

Declaration to be the World's Most Advanced IT Nation

June 14, 2013

**Strategic Headquarters for the Promotion of an Advanced
Information and Telecommunications Network Society**

Contents

I. Basic Principles	2
1. Eliminating Gridlock and Rejuvenating Japan	2
2. Becoming an IT Utilization Society at the World's Highest Levels	3
II. The Society that Japan Should Seek to become	5
2. The World's Safest and Most Disaster-Resilient Society where People can Live Safely, with Peace of Mind, and Comfortably	6
3. One-Stop Public Services that Anyone Can Access and Use at Any Time.....	6
III. Measures for Achieving the Society that Japan Should Seek to become	7
1. Creating a Society that Encourages the Creation of New and Innovative Industries and Services and Growth.....	7
(1) Encouraging the use of open data and big data.....	8
(2) Achieving advances in Japanese agriculture and peripheral industries, converting them into intelligent industries through the use of IT, and deployed business models internationally (Made by Japan Agriculture).....	10
(3) Encouraging interdisciplinary open innovation in a broad range of fields	11
(4) Rejuvenation of local communities (including remote islands) through the use of IT and data	12
(5) Creating new business and reinforcing international competitiveness in the imaging industry through the creation of next-generation broadcasting services.....	13
2. The world's safest and most disaster-resilient society where people can live safely, with peace of mind, and comfort	13
(1) Create a healthy society of longevity through the provision of appropriate local healthcare and nursing care and promotion of good health.....	14
(2) Creating the world's safest and most disaster-resilient society	16
(3) Efficient and stable energy management in homes and communities.....	18
(5) Diversifying Type of Employment and Achieving a Good Life-Work Balance.....	20

3. Development of one-stop public services that anyone can access at any time and from anywhere	22
(1) Provision of highly convenient electronic government services	22
(2) Reforming government information systems on the national and local levels.....	23
(3) Reinforcing IT governance in government.....	24
IV. Reinforcing fundamentals for expanding use of IT	25
1. Fostering and training human resources.....	25
(1) Digitalization of Educational Environments	26
(2) Raising the IT literacy of the public as a whole.....	27
(3) Training advanced IT human resources with practical skills that are effective and can lead internationally	27
2. Securing IT infrastructure environments at the world’s highest levels	28
3. Cybersecurity.....	29
4. Encouraging research and improvement and collaboration among the results of research and improvement.....	29
V. Structures for Implementing This Strategy and Implementation Policies	29
1. PDCA cycle for the Strategy and other implementation structures	29
(1) Exercise of the government CIO’s guidance functions.....	29
(2) Implementation and management structures within the IT Strategic Headquarter	29
2. Assessment indicators for target and progress management.....	30
3. Regulatory reform and improvement of environments.....	31
4. Verification and Deployment of Successful Models	31

I. Basic Principles

1. Eliminating Gridlock and Rejuvenating Japan

Japan currently stands at an historic crossroads. As it went through the post-war period of rapid economic growth, Japan quickly eliminated the disparity in economic development with the West and became an economic superpower second only to the United States. Japan gained international acclaim, and its people developed considerable hopes and confidence.

Following the collapse of the bubble economy, however, the Japanese economy experienced an extended period of economic downturn referred to as the “lost two decades,” and economic growth was at the lowest levels among major countries. During this period, developing countries underwent rapid economic growth, causing Japan’s relative economic strength to decline and its international standing to regress.

The “high volume production and price competition” growth model of the period of rapid economic growth reached its limits, and as calls were made for needed changes in industrial structures, Japan underwent the fastest aging of society, falling birthrate, and declining population in the entire world. Japan is now facing a variety of issues including a shrinking labor force, rising social insurance benefit expenditures, recovery from the Great East Japan Earthquake, measures to address large scale natural disasters, maintaining stable and affordable energy supplies following the nuclear power plant accident, and the aging of infrastructure that was the subject of intense investment during the period of rapid economic growth. Japan has become a developed country with emerging issues.

The Japan that attracted the world’s attention and praise no longer exists. The people have lost confidence and feel considerable unease about the future, and the economy and society as a whole are at an impasse. Japan’s ability to solve these problems is being questioned, and its future prospects are a focus of attention.

At this time, if Japan is unable to reinvigorate its economy, put an end to the “lost two decades,” and deal with the various problems that it’s facing, it will inevitably experience a “lost three decades” and lose its status as an economic developed country. Now is truly an historic time that will determine Japan’s future.

With regard to fiscal policy, monetary policy, and growth strategies, the first two have already been addressed and there are signs of economic improvement. It is necessary to support the positive economic developments through the growth strategies that will be released at a later time.

Information technology (IT) has the power to spur innovation as an all-purpose tool that can be used in all fields. IT can lead to higher productivity in service industries, which is relatively low despite accounting for approximately 70% of Japan’s GDP, and contribute to higher productivity as a foundation for growth potential. In addition to increasing productivity, IT can also be expected to facilitate employment of women, seniors, and others, quantitatively expanding labor input and

making substantial contributions to economic recovery, and resolving social issues.

IT strategies are the pillars of growth strategies, and this strategy, which will serve as the leading arrowhead, will eliminate Japan's stagnation, create a path to a future where the people experience abundant hope and confidence, and get to the heart of making continuous growth and development possible.

2. Becoming an IT Utilization Society at the World's Highest Levels

In 2001, Japan established the Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters), adopted the e-Japan Strategy, set a goal of becoming the world's leading IT nation within five years under the leadership of the IT Strategic Headquarters, and began implementing full scale measures with a focus on broadband infrastructure development. As a result, Japan achieved the world's highest levels in infrastructure development and later implemented policies that emphasized the use of IT. Many people, however, have not personally experienced the results of these developments. The original strategy emphasized use of IT, but simply espousing the adoption and use of IT without an adequate understanding of user needs or undertaking business process reforms that go beyond organizational boundaries did not allow for IT to exhibit its full benefits and efficiency. In addition, each government ministry invested in IT and implemented policies independently, leading to redundant investment and the failure of policies to have the intended effects. In light of these circumstances, it is now necessary to make a new start based on an honest review of these points.

From an international perspective, Japan has lost its status as the world's leading IT nation, and many countries have surpassed Japan in global competitiveness rankings.

When the IT Strategic Headquarters was established in 2001 and IT policy implemented under the slogan of an IT revolution, programs were initiated with a sense of crisis arising from the fact that Japan's measures were substantially lagging compared to other major countries. Today, IT has been positioned as an engine of growth not only by developed countries, but also by emerging and developing countries, which are implementing IT programs. Now is the time for Japan to unreservedly recognize that there are other countries forging ahead of it, and as a developed country with emerging problems, Japan must position IT as an engine of economic growth to contribute to economic recovery and declare that it will aggressively and boldly use IT as a key tool for solving issues including pressing matters such as recovery from the earthquake disaster.

To do this, it is necessary that Japan strive to become an IT society at the world's highest levels in terms of IT use and immediately begin taking specific measures. Japan can become a developed problem-solving country that can distribute solutions to various problems around the world, present models of successful problem solving using IT, and support their adoption worldwide, contributing to international society.

Considering that Japan has not been able to fully utilize IT and as a result has not provided

adequate returns to society, it is imperative that the IT Strategic Headquarters collaborate with the Council on Economy and Fiscal Policy, Industrial Competitiveness Council, Council for Regulatory Reform, and other bodies on government-wide IT strategies and serve as a conning tower that provides overall direction. The designation of the Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society has been changed from the IT Strategic Headquarters to the IT Strategic Headquarters, which must now work to eliminate the vertical divisions within government ministries and agencies and actively cut across ministries and agencies to address common issues to serve in a guiding capacity.

