regardless of location, whether metropolitan, regional, or remote island, unprecedented combinations of companies will emerge, making it possible to create new value. At times of emergency, they will function as resilient supply chains to procure and supply necessities in a stable manner.

Digitalization and standardization, network development:

To make supply chains more resilient, corporations that play a central role in existing supply chains will work together with suppliers, factories, logistics businesses, wholesalers, and retailers to promote the digitalization and standardization of supply chains, and connect them to create a networked supply chain. It is also important to deliver government support[22] to SMEs that lack investment strength due to employee aging and increasingly severe labor shortages, so they can promote the digitalization and standardization of their supply chains.

There has been a particular lack of progress in the standardization of manufacturing and logistics data, due to intense competition. For this reason, with the cooperation of the business community and the government, the deliberation of standardization and inter-corporation collaboration in areas where collaboration is possible should be accelerated and their realization should be encouraged.

[22] Focused support of the Common EDI (Electronic Data Interchange) for SMEs and Zengin EDI System.

Automation:

To address labor shortages and improve the efficiency of existing systems, robots and self-driving vehicles in areas such as manufacturing, logistics, and ports should be empolyed and automate certain supply chains. The government must ease the regulations that are impeding automation, while still ensuring the safety aspects.

Optimization:

Through digitalization and standardization, and IoT[23] such as RFID[24] and LPWA[25], platforms that make it possible to ascertain the state of the supply chain appropriately at appropriate times should be built, and strive for total optimization through the use of AI and other technologies.

It is important that the government strive for collaboration that will enable the various administrative procedures involved in trade, both in the public sector and private sector, to be performed on such platforms. Corporations will reexamine their own operational processes and trading practices that are impediments to productivity.

(5) New public administration that will respond swiftly to diverse needs

Under the Digital Agency, which will appropriate the budgets related to digital policies in a bundle and have command over the various sections of the administration, the digital transformation of public administration should be promoted at a single stroke. Public administration systems, operations, and services, which have long been a symbol of inefficiency and inconvenience, should be changed into something that anyone would

[23] Internet of Things: Connection of "things" to networks using devices such as sensors and cameras.

[24] Radio Frequency Identification: A system of non-contact reading and writing of electronic tag data.

[25] Low Power Wide Area: Wireless communications technology that is able to communicate across wide areas with low power consumption.

perceive as convenient and of value, on the premise of online delivery.

Provision of convenient online government services:

In the provision of government services by the central government ministries and agencies and local governments, the three principles of digitalization[26] should be thoroughly implemented. The government must reform those regulations that are a barrier to this, and complete the standardization of specifications for the core ICT systems of central ministries and agencies and local governments, within three years in the case of central ministries and agencies and within five years for local governments.

The business community will also undertake a drastic transformation of business models for public administration. Instead of pursuing lock-in systems or customization to match existing operations, promote the shift to the cloud and AI in an open manner that ensures interoperability.

Provision of new value through the use of the My Number system:

In addition to the further popularization of the My Number Card, the My Number System should be made thorough use of as a new tool for service delivery by public administration. To this end, the government must turn the My Number Card into a necessary and convenient card for all citizens. This should be done through the digitalization of all government-issued certifying documents, such as health insurance cards, driver's licenses, and residence cards, and cards from other sources, such as patient registration cards and student cards, and the amalgamation of such certifying documents and cards with the My Number Card. Providing incentives that use My Number Points and similar programs will also be effective to this end. At the same time, from the perspectives of the swift delivery of subsidies at

[26] The three principles of Digital First (As a general rule, individual procedures and services are completed consistently and digitally), Once Only (No need for the resubmission of information already submitted), and Connected One Stop (Multiple procedures and services available, including private services, from anywhere in one place).

times of emergency and the prevention of fraudulent receipt of benefits, it is important that the My Number be tied to bank accounts. For added convenience, Specific Personal Information must be abolished, and the My Number be given equivalent status to Personal Information under legislation.

Based on these initiatives, the government needs to deliver push-type administrative services[27] that originate from the My Number portal (Mynaportal) and provide citizens with new experience value.

Construction of new regulatory frameworks that will not impede innovation:

The government's regulatory framework should be changed from one that is centered on conventional laws and regulations to one that will enhance innovative initiatives that accompany technological progress, more swiftly and flexibly.

While reconsidering the scope of government regulation, with a focus on areas that will incorporate technological progress such as AI, the government must shift from regulations that impose procedural and behavioral obligations to regulations focused on the purposes and goals to be achieved. The business community will develop voluntary rules and guidelines, as well as cooperating in the creation of flexible rules for corporate governance and monitoring that make use of the data owned by corporations.

