

Acceleration of Broadband Utilization

1. Introduction

At the May 2003 EU-Japan BDRT, the ICT Working Party insisted that the advent of a mass market for various multimedia services on broadband networks brings huge business opportunities for the ICT sector in general, accelerates entire economic growth, and contributes to addressing social problems. Broadband is indeed an opportunity to get the much needed increase in productivity in Japan and Europe and to create new added value. Then, the government engagement of e-Japan/e-Europe instigated the development of broadband infrastructure environment, and continuous efforts have been made to promote its utilization. However, some issues such as cyber security, protection of privacy and intellectual property rights, and the development of Voice over IP (VOIP) services have become increasingly important, linked to the expansion of broadband services. At the WSIS held in Geneva in December 2003, the importance of broadband was stressed and thus it is now better recognized internationally. Both Japan and EU governments need to tackle continuously these issues.

2. Current status

In EU

In Europe, after a slow start, the rate of broadband penetration in fixed networks has progressed. This is enabling diffusion of ICT benefits to European businesses and consumers in line with the objective of e-Europe. Broadband penetration is on average around 10% of households, with Scandinavia and Belgium being more in the 20% level. Increasingly, ADSL and also cable modem are the dominant technologies on the fixed side.

In 2004, broadband is becoming mobile. The trend in 3G is accelerating. Networks are being deployed in most countries. Initial technical problems are now being resolved. As handsets will finally become available in larger quantities during the course of the year, one will see operators launch services. The availability of mobile broadband will in turn help the overall market develop, as we see an increasing trend to offer “portable” services available both on the fixed and on the mobile networks.

Some key facts¹

- Broadband coverage and connections continue to grow fast in the EU with 11.1 million new broadband connections in the period Q1 03-Q1 04.

¹ Source: BRT Operators, European Commission, Informa Group, Point-Topic, Prognos 2003, eMarketer, Monitor Analysis

- Competition is increasing and alternative providers continue to gain share: connections from alternative providers grew 98%, compared to 75% growth by the overall market (period Q4 02-Q4 03).
- Broadband prices have fallen.
- Number of connections is growing across all platforms: ADSL 83% growth, cable 47%.
- New business models delivering multimedia services through close partnerships with multiple industry players are being experimented on the market (e.g. TV over DSL).
- Customer usage of new services is growing: e.g., total value of B2C e-commerce sales nearly doubled in 2003.

However, the current broadband rate has not allowed Europe to catch up with the United States and Asia. The current objectives of accelerating broadband penetration should be maintained and even reassessed towards more ambitious targets. This is made possible because technology now offers a full catalogue of solutions, including copper DSL, cable modems, fiber optics, satellite and wireless access.

In Japan

E-Japan Strategy published in January 2001 announced that Japan aimed to become the world's most advanced IT nation by 2005. E-Japan Strategy II decided in July 2003, sets its goal to establish a “vigorous, safe, impressive and convenient society” through Information Technology utilization. Referring to possible subscribers’ number as a benchmark, e-Japan Strategy set out the target: to establish a possible environment “for providing high-speed access to 30 million households and ultra-high-speed access to 10 million households by 2005”. This target has been achieved beyond expectations: service providers have a possible provision to offer services up to 38 millions for DSL and 18 millions for FTTH as of March 2004. Following e-Japan strategy’s achievement, e-Japan II resets the above-mentioned target with numbers of actual IT using households to emphasize IT utilization. It aims to have 30 million households use high-speed internet and 10 million households use ultra-high-speed internet via optical fiber by 2005.

As of the end of April 2004, the total number of households subscribed ADSL and cable internet exceeded 14 million and the number of fiber cable subscribers became more than 1 million. Further, the transition to the third-generation mobile phone is going on rapidly and as of the end of April 2004 the number of the above-mentioned mobile phone contracts exceeded 17 millions. The ITU survey published in September 2003 says that Japan is the world’s most advanced IT nation in respect of Broadband transmission speed and its charge per speed.²

² ITU Internet Reports: Birth of Broadband (2003/9)

3. Issues

In EU

Broadband has now moved from a means to access Internet faster to a critical growth factor not only for the telecom and media industries, but also for the general economy of countries. Indeed, huge progress of broadband technologies in recent years and continuous decreasing investment costs make it possible to turn broadband into a key tool to address Europe's top challenges. These challenges which are in the way of the realization of the Lisbon goals are clearly to increase productivity and to find new added value:

- Productivity is an important challenge first of all because Europe is confronted with a problem of ageing population. In the coming decades, Europe's "active age bracket" of the 25-55 years old will decline by more than 20%. In order to face this problem, Europe will need to increase its productivity, and these productivity gains will not be possible without massive use of ICT centered around broadband networks.
- In addition an enlarged European Union is confronted with large regional disparities. In order to avoid that a large part of Europe and its population remains marginalized from economic growth and the possibility of improved quality of life we have to bring these broadband networks everywhere. The European Commission has clearly identified the problem and sought the advice of high level industry experts in the "e-Europe Advisory Group".
- Broadband ubiquity also presents a strong opportunity for increasing added value, particularly in the content sector. Bringing the content and the telecom sector together creates a large opportunity for the creation of new activities and enterprises.