This year saw the creation of the government CIO system. The government CIO, an issue that remained unresolved for many years, is legally positioned as the Deputy Chief Cabinet Secretariat for information technology within the Cabinet Secretariat and is expected to serve as a guide for IT policy for the entire government with the participation of the IT Strategic Headquarters.

The government CIO will have the authority to perform high-level coordination of prefectural policy and to prepare inter-agency plans and expenditure estimate policies and is expected to use this authority to break through vertical divisions within ministries and agencies and develop all-inclusive policies.

Accordingly, this strategy, guided by the Deputy Chief Cabinet Secretariat for information technology, will drive forward IT policies that must be implemented throughout the entire government and undertake bold measures to address policy issues that could not be carried out in the absence of a government CIO.

For Japan to become an IT user society at the world's highest levels, it is essential that the support for IT use be expanded. To achieve this, it will be necessary for the government to take measures for the improvement of environments that bring out private sector capabilities and investment to make implementation of the strategy feasible such as strongly promoting self reform within the government itself, eliminating organizational barriers, systems, and rules that impede use, making focused investment of policy resources through inter-ministry collaboration, and implementing national projects to verify successful models.

In addition, industry and government leaders in various fields must have an understanding of global circumstances based on their own observations and experiences and serve as pioneers who can guide the way for others, as IT Kan-rin-maru.

As Japan becomes an IT user society at the world's highest levels, information assets will become a new management asset that is equally as important as people, goods, and money, and it is the use of information assets that will serve as the key to economic growth and solving problems. It is necessary that the collection, storage, integration, analysis, and use of information assets that transcends fields and areas as exemplified by the expectations for big data and open data create new value, increase the pace of reform, and lead to the creation of a society that makes possible new innovation in industrial structures and social lifestyles.

Until now, Japan has worked to build a safe and reliable cyberspace that provides for the free flow of information by ensuring openness and interoperability without excess management or regulation. In recent years, the increased use of mobile communications, the improvement of sensor networks, the establishment of cloud services, and the rise of social services such as social networks has led to increased use of international services and other networks. To ensure the adequate use of information assets in the face of this trend, it is crucial that Japan maintain the direction of its current measures while embracing international collaboration with an eye towards expanding the sphere of free-flowing information globally.

This strategy is intended to create an IT user society at the world's highest levels and disseminate the results globally through a five-year process (by 2020). Based on an awareness that the visualization of data use will be crucial for accelerating the pace of recovery from the earthquake disaster and in light of the rapid technological innovation taking place in digital technology and the improvement of a global information society, identifies the strategy the type of society and position that Japan should aspire to, and sets forth the measures necessary to achieve them based on the following three pillars:

- (1) Contributing to the creation of new industry and growth in all industry fields through the creation of innovative technologies and integrated services that will enable the public to experience personally the recovery of the Japanese economy through the use of IT and data;
- (2) Contributing to the improvement of the world's safest and most disaster-resilient society where people can live safely, with peace of mind, and comfortably; and
- (3) Contributing to the provision of electronic government services and government reform from the perspective of user public to enable one-stop public services that anyone can access and use from anywhere.

In addition, quantitative key performance indicators (KPI) are specified whenever possible to enable assessment of the progress and results of actions taken (KPI will be continuously improved throughout the process of implementing the strategy to establish more appropriate indicators).

This Declaration to be the World's Most Advanced IT Nation is adopted as a national vision for building a future where government, industry, academia, and individual citizens can share, collaborate on, and use IT and information resources as a result of the entire government working in concert to develop an IT user society at the world's highest levels.

To carry out this strategy, a separate roadmap identifying the specifics of who (responsible government ministries) will do what (actions) by when (schedule), and the PDCA cycle will be applied to the policy.

II. The Society that Japan Should Seek to become

1. A Society that Encourages the Creation of New and Innovative Industries and Services and Growth

The massive volume of diverse data in the possession of the public and private sectors is a source of completely new knowledge and management resource. The use of digitized data that leads to the creation of new industries and services as well as the invigoration of existing industries, businesses, and communities is central for achieving growth. In addition, creating environments that make possible open access to and use of data must be Japan's mission to establish its presence as a member of global society.

Highly reliable public data (e.g., geospatial information, disaster prevention and alleviation information, procurement information, statistical data, etc.) will be provided using an open platform that can be accessed from anywhere inside or outside of Japan enabling that information to be freely combined and used with data in the possession of the private sector or individuals (e.g., geospatial information, disaster prevention and alleviation information, transportation information, weather and environmental data measured by the private sector or individuals, etc.), forming a society where new industries and services can be created. In addition, a society will be created that establishes new business models using IT and data including industries where the use of IT is lagging, reinforces the latent capabilities of industry, creates new jobs, and fosters growth.

2. The World's Safest and Most Disaster-Resilient Society where People can Live Safely, with Peace of Mind, and Comfort

New solutions to various social issues will be devised and diverse new services created by accurately identifying, understanding, and analyzing the risks and problems that Japan is facing in areas such as healthcare and nursing, health, energy, and disaster prevention and response, and building new social systems that utilize IT and data. Through these measures, a society where people can live safely, with peace of mind, and comfort, and the world's safest and most disaster-resilient society will be created.

Specifically, healthcare information and a collaboration of networks necessary for health and nursing care will be developed nationwide to establish a society where appropriate health and nursing care can be obtained when necessary. In addition, a society with the world's safest and most economical social infrastructure that can be used to obtain necessary information not only during normal times but during disasters as well, a society that conducts efficient and stable energy management, and a society environmentally-friendly, accident-free, and the world's safest road transportation will be created.

3. One-Stop Public Services that Anyone Can Access and Use at Any Time

A “convenient living” society will be created based on the principle of providing electronic access to all government services through simple means. Such services, which will be secure and easy to use, will provide one-stop access to public services to everyone at any time and from anywhere, and will serve as the basis for responding to the aging of the population and low birth rate, invigorating local communities including remote islands, and facilitating the mobility of human resources.

The extensive use of cloud computing will break down vertical divisions within government ministries and agencies and government services that are convenient and pose fewer burdens unused will be created through collaboration by the public and private sectors.

III. Measures for Achieving the Society that Japan Should Seek to become

To achieve the society that Japan should seek to become described in II, the following measures will be taken. When undertaking specific measures, KPI will be set to the fullest extent possible and progress management will be conducted by the IT Strategic Headquarters.

When carrying out measures, regulations, systems, and rules that act as impediments will be actively reviewed and relevant ministries will collaborate on priority issues to focus investment of policy resources and carry out projects to verify successful models in order to achieve the society that Japan should seek as set forth in this strategy.

1. Creating a Society that Encourages the Creation of New and Innovative Industries and Services and Growth

The use of IT and data is the key to success in global competition. A society that encourages the creation of services that generate new added-value and the creation of new and innovative industries and services as well as growth in all industries will be created through the strategic use of IT and data.

There are high needs in the private sector, particularly, for data in the possession of government, as highly-reliable basic data. But the data is not used adequately because there are currently restrictions on the secondary use of released data, much data is not machine-readable (possible to analyze and process by software), the existence and location of desired data is difficult to identify, and much of the data that can be used by businesses and others is not released publicly. It is necessary to immediately encourage promoting private sector access to public data (open data) and improvement of an environment in which the unfettered combination and use of public data are allowed.