2. Transformation of Work Styles

(1) Shift to more flexible work styles that are not confined by time or space

Workers in the era of Society 5.0 will command digital technologies with rich imagination and creativity and will create value through flexible work styles that are not confined by

[27] The government will "push" information about administrative services out to users.

time or space. They will be evaluated not on the hours they work but on the value they create, and they will be remunerated on that basis.

Corporations will pursue the most productive work styles by combining remote work with on-site work, and online with offline operations, as necessary. They will encourage side jobs and side businesses, on the premise that workers' health is ensured.

In doing so, the role of managers will be important in increasing individual workers' engagement and drawing out their ability to create value to the fullest. Managers will be called on to create value from diversity in ways that differ from the conventional pattern of homogeneous teams sharing the same time and space as they work.

Large corporations are already finding some success with work styles flexibility, such as maintaining work-from-home levels at 50%. While there are certain occupations believed to be difficult to perform remotely due to the need for physical work on site, the range of jobs that can be done remotely will expand as technology progresses, such as the remote operation of construction machinery and remote monitoring of manufacturing sites. On the other hand, under current circumstances, due to delays in digitalization and deficiencies of infrastructure and expertise, SMEs are not achieving the same level of progress in the introduction of remote work. In addition to support from the government, large corporations should assist the SMEs in their supply chains with digitalization and operational reforms to make more flexible work styles possible.

Japan's current working hours legislation was developed during the Industrial Society era, that is the era of Society 3.0, on the premise of factory labor. Since then, we have shifted to an Information Society, and although the nature of the work and the skills required have changed, the basic legal frameworks remain unchanged. To match the new work styles of the Society 5.0 era described earlier, it is essential that government, labor, and employers work together to establish new working hours legislation that is more suitable for a creative

society and that will enable each individual to demonstrate their imagination and creativity to the fullest in their own way.

(2) Human resources mobility to enable diverse careers with multiple paths

As diverse careers with multiple paths become more common with the spread of flexible work styles, practices such as the mass recruitment of new graduates, lifetime employment, and the seniority system will no longer function, and corporations will need to reexamine their recruitment, hiring, and remuneration practices. They should conduct mid-career hiring as well as new graduate recruitment to ensure diversity of background, experience, and skills. At the same time, reskilling[28] will be required to facilitate the transfer of personnel to the new operations that will emerge within the company with the corporations' DX.

With the transformation of the industrial structure due to DX, some industries and occupations will fall into decline or be lost. On the other hand, new ones will emerge and grow. It will be crucial to establish an environment that will provide support for the smooth transition of labor from the jobs that are lost to those newly created jobs. Focused investment as a nation is needed in "re-learning," or recurrent education, which is essential for the smooth transfer of labor. Platforms should be developed that will allow personal data, such as educational and work history and qualifications, not only from formal education but from during an individual's working life, to be properly linked and put to use, as a way of visualizing learning and experience, to promote the formation of diverse careers with multiple paths through human resources mobility. Also, from the perspective of reinforcing safety nets for the labor market, the government must establish systems for

[28] Retraining of employees so they can take up new work within the company.

financial relief in the reversal of dismissal, which will contribute to worker protection.

(3) Promotion of active participation in the workforce by diverse people

As discussed in Section I, the keys to sustainable capitalism are the inclusion and co-creation of diversity. Corporations are being called on to establish environments that will draw out to the fullest the ability of diverse people to co-create value.

The government declared a target of women occupying at least about 30% of leadership positions by 2020, but that target was not achieved. If the differences in the environment between men and women in corporations, the home, and society as a whole no longer existed, given the male-to-female population ratio[29], it would be a natural conclusion for women to account for around 50% of leadership positions. It is important we continue to pursue the ideal of realizing such a society, and new, high targets should be set that would provide a driving force toward their achievement.

Companies should actively promote diversity in gender, age, nationality, and background, and any disability. As an indicator of that goal, they should strive to increase the percentage of women on boards of directors and the recruitment of foreign nationals and mid-career personnel. As a specific target, they should aim to increase the percentage of female executives (including not only directors under the Companies Act, but also executive officers and equivalent) to 30% or more by 2030.

Regarding the active participation of foreign nationals, Japan needs to conduct earnest debate about how many foreign nationals it is willing to accept and how it should develop frameworks for accepting them. Once that has been done, environments ,in which foreign nationals are willing to live and work, need to be established, including global-standard

[29] 94.8 men for every 100 women, as of October 2019.

residential environments such as housing, education, and healthcare. Competition with other countries to secure the best people is intensifying, so it is important that Japan become a country attractive to foreign nationals. This means a country where they can do new and innovative things and have dreams for the future, and a country where foreign nationals can flourish in the workplace and take the next leaps toward their own success.