In Japan

It is important for both governments to promote fusion of ICT and structural reform by further accelerating e-Japan/e-Europe and accumulating examples of success visible for the nations of Japan and Europe. The provision of attractive applications is one of the key drivers to accelerating broadband utilization furthermore. The protection of intellectual property rights is also an ongoing necessity.

Japan/EU Common Issues

Some issues remain to further boost the take up of online services as a support for Industry and society. In recent years, network traffic expands rapidly due to the increase of Peer to Peer Communications. Acts of cyber crime such as DDOS (Distributed Denial of Service) attacks are one of the more serious problems which need to be tackled besides spam. Improvements have been reached as the sending of cyberbugs is prohibited and regarded as an unlawful act in Europe. Whereas the spam issue was legally

addressed at EU level mandating an “opt-in” solution. As a general principle under current EU law there is no obligation for communication carriers to monitor network traffic. Exemptions to this principle should only be admitted on a case by case basis.

For the Internet to be used as a social infrastructure in a ubiquitous society, governments should create an enabling and investment-friendly environment where innovation can flourish and business (without any discrimination) can bring products and services to customers and solutions to problems easily.

For attractive content to become widely available on broadband networks, it is of key importance to have effective Digital Rights Management systems in place, which protect the content from an IPR perspective, while at the same time offering consumers the possibilities to use legally obtained on-line content on multiple devices. This will require interoperability between the various DRM systems.

Another issue of importance and of common interest is the foreseen expansion of VOIP services, already widespread in Japan and soon to take off in the EU. In spite of the small percentage of global voice traffic actually delivered by VOIP, it is very likely that VOIP will progressively displace (both functionally and economically) traditional PSTN voice services. Consequently, VOIP raises a number of policy and regulatory questions that, given the non-geographic nature of any IP based service, could be usefully addressed by both EU and Japan Governments in a coordinated fashion. These questions could be summarized by the following list of topics:

- Impact on management of the Universal Service (service characteristics, service provider obligations, funding)
- New rules applicable to Interconnection (charging, interoperability, network integrity)
- Regulatory challenges with regard to emergency services using VOIP
- Clear policy and regulation regarding legal interception obligations for VOIP providers
- Shared practice and experience on questions surrounding the use of national numbering plan resources for VOIP services and subscribers (VOIP prefixes, coexistence of VOIP and PSTN numbers in the same numbering scheme, etc.)
- A common Policy maker attitude towards extra-territorial provision of VOIP services.

4. Recommendations

The following actions should be implemented to establish the ICT society aimed by e-Japan Strategy/e-Europe Action Plan, achieve economic growth and overcome social problems. Such fact should be recalled that ICT leads a large success to structural reform and new value creation only when government and private sector cooperate in various fields.

3-EJ-1: Revision of target number of broadband subscription

Both governments should accelerate implementing actions to achieve goals on broadband penetration based on the development of e-Japan Strategy II/ e-Europe Action Plan. Regarding a target number of broadband subscribers, each member country's goal needs to be revised ceaselessly to a higher level reflecting its progress and present condition.

Since ICT development provides us new communication possibilities like ubiquitous network, both governments should continue to improve the business environment and eliminate the regulatory barriers which today hold back new innovative solutions in the multiplatform delivery of interactive broadband services.

The governments should also encourage the freedom of consumers to be able to have access to services they choose any time and any place. Finally, governments can do a great deal by transforming public services for multiplatform delivery and adopting new on-line or wireless solutions to improve the efficiency of the back-office processes.

3-EJ-2: Promotion of broadband utilization

Both governments should promote further development of ICT environment aiming effective utilization of broadband network and generalize the use of applications such as e-Government, e-Health, e-Education relying on broadband. This is one essential part of the productivity increase and an answer to problems related to the ageing of the population. Spread of broadband network produces new solutions and new business models. Policy makers should not deteriorate the vitality of private sector, but support the emergence of new applications and services, and convert them into tangible forms as soon as possible. Especially, in areas such as employment and labor, medical services, and education, which have close relation to people's lifestyle and are expected great innovation effect, the role of government is extremely important. E-Japan II provides leading model and activities in 7 fields, and it is important to implement these activities from consumers' and users' view points. For practical use of services such as e-Government, e-Health and e-Education, public and private sector need to continue dialogues on regulatory issues.