Furthermore, it is necessary to develop environments that include reform of regulations and systems so that private sector capabilities can be drawn out to the greatest possible extent, facilitating private sector uses of data that will lead to new businesses and new services based on new ideas.

In agriculture, where the use of data and the introduction of IT is lagging, IT such as the digitization of expertise from outstanding examples is necessary to industrialize knowledge throughout industry, including peripheral industries, and to bolster international competitiveness.

In conjunction with these measures, local communities will be reinvigorated by combining local industries and local resources such as tourism resources with IT and dated use and raising local capabilities. Also, next-generation broadcasting services will be used to create new business in the broadcasting industry.

(1) Encouraging the use of open data and big data

By interlinking and using public data in the possession of the government such as geospatial information, disaster prevention and alleviation information, procurement information, statistical data with customer information in the possession of companies, the life logs of individuals, and various other large volumes of data present in society and markets, i.e., “big data,” it will be possible to create new business such as improvement of programs that automatically extract data from large volumes of diverse information according to customer needs and provision of real estate information that shows conditions in an area in easy-to-understand formats by gathering and arranging environmental, educational, transportation, and other data, and to create new services through public and private sector collaboration. And a society that fosters innovation in corporate activities, consumer conduct, and social lifestyles will be created..

To achieve this, promoting private sector access to public data (open data) will be encouraged and an environment will be created to promote the use of personal data, which is expected to provide considerable value in spurring the creation of new business and new services that use big data.

(a) Promoting private sector access to public data (open data)

With regard to public data, a shift in concepts will be made based on the concept of open by default. To facilitate use by businesses and services created through collaboration between the public and private sectors, the large volumes of diverse data in the possession of government, independent government corporations, local governments, and others will be released on the Internet in machine-readable formats in accordance with rules that allow

unrestricted editing and processing including commercial use.

To achieve this, a roadmap based on the Open Government Data Strategy will be promptly adopted and released, rules that allow unrestricted secondary use of public data will be created, and measures will be taken to expand release of data in international standard and machine-readable data formats from FY 2013. A trial version of data catalog site that provides guidance to and enables cross-sectional searching of public data released by each ministry and agency will be launched during FY 2013 and gathering opinions from the public will be conducted, with full-scale operation to begin in FY 2014. Also, measures will be taken to build the base of common vocabulary that facilitates data combinations and cross-sectional use.

The 2014 and 2015 fiscal years will be positioned as a time for intensive action, and release of data at the same level as other developed nations will be achieved by the end of fiscal 2015.

To encourage the use of public data, active measures by various methods such as contests will be taken to identify and encourage needs of use, to develop and spread models of use, and to support the improvement of highly-skilled human resources that can use data. And the creation of new businesses and new services will be supported.

KPI

- Progress of open data achievement by each ministry and agency
- Number of datasets published on data catalogs, number of access hits, and number of downloads
- Number of applications that use open data

(b) Supporting the creation of new businesses and services through the use of big data

Data concerning individuals, devices, and infrastructure conduct and status is being distributed and accumulated using IT day by day and minute by minute, and strong encouragement will be provided to the creation of new businesses and new services that can generate added-value through the use of this “big data.”

To achieve this, business environments that are compatible with the protection of personal information and privacy will be created to facilitate the efficient use of big data with respect to the handling of personal data including information concerning individual conduct and status, an area that is expected to produce particularly high use value. When developing such an environment, standardization of rules concerning privacy and information security as well as increasing convenience and effective international flows of information through international systems will be essential, and international collaboration will be promoted through international negotiations in forums such as the OECD.

In areas where advanced rules are already being adopted such as rules concerning the

handling of user information by smart phones, the expansion of such measures will be encouraged.

Further, new investigatory bodies will be promptly created under the IT Strategic Headquarters, rules on the use of personal data will be established taking into consideration personal information and privacy, personal information protection guidelines will be reviewed, and measures such as standardizing procedures for obtaining consent will be taken as soon as possible within the year. Also this year, the new investigatory bodies will review systems and adopt policies (including roadmaps) that consider new legal measures including the creation of third-party organizations.

Starting in 2014, personal data use environments will be developed in stages and the use of such data encouraged in accordance with the reviews of systems and roadmaps indicated in the policies while taking into consideration international collaboration.

In conjunction with these measures, to encourage the use of big data, shared technologies will be quickly established to raise the safety and reliability of data and networks, ensure interoperability, and raise the level of collection and processing of large volumes of data. Research and improvement of new technologies for the use of data that lead to the creation of new businesses and new services and their use will also be encouraged.

KPI

- Degree of attainment of review of systems relating to the use of personal data
- Total value of new businesses and new services created through the use of big data

(2) Achieving advances in Japanese agriculture and peripheral industries, converting them into intelligent industries through the use of IT, and deployed business models internationally (Made by Japan Agriculture)

In Japanese agriculture, which produces high-quality agricultural products, and in the peripheral industries that support agriculture, measures concerning agri-informatics (AI) for the advanced use of various types of data including knowledge from outstanding farmers will be taken to create new business models, transform agriculture into an intelligent industry, and deploy the business models overseas to create “Made by Japan Agriculture.”

To achieve this, large volumes of data obtained through measurements at agricultural sites will be accumulated and analyzed for multiple applications such as using the knowledge of outstanding farmers with high production technologies for human resource development and the sharing and use of information by numerous operators including small-scale farmers to raise profitability. Measures will be taken to create new production methods by 2016 and the resulting new business models will be deployed in Japan and overseas to transform agriculture

into knowledge industry. The widespread adoption of traceability systems that use data to link the farm to the kitchen table will support the creation of value chains that include small-scale farmers, while higher added-value and synergy effects will be used to establish a safe and trusted Japan brand. Overseas marketing of agricultural goods produced using these IT-use technologies and overseas adoption of the technologies will begin in FY 2017.

In peripheral agriculture-related industries such as agricultural materials and equipment, the development of integrated services such as the sale of data and expertise obtained through AI agriculture measures in combination with products will grow into a major source of income in the industry by 2018.

Support will be provided to the improvement of environments by FY 2015 that encourage businesses to enter agriculture and the incorporation of agricultural operations to promote new entry into agricultural management, secure successor operators, and encourage larger scale operations. In addition, the use of IT and data to raise levels in agricultural and peripheral industries and to convert them into intelligent industries will be accelerated.

As a result of these measures, improvements in Japan's cultural productivity as well as stabilization and dramatic increases in the added-value of agricultural products will be achieved. The target for agricultural, forestry, and fishery product exports in fiscal 2020 is one trillion yen.

KPI

- Scale of the agricultural IT market
- Percentage of sales in agriculture-related industries accounted for by service production segments.
- Status of overseas adoption of Japanese-style agriculture service solutions

(3) Encouraging interdisciplinary open innovation in a broad range of fields

By promoting the adoption of third-party technologies and knowledge from different fields and industries without adhering solely to internal technologies, that is, engaging in “open innovation,” IT ventures that create new business and new services and families of specialized companies that are globally competitive will be established.

In addition, proactive measures will be taken to enhance Japan's competitiveness by responding promptly to a new era of digital manufacturing brought about by 3D printing and other technologies.

These objectives will be achieved by providing support to existing start-up companies, bolstering intermediary functions for supplying risk money including encouraging the use of

innovative financing methods that employ IT such as cloud funding, identifying and supporting human resources, businesses, ideas and so on with future potential through contests and other means, providing necessary knowledge and data, and encouraging support by specialists. In addition, measures will be taken to establish environments where skilled personnel can be effective and to accelerate collaboration among skilled individuals and businesses.

