

Asia Broadband Program
(Unofficial Translation)

March 28, 2003

Ministry of Public Management, Home Affairs, Posts and Telecommunications
Fair Trade Commission
Ministry of Justice
Ministry of Foreign Affairs
Ministry of Education, Culture, Sports, Science and Technology
Ministry of Health, Labor and Welfare
Ministry of Economy, Trade and Industry

Based upon the "e-Japan Priority Policy Program – 2002 (June 18, 2002, Decision of IT Strategic Headquarters)" and the "Basic Policies for Economic and Fiscal Policy Management and Structural Reform 2002 (Cabinet Decision of June 25, 2002)," the "Asia Broadband Program" is hereby set forth as follows.

In order to realize a globally-balanced IT society, various IT-related policy measures for Asia, including measures contained in this Program, being implemented by the relevant ministries are expected to be carried out in unison, according to the "e-Japan Strategy."

I. Basic concepts

(1) Strengthening of relationships among Asian countries/economies

Asian countries/economies, including Japan, are rich in diversity, as exemplified by their geographical, social, economic, cultural and linguistic diversities, and are mutually and closely linked with each other. Especially in recent years, as exemplified by positive business deployments in Asia, flows and exchanges of people, products, funds, information, etc. among Asian countries/economies are rapidly developing and trends toward conclusions of economic partnership agreements (EPAs) and other agreements are prevailing as well. The significance of Asia for Japan has been growing further.

(2) Significance of broadband platforms in Asia

On the other hand, the socioeconomic importance of ICT has been shared internationally by the G8 Leaders' "Okinawa Charter on Global Information Society (July 2000)," the United Nations "Millennium Declaration (September 8, 2000)" and other statements. In order to develop Asia and enhance mutual ties, ICT is an indispensable infrastructure and is anticipated to play a vital role in the future.

The advantages of broadband platforms (Note1) are i) high speed and large capacity, and ii) constant connection and flat rates. They provide people with a new environment, thus enabling the dramatic overcoming of time and space restraints in human communications. These features will enhance living standards and individual creativity; invigorate corporations, NPOs, administrations and other entities and improve efficiency thereof; help economies grow dynamically; promote trade, wide-ranging sharing of cultural diversities, science, transborder activities and other mutual benefits.

It can be said that Asia is already one of the most developed regions in terms of deployment of broadband platforms. But toward a ubiquitous network society in the future, all people in Asia will benefit from ICT through more widespread use and full utilization of broadband platforms. Moreover, broadband platforms will lead to further socioeconomic and cultural developments of Asia including Japan, and thus to peace and stability in the Asian region as well as the world.

(3) Current status of Asia

When looking into the current status of Asia, the following problems exist:

- (i) While there are countries/economies with higher penetration rates of broadband platforms, at the same time there are countries/economies with penetration rates of 1% or less for telephone networks and the Internet. The significant digital divide exists between respective Asian countries/economies and between urban and rural areas, which looms as a potential danger that may increase economic and social disparities further.
- (ii) Even in some environments accessible to broadband platforms, there are situations under which broadband penetration is still stagnant due to inhibited use derived from lack of demand.
- (iii) The volume of information flows between countries/economies within the Asian region, compared to those within North America and Europe, is not high. Furthermore, when comparing the tripolar hubs of Asia, North America and Europe, whereas trade volumes between each of any two of the those hubs are nearly balanced, information flows between Asia-North America and between Asia-Europe are significantly small compared to those between North America and Europe.

¹The term "broadband," in general, means networks that enable high-speed access to the Internet, such as ADSL, cable television and fiber-optic networks. In this Program, "broadband" covers networks enabling access to the Internet at speeds of 1 Mbps or higher.

(4) Need for efforts to address preparation of broadband environments

Taking into consideration the viewpoints above, efforts shall be made henceforth to bridge the digital divide in developing countries/economies, enable all people in Asia to benefit from ICT and encourage further socioeconomic and cultural developments of Asia including Japan. To this end, it is vital to encourage further deployment and widespread use of broadband platforms, with an eye toward cultural diversity in Asia.

For this, while the private sector takes initiatives and governments play complementary roles in efforts made by the private sector, it is essential that governments, business entities, NPOs, international organizations and such other entities collaborate on concerted efforts with ownerships. Japan, in this case, is expected to play a leading role, making the most of its technological competence and expertise.