(4) Concentrated investment for a society in which it is easy to have and raise children

As the children of the baby-boomer generation have passed childbearing age and the birthrate has fallen to low levels, Japan's declining birthrate/aging population problem has become increasingly serious. If the birthrate stays low, it is predicted that Japan's population will fall below 50 million by 2100. In light of factors such as Japan's food and energy self-sufficiency, supply chain independence, and infrastructure maintenance costs, there is a need to determine the optimal population size for our future as a nation. Having done that, while it may be impossible to stem the population decline, to mitigate the rate of decline with the aim of settling at an optimal population size, recovery of the birthrate should be positioned clearly as a national priority and all manner of measures to achieve that should be strengthened. This calls for the enhancement of seamless support for couples from finding each other to marriage, pregnancy, childbirth, and parenting, specifically, providing insurance cover for fertility treatment, ending the problem of long waiting lists for childcare, and developing environments to encourage men to take parenting leave. Child allowances should be expanded with a priority on low- and medium-income groups.

Amid these moves, corporations should incorporate diverse and flexible work styles that are not confined by time and space and promote a balance of work and parenting. They should also review their programs to enable recovery from career interruptions and delays caused by taking maternity and parenting leave. They should promote the establishment of

environments, including workplace atmospheres, which will make it natural for men to take more responsibility for parenting at all times, not only when they are on parenting leave.

3. Regional Revitalization

(1) Promotion of human resources mobility through a shift to flexible work styles

Corporations will promote diverse work styles that are not confined by time or space, such as enabling employees to have dual residences in the city and a regional area, so they can be in the city and do regional work remotely as a side job or side business, or work remotely from the regional area or take workations[30] and the like and have a side job or side business in the region. There is also the potential for corporations themselves, based on changing and diversifying work styles, to be encouraged to transfer their head office or certain functions to regional areas or to strengthen their regional locations.

The national and local governments should push strongly for the active participation of human resources in regional areas through dual residency, remote work, and workations, with housing policies and other policy-based assistance.

In particular, education and healthcare environments are often a hurdle to moving into regional areas. To attract superior talent into the regions from other parts of Japan and from overseas, there is a need to provide high-quality administrative, educational, and healthcare services through the total digitalization of public administration, and the use of leading-edge HealthTech and EduTech[31]. For example, the higher education gap between metropolitan and regional areas could be eliminated by permitting mutual recognition of

[30] Vacation in a regional area while working through remote work, etc.

[31] Neologisms coined by combining the words Health and Education with the word Technology. Health and education techniques that employ digital technologies.

university credits or allowing students to take any university's lectures online.

Further, the regional areas will be able to realize satisfaction of an equal or higher degree than metropolitan areas, not by aiming to emulate the cities, but by offering value that the cities do not possess, such as co-existence with abundant natural surroundings and spacious housing.

(2) Strengthening competitiveness of regional industries, universities, etc.

As a premise to the construction of value co-creation ecosystems in regional areas, as described in the future vision in Section II, regional SMEs, the tourism industry, and the agricultural industry should strengthen their competitiveness with DX. The government will promote it by subsidies and tax systems. In addition, the promotion of measures to encourage restructuring and consolidation of regional SMEs to improve their competitiveness and regulatory reforms to promote the use of the-state-of-the-art technology and increase the scale of agricultural production are matters of urgency.

Regional banks are expected to play an important role in ensuring that funds reach regional SMEs and start-ups that will make up those value co-creation ecosystems. To this end, they should strengthen their competitiveness through restructuring and mergers based on the individual banks' business decisions and improve their functions as regional infrastructure.

Regional national and public universities will play a significant role in cultivating seeds such as technologies and business models that will be at the heart of value co-creation ecosystems. To this end, in anticipation of falling student numbers, they should strengthen their competitiveness through restructuring and mergers in the direction of specialization in fields in which the individual universities excel.

In line with the policies by regional industries and universities as described above, corporations should actively cooperate in the promotion of DX at regional SMEs in their

supply chains that are engaging enthusiastically in reforms for growth. It is also possible for the business community as a whole to set up mechanisms for supporting other industries and universities through such means as dispatching retiring employees or allowing current employees to work there as dual employment or side businesses.

(3) Building of value co-creation ecosystems in regional areas

Local governments should formulate unique growth strategies that make the most of their region's particular strengths and build value co-creation ecosystems in regional central cities. These ecosystems would be composed of diverse entities, with competitive regional national and public universities at their heart. Diverse entities would build platforms to share data and use them for the creation of value. Large corporations headquartered in the large cities should also participate in these value co-creation ecosystems and collaborate with regional entities to generate the following kinds of outcomes. The business community will provide opportunities such as pitching[32] and matching events to promote connections between various regional entities and large corporations.