Through these measures, high service levels and effective corporate management achieved by the use of IT and data will be promoted, leading to higher competitiveness and greater activity by small and medium business enterprises including start-up companies.

KPI

- Number of new companies established
- Status of utilization of support programs

(4) Rejuvenation of local communities (including remote islands) through the use of IT and data

Appealing communities full of vitality where children and senior citizens can lead enriching lives will be created according to the characteristics of each locality by making use of IT and data in tourism that makes use of local resources, government, and local industry including agriculture. In addition, new and growing towns that are resilient against natural disasters will be developed by identifying and nurturing young human resources and start-up companies with new ideas and technologies for solving the problems being faced by local communities and society, and by generating virtuous cycles that lead to continuous development in the reinvigoration of local communities and society.

Also, stimulus will be provided to local economies by establishing new business models on remote islands where limiting the outflow of young people and other citizens is a pressing issue.

To achieve these objectives, measures for creating attractive communities full of vitality will be encouraged by increasing efficiency and improving services through the use of smart phones, tablets, and other devices. Also, new models for community building and business models for remote islands will be developed by combining IT such as sensors, cloud computing, and telecommunications infrastructure that can be used during disasters with the use of geospatial and other information.

In conjunction with these measures, the potential for expanding and maintaining the results of measures including demonstration projects in various communities including remote islands and other locations will be verified, shared infrastructure for community development

using IT will be built, and starting in FY 2015, measures will be taken to expand domestic and overseas adoption of successful models for continuous community reinvigoration.

KPI

- Effectiveness of measures (ripple effect in industry, etc.)
- Demonstration project and economic independence and continuity of models for expanded adoption

(5) Creating new business and reinforcing international competitiveness in the imaging industry through the creation of next-generation broadcasting services

New markets will be created through 4K and 8K broadcasting services, which offer ultra-high-resolution and a sense of ‘being there’, and by Japan being among the first in the world to create next-generation broadcasting services such as distribution of programming and application use via smart televisions that completely integrate broadcast programming and the Internet. The targets for the start of 4K and smart television compatible broadcasts and for 8K compatible broadcasts are 2014 and 2016, respectively, via satellite broadcasting.

To achieve these objectives, an environment will be developed for the creation of systems for businesses involved in broadcasting to share and execute targets and action plans and an environment will be developed to facilitate the adoption and public announcement of technical and organizational rules necessary for practical application, international standardization, and verification of technologies. In addition, new open media spaces will be created to allow participation by anyone with the desire to provide programming or applications. An environment will be developed to enable commercial television sets to receive 4K and 8K broadcast and smart television compatible services by 2020.

Based on the results of introduction, Japan’s next-generation broadcasting services will be packaged for international adoption.

KPI

- Status of achievement of establishing environments for starting 4K and 8K broadcasting and other services

2. The world’s safest and most disaster-resilient society where people can live healthily, with peace of mind, and comfort

Japan is currently facing a large number of significant social issues including responding to the extreme aging of its population, preparing for large-scale natural disasters based on the experience

of the Great East Japan Earthquake, dealing with aging social infrastructure that was developed mainly during the period of rapid economic growth, ensuring stable and efficient energy supplies through management of electricity supply and demand, reducing the number of traffic accident fatalities, which has stopped climbing, and eliminating labor shortages caused by the low birthrate and aging population.

In light of these circumstances, new universal social systems that enable all individuals including those with inadequate access to information resources such as the disabled and senior citizens to lead healthy, secure, and safe lives by combining new technologies that make use of IT with technologies for analysis of large volumes of data. Resolution of various social issues will be verified with specificity, and the world's most disaster-resilient society will be created to enable individuals to lead healthy and secure lives by creating highly economical and convenient new services through business reforms and business development by companies.

In addition, successful models of problem-solving achieved through these measures will be deployed internationally.

(1) Realize a healthy society of longevity through the provision of appropriate local healthcare and nursing care and promotion of good health

In light of the significant issues that Japan is facing in healthcare including shortages and uneven distribution of doctors in local areas, higher burdens on healthcare workers, and rising demand for healthcare and nursing care as a result of the coming extreme aging of Japan's population, systems will be created to improve and manage health and prevent disease by gaining the understanding of all members of the public about the effectiveness of using data, leading to autonomous use by the public. Sustainable structures that facilitate the acceptance with peace of mind of effective and efficient healthcare and nursing care and livelihood support services when needed will also be created. Through various policies that include these measures, a society where people can live long, healthy, and independent lives (a healthy society of longevity) will be established and corresponding new services and new industries will be created. To carry out these objectives, the following two measures will be implemented.

(a) Expansion of effective, efficient, and high-quality healthcare and nursing care services

Structures will be created to facilitate the sharing of information concerning healthcare, nursing care, and health and collaboration among healthcare institutions and providers of remote healthcare, home-based healthcare and nursing care, and livelihood support services. Also, systems will be developed for the provision of effective and efficient healthcare and nursing care.

To carry this out, the cost effectiveness of healthcare information networks will be improved by establishing standards for data and system specifications, investigating operating rules, and drastically reducing system-related costs with the aim of building infrastructure for the use of healthcare information that supports the provision of healthcare services to citizens in different regions. These programs will be expanded and deployed nationwide by FY 2018.

To provide appropriate healthcare, nursing care, and livelihood support services tailored to user circumstances, various bodies involved in comprehensive regional care will share information and collaborate, and considering that that provision of appropriate nursing care services will lead to improvements in the need for those services by users, measures will be taken to improve the objective assessment of these services and their content, and specific policies for verifying effects and expanding and developing services will be investigated and adopted.

Furthermore, development, trials, and practical application of sensor and robotic technologies relating to healthcare, nursing care, and livelihood support services will be carried out to encourage autonomous living and social participation by senior citizens and to contribute to improving quality of life.

In conjunction with these measures, systems will be created for the centralized and continuous management and utilization by patients and individuals of their own healthcare and health information such as electronic medicine notebooks and personal management of lifestyle-related disease.

KPI

- Nationwide expansion and deployment of healthcare information networks based on the cost effectiveness and sustainability of introduced systems
- Spread of systems that enable information sharing and collaboration by diverse organizations involved in healthcare and nursing care

(b)Enhancing the use of various types of data such as healthcare and health information including measures for improving health conditions for the working ages

Measures will be taken for appropriate and continuous improvements in health according to individual lifestyles and to prevent the occurrence of disease and serious conditions by using various types of medical, healthcare and related data while working to raise understanding concerning the effectiveness of preventing the incidence of lifestyle-related diseases and serious conditions in individual members of the public.

To carry this out, insurers, local governmental bodies, and companies will use medical checkup data, medical insurance claim data, and other information to determine and analyze the health status of insured, local residents, and employees and use the results to provide

specific health guidance and promote good health with the participation of the individuals. This will facilitate measures relating to the safety of pharmaceuticals by using healthcare information databases. By FY 2016, effective policies will be established for improving and managing the health of citizens in local communities and companies, and based on the results, the policies will be expanded nationwide.

In addition, by making further use of IT in medical insurance claim data reviews, the efficiency and effectiveness of such reviews will be increased, and the use of medical insurance claim data by insurers and local governments will be increased to support measures for the provision of appropriate healthcare.