Thus, the Japanese government will, in cooperation with other governments, business entities, NPOs, international organizations, etc. in Asia, strive to realize the following goals:

II. Goals

In this Program, setting 2010 as the target year, a common goal in Asia is to invigorate information flows within the region to make Asia as a whole a global information hub, through the realization of the followings:

- (i) Enable all people in Asia to gain access to broadband platforms including access from various public facilities, and to use applications utilizing broadband advantages to the fullest.
- (ii) Construct international intra-regional broadband networks with sufficient bandwidths for linking directly countries/economies in Asia. Increase amounts of information flows (network bandwidth) between "Asia and North America" and "Asia and Europe" to the same level as those between "North America and Europe."
- (iii) Facilitate transition of IPv4 networks to IPv6 (Note2)-ready networks in Asia, and make Asia the leading region in ICTs such as the next-generation mobile communications technology.
- (iv) Prepare environments under which Asian people are able to use ICT in a safe and easy-to-use manner.

² The term "IPv6" stands for Internet Protocol version 6. IPv6 is the next-generation standard of Internet Protocol necessary for enabling data communications over the Internet. Compared to IPv4 currently in use, IPv6 enables a significant increase in the number of addresses, strengthened security and other beneficial features.

- (v) Digitize and archive major cultural assets in Asian countries/economies, to share them within the region and transmit them to the rest of the world via broadband.
- (vi) Develop machine-translation technologies between major languages in Asia, and put them into practical use.
- (vii) Dramatically increase the number of engineers and researchers in the ICT field in Asia.

III. Measures to be taken

(I) Perspectives

Policies to be taken for realizing "II. Goals" above are of two categories as follows and appropriate measures have to be taken in both categories.

- (i) Policies for preparing network infrastructure pertaining to broadband platforms
- (ii) Relevant policies for introducing and diffusing broadband platforms

Thus, with an eye on the extension of benefits of Japan's domestic policies to Asian countries/economies through international conferences and other opportunities, the measures noted below shall, in collaboration with the relevant ministries, be taken.

In addition, taking into consideration the fact that on the occasion of the G8 Leaders' "Kyushu-Okinawa Summit Meeting" Japan announced a comprehensive cooperation package to help bridge the digital divide with official funds totaling about 15 billion dollars including OOF and ODA funds for five years, Japan will implement these measures by FY2005 with priority.

Of the following measures, those applicable to Pacific island nations can be promoted in those nations.

(II) Measures for preparing network infrastructure pertaining to broadband platforms

(1) Basic concepts

It is vital to build network infrastructure so as to enable all peoples in Asia to access broadband platforms at an affordable price level in the future.

To this end, with regard to developing countries/economies and rural areas, in order to close the digital divide, network infrastructure making the most of technological innovations shall be prepared (for example, IP-based networks enabling low-priced IP-telephony services instead of telephone networks, and wireless networks including satellites).

Along with progress in domestic deployment of broadband platforms, it is anticipated that demand for circuits will grow in the future. Another important aspect is that it is difficult to ensure sufficient quality levels due to the fact that international information flows between Asian countries/economies via the Internet is dependent on other regions. Thus, international network infrastructure with sufficient bandwidths for meeting circuit demand within the Asian region shall be prepared to link directly Asian countries/economies.

With respect to new network infrastructure technologies beneficial to Asia, R&D activities including joint research with Asian researchers shall be carried out and benefits thereof shall be extended to Asian countries/economies. Such R&D activities shall be strategically carried out in a system open to researchers regardless of nationalities, with an eye to retaining leaderships, working toward establishment of technologies with higher transparency, and considering making outcomes international standards.

In addition, human capacity building and human resource exchanges including engineers and researchers with advanced knowledge and expertise regarding network infrastructure shall be promoted.

Relating to the Quasi-Zenith Satellite System to be developed toward realization, deliberations should be engaged on availability of the Satellite System as a future network infrastructure in Asia, taking into account feasibility studies on commercialization undertaken by the private sector.

(2) Specific measures

- (i) Support for preparation of network infrastructure in developing countries/economies

In order to bridge the digital divide in developing countries/economies and rural areas with insufficient basic ICT network infrastructure, it is vital to construct network infrastructure, such as i) access circuits including utilization of wireless technologies, ii) IP-based networks, iii) Internet centers utilizing various public facilities such as post offices. Taking into account these points and the need of developing

countries/economies, continue appropriate supports for constructing infrastructure.

