

Follow up Report
of the Charter and the Joint Declaration
from the 2016 G7 ICT Ministers' Meeting
by Japan as 2016 G7 Presidency

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I. Background and Purposes

1) G7 ICT Ministers' Meeting in 2016

The G7 ICT Ministers' Meeting in Takamatsu, Kagawa in April 2016 was the first information and communications technology (ICT) Ministerial of the Group of Seven (G7) in 21 years. The participants discussed principles and challenges for the realization of a digitally connected world, where all people and goods are globally and seamlessly connected to the networks, and economic growth and social transformation are facilitated. They adopted a Charter for the Digitally Connected World and a Joint Declaration.

At that time, the participants confirmed the necessity for improvements in access to ICT in order to enable people all over the world to enjoy the benefits of the digitally connected world. They committed to the goal for enabling an additional 1.5 billion unconnected people in the world to gain access to the Internet within the next five years with the purpose of bridging the digital divide, as well as to improving literacy and affordability.

Furthermore, the participants recognized the necessity for promoting the free flow of information, while taking account of protection of personal data and cybersecurity, and for generating economic growth through innovation by emerging technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI). It was also agreed to be important to utilize the fruits of the growth to contribute to resolving global issues included in the Sustainable Development Goals (SDGs).

2) Current Status of Digital Divides

The number of Internet users in the world was 3.2 billion in 2015, which expanded to 3.5 billion in 2016 (according to International Telecommunication Union (ITU) statistics). Approximately 47% of the people in the world are connected to the Internet. Annual increase of 300 million users may make it possible to achieve the goal in five years, but the remaining regions can be even more difficult to connect, and further efforts will be required.

In fact, 2.5 billion users among the 3.5 billion users are people in developing countries. In terms of diffusion rate, 81% of the people in developed countries are connected to the Internet while only 40% of the people are on line in developing countries. Moreover, the diffusion rate is still 15% in the least developed countries. 53% of the people in the world, i.e., 3.9 billion people are not connected to the Internet and not benefited from the digital economy.

3) Progress of Digitalization and Economic Benefits of IoT

Among ICT services, spread of broadband services has a large impact on national economic growth. There is an estimate on economic effect that a 10% increase in the diffusion rate of broadband services will boost the country's GDP growth rate by 1 to 2 percentage points (according to a World Bank report 2012).

Cellular phones have become widespread, and 95% of the people in the world, i.e., approximately seven billion people, reside in the service areas of the second-generation (2G) of wireless networks. Long-term evolution (LTE) services are now available to 53% of the people in the world, i.e., approximately four billion people. The spread of mobile phones is creating opportunities for economic growth through mobile finance even in underdeveloped regions, including Africa.

On the other hand, the percentage of those who do not own mobile phones is more than 20% in developing countries according to ITU statistics. It is estimated to be more than 40% in particular, in developing countries with large population sizes (e.g., India, Bangladesh, and Indonesia). The cause is presumed to be people's affordability of terminals according to an ITU report 2016.

In the future, utilization of emerging technologies such as AI, IoT, and big data could act as a further spur to economic growth and social transformation.

4) Contribution to Addressing Global Challenges

ICT will contribute to improvements in global challenges in various fields including global warming and poverty. ICT can contribute to addressing global challenges such as ageing society, disaster risk reduction, education, and health care, and good practices are increasingly seen in various countries in various fields.

5) Recent Developments in Discussions on Free Flow of Information

While the benefits of ICT and the development of the digital economy are increasing, some developing countries are trying to restrict the free flow of information in the world. It is necessary for the G7 to continue delivering messages on the promotion and the protection of the free flow of information.

6) G7 ICT Mid-term Review Meeting for Follow up

The G7 held a review meeting in December 2016 to follow up its action plans and the

efforts specified in the G7 Opportunities for Collaboration, and reviewed the progress of the efforts and the possibility of further cooperation in the future.

This report summarizes this situation and presents the future directions of actions and efforts.