Start-ups should be cultivated within these value co-creation ecosystems to give rise to world-class unicorns[33]. Regional SMEs should make thorough productivity improvements through a shift to IoT[34] using local 5G and other technologies and increase their competitiveness by further refining their unique proprietary technologies and rolling them out globally. The agriculture, forestry and fisheries industries should shift from production based on intuition and experience to data-based production, use digital technology to dramatically improve market access, optimize their value chains, and strive to become

[32] Short presentations to small groups with the aim of promoting ideas such as new businesses.

[33] Unlisted start-ups with an evaluation of $1 billion or more.

[34] Aim for operational efficiency, productivity, and quality improvements by connecting all factory machinery and production processes to the Internet to manage them.

growth industries by extending globally. On the ground in production, they should analyze data about conditions such as the weather, soil, and water levels and the state of production, and propose optimal production methods. Data, research outcomes, and know-how held by the public and private sectors and research institutions should be made open and data infrastructure should be built and put to use to improve productivity and realize higher added value. At all sites, from processing and logistics to sale and consumption, the relevant entities should share and use information in real time to optimize inventories, shipment timing and volumes, and shipping routes, to offer the foods and services that customers want. The business community will work with the National Federation of Agricultural Co-operative Associations (JA) and other agricultural industry bodies to secure traceability[35] from agricultural produce to processed foods and provision at restaurants and to optimize value chains.

The tourism industry should also seek to add higher value through DX with the aim of achieving its target of 60 million international visitors by 2030. Data held by related entities concerning tourists' movements, actions, accommodation, purchases, and other factors should be shared and put to use to offer more individualized, attractive services to individual tourists, while ensuring safety and security, through congestion avoidance and infection prevention measures. Further, the industry should evolve from a tourism MaaS[36] that fuses together mobility, accommodation, and dining into a comprehensive lifestyle industry that is a fusion of healthcare, food, entertainment, and other sectors.

In the value co-creation ecosystems discussed above, the government should establish special zones in which all regulations concerning R&D, demonstration, and new business creation are comprehensively abolished, to encourage the creation of new industries and

[35] The ability to identify food products from production to processing, logistics, final consumption, and disposal.

[36] Mobility as a Service: A system that uses IT to link all forms of public transport seamlessly to enable people to use them more efficiently and conveniently.

higher value-adding of existing industries through solutions to regional issues. Further, when growth industries originating in regional areas target the global market as well as the Japanese domestic market, the government needs to assist them with the provision of information about overseas markets and promotional activities through public-private collaboration.

(4) Building of resilient and sustainable social infrastructure

To ensure the sustainable maintenance of infrastructures such as water supply and sewerage networks, energy, public transport, and communications networks that are stretched widely throughout regional areas, even in the face of population decline, it is necessary to pursue greater efficiency of their operation and management and the reduction of maintenance and replacement costs. To achieve this, promotion of more compact, network-based life infrastructure and wide-area collaboration that goes beyond single administrative units is needed, while introducing digital technologies and making use of data.

Regarding energy infrastructure in particular, as rooftop solar panels, biomass power generation using untapped materials in the region, storage batteries and heat pumps, and digital technologies such as individualized control of home appliance power consumption become more popular, local production and local consumption of energy will be a new option. From the perspectives of the revitalization and resilience of regional economies and economic feasibility, residents themselves should become more proactively involved in regional energy choices. The government needs to design relevant programs for the optimization of energy across the society, based on these kinds of new supply and demand situations.

In terms of resilience, there are concerns about increased frequency of earthquakes, greater intensity of damage from natural disasters such as typhoons that are becoming larger and

severer due to climate change, and the growing prevalence of zoonotic diseases. Japan will use digital technologies and data to combat these kinds of disasters.

The government should promote the construction of government databases in areas such as disaster readiness, weather, national land, transport, and infectious diseases, standardize them, and make them available in real time. It should pursue coordination between databases such as the Land, Infrastructure and Transport Data Platform being built by the Ministry of Land, Infrastructure and Transport, the Shared Information Platform for Disaster Management, whose verification trials are being led by the Cabinet Office, and the Health Center Real-time information-sharing System on COVID-19 (HER-SYS) built by the Ministry of Health, Labour and Welfare, to enable multifaceted responses to simultaneous multiple natural disasters. At the same time, it should also promote more resilient, multidimensional, and decentralized infrastructure and supply chains through public-private collaboration, to ensure the safety and security of residents and enable corporations to continue their business at times of disaster.

In addition, in light of responses to the current pandemic, and in preparation for a future large-scale earthquake, the government must reconsider the state of privacy protection and restriction of individual rights at times of emergency, the state of data utilization, and the state of the use of mobile apps[37] to ensure the design of better systems from the perspective of maintaining public health and safety. Regarding the sharing of medical data and its use at times of earthquakes and pandemics and for vaccine development, greater speed and flexibility are needed because they are directly linked to human life,.