(ii) International infrastructure preparation in the Asian region

- a) Support efforts of private businesses in Asian countries/economies to
 - i) facilitate interconnection through peering among Asian ISPs (Note3),
 - ii) enhance international Internet circuit capacities including reinforcement of backbones. For this, convene fora through private and public sector cooperation.
- b) Continue to promote surveillance on Internet traffic structures within Japan and between Japan and individual Asian countries/economies, in cooperation with ISPs, to track traffic structures within the Asian region.
- c) Extend fruits of "joint experiments between Japan and Asian countries/economies for promoting information flows" to Asian countries/economies for further construction of international IXs (Note4).

(iii) Development of new infrastructure technologies specially suited for use in Asia

- a) Promote diffusion of fruits of R&D on key technologies including large-scale multicasting indispensable for broadband satellite systems serving Asian countries/economies.
- b) Launch the ultrahigh-speed Internet satellite (Note 5), carry out verification experiments thereon with wide-ranging participation of Asian countries/economies and promote commercialization thereof based on the achievement of the verification experiments, in order to contribute to the construction of network systems for the ultrahigh-speed Internet utilizing satellite communications.
- c) Based upon the agreement of the First Japan-China-Korea ICT Ministerial Meeting (September 24, 2002), encourage i) further

³The term "ISP" stands for Internet Service Provider and indicates businesses providing the service of access to the Internet.

⁴"IX (Internet exchange)" means a point of interconnection over the Internet linking networks of domestic and foreign ISPs utilizing high-speed switches.

⁵The name of the ultrahigh-speed Internet satellite to be launched by 2005 is the Wideband InterNetworking engineering test and Demonstration Satellite (WINDS).

standardization, ii) harmonization of the system, and iii) exploration of service application, of the third-generation cellular telephone systems through concerted efforts between private and public sectors.

(iv) Promotion of R&D and standardization regarding network infrastructure

a) Because it is effective to carry out international joint R&D with industry-government-academic collaboration for strategically promoting international standardization, continue to promote international joint R&D with Asian research institutes and other organizations on the fourth-generation mobile communications systems and other technologies. Continue to promote international joint R&D activities, including those of the Asian Info-Communications Council (AIC), APII testbed projects, and other relevant organizations, and strengthen cooperative ties among relevant organizations.

b) Promotion of international standardization activities in Asia

i) With respect to technologies such as real-time transmission systems for broadband audio-visual content production systems, promote international joint projects for R&D and verification experiments between Japan and other Asian countries/economies. Encourage standardization activities within Asia for global standardization through fora, including the APT Standardization Program (ASTAP).

ii) Aimed at forming human networks among people involved in standardization activities in Asia, raising levels of human resources and making Asian-origin technologies international standards, encourage joint proposals of Asia to ITU and other standardization bodies via APT, ASTAP; and joint R&D, seminars and other forms of human resource development utilizing APEC, AIC, etc., with respect to the next-generation network technology, network security technology, etc. In particular, through regular meetings among our domestic standardization organizations and their counterparts, strengthen collaboration with China and the Republic of Korea, which have enhanced capacities on R&D and standardization.

c) For the purpose of promoting R&D exchanges within Asia, and diffusing Asian-origin technologies regarding network infrastructure as international standards, prepare R&D bases for promoting

exchanges of researchers and encouraging international joint R&D projects by industries, governments and academia.

- d) In order to encourage international R&D in Asia, prepare broadband international testbeds utilizing the ultrahigh-speed Internet satellite (WINDS) for joint technological development and verification experiments. These testbeds shall be open to Asian research institutes and other organizations as a forum for wide-ranging international joint R&D. For this, R&D themes are to be invited from the public.
- (v) Human capacity building and exchanges of human resources concerning network infrastructure
 - a) Promote i) acceptance of trainees from Asian countries/economies, ii) dispatch of experts to Asian countries/economies, and iii) e-learning, in order to promote human capacity building in each country/economy.
 - b) In order to encourage human capacity building and exchanges of human resources such as engineers, researchers and lecturers in Asia, provide financial assistance to training institutes on a country basis or regional basis such as ASEAN and support effective activities of such institutes through dispatch of engineers and researchers from Japan.
 - c) In order to encourage the exchange of engineers and researchers, promote both relaxation and simplification of conditions covering the issuance of entry visas and conditions pertaining to the granting of residence status (conditions for landing) to qualified persons among such ICT researchers.