Systems will also be created to gather, assemble, analyze, and use various types of medical, healthcare and related information that will contribute to these measures.

Also, considering that verification of the health enhancement of effects of agricultural work by senior citizens and existing measures for promoting good health through diet have indicated substantial health benefits of exercise and diet, models for improving health including diverse styles of working in different regions and Japan's unique dietary practices will be investigated and created and methods of spreading those models will be actively examined.

KPI

(Overall effects including the above measures)

- Extension of healthy life spans (or extension of healthy life spans beyond increases in average life span)
- Maintenance of healthy life spans at the world's highest levels

(2) Creating the world's safest and most disaster-resilient society

Disaster response and damage reduction information infrastructure will be built to enable all members of the public to obtain accurate disaster-related information through various reliable means during an emergency. A disaster-resilient society will be created where IT and data can be used during major disasters to facilitate life-saving, firefighting, and other operations and to support effective on-site responses such that lives can be reliably saved.

Also, sensors, robots, nondestructive testing, and other technologies will be used to accurately determine the status of social infrastructure, accumulate information, and use that information to extend the safe life of social infrastructure, contributing to the development of the world's safest and most economical social infrastructure.

(a) Building disaster response and damage reduction systems including systems for the provision of disaster-related information to protect lives

Robust communications and broadcasting infrastructure and other systems will be built to enable the public to obtain accurate disaster-related information by various reliable means during emergencies. A disaster-resilient society will be created where highly-precise position information obtained from quasi-Zenith satellites and IT can be used during major disasters to accurately determine the status of damage and other conditions and use remote operation to conduct life-saving, firefighting, emergency response and recovery, and other activities and to support effective on-site responses such that lives can be reliably saved.

Also, the public and private sectors will cooperate to encourage the use of geospatial information and the Internet will be used to provide disaster-related information from comprehensive disaster response information systems shared by some government ministries and agencies from the perspective of encouraging open data to make it possible for anyone to rapidly access and use geospatial information and disaster-related information.

In addition, systems will be created for the collection and dissemination of multifaceted information using diverse media including establishing redundancies and diversification of means of instant information dissemination using J-Alert and deployment of telecommunications terminals that can provide disaster-response and damage reduction information even during normal times. This will enable all members of the public to obtain accurate disaster-related information using public and private sector services.

By implementing these measures, multifaceted systems for collecting and disseminating information using various media will be created by FY 2015.

Furthermore, disaster-response robots and other devices that can be operated remotely using IT will be introduced by fiscal 2018 for use during large-scale disasters and unique accidents where a site cannot be approached. Continued advances in these devices will be made and geospatial information will be used to guide people to evacuation sites, and introduction for firefighting measures will be investigated by FY 2016 with introduction in FY 2020.

KPI

- Degree of nationwide deployment of diverse means of information dissemination

(b) Establishing the world's safest and most economical social infrastructure through the use of IT

Managers of social infrastructure will make use of data concerning the status of various facilities necessary for the maintenance and management of social infrastructure and rapidly identify and respond to irregularities to prevent accidents. In addition, social infrastructure will be made safer and its lifespan extended, national resilience enhanced, and total lifecycle

costs relating to maintenance, management, and updating reduced by rapidly discovering damage and implementing preventing measures before large-scale repairs are needed.

To do this, a database will be created concerning the status of various facilities starting in FY 2013 so that social infrastructure managers can identify and accumulate data necessary for maintaining, managing, and updating social infrastructure. A platform will be created for integrated handling of the data, with partial operations to start in FY 2014 and a transition towards full-scale operation in FY 2015 while bolstering functionality. In conjunction with these measures, utilization of various facilities by managers will be encouraged and that utilization will be made visible to the public.

In addition, research and development as well as the introduction of sensors, robots, and nondestructive testing that can lead to the early identification of deterioration and damage and higher efficiency maintenance and management operations will be encouraged. Research and development will include examination of future expansion including full consideration will be given to needs, reliability, and economics to facilitate introduction of the developed technology at use sites.

Industry, government, and academia will collaborate to introduce at use sites low-cost technologies relating to the determining the status of deterioration of social infrastructure that is tailored to specific use sites by combining sensor, robotic, nondestructive testing, and other technologies with large-scale data processing technology by FY 2020 to establish the world's most advanced high-precision analysis techniques.

As a result of these measures, new industries relating to the maintenance and management of social infrastructure will be created. Also, inspections and repairs of 20 percent of key and aging infrastructure in Japan will be conducted using sensors and other technologies, and successful models for countermeasures to aging social infrastructure, which may become a common issue around the world, will be developed and deployed internationally to position Japan as a frontrunner in this field.

KPI

- Number of incidents involving social infrastructure

(3) Efficient and stable energy management in homes and communities

Achieving reductions in peak energy consumption, which has been a major issue since the Great East Japan Earthquake, will require responses on the supply side as well as energy management that can intelligently control demand.

Until now, energy demand has been treated as a given and supply and demand has been

managed primarily by electric power companies adjusting supply. In contrast to this, systems will be created to enable users to actively participate in management of energy including electricity such as demand responses that enable users to make demand choices based on the status of supply.

In the private sector, the roles of aggregators that use IT and cloud computing technologies to bundle small-scale users and provide effective energy management services will become increasingly important. The establishment of aggregators as a new business sector will lead to efficient energy management.

To carry out these measures, a demonstration project relating to demand response will be completed by FY 2014 and it will be put into practical application. In conjunction with changes to legal systems including the liberalization of entry into the retail electric power business, which is scheduled for 2016, smart meters will be deployed nationwide and the spread of efficient and stable energy demand using demand response will be supported.

KPI

- Percentage of regional electric power equalization (reduction of electricity consumption at peak times)
- Assessment by local residents of electric power amount and rate reductions

(4) The world's safest, environmentally-friendly, and economical road transportation

Intelligent Transport System (ITS) technologies including map information, geospatial data such as position data for vehicles and individuals, and accumulated data will be used to enable the timely exchange of information among vehicles, between the road and vehicles, and between vehicles and individuals. This will reduce the risks of traffic accidents, alleviate traffic congestion, and contribute to the establishment of safe, environmentally-friendly, and economical road transportation.

Mobility support systems will be created to enable safe, secure, and efficient mobility by senior citizens and disabled individuals. Also, systems will be built to make suggestions concerning optimal methods and transport combining cars with public transportation based on accurate determination of needs when people travel.

To carry out these measures, an inter-ministerial roadmap will be adopted and support organizations established to encourage development and application of advanced driving support technologies and automated driving systems.

Specifically, infrastructure will be developed at major intersections nationwide, compatible onboard devices and pedestrian terminals that take into consideration senior citizens and

children will be developed and put into use and measures taken to support their introduction, and service operating systems will be created to accelerate the rapid practical application of safe driving support systems currently being undertaken through collaboration by the public and private sectors. Also, environments will be created for the use of electronic toll collection (ETC) and other ITS technologies at facilities other than highways such as parking garages to enhance user convenience. Measures relating to collection and dissemination of traffic information that can be effectively used for safe driving support, relieving traffic congestion, and responding to disasters will be promoted. In addition, ultra-compact mobility devices (ultra-compact vehicles that can accommodate one to two passengers) using mobility support robotic technology will be developed and their adoption encouraged.

Information concerning these ITS technologies developed in Japan will be disseminated in Japan and to other countries at the ITS World Congress to be held in Tokyo in 2013 and at other forums. Starting in FY 2014, advanced verification trials will be conducted on public roads in model districts with the assumption of widespread adoption and development of advanced driving support technologies will be commenced.