Companies should strengthen their business continuity plans (BCP) [38] by incorporating

[37] COCOA, the contact confirming app developed to prevent the transmission of COVID-19 has not achieved the download rate and level of registration of positive test data needed to be sufficiently effective in the prevention of transmission.

[38] Business Continuity Plan: Plans for the minimization of damage and continuation and restoration of business in the event of emergencies such as a large-scale earthquake.

the use of digital technology in order to make their businesses more resilient. They should also take advantage of government data bases to offer new services and contribute to public areas such as infrastructure, transport, disaster readiness, and public safety.

4. Rebuilding the International Economic Order

(1) Maintenance, expansion, and deepening of free trade and investment system

Even as production and consumption activities become more globalized and DX transforms the economic structure, free and open trade and investment will remain a critical foundation for the world's sustainable growth. To realize the Free and Open Indo-Pacific (FOIP), the Japanese government must clearly declare its position of firmly maintaining a free trade and investment framework, and expand and deepen its inter-regional cooperative relationships by expanding economic partnership agreements and improving their quality. At the same time, it needs to take the lead in the swift formation of rules that will enable responses to changes in economic activities and make the foundations that underpin the global economy more robust and predictable. Toward emerging nations, it is important to actively conduct capacity building[39] to ensure smooth participation in high-quality economic partnership agreements.

In the overseas deployment of infrastructure systems, demand for which is expanding in various countries and regions, in addition to contributing to solutions to social issues while meeting local needs, it will pursue smoother global mobility of people, goods, money, and data and improved connectivity. The standardization of systems and procedures is the key to connectivity, and in this regard, the public and private sectors should unite to achieve

[39] The building and improvement of the capacity of organizations and society to achieve goals.

the international standardization of Japanese corporations' technologies and know-how and to make them the de facto standards[40]. Also, to promote the spread of high-quality infrastructure, Japan should actively contribute to the design and operation of the Blue Dot Network (BDN) system[41].

The business community will support the expansion of comprehensive, high-quality economic partnership agreements to promote greater stability and resilience of global supply chains.

As a way of priming new growth opportunities through DX, for Japan to become a central player in lively investment and capital transactions and in the creation of new jobs and business opportunities, it is essential to establish its status as a hub of international finance. It should undertake bold relaxation of various regulations to attract money and talent from Asia and, in turn, the world, and develop attractive systems, to build Asia's leading international financial center.

For Japan to rank among other countries in the data arena, it must take the lead in the establishment of rules for Data Free Flow with Trust (DFFT)**.** For example, to achieve the SDG of ensuring healthy lives and promoting well-being for all people of all ages, nations should share and use the data needed for the development of therapeutic drugs and vaccines against COVID-19. Regarding cross-border data flows, the establishment of rules that achieve a balance between protecting privacy and not impeding innovation is needed.

In a society that is overflowing with information everywhere, while ensuring freedom of speech, international cooperation is essential to combat the arbitrary manipulation of information, speech, and public opinion.

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[40] De facto standards that have been the victors in market competition.

[41] Blue Dot Network: Mechanism for certifying high-quality infrastructure being pursued in a Japan-US-Australia initiative.

(2) Ensuring proactive and strategic economic security

The government needs to deploy proactive and strategic diplomacy, placing top priority on the realization of safe and secure daily lives for the Japanese people and the improvement of international competitiveness through innovation in all sectors of industry, academia, and government. In particular, it needs to identify the foundational technologies, emerging technologies, and strategic commodities that are essential to Japan's economic security. Once this has been achieved, the government's next urgent task will be to develop mechanisms to ensure the protection of sensitive technologies and the stockpiling and stability of supply of strategic commodities. In particular, regarding sensitive technologies that are important to national security, in addition to the strengthening of technological development and industrial infrastructure in Japan, the government should design systems that will lead to the improvement of Japan's competitiveness, such as making participation in international joint research possible. Corporations will manage the subject technologies within appropriate frameworks.

For Japanese corporations to conduct economic activities at their ease amid an international situation that is changing at a bewildering rate, it is crucial that they grasp the situation in individual countries swiftly and accurately, and respond accordingly. To this end, the government and corporations should further strengthen their intelligence functions in the economic sphere, envisage all possible risks, and take action accordingly. At such times, in both information gathering and action, they should engage with countries and regions with which they share common security interests.

(3) Formation of coalitions for solving global issues

The realization of Society 5.0 proposed by Japan is indeed a necessary vision for the global

community. As well as promoting the realization of Society 5.0 on a global scale, the Japanese government and business community should indicate even more clearly their willingness to contribute to the international community. With the vision of Society 5.0 at the core, they should seek to solve global issues such as climate change, the elimination of poverty, natural disasters, infectious diseases, and ocean plastics.