II. Status of Development in Measures and Actions

1. Promoting Access to ICT

1) Progress of Efforts

The United States promoted the collective effort of the Global Connect Initiative (GCI), and France presented the Development and Digital Technology Action Plan. All G7 members, including the European Commission (EU) and the United Kingdom (UK), have been making progress in efforts to promote bridging the global digital divide and improvements of accessibility. The cooperation among the multi-stakeholder platforms, such as the Institute of Electrical and Electronic Engineers (IEEE) and the World Economic Forum (WEF), and the international organizations, including the World Bank, is making progress, and global momentum is growing. In the meantime, Japan is encouraging improvements of the world's ICT infrastructures to be sustainable, resilient, and easy to use by sharing the principles of Japan's quality ICT infrastructure development policy.

a) Progress in National Strategy and Infrastructure Development Plan

ICT infrastructure development is still a challenge for a large number of African, Asian, and other emerging economies and developing countries. Some of the countries are working on infrastructure development through the formulation of national strategy and development plan.

b) Progress in Policy Environment

In some developing countries, transparent and competitive legal frameworks and communications legislations are being developed in order to prepare environments to incentivize inward investment rather than government aids. There are moves to encourage private investment and thus to promote infrastructure development. Still, the number of the countries is limited, which position ICT infrastructure development as a part of a national development plan and encourage private investment by improving environment for ICT infrastructure development.

c) Improvement in Accessibility/Affordability and Literacy/Digital Skills

i) Introduction of Low-cost Terminals

Following the emergence of 100-dollar PCs for developing countries, mobile phones and smartphones priced less than 10 dollars have appeared in the markets.

ii) Realization of Reasonable Service Charges

Progress in competition has led to a decline in usage fees. Furthermore, there is a reduction of service charges as a result of the prevalence of prepaid terminals.

iii) Provision of Services in No-power Areas

The provision of communications service became feasible in areas without electric power as a result of progress in solar power generation and batteries.

iv) Penetration of Services, such as Mobile Banking, in Developing Countries

Mobile phone services such as mobile banking are creating opportunities for economic development in less developed regions including Africa.

v) Promotion of Literacy Improvements

Canada and the UK are cooperating in implementing a project called Information Network in Asia and Sub-Sahara African Program (INASSA) to eliminate the digital divide in less developed Asian and African regions. Germany is promoting the development of digital skills as support for the dissemination of Internet access in rural areas of developing countries, with particular emphasis on support for women and girls.

2) Further Challenges

a) Encouraging Formulation of National Strategy and Infrastructure Development Plan

It is observed many governments are still attaching high importance to the conventional infrastructures such as electricity, roads, harbors, and clean water in their development policies. Currently, the priority of ICT infrastructure is still low. In the coming years, G7 members will need to encourage and accompany developing countries to develop national ICT infrastructure strategies and development plans.

b) Encouraging Policy Environment Development

It is observed the governments of some countries are changing their conventional ideas on infrastructure financing methods and beginning to think about accepting sustainable overseas investment and continuing activities by private sector, instead of unsustainable government assistance.

c) Cooperation for Improving Literacy and Digital Skills

In addition to the development of infrastructure, the G7 shares the recognition of the importance of improvement in people's literacy, digital skills, and usage.

2. Promoting and Protecting the Free Flow of Information

1) Progress of Efforts

a) Progress in Promoting Internet Openness and Cross-border Information Flows

All G7 members have been cooperating in delivering messages on promoting the free flow of information and the protection of personal data at international fora, such as the Group of Twenty (G20), the Organization for Economic Co-operation and Development (OECD), the Asia-Pacific Economic Cooperation (APEC), and the Association of South-East Asian Nations (ASEAN), as well as various trade (EPA/FTA) negotiations.

Some countries continue to restrict the open and interoperable Internet and the free flow of information, such as data localization requirements. Several members including France and the European Commission shared studies related to the free flow of data and data localization.

b) Progress in Promoting Privacy and Data Protection

G7 countries endeavor to develop policy frameworks that further promote effective privacy and data protection across jurisdictions to meet high standards of privacy and data protection.

Revisions to the personal information protection legislation have been made in Japan and the EU, to promote the utilization of information while protecting personal information.

The EU-US Privacy Shield Framework was designed to provide a mechanism to comply with EU data protection requirements when transferring personal data from the EU to the US in support of transatlantic commerce.

c) Progress in Promoting Cybersecurity

In July 2016, the European Commission obtained Parliament approval for the Directive on Security of Network and Information Systems, the first cyber security

legislation covering the entire EU. 28 member countries will implement the Directive in the future. The Directive will come into full force in May 2018, thus providing information networks in a various fields of critical infrastructures, including energy, water supply, medical care, transportation, payment transaction, trade, and Internet service provider (ISP) services, to report and share incident information.

In order to promote information sharing through the collaboration of critical infrastructure operators, Japan held an international collaboration workshop in Tokyo, where Information Sharing and Analysis Center (ISAC) or equivalent organizations in the field of information and communication field participated from Japan, the US and Germany (in October, 2016). The workshop is expected to continue in the future with an expansion of the number of participating countries.