Furthermore, autonomous vehicle systems will be combined with inter-vehicle and road-vehicle information exchanges, and driving support technologies will be advanced while conducting trials on public roads for future practical application with a target of commencing trials of automated driving systems in the 2020s.

As a result of these measures, the number of traffic accident fatalities will be reduced to less than 2,500 by about 2018. Also, the world's safest road transportation will be created (the world's lowest rate of traffic fatalities compared to population) and traffic congestion will be greatly reduced by 2020.

KPI

- Number of traffic fatalities
- Status of traffic congestion

(5) Diversifying Type of Employment and Achieving a Good Life-Work Balance

Cloud computing and other IT services will be employed to enable work that is not tied to a specific locations such as outside the office, at home, and in remote areas including mountainous regions according to the circumstances of various persons including youth, women, senior citizens, caregivers, and handicapped persons and the content of their work. This will lead to the development of a society where people can choose from among various

and flexible types of employment. Also, efforts will be made to expand the adoption of telework to help workers maintain a good life-work balance.

To these ends, government will collaborate with industry to support employment models for teleworking from home that allow workers to spend at least one full workday per week at home targeting women engaged in child raising, who find it particularly difficult to continue working, as well as men participating in childcare, and caregivers. The target is full development and widespread adoption of such models by 2016 to encourage greater social participation by women, secure labor during a time of low birth rates and an aging population, support greater participation by men in childcare, and achieve balance between work and care giving.

It is also important that government agencies continue to encourage changes in work styles such as by supporting telework.

As a result of these initiatives, the number of companies that have introduced telework will increase threefold by 2020 compared to 2012 and the percentage of workers who telework and work from home at least one day per week will reach at least 10%. Measures to support the employment of women including the above will raise the percentage of women who continue working before and after having their first child to 55% (compared to 38.0% in 2009) and the employment rate of women aged 25 to 44 years to 73% (compared to 66.8% in 2011).

In addition, employment matching will be conducted, a shift to high-growth fields encouraged, and employment of persons who want jobs will be supported by using IT to reinforce employment support functions such as the HelloWork Internet job search service to facilitate the employment of unemployed youth, job-seeking women who are raising children, have left work, or retired, middle-aged and senior workers, and others in jobs that suite their circumstances or make use of their specialized knowledge and experience as well as employment that eliminates the gap in various working conditions including skills and treatment between employed persons and job seekers.

Furthermore, the use of idle assets in remote areas such as mountainous regions including schools and other public facilities and old homes as corporate satellite offices will be encouraged nationwide to rejuvenate local communities and maintain a life-work balance.

KPI

- Number of companies that have introduced telework
- Percentage of workers who telework from home at least one full day per week (number of workers who telework from home at least one full day per week)
- Reinforcement of job search support functions using IT such as HelloWork
- Number of companies using satellite offices in remote areas such as remote islands

3. Development of one-stop public services that anyone can access at any time and from anywhere

Existing measures for electronic government services has produced certain results in terms of digitalizing services and developing one-stop services, but in many cases they follow rules and procedures from the analog period and service desks and paper forms remain fundamental, with the online provision of services serving in a supplementary role. In addition, the vertical organization of ministries and agencies or the vertical organization of bodies within ministries and agencies is often the cause of the failure to provide services that are convenient from users' perspectives.

In contrast to this, the use of cloud computing based services is advancing around the world because of their efficiency, but it has been reported that Japan is in a superior position compared to many other countries with regard to such services in terms of the establishment of legal systems and the creation of communications infrastructure.

Going forward, the ability to obtain government services electronically will be the norm, and comprehensive utilization of cloud computing will make possible the creation of convenient lifestyles where anyone can obtain one-stop electronic government services from anywhere, at any time, using any type of terminal.

To achieve this, the provision of convenient government services placing little burden on users is being established while building resilient and high-security administrative platforms, making extensive cost cuts, and conducting efficient administrative operations. By implementing these measures centered on a cooperative relationship between the public and private sectors, a new model for electronic government capable of sustainable development will be created.

(1) Provision of highly convenient electronic government services

Functions for the provision of services that were previously undertaken by government will be opened to the private sector and highly convenient services will be created through collaboration by the public and private sectors. Open user environments that utilize cloud computing are being developed through the standardization and sharing of data format, terminologies, codes, and characters and the public release of application interfaces (API) to facilitate active participation by members of the public as stakeholders. With regard to the standardization and sharing of characters in particular, information systems developed in the future will in principle use character data platforms that conform to international standards.

When designing online services, the objective will be to digitalize the entire service value chain with the aim of increasing convenience and raising overall efficiency. Marketing techniques will be employed for the design of user-centric services and services will be provided through appropriate channels.

During this time ‘on’, improvement policies will be adopted while making reference to existing best practices to enhance the convenience of online procedures. Also, detailed action plans will be adopted for the improvement of open use environments including the optimal status of organizations for carrying out reforms through public-private sector innovation, and the plans will be implemented in phases. Websites will be reviewed to create sites that are more convenient from users’ perspectives by progressively publicly disclosing API for government websites and taking other measures.

In preparation for the utilization of cloud computing and the introduction of a social security and tax number system (the “Number System”), operational reforms will be systematically implemented, highly convenient online services including the one-stop services that users want and customizable services that can be accessed via mobile terminals will be provided, and efficient administrative operations will be conducted.

In anticipation of the use of individual identification cards, services for individuals will be provided using the “My Portal” concept (tentative name) to be created in the future, and “My Government,” a concept that can be linked to an administrative concierge service that will provide access to highly convenient online services such as one-stop push-type services tailored to the needs of each individual will be established. Services will be accessible via multiple channels including PCs and mobile phones.

KPI

- Degree of satisfaction with services by users, number of website hits, number of APIs released, etc.

(2) Reforming government information systems on the national and local levels

Comprehensive reforms will be implemented when investing in IT. When updating individual information systems, individual governmental ministries and agencies will adopt detailed reform plans that specify their vision for improving services and streamlining and raising the efficiency of operations, the details of necessary reforms to legal, organizational and operational systems, and the effects of investment. Operational and system reforms will be implemented systemically based on these plans.

In addition, extensive use of cloud computing will lead to higher efficiencies on larger scales, seamless collaboration that eliminates vertical organizational divisions, improved ability to respond rapidly and flexibly to change, and substantial cost reductions through more efficient administrative operations.

To carry out these measures, portfolio management relating to government investment in IT will be introduced. A roadmap for government information system reforms will be adopted

during FY 2013, redundant information systems and networks will be consolidated, and systems for which there is little need will be reviewed under the direction of the government CIO and the transition to a common government platform will be accelerated.

In government sectors where the Number System will be introduced, relevant organizations will adopt plans while collaborating on administrative service and operations reform and information system reforms under the guidance of the government CIO and taking action in accordance with those plans based on the introduction schedule.

Also, the digitization of information (going paperless) and higher productivity will be achieved through the use of mobile terminals and other means, and reforms will be implemented with regard to employee work styles taking into consideration the work-life balance and the ability to continue operations during emergencies.

As a result of these initiatives, the number of information systems in use will be reduced by nearly half the current number (approximately 1,500 in FY 2012) by FY 2018. With the exception of systems that require special consideration such as those in need of large-scale updating based on reviews of operations, in principle, all government systems will be shifted to cloud-based systems with a target of FY 2012, and a disaster-resilient and highly-secure government platform will be created and operating costs reduced (with a target of approximately 30%) while achieving distribution of operating sites.