It is essential that the public and private sectors unite to engage in the solution of global issues. For this reason, further dialogue and coordination should be promoted between them. Regarding existing forums for multilateral public-private dialogue[42], frameworks and formats should be managed flexibly as needed to come up with more effective policies that will lead to solid outcomes.

Japanese corporations should uphold Society 5.0 for SDGs even higher as a key principle, actively communicating and rolling out into the international community specific measures that they have cultivated through the solution of domestic issues and that it can offer other countries, such as high-quality healthcare and education systems through DX.

The business community will also strive for international collaboration as a stakeholder in the global community and strengthen its engagement in the solution of global problems by mobilizing all of the ideas and technologies at its disposal. To realize Society 5.0, Japan's business community will actively deploy private-sector diplomacy to create momentum and establish models at the private-sector level. In doing so, it will take maximum advantage of opportunities for collaboration with the WEF and other forums and for dialogues with the business communities of other countries and regions[43].

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[42] G7 (Group of 7)/B7 (Business 7), G20 (Group of 20)/B20 (Business 20) OECD (Organization for Economic Co-operation and Development)/BIAC (Business at OECD), APEC (Asia-Pacific Economic Cooperation)/ABAC (APEC Business Advisory Council), TICAD (Tokyo International Conference of Africa's Development) /JBCA (Japan Business Council for Africa).

[43] US-Japan IED (Policy Cooperation Dialogue on the Internet Economy), EU-Japan sector-to-sector meeting (regulatory cooperation), Asian Business Summit, Japan-China Business Leader and Former High-

5. Realization of Green Growth

(1) Acceleration of innovation aimed at a decarbonized society

In 2020, despite the world being plunged into an economic crisis by the COVID-19 pandemic, global CO2 emissions are expected to drop by only around 8% year-on-year[44]. Even as the brakes are being applied sharply to the global economy, to the extent that it has brought turbulent change to people's everyday lives, it has become clear that this slowdown will not lead to any drastic reductions of 80% or 100% of greenhouse gases. It will be impossible to realize both the improvement of living standards for the world's people and a decarbonized society with existing technologies and socio-economic structures, and the only solution is major reforms of the economy and society through innovation.

In aiming for the new goal of Carbon Neutrality by 2050 proposed by the new Japanese government, existing measures alone should be clearly inadequate. The development and dissemination of the innovative technologies that are essential to the transition to a decarbonized society must be placed at the center of industrial policy. A national project must be launched, with industry, academia, and government combining all of their forces to pursue initiatives in this regard. Once clear, ambitious targets for pricing and performance and other goals have been set in each technological field, there should be long-term, large-scale investment of public funds to support those initiatives. Examples could include the introduction of large-capacity, low-cost, and safe next-generation storage batteries, the large-scale supply of low-cost hydrogen, the development of demand-side

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Level Government Official Dialogue (Japan-China CEO Summit), bilateral business cooperation committees, missions to the US and other countries, etc.

[44] Forecasts in IEA Global Energy Review 2020 (April 2020).

technologies for hydrogen utilization including industrial processes and power generation, and the commercialization of CCUS for the sequestration and re-use of CO2 emissions, which will still occur even with the promotion of electrification and conversion to hydrogen.

The business community will make use of platforms such as Keidanren's Challenge Zero[45], while engaging in assistance through the dissemination and installation of net-zero emission technologies[46] and transition technologies[47], as well as actively financing companies that are working on innovations. We require the government to develop comprehensive measures for the creation of innovation that will connect the virtuous cycle of economy and environment to our nation's growth. The possible actions will be support in the area of taxation and fiscal policy for companies engaged in innovation, collaboration in the area of dissemination of information overseas, and further, policies and regulatory reforms to ensure the competitiveness of Japanese industry, including placing it on an equal footing with overseas industry.

In encouraging the development and dissemination of innovative technologies, securing the investment that this requires, and, ultimately, aiming for a decarbonized society, it is important to indicate the future vision of Japan's energy. If there is a certain future vision in place and the policies to realize that vision are presented in advance, individual corporations will be able to deploy consistent and appropriate investment strategies at the suitable times. Under current circumstances, the energy mix for FY2030 that the government set out by accumulating measures in 2015 exists as a future vision, but the path to achieving that has not necessarily been made clear. For more long-term goals, such as

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[45] A project for the strong promotion and encouragement of innovation actions that companies and organizations can take on to realize a decarbonized society, conducted by Keidanren in collaboration with the Japanese government.

[46] Technologies that will reduce greenhouse gas emissions to net zero.

[47] Technologies that, while not reducing greenhouse gas emissions to net zero, will contribute to major reductions in those emissions across the entire world, including developing countries, making them necessary for the realization of a decarbonized society. They can lead to net-zero emissions by combining them with CCUS.