(II) Relevant measures for introducing and diffusing broadband platforms

1. Preparation of common key infrastructures

(1) Basic concepts

In order to deploy broadband platforms in Asia and actively transmit rich content to Asia, it is vital to prepare common infrastructure for broadband platforms such as i) assurance of network security, ii) preparation of rules on intellectual property rights and appropriate application thereof, iii) standardization of code systems. To this end, Japan will promote cooperation with Asian countries/economies.

Furthermore, it is anticipated that broadband platforms will be rapidly deployed in Asia with a huge population, resulting in serious problems

with the shortage of addresses. Thus, Japan shall support efforts to diffuse IPv6.

(2) Specific measures

- (i) Assurance of network security
 - a) In order to promptly cope with emergency cases of large-scale Internet faults and prevent occurrence of violation of network security, strengthen the international collaboration among governments in Asia and organizations for network security such as the Telecommunications - Information Sharing and Analysis Center (Telecom- ISAC) (Note6).
 - b) In order to provide highly reliable network services and realize highly secure communications, carry out verification experiments for constructing secure service platforms, which provide networks with personal identification functions, and promote to diffuse the results thereof to Asian countries/economies.
- (ii) Preparation of rules on intellectual property rights and appropriate application thereof
 - a) At the World Intellectual Property Organization (WIPO), new treaties and conventions on audio-visual performance and broadcasting organizations are being considered. Play an active role for adoption of those treaties and conventions and encourage Asian countries/economies to conclude the already-effective "WIPO Copyright Treaty" and "Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations."
 - b) Support efforts to prepare copyright protection systems and raise awareness on copyright protection in Asian countries/economies through dispatch of experts, holding of seminars, support for human capacity building such as acceptance of trainees and so on, and cooperation on development of educational materials. At the same time, make efforts to monitor copyright systems and its administration

⁶ "ISAC (Information Sharing and Analysis Center)" is an information security support organization. An ISAC is established at each industrial sector that supports companies in dealing with information security through information sharing and analysis concerning system vulnerability and cyber-attacks.

through use of the review of provisions under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

(iii) Harmonization of technical standards pertaining to telecommunications

Toward harmonization of technical standards pertaining to telecommunications and certification of conformity with technical standards, promote information exchanges with Asian countries/economies.

(iv) Support and cooperation for diffusion of IPv6

a) i) carry out model verification experiments for facilitating transition of Internet infrastructures from IPv4 to IPv6, to establish transition technologies and transition models. And share knowhow on transition to IPv6 with Asian countries/economies by publication of results of the verification experiments, technology standardization at international organizations, etc.

b) Establish IPv6-ready satellite technologies compatible with terrestrial systems through R&D on IPv6-ready satellite broadband technologies and encourage widespread use of those technologies in Asian countries/economies.

c) With respect to joint experiments currently conducted between Japan and Asian countries/economies concerning key infrastructure for large-volume content distribution using IPv6, encourage widespread use of fruits of those experiments in Asian countries/economies.

2. Promotion of use of broadband platforms

(1) Basic concepts

In order to promote widespread use of broadband platforms, it is vital that in addition to preparation of network infrastructure, broadband platforms are fully attractive to users. To this end, Japan will make efforts to enrich attractive applications, fully utilizing advantages of broadband.

Also, private sector efforts, such as international exchange activities, that concern applications utilizing broadband platforms must be given due consideration.

(2) Specific measures

- (i) Promotion of applications utilizing advantages of broadband
 - a) Promotion of e-governments at central and local levels
 - i) In order to enhance transparency and efficiency of administrative procedures through introduction of electronic administrative procedures and electronic procurement, support countries/economies, in which e-governments at central and local levels are not sufficiently prepared, for developing relevant master plans and systems, etc.
 - ii) In order to encourage Asian countries/economies to introduce e-governments at central and local levels, promote information exchanges and studies on e-governments on a multilateral basis in Asia.
 - b) Toward introduction and diffusion of e-learning providing wide-ranging people with opportunities for education and training, support efforts to introduce e-learning into Asian countries/economies, utilize the JICA-NET (Note7) and enhance content for education and training, etc.
 - c) In response to progress in preparation for medical care infrastructure and demand from people in charge of medical care in Asian countries/economies, support Asian countries/economies to utilize e-health and foster people in charge of e-health.
 - d) Toward large-capacity video transmission experiments based upon the agreement of the First Japan-China-Korea ICT Ministerial Meeting, promote various opportunities for international cooperation through concerted efforts of the public and private sectors.