The next four years prior to the introduction of the Number System will be positioned as a period for intensive action concerning local government cloud computing, and measures by local public bodies will be accelerated by introducing shared systems and standardization.

KPI

- Reduction in the number of government information systems and reduction in system operating costs
- Targets for going paperless (electronic payment rate, etc.)

(3) Reinforcing IT governance in government

IT governance by the government CIO will be reinforced and strategic IT investment management will be conducted throughout the government to engage in aggressive IT investment and completely eliminate waste.

To achieve this, an investment plan for government information systems will be adopted and implemented under the leadership of the government CIO in conjunction with preparation of the FY 2014 budget to steadily implement the roadmap for reforming government information systems. Also, operation of a Japanese “IT dashboard” (a structure that enables

members of the public to confirm at a glance via the Internet the status of IT investment by individual government ministries and agencies) will begin in FY 2014.

Common rules relating to information system procurement and project management will be adopted, a pool system for government CIO aides, databases for managing government information system assets created and put into operation, and review systems introduced. A new assessment system will be created under the IT Strategic Headquarters, and monitoring functions will be reinforced for large-scale and high-risk projects.

Moreover, to foster IT human resources within government, training programs will be reviewed and across-the-board measures taken to improve those programs. Ministries and agencies will implement personnel exchanges with government CIO staff organizations and organizations that carry out large-scale projects involving multiple agencies such as shared government platforms to systematically train IT personnel. Also, innovations will be implemented with regard to personnel rotations to ensure that core personnel working on ministry and agency projects are retained in their posts until appropriate stages of the project life cycle are reached.

In conjunction with these measures, measures will be taken to address procurement of government information systems including ending vendor lock in to reduce costs and taking action with the aim of conducting strategic procurement for establish a more transparent and competitive market. This will be done by encouraging the utilization of open source software, standardization, and shared use and conducting reviews of optimal assessment of the technical skills of bidding businesses and by conducting procurement that makes use of economies of scale throughout the entire government through consolidation and integration and the introduction of government licenses for necessary operating systems and other software.

KPI

- Degree of achievement of individual projects, number of IT personnel trained (number of persons undergoing training)

IV. Reinforcing fundamental for expanding use of IT

1. Human Resource Development and Education

To be the country with “Rich Information Resources” through establishing the world’s top level society with full utilization of IT, it is necessary to develop human resources who can drive, support, and enjoy this transformation to gain the best benefits to enrich their daily life. Accordingly, it will be necessary to investigate and develop policies tailored to each generation and their objectives.

In order to realize this vision, it will be necessary to investigate the digitalization of the educational environment (infrastructure including software and hardware), increasing IT literacy for all the people, bringing up the world top level of IT human resources who can take a lead in future innovation through providing opportunities (supporting environment and encouraging challenging activities to enhance individual capacity), and delivering information education with specific curriculum (curriculum prepared for specific needs and educational goals). Based on these investigations, measures need to be incorporated and carried out.

Speaking of progress and achievement monitoring about any measures for human resource development and education, it is also important to set appropriate indicators (KPI) with their generation and literacy level in mind, and to be sure that its progress can be confirmed.

The capacity building and development of human resources is an issue in which the entire society needs to be involved, especially so to have further collaboration among industry, universities and government.

With the above mentioned concerns in mind, the following three measures in particular are focused to be out. Detailed plans, approaches, and schedules are defined in cross-organizational plan which is provisionally named “IT Human Resource Reinforcement Plan” within this year. The actions are taking place in line with the plan from the following year.

(1) Digitalization of Educational Environments

Academic ability and IT literacy for children and students are expected to be enhanced and increased as their educational environment is more in touch with IT from primary education. Such an educational environment is equipped by high-speed broadband, one computer per student, electronic blackboards, wireless LAN, digital textbooks and other educational materials.

In conjunction with preparing IT equipped educational environments, it is necessary to develop a teacher’s capacity to take the full advantage of such an educational environment for each student’s levels. The teacher’s training model is going to be development in order to build the standardized approach and contents as well as enhancing the teaching skills of, for, and with IT. To support a teacher’s capacity enhancement, databases of teaching plans and educational materials will be prepared and open to all teachers. The database even includes teaching materials which are developed from existing governmental websites for children. For enrichment of such contents and services, it is important to promote cooperation and involvement from private companies and sectors.

Through these measures, educational environments will be digitalized at all elementary, secondary, high, and special support schools in the 2010s. The seamless educational and learning environment between schools and home will be realized by the digitalization of the school environment. .

In addition to digitalization of educational environments, it is also to develop the environment which supports enabling students and others to acquire skills that hold promise for the future such as new technology including digital fabrication (3D printing and so on) as well as robotics, programming, information security, and digital contents development.

(2) Increase and enhance IT literacy for all

Considering the increase of opportunities for the public to be exposed to IT as a result of the expansion of the Internet as well as rapid growth in the use of smart phones, the IT literacy of the public as a whole including awareness of information morals and information security needs to be increased. In order for anyone from children to senior citizens to live comfortably, it is necessary to ensure all can feel and enjoy the benefits of IT.

In order to cover all the population and bring up their IT literacy, the educational approach and contents will be prepared and delivered based on the study for understanding current IT literacy for each age group; children, to students, adults, and seniors.

With the full utilization of IT as supporting tools for remote education, all citizens in every corner of the country including remote islands will be able to enjoy their educational opportunity without geographical or temporal restriction.

(3) Bring up world highly qualified IT human resources who can lead innovation

Human resources is the key to innovation. It is necessary to discover and bring up talented human resources who can solve socio-economic issues with IT. It is required that highly qualified IT human resources have problem-solving designing capabilities as well as leading abilities using IT utilization. To bring up such IT human resources with advanced skills and capabilities, it will be necessary to offer practical environments to strengthen said abilities.

To achieve this, it is important to develop an environment where IT human resource can continuously brush up their skills and knowledge. TO create such continuous educational environments and opportunities, IT education, for example programming class, is considered to be included in school curriculums starting from primary and secondary educational levels. It is also encouraged to strengthen the network and collaboration between industry and higher educational institutes to reinforce the development of IT human resources. Practical and specialized educational programs including interdisciplinary nationwide practical educational networks and internships will be established. It is also necessary for industry to create attractive role models who have been brought up with practical educational career paths, as well as acquire human resources with expected skills.

It will be important to establish and utilize appropriate skills standards. The indicated IT

skill levels are always reviewed in line with changes in information technologies.

It is also encouraged to discover and support cutting-edge individuals through events and projects that encourage entrepreneurship.

It is also important to increase the attractiveness of the IT industry as well as creating and promoting various environments and opportunities through which human resource exchanges and job switches can take place more freely among industries without barriers.

2. Securing IT infrastructure environments at the world's highest levels

With regard to IT infrastructure, the improvement of broadband environments in Japan has advanced in areas such as mobile communications and optical fiber as a result of policies undertaken by the national government since 2000. Going forward, it will be necessary to establish broadband environments at the world's highest levels and appropriately and safely develop IPv6 compatible environments to allow for the utilization of massive volumes of data including accurate position and time information.

From the perspectives of disaster resistance, efficiency, convenience, and redundancy, it is necessary to create a national broadband environment that encompasses all regions including remote islands to will created and the world's most robust broadband environment using satellite broadband and other means to contribute to searching for and safely securing resources not only on land but at sea as well. Capitol will also be necessary to create highly reliable and stable broadband infrastructure to connect Japan to the rest of the world.