Furthermore, there are useful security efforts ongoing by multi-stakeholder organizations, such as the Best Practice Forum on Cybersecurity of the Internet Governance Forum (IGF) and the Malware Mobile Anti-Abuse Working Group (MAAWG), in which 25 countries are participating to develop antimalware and antispam measures.

2) Further Challenges

a) Continuous Transmission of Messages on the Free Flow of Information

The G7 members will continue promoting and protecting the free flow of information.

b) Promotion of Personal Data/Privacy Protection and Cybersecurity Improvement

The G7 members must properly respond to issues, including on the protection of personal information and security improvements. The G7 members need to continue to give convincing explanations to the countries attempting to limit the free flow of information without legitimate public policy objectives, to improve their understanding, and to make the free flow of information as a broadly agreed concept.

3. **Fostering Innovation**

1) Progress of Efforts

a) Trend of Digitalization across the World

Many countries are progressing in making strategies and initiatives to promote the digitalization of the society and economy. Such strategies and initiatives include the Industrie 4.0 in Germany, the Industria 4.0 in Italy, the IoT Promotion Consortium in

Japan, the Digital Catapult in the UK, and the Digital Republic strategy and new regulatory strategy of France. Furthermore, various activities led by the private sector are activated, and the international partnerships between promoting organizations are progressing. The cooperation of private-sector led IoT promotion organizations between Japan and Germany and between Japan and the US began in April 2016 and in October 2016, respectively.

b) Progress in Efforts on AI Network Society

The US National Science and Technology Council prepared a report on AI, "Preparing for the Future of Artificial Intelligence." In addition, Japan has been continuing studies on the benefits and impacts of the progress of AI networking on the Japanese society and economy. On the basis of the results, Japan held an international forum in cooperation with G7 members and international organizations (in March, 2017). Furthermore, Japan and some G7 members are planning to facilitate the development and deployment of networked AI system by promoting discussions over development principles through Japan's collaboration with international organizations such as the Organization for Economic Co-operation and Development (OECD).

c) Progress in Economic Analysis of Digitalization

Several members including France and the European Commission shared studies related to the free flow of data and data localization. (See II. 2. 1) a)). The OECD is trying to make a quantitative analysis of the economic effect of data distribution.

d) Progress in Promoting Smart Communities

With regard to the realization of smart communities, the US National Institute of Standards and Technology (NIST) is promoting a Global City Teams Challenge (GCTC) initiative with the aim of developing smart cities and smart communities globally, and conducting demonstration experiments under the cooperation of local governments, nonprofit organizations (NPOs), companies, etc. The UK is promoting its collaboration of the Future Cities Catapult to realize smart cities. These trends are seen in various countries, and new services and business models are emerging through the utilization of ICT in various fields such as transport, energy saving, healthcare, education, disaster risk reduction, and ageing society.

2) Further Challenges

a) International Collaboration in Standardization and Promoting IoT Society

With regard to the IoT, we should clarify prioritized fields, such as transportation, manufacturing industry, healthcare, and items to be addressed, such as standardization and security, and promote the work conducted at international Standards Development Organizations (SDOs) and sharing of good practices.

At the same time, the necessity for reviewing the existing framework of regulations and rules in various fields is being recognized, and we should share information on these issues.

b) Promotion of Discussions over the Development Principles for AI Network Society

With regard to AI networking, the G7 could lead discussions in 2017, analyze the socio-economic benefits of AI networking, and deepen discussions on the principles of development and utilization. Through these efforts, it may be necessary to focus on the benefits of development of AI networking. In addition, the G7's collaboration with relevant international organizations and stakeholders will be essential.

c) Advocating the Benefits and Impacts of the Digital Economy

The G7 should continuously cooperate with international organizations such as the OECD, make an economic analysis of the digital economy, and advocate the impacts and benefits of digitalization and the data flow to the world.

d) International Collaboration toward Realization of 5G by 2020

As for the fifth-generation (5G) mobile telecommunications, the G7 could support advancing the cooperation among the private promotion organizations, and strengthen the G7's collaboration in promoting standardization etc. to realize 5G mobile telecommunications by 2020.

e) International Collaboration to Promote the Smart Communities

As for smart communities, the G7 should coordinate initiatives related to social issues, including transportation, energy saving, healthcare, education, disaster risk reduction, and could promote practical applications through the sharing of good practices.