2050, while taking the uncertainties of economic, social, and technological trends into account, it is hoped that a vision will be indicated as multiple scenarios that provide a more concrete picture of aspects such as the locations of power sources, network infrastructure, energy demand, and the public financial burden. Based on these points, we call on the government to indicate a rational future vision based on quantitative analysis and simulations in the next Strategic Energy Plan that it is currently deliberating in earnest, and to identify innovation challenges that anticipate the long-term vision and propose responses to those challenges. It is necessary that such movements by the government will establish an environment in which corporations can make investment decisions, including investment in electric power, which have been dangerously stagnant for some time.

In the energy/environment sector, which will take a long time to show results, strategies with targets that go beyond 2030 are being declared, not only in the Strategic Energy Plan, but also in other various policy documents, including the Plan for Global Warming Countermeasures. It is also important that these strategies be steadily executed.

(2) Priority assistance for competitive renewable energies

It is extremely important to establish a market environment in which electricity users who wish to use renewable energies will be able to access the value of renewables by paying a reasonable premium for them. The existence of demands for renewables will contribute to the expansion of their introduction, and we are also seeing moves among investors and corporate customers to require renewable energies. To ensure that Japan is not cut off from ESG[48]-focused supply chains, prioritized support measures that will enable a generous supply of affordable renewable energies are needed.

[48] Environmental, Social, and corporate Governance considerations.

Since the Renewable Energy Special Measures Act[49] came into force in 2012, the government has adopted measures that add a policy-based premium broadly to all forms of renewable energy without a clear, specific strategy. However, the public financial burden of this policy has ballooned to ¥2.4 trillion[50] per year, which can in no way be described as sustainable. Further, with the influx of large volumes of these subsidized electricity sources into the market, the wholesale market price is falling, and adverse impact is starting to be apparent in terms of foreseeing investment returns from other sources.

In light of these circumstances, the government should effect a drastic shift in its policy of broadly subsidizing all forms of renewable energy and give priority to the support of competitive renewables.

Examples of power sources that can be expected to become competitive and that have potential for large-scale uptake would include rooftop solar and other forms of solar power generation, which offer competitive prices even with adjustment costs, and large-scale offshore wind power. With a view to expanding the introduction of these kinds of power sources, focused support should be provided to preparing the environment for their introduction, in other words, upgrading and reinforcement of power transmission and distribution networks necessary to drive the introduction of renewable energy that tends to be unevenly distributed among regions, and the introduction of technologies for monitoring and controlling those networks, as well as the establishment of supply chains including parts and maintenance. It should be noted that, in principle, the value of electricity derived from renewable energy sources is evaluated not through the policy-based premiums, but

[49] Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities

[50] Total amount of renewable energy surcharges in FY2020. The total amount spent on the purchase of electricity from renewable energies was ¥3.8 trillion.

through the non-fossil fuel energy value trading market[51].

At the same time, to enable operators to make investment decisions for the future, it is important that Japan indicates its future market size, that is, its targets for the introduction of renewable energy as a nation. It is hoped that, based on the future introduction targets proposed by the government, operators will accelerate their efforts to lower the cost of renewable energy in anticipation of the expansion of the market.

The business community will actively set and execute ambitious targets for the development and use of energy from non-fossil fuel sources and renewable energy in individual companies, including participating in international initiatives.

(3) Use of nuclear power that balances decarbonization and economic feasibility

Nuclear power is an indispensable means of pursuing the realization of a decarbonized society. We must continue to take advantage of nuclear power, on the major premise that we use the lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station and ensure firm safety based on the latest scientific findings. In addition to the nuclear power operators and the regulatory authorities collaborating and cooperating in efforts toward unremitting safety improvements, the national government must forthrightly debate the safety assurance measures of nuclear power and its necessity from the perspectives of national policy. Through such efforts, it should promote the operation of nuclear power plants whose safety has been confirmed and that have obtained the understanding of local residents, whether through the restarting or resumption of construction of existing facilities, replacement, or construction of new or expanded plants. Particularly, in the short term, the delay in restarting existing power stations has become a

[51] Exchange for the trading of Non-fossil Certificates that separate out the environmental value of electricity from non-fossil fuel sources. Trading commenced for FIT electricity sources (sources covered by the Feed-in Tariff Scheme for Renewable Energy) in May 2018, and for all non-fossil fuel sources in April 2020.

major issue. Human resources for the construction, operation, and maintenance of nuclear power plants are starting to deplete in Japan, and there are strong concerns about the passing on of technologies and expertise. The acceleration of efforts in this regard is a matter of urgency.

