

Keynote Address: High-quality ICT Infrastructure Development: Toward the Realization of a Digitally Connected World



Ryoji Yamazaki

Director, International Policy Division, Global ICT Strategy Bureau
Ministry of Internal Affairs and Communications

1. International Symposium on Quality ICT Infrastructure Development: Overview and Objectives

Following up on the joint declaration of the G7 ICT Ministers' Meeting in Takamatsu, Kagawa in 2016 to implement measures to "improve access to ICT," the symposium was convened by the Ministry of Internal Affairs and Communications (MIC) in Tokyo on March 15, 2017 to exchange views and promote international discussion among G7 member nations, international organizations, emerging markets, and developing economies expected to see the greatest demand for ICT infrastructure regarding initiatives and policies to help bridge the digital divide through "quality ICT infrastructure development."

The keynote address "High-Quality ICT Infrastructure Development: Toward the Realization of a Digitally Connected World" provides a broad overview of the following three sessions: session one "ICT infrastructure news in developing countries," session two "improvement in policy and investment environment for quality ICT infrastructure development," and session three "quality ICT infrastructure required in the IoT era." In addition, the speech also highlights the concept, elements, and significance

of "quality ICT infrastructure," the theme of the symposium, and introduces "quality ICT infrastructure" investment efforts promoted by the MIC.

2. Realization of a Digital Connected World Through Quality ICT Infrastructure Investment

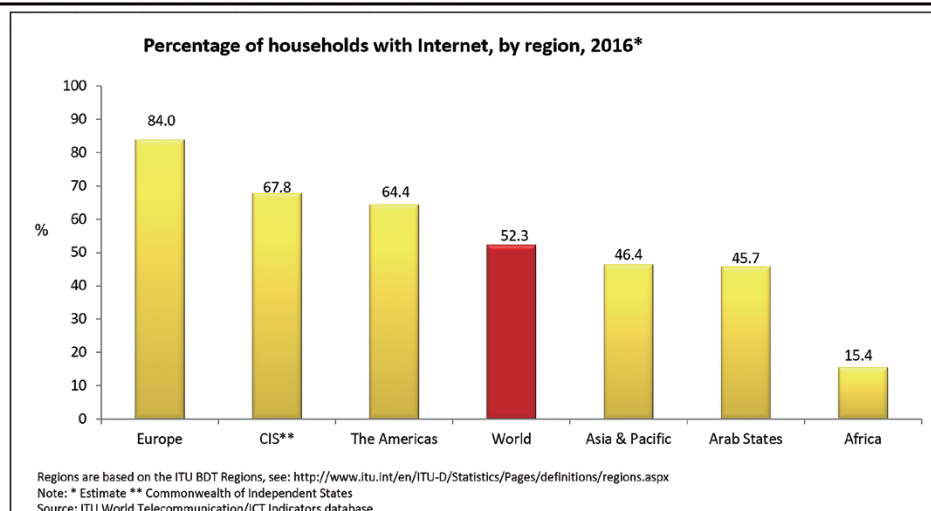
2.1 State of the Global Digital Divide and the G7 ICT Ministers' Meeting in Takamatsu, Kagawa

ICT is key infrastructure for promoting economic growth and an indispensable tool in every aspect of socio-economic activity, yet there are vast disparities in access to information technology among regions throughout the world—the so-called digital divide—and approximately only 52.3% of households have access to the Internet.

Given this situation, the MIC hosted the G7 ICT Ministers' Meeting in Takamatsu, Kagawa in April 2016 to discuss policy guidelines and challenges to achieving a digitally connected world. This would be a world in which all people and things are connected to a global-scale seamless network that opens the way to economic prosperity and transformative social change. The joint declaration coming out of the meeting highlighted

Figure 1: Current state of the global digital divide

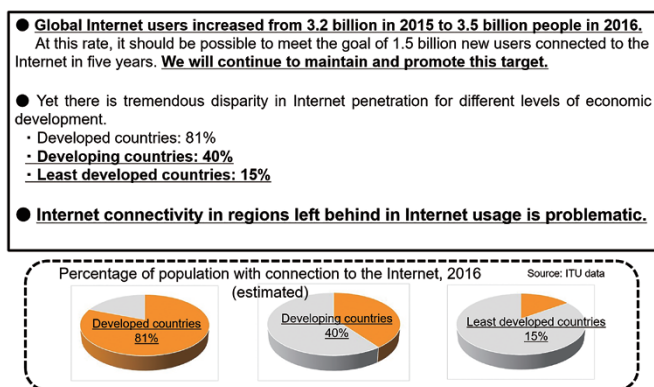
● Currently only half the world's households have access to the Internet, and there are great disparities between regions.



four key objectives: “enhanced access to ICT,” “protection and promotion of unfettered distribution of information” “promotion of innovation” and “leverage ICT to address global-scale challenges and opportunities.” To achieve the first goal, “enhanced access to ICT,” the meeting proposed concrete initiatives by multi-stakeholders that would bring an additional 1.5 billion new Internet users online worldwide over the next five years, an objective that was agreed to at the G20 Hangzhou summit held in September 2016.