3. Promotion of digital content distribution

(1) Basic concepts

⁷ JICA-NET: The JICA-NET aims to extend timely and flexible technical cooperation and policy advice by linking through communication network two Core Centers in Japan (Okinawa and Tokyo) to Satellite Centers that are set up in developing countries as human resource building basis. Satellite IT Centers are already in operation in Jakarta (Indonesia), Kuala Lumpur (Malaysia) and Manila (the Philippines) in FY2001, and will be established in Laos, Bangkok (Thailand), and Vietnam.

There are many languages in Asia. This would cause obstacles in exchanging information within Asia on the Internet and providing and obtaining important information. In order to deploy broadband platforms and encourage distribution of digital content, it is vital to facilitate machine translation among many Asian languages. To this end, development of machine translation technologies and methods between Asian languages shall be continuously carried out.

In addition, it is thought to be important that i) Asia's diversified cultures are to be preserved, ii) cultural exchanges are to be promoted, iii) information from Asia is to be transmitted to the rest of the world, and iv) the tourism industry is to be promoted, etc. Thus, Japan will encourage efforts to construct digital archives of the diverse and unique cultural assets and other attractions of Asia.

(2) Specific measures

(i) Development of multiple-language translation technologies

a) In the R&D for international IXs and joint experiments between Japan and Asian countries/economies for encouraging information distribution that are being carried out to establish international ICT hubs, a multilingual environment is to be established. Diffuse its results to Asian countries/economies.

b) Develop multilingual dictionaries and collect texts in multiple languages as linguistic data on Asian languages for R&D on networked multilingual translation systems and research. In cooperation with research institutes in Asian countries/economies, formulate formats of dictionaries and texts suitable for Asian languages to introduce such efforts to standardization activities already underway in North America and Europe.

(ii) Promotion of digital archives

In order to promote digital archives that digitize and preserve diverse Asian cultural and other assets, support efforts to construct digital archives of cultural and other assets in developing countries/economies in cooperation with relevant organizations.

4. Support for developing national strategies, policies/schemes

(1) Basic concepts

In order to encourage widespread use of broadband platforms in Asia, it is vital for Asian countries/economies to i) establish national strategies, ii) prepare related policies and schemes such as pro-competitive policies, and iii) apply those systems appropriately. To this end, upon developing and implementing appropriate ICT policies in Asian countries/economies, efforts shall be made to provide and share useful knowledge and knowhow, etc.

(2) Specific measures

- (i) Support for formulating national strategies through policy dialogues, sharing of knowledge

In order to support policymakers in each country/economy and share knowledge and knowhow, strengthen the existing measures further through dispatch of missions for policy dialogues and experts, policy assistance using websites like the Japanese government's "DO Site", etc. Promote cooperation for preparing policy and schemes by utilizing multilateral frameworks.

- (ii) Tracking diffusion of broadband systems

Collect best practices concerning broadband deployment, and share this data among Asian countries/economies.

5. Support for developing countries/economies

(1) Basic concepts

As mentioned in "I. Basic concepts," the significance of ICT in social development and economic growth is internationally recognized under the United Nations "Millennium Declaration" and other statements and bridging the digital divide has also become the world's urgent challenges. Furthermore, deployment of broadband platforms is becoming important issue. Taking these into account, supports for developing countries/economies by measures mentioned above shall be implemented.

(2) Specific measures

- (i) Promotion of projects utilizing ICT

Promote preparation of ICT network infrastructure and develop and implement projects utilizing ICT, such as e-governments, distance learning, telemedicine, etc.

- (ii) Promotion of development of projects through policy dialogues and other opportunities with individual countries/economies

With regard to ODA, promote highly-rated projects in countries/economies that have already been implemented and found to have a high economic development effects in another country/economy, through policy dialogues and other opportunities with relevant countries/economies.

- (iii) Implementation of projects for multiple countries/economies

In order to promote preparation of international networks linking multiple countries/economies and IXs necessary for widespread use of broadband platforms, implement projects targeting multiple countries/economies.

IV. Review of this Program

This Program is to be reviewed by the end of FY2005, considering progress in diffusion of broadband platforms in Asia and implementation status of measures proposed in this Program, etc.