In anticipation of the future, it will be extremely important to promote the development of technologies that will lead to improved safety of light-water reactors and other new types of reactors (e.g., SMR[52], HTGR[53], nuclear fusion reactor) that are highly safe and potentially economically feasible. With the aim of the early realization of a decarbonized society, efforts should be pursued to start the construction of new types of reactor by 2030 as a national project.

(4) Improvement of electrification rate

Given the fact that renewable energies and nuclear power are primarily consumed in the form of electricity, the improvement of the electrification rate in the economy as a whole should be an effective means of decarbonization. At the same time, anticipation of a certain level of electric power demand will become an incentive to invest in electric power generation and a driving force in the shift to next-generation electric power systems, including the decarbonization of power sources.

The government needs to promote the maintenance, development, and attraction of large-scale power demand, such as data centers, and also accelerate the electrification of homes and office buildings, including hot water supply and air conditioning, as well as the electrification of the transport sector. It must implement assistance measures, including fair transition measures for the energy operators who will be affected, and develop related

[52] Small Modular Reactor

[53] High Temperature Gas-cooled Reactor

programs.

The promotion of electrification will lead to the replacement of equipment and items that are part of our daily lives, such as in the home and workplaces, as well as private vehicles. It is important not only for governments and corporations, but also for every individual citizen to understand the need for this process and to proactively engage in it.

The business community will consider and verify the feasibility of electrification in domains where it is currently technically and economically difficult, such as in industrial processes and sea and air transport, and will link those efforts to the adoption of economically rational technologies.

It should be noted that, given that digital technologies are being introduced in many different sectors of society, electric power will play an even more important role as a social lifeline. The government needs to work on the development of a business environment that will facilitate the necessary investment, such as the steady replacement of aging facilities and equipment, and, in collaboration with related businesses and local governments, engage in improving the resilience of electric power infrastructure.

(5) Formation of "the Union of Green Growth Nations"

To realize carbon neutrality on the global scale that will be essential for the ultimate solution of climate change, it is imperative for all countries and regions which have different industrial and energy structures to engage in the transition to a decarbonized society.

The Japanese government should take the lead in the formation of a union of nations that aim to realize green growth through the proactive introduction of net-zero emissions technologies and transition technologies, particularly in the Asian countries that are similar to Japan with regard to densely populated cities and population structures and vigorous

energy demand. Further, it is hoped that the government will use such opportunities to lead the decarbonization of the world by coordinating and forming a common idea of effective sustainable finance[54] (including disclosure), and communicating it to the international community, to enable the mobilization of funds to a wide range of technologies and economic activities that will contribute to decarbonization. This will also bring further momentum to the dissemination of Japan's net-zero emissions technologies and transition technologies all over the world.

We, business community, will actively contribute to the discussion on Japan's basic policies and roadmaps for transition finance, including providing lists of technologies. It will also explore collaboration with economic organizations in other countries and regions, including in Asia and the West, about sustainable finance and other initiatives to support green growth, and work together with them on ensuring the global mobilization of funds for a wide range of technologies and activities to transition to the decarbonized society.

[54] Finance that aims to build a sustainable society through mobilization of funds. For details of Keidanren's view on sustainable finance in the area of climate change, refer to its policy proposal, Basic Approach to Sustainable Finance on Climate Change and Concrete Actions (October 2020).

Conclusion

The key to achieve sustainable capitalism, which is the basic principle of this growth strategy, will be the visualization of issues and creation of solutions through DX, or, in other words, the realization of Society 5.0. To put this in action, regulatory reform, that is, the updating of regulatory systems in line with technological progress so that they do not hinder innovation, and the reform of public administration, that is, encouragement through policies from comprehensive viewpoints that eliminate the bureaucratic sectionalism, will be essential.

Also, for the Japanese economy and society to achieve sustainable growth, it will undoubtedly require the fiscal consolidation over the medium to long term. The sustainability of the social security system will also need to be ensured. Through wise spending that concentrates investment on the key areas mentioned in this proposal, the government should recover and grow the economy and draw up a path that will lead to the realization of fiscal consolidation.

On the other hand, Japanese corporations need to extend and deepen their efforts through the promotion of constructive dialogue with investors, who are one of their multiple stakeholders. In addition to Japanese corporations continuing to actively disclose information, including building stories aimed at co-creation with multiple stakeholders about the value generated through business activities, investors also need to clarify their investment stances and deepen their ESG investments, to contribute to the realization of Society 5.0 for SDGs. Furthermore, it will be important to pursue the development of methods for the evaluation of ESG investment returns and solutions to social issues so that the significance of long-term and ultra-long-term investments is widely known more than ever.

To establish sustainable capitalism, as described above, co-creation among diverse entities,

including corporations, citizens, and government, is required for the realization of Society 5.0 for SDGs. The business community hereby declares that it will steadily implement the actions stated in this growth strategy, starting with those actions that can be taken immediately.