When we look at the number of Internet users after the G7 Ministers’ Meeting, we see that Internet adoption increased by 300 million during 2015 and reached 3.5 billion in 2016, so the initiative is on track to achieve its target of “1.5 billion in five years.” Japan is committed to sustain and promote this movement. Yet it is apparent from the correlation between Internet penetration and economic development—81% for advanced economies, 40% for developing economies, and 15% for least developed economies—that without removing barriers to Internet adoption, many regions may be left behind. And even if we do reach our goal of 1.5 billion new Internet users in 5 years, much more effort is needed to improve connectivity and close the digital divide.

Figure 2: Global ICT access progress following the 2016 G7 ICT Ministers’ Meeting



2.2 Policies and Initiatives to Close the Digital Divide Broken out by Country / Institution

Let us consider some of the policies and initiatives that have been proposed and implemented by countries and private-sector institutions in an effort to bridge the digital divide. The U.S. unveiled the *Global Connect Initiative* (GCI) in 2015, a multi-stakeholder approach with the goal of bringing 1.5 billion additional people online by 2020. Meanwhile, the government of Italy has inaugurated a *National Ultra-Broadband Plan* to build out a smart-city backbone access network throughout the country that should also open up investment opportunities.

The World Economic Forum (WEF) has teamed up with the U.S. GCI initiative to develop an *Internet for All*, while the World Bank has thrown its support behind the *Digital Development*

Partnership (DDP), which is engaged in a wide range of multi-stakeholders initiatives.

Japan has put out a global call for quality ICT infrastructure, which I discuss in some detail below. The idea is to promote investment in quality ICT infrastructure while contributing to enhanced ICT access around the world.

Emerging and developing countries are also taking aggressive steps to enhance ICT access. For example, Indonesia is working on the *Palapa Ring project*, an ambitious broadband backbone network that will effectively close the gap between rural and urban areas by providing access to high-speed Internet throughout the country. And as part of Colombia’s *Plan Vive Digital* ecosystem, a second phase called *Plan Vive Digital 2* is now under development that focuses on broad-based exploitation of ICT.

Meanwhile, the African Union has promulgated *Agenda 2063*, a strategic framework designed to boost broadband usage 10% by 2018, and deploy the necessary infrastructure to achieve socio-economic transformation of the continent by 2063.

Amid all these infrastructure plans and projects in emerging and developing countries across the globe, a recent study reported that the telecom sector of developing economies in Asia alone will require an investment of US\$2.3 trillion over the next 15 years from 2016 to 2030 just to sustain its economic growth, so it is clear that ICT infrastructure development will continue to be a global-scale challenge for the foreseeable future.

2.3 What do we Mean by “Quality ICT Infrastructure?”

Here we would emphasize that development of ICT infrastructure alone is not the whole story. While certainly economic growth through development of ICT infrastructure is important, development should be conducted in a way that enhances the quality of peoples’ lives—including the lives of the more vulnerable—and in a way that harmonizes with the local environment and culture. This insight led us to the concept of “quality ICT infrastructure.” In light of the current ICT infrastructure boom, it occurred to us that this emphasis on quality might be something Japan could share with the rest of the world.

By “quality ICT infrastructure,” we mean ICT infrastructure that doesn’t leave anyone behind; that is, infrastructure that promotes inclusivity, sustainability, and robust quality growth. For ICT infrastructure to be characterized as qualitative, the ICT infrastructure itself must exhibit quality.

For example, typical attributes enhancing the quality of ICT infrastructure include, “cost-effective economical lifecycle costs,” “social inclusivity,” “safety and robustness,” “sustainability,” and “convenience and comfort.” Note that just because the infrastructure is high quality does not necessarily mean it will support socio-economic growth or the lives of the local people. Other factors must also be taken into account such as “dealing with socio-economic development strategies and needs,” “serving the interests of local communities and economies,” “effective

funding through public-private partnerships,” and “compliance with high-level international standards formulated to reduce adverse impacts on the environment and society.”