4. Using ICT to Address Global Challenges and Opportunities

1) Progress of Efforts

Efforts and international collaboration are underway to solve global challenges, such as poverty and healthcare issues, by using ICT.

a) Progress of Efforts to Respond to the Ageing Society

Ageing society is a common issue in Europe and Japan, and the EU and Japan with the cooperation of Italy and others, held an international forum on ICT utilization for ageing society (December 2016).

b) Progress of Efforts to Eliminate Poverty and to Bridge the Rural Digital Divides

Some countries are working on the elimination of poverty in regions, including Africa, especially on the bridging of the rural digital divide, where global momentum is growing (see II. 1. 1)).

c) Progress of Efforts for Disaster Risk Reduction

Japan proposed to provide disaster-prone countries in Asia and other regions with a knowledge and experience to build up ICT systems as countermeasures against natural disasters.

2) Further Challenges

a) Promotion of Responses to the Ageing Society

The promotion of responses to the ageing society could be discussed as an issue common to developed countries, including Japan and the EU, and discussion and agreement on reinforced policies at the Leaders' level could be made.

b) Promotion of Elimination of Poverty and Bridging of the Digital Divides in Rural Areas

It is necessary to promote and strengthen efforts currently in progress, especially in Africa, through the G7's collaboration with multi-stakeholders.

c) Promotion of Efforts for Disaster Risk Reduction)

It is necessary to promote application through the localization of advanced models, such as those in Japan.

d) Promotion of Efforts for Improved Healthcare (Anti-epidemic etc.)

It is necessary to share models that can be spread in the field of healthcare, such as those of epidemic countermeasures that will contribute to improvements in the living conditions of developing countries.

5. Strengthening Comprehensive International Cooperation and Collaboration

1) Progress of Efforts

The G7 members have been cooperating in communicating the results and the contents of the Charter and the Joint Declaration of the G7 ICT Ministers' Meeting to other international fora, such as the G20, OECD, APEC, and IGF. Furthermore, the G7 members have been cooperating in promoting the spread and expansion of individual efforts, such as Global Connect Initiative, ISAC collaboration, and study on networked AI.

2) Further Challenges

It is necessary for the G7 members to continue sharing their major results and ideas by working at United Nations (UN) conferences and other international conferences, in cooperation with the World Bank and regional international financial institutions, and ICT-related institutions, including the ITU and Asia-Pacific Telecommunity (APT).

It is also essential to continuously strengthen collaborations among multi-stakeholders in our building up the digitally connected world.

III. Future Efforts

Japan recommends the G7 summit as well as the ICT and Industry Ministers' Meeting, chaired by Italy's Presidency in 2017, to take up the following priorities among other important up to date issues in ICT field.

Furthermore, Japan recommends for the G7 members to encourage other countries and regions to work together on these issues, including at international fora, such as the G20, OECD, and APEC, and to propose them to act to reach broader consensus.

Japan's Priorities for 2017

1) Bridging the Digital Divide and Improving ICT Accessibility.

The G7 should continue emphasizing the importance of ICT infrastructure and the necessity for transparent and fair policy environments for the promotion of investment and competition in the ICT industry as well as the promotion of the utilization of ICTs in

its global engagement. Furthermore, the G7 could jointly promote efforts to encourage private investment as well as government assistance.

Connectivity improvements in developing countries, particularly in Africa, should be pursued. Specifically, support could be extended for formulating and implementing ICT strategies and infrastructure development plans with a view to developing investment-worthy competitive markets. Cooperation for literacy improvements will be necessary as well.

2) Continuously Promoting the Free Flow of Information.

A further discussion at the G7 about the free flow of information is expected. In particular, taking over the Joint Declaration agreed by G7 ICT Ministers in 2016, G7 Leaders should reaffirm the principles of the Free Flow of Information, refrainment from Data Localization Requirements and refrainment from Access to or Transfer of Source Code at the G7 ICT and Industry Ministers' Meeting in 2017.

It is also expected to make an economic analysis of the benefits of the free flow of information and in particular, the cost of enforced data localization. G7 should endeavor to expand the group of countries that promote the free flow of information, while protecting personal data, through discussions at international fora and negotiations.

3) Measures to Strengthen Cybersecurity.

To strengthen cybersecurity, we endeavor to promote cybersecurity awareness raising and information sharing among all stakeholders.

4) Promoting Analysis of the Benefits and Impacts of AI Networking and Study of Development Principles

We recommend continuing the study on the benefits of progress of AI network on the society and economy, and will take the initiative on discussion over development principles of AI network in collaboration with international organizations such as the OECD.

5) Promoting the Industry and Society Digitalization as well as IoT and other Innovations.

We expect to promote consideration of establishing and expanding new standards and rules in collaboration with international organizations and fora. Road map and schedule could be clarified.