To carry this out, the following measures will be taken as an environment created to encourage Internet and IT related investment to secure long-term corporate competitiveness.

(1) With regard to communications network infrastructure, competitive policies will be maintained including policies for securing fair competition among businesses to enable the use of low-cost, high-speed broadband environments. In unprofitable regions such as remote islands, high-speed broadband environments will be developed and secured taking into consideration regional characteristics. In addition, IT infrastructure will be secured to respond to increases in traffic volumes in the era of big data.

(2) From the perspective of using IT during a large-scale disaster, redundancy in international IT infrastructure including undersea cables, regional distribution of data centers, which are currently concentrated in the Tokyo region, and regional collaboration, as well as regional distribution of Internet exchanges will be encouraged and backup systems will be built with the aim of establishing resilient and redundant IT infrastructure.

3. Cyber security

Risks in cyberspace including cyber attacks are becoming increasingly serious, and this is having an impact on national security and crisis management. These risks can also threaten international competitiveness and give rise to a sense of insecurity among the public.

Under the circumstances, as Japan strives to become the world's highest level IT-based society, reinforcing cyber security will be imperative not only for national security and crisis management, but also for bolstering Japan's industrial competitiveness through the use of IT and data.

Accordingly, Japan will become a "cyber security nation" by creating the world's leading robust and vigorous cyberspace through implementation of specific policies based on the Cyber Security Strategy adopted by the Information Security Policy Council on June 10, 2013.

4. Encouraging research and development and collaboration among the results of research and development

Continuous cutting-edge technology research and development is crucial for using IT and data in ways that leads to the improvement of society and industry, and how to put this into practice in society is central.

In order to create the world's most advanced IT-based society and maintain and further its development, it will be necessary to conduct research and development while monitoring developments in the telecommunications-based society. It will also be necessary to promptly and accurately link the results of research such as building cutting-edge international network bases, ultra-high-speed network transmission, recognition, data processing and analysis, software development, nondestructive testing, device, sensor, and robotics technologies with IT strategies so that cutting-edge technologies that lead to innovations such as cutting-edge science and technology in various fields can be linked to cutting-edge research communities. To achieve this, research and development will be encouraged in collaboration with the Council for Science and Technology Policy and measures will be taken to establish the results as international standards and gain widespread international acceptance.

V. Structures for Implementing This Strategy and Implementation Policies

1. PDCA cycle for the Strategy and other implementation structures

(1) Exercise of the government CIO's guidance functions

The government CIO will act in a guiding capacity with respect to the following four points to ensure the strong and steady implementation of this Strategy.

- (a) Close collaboration among relevant ministries will be conducted in areas such as electronic government, new industries, agriculture, healthcare and health, disaster response and damage mitigation, road transportation, and human resource development

and the government CIO will prepare an inter-ministerial plan for effective and efficient implementation of each policy.

(b) When carrying out the Strategy, the government CIO will adopt government policies (expense estimate policies) for achieving overall optimization through prioritization of and higher efficiency in IT investment (securing collaboration among relevant ministries and agencies and prioritization of investment in specific fields).

(c) The government CIO will prepare policies (guidelines) setting forth technical and specialized matters for government ministries to carry out uniform and specific measures relating to this Strategy;

(d) The government CIO will make assessments relating to the implementation of policies (investment effects, progress, etc.) for each stage of the PDCA cycle.

(2) Implementation and management structures within the IT Strategic Headquarters

A specialized investigation body centered on the government CIO will be created under the IT Strategic Headquarters to serve as the implementing and managing body for the PDCA cycle of this Strategy.

In addition, subcommittees will be formed under the specialized investigation body to address priority fields such as electronic government, new industries, agriculture, healthcare and health, disaster response and damage mitigation, road transportation, and human resource development. The subcommittees will investigate the specific policies and assessment guidelines necessary for carrying out the strategies relating to each field, adopt and review roadmaps, and assess the status of measures.

Furthermore, investigations will be conducted concerning further reinforcement of the systems for establishing the PDCA cycle with respect to IT strategies centered on the government CIO to effectively carry out the above measures.

2. Assessment indicators for target and progress management

To confirm the progress and results of the specified measures implemented pursuant to this Strategy, it is important that KPI be set as indices for quantitative measurement of whether the targets are being achieved and actions are being taken to achieve those targets according to plan.

Accordingly, quantitative KPI will be set to the extent possible and managed, and the specialized investigation body established under the IT Strategic Headquarters will investigate the setting and review of new assessment indicators within the process of carrying out strategies with the aim of becoming the world's most advanced IT use-based society.

At the same time, to become the world's most advanced IT-based society, it will be important to set indices that reflect the society sought by this Strategy and are fair, objective, easy to understand,

gain global acceptance, and are suitable for general application. It will also be important to measure and manage progress towards achieving targets.

In particular, when using indices that have already been publicly disclosed, it is necessary to understand the elements that make up those indices and the assessment items and to set and utilize indices taking into consideration advances in technology and market developments.

3. Regulatory reform and improvement of environments

Current systems were created on the basis of the pre-Internet, analog society, and it is necessary to implement reforms based on a digital society according to changes in the times. To accomplish this, factors that impede the use of IT will be identified and single-minded efforts will be focused on resolving high priority issues (regulations, systems, etc.).

Specifically, actions will be taken in collaboration with the Council for Regulatory Reform to address the following three points, and as a part of those actions, the need for legal measures (such as a basic law for encouraging the use of IT) to support the use of IT will be investigated.

(a) To develop environments that encourage the use of open data and big data, a new investigatory body will be created promptly under the IT Strategic Headquarters to adopt, as soon as possible during this year, data use rules that take into consideration the balance between data use and protecting personal information and privacy. Also, systems will be reviewed within this year, taking into consideration the creation of new legal measures and new policies will be adopted including the creation of third-party bodies with monitoring, supervisory, and complaint and dispute resolution functions.

(b) In addition, models for personal identification procedures including optimal identification for electronic government services will be developed keeping in mind the use of IT via smart phones and tablet PCs. A review of identify confirmation procedures will be conducted based on online access that maintains a balance between the convenience of users with respect to entering into contracts and accessing services with protecting privacy and ensuring the accuracy of personal identification.

(c) Furthermore, a detailed screening and investigation of related systems (including systems whose operational interpretation is not clear) will be conducted from the perspective of expanding the scope of IT use including services and procedures that are performed in person and on paper, and a Regulatory System Reform Intensive Action Plan for Expanding the Scope of IT Use (tentative title) will be adopted during this year.

4. Verification and Deployment of Successful Models

To steadily implement this Strategy, create innovative new industries and services, and establish a society that supports safe, secure, and convenient lifestyles, relevant ministries will collaborate and implement projects by integrating fields to devise comprehensive solutions through the use of

IT in priority areas including the rejuvenation of local communities, raising efficiency in government, geospatial information, agriculture, healthcare and health, resources and energy, disaster response and damage mitigation, road transportation, and education.

To carry this out, the IT Strategic Headquarters will identify issues and regions, intensively introduce the policy resources of individual ministries, implement them as national projects, and verify and disclose successful models.

Also the use of IT in rejuvenating local communities, raising efficiency in government, geospatial information, agriculture, healthcare and health, resources and energy, disaster response and damage mitigation, road transportation, and education is a new frontier for infrastructure export, and successful models in these fields will be packaged for overseas deployment to make international contributions and enhance Japan's international competitiveness.