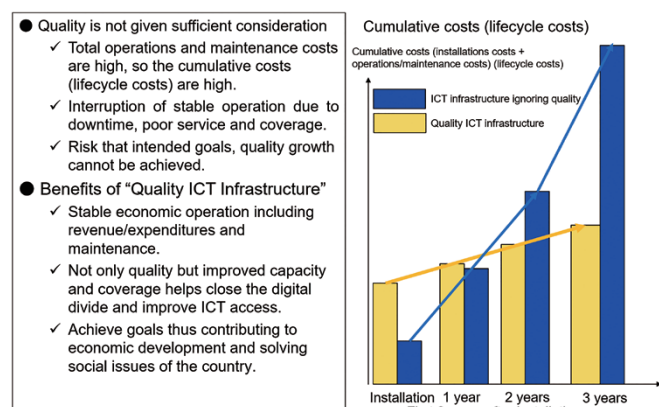
2.4 Japan’s Efforts Regarding “Quality Infrastructure Investment”

Let us next turn to Japan’s initiatives regarding “quality infrastructure investment,” including ICT infrastructure. Back in May 2015, Prime Minister Abe announced a “quality infrastructure partnership” bringing together a number of countries and international organizations to promote Asian quality infrastructure investment ensuring the “quality” of infrastructure while also seeking to “expand the quantity” of infrastructure. A year later in May 2016, just before the G7 Ise-Shima Summit, the government of Japan announced the “quality infrastructure export expansion initiative” expanding the scope of the initiative from Asia to the world at large. The G7 Ise-Shima Summit also incorporated the initiative when members agreed and shared the “G7 Ise Shima principle promoting quality infrastructure investment.”

Now if we compare the cumulative costs (*i.e.*, the lifecycle costs) including installation costs and operations/maintenance costs for “quality ICT infrastructure” versus “ICT infrastructure without quality,” we find that operations and maintenance costs are considerably higher for infrastructures when quality considerations are ignored. This is problematic because it drives up the lifecycle costs. Operation of networks and systems also become less stable due to problems and equipment failures, and this means relatively poorer provisioning of services and coverage. Consequently, neither intended results nor quality growth can be achieved.

On the other hand, installation of “quality ICT infrastructure” ensures stable economic operation including revenue /expenditures and maintenance aspects. This not only provides better quality but improves capacity and coverage to achieve the intended effects of closing the digital divide and improving ICT access. This contributes to economic development and social problem-solving

■ Figure 3: Significance of “Quality ICT Infrastructure”

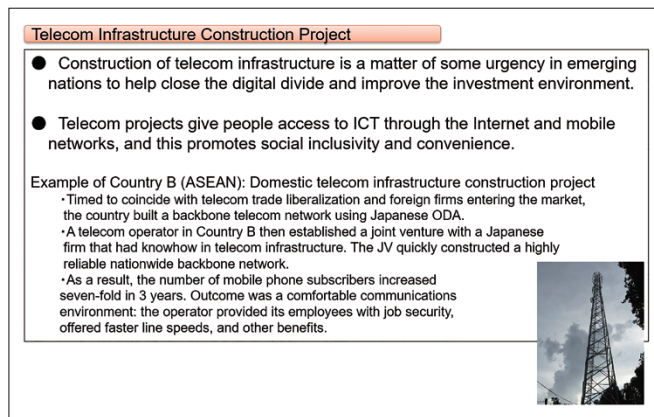


in countries that are now deploying quality ICT infrastructure.

Let us next consider a telecom infrastructure construction project as an example of quality ICT infrastructure. I noted earlier that constructing telecom infrastructure projects is a matter of some urgency in emerging nations to help close the digital divide and improve the investment environment. But telecom projects also give more people access to ICT through the Internet and mobile telecom networks, which enhances social inclusivity and convenience.

Recently for example, perfectly timed to telecom trade liberalization and entry of foreign firms, an ASEAN nation constructed a backbone telecom network using Japanese ODA. Subsequently, a telecom operator in the same country launched a joint venture in partnership with a Japanese company with considerable expertise in telecom infrastructure. The joint venture was able to quickly deploy a highly reliable backbone network extending from one end of the country to the other, and the number of mobile phone subscribers increased seven-fold within three years. And there were other benefits to the local economy as well. They ended up with a very comfortable communications environment where the operator provided its employees with job security, offered markedly faster line speeds, and other benefits.

■ Figure 4: Example of Quality ICT Infrastructure (2)



3. Conclusions

To share our insights regarding “quality ICT infrastructure” investment and advanced economy case studies with emerging markets and developing economies where the greatest demand for quality ICT infrastructure development is likely to occur, we are now in the process of drafting a “Playbook for Investment in Quality ICT Infrastructure.”*

We are confident that these guidelines will provide a valuable resource in helping people understand quality ICT infrastructure, will help boost investment in quality ICT infrastructure, and contribute to the realization of high-quality growth.

* MIC published its “Playbook for Investment in Quality ICT Infrastructure” (English and Japanese) in July 2017.
http://www.soumu.go.jp/english/gisb/index.html#gisb_06