(a) e-Government

As an example of broadband utilization, both governments should reinforce implementation of e-Government. E-Government is one of the influential applications that contribute to the spread of broadband, and a wide range of policies is being implemented as an important issue within e-Japan and e-Europe. In a report as to e-Government published by the United Nations in November of last year, however, due to not-so-high evaluation of electronic "interaction" with public organizations and other factors, Japan was ranked 18th in the overall assessment.³ Although some countries in the EU were

³ World Public Sector Report 2003: E-Government at the Crossroads (2003/11)

ranked high, such as Sweden which was ranked 2nd, there were gaps in the region as other countries still needed to make further progress.

E-Government will enable citizens to overcome conflicting schedules and offer new simplified and optimized services. In the end, resources will be used more efficiently at a reduced costs and permit to re-deploy skilled workers for other sectors of activity. The economic benefits of e-Government have been measured in terms of annual global savings in a Canadian province amounting to 0.7% of GDP.

In Japan, while an infrastructure for providing e-government services such as the Basic Residential Registers Network System and the Public Authentication Services for Individuals has already been established, residents have not yet indicated much desire to take advantage of these services due to such factors that applications are provided in isolation or that they have few opportunities to use these applications. Governments in both Japan and Europe should provide affordable application services that are convenient and easy for residents to use, such as providing them with a single card that enables them to use multiple applications with safety and peace of mind.

Standardizing data codes for common use among databases or facilitating data distribution is believed to be an effective way to create links among various applications.

(b) e-Health

What are the benefits of e-Health? Doctors who are on duty will be able to consult patient files and improve the quality of their diagnosis. Independent of location, whether in the hospital or in a clinic, in real time, a doctor can ask the advice of a specialist situated at the other end of the department on the interpretation of a scanned image, enabling to gain precious time. By allowing the permanent follow-up of certain functions or biological parameters – such as cardiac rhythms or blood analysis - , home care will be generalized, considerably improving the quality of life of convalescents while also reducing the costs of health care systems. One of Europe's key ambitions should be to create a "common medical file" - today there are some initiatives which exist, but they are fragmented. All of this is about containing the increasing costs of health care in our society.

(c) e-Education

E-Education is particularly important in the context of continuous education, especially in an ageing society, where lifelong learning will be critical to a longer and more mobile working life.

(d) Joint efforts between EU and Japan for promotion of broadband utilization

In order to make further advances in broadband utilization, the following actions are considered to be valid as well: links between Japan and the EU in such next-generation ICT fields as IC tags, mobile phones, basic software (OS), and Internet standards (IPv6),

as well as the promotion of R&D and empirical experiments between government and citizens, the establishment of test beds, the launch of forums and other links between governments. In addition, it is also valid to share success model by comparing progress of ICT policies through common benchmark in every field of ICT.

3-EJ-3: Establishment of secure network environment

Governments on both sides and private sector should cooperate to overcome the issues of increasing traffic, cyber terrorism and others accompanying the spread of applications, and take measures to establish secure network environment serving as a social infrastructure.

To address sudden increases in traffic, governments on both sides and private sector need to conduct R&D in such areas as large-capacity networking technologies, including improvements of backbone, routers and switches, which can be of great help in constructing network infrastructures for the future. To confront cyber terrorism, global cooperation is indispensable. Governments should intensify both, technical and institutional cooperation to better trace the sources of attacks, while respecting the principle of freedom of communication. One idea for private sector is to work toward making effective use of network resources by diversifying the service menu in a manner similar to offering best effort service at a lower price or quality guaranteed service at a higher price.

3-EJ-4: Establishment of PDCA cycle for evaluation of IT policy development

To evaluate ICT policy development, both governments should establish PDCA cycle, actively reflecting private sector's requests. Both public and private sectors should make and carry out necessary action plans.

In Japan, upon the request of IT strategy headquarters, it is significant that the professional evaluation committee consisted of private intellectuals issued a mid-term report and handed it over IT strategy headquarters in March 2004. ICT WP highly appraises the fact that this committee evaluates by achievement from users' viewpoint. Further, ICT WP supports this committee, evaluating IT strategy development semiannually. The government should respect the committee's regular measurement and progress management in the course of policy implementation.

In the implementation course of IT Strategy, it can be possible that each action will not lead to realization of targets, even if its implementation is achieved as it expected. In this connection, comprehensive evaluation is required by use of the following benchmarks: kind of action, degree of contribution and extent of nationals' benefit received from the action's outcome.

3-EJ-5: Implementation of ICT actions into all EU countries

To implement the above-mentioned ICT actions, EU's 25 countries should continue to

draft and carry out national broadband strategy based on e-Europe action plan.

3-EJ-6: VoIP

Regarding VOIP services, the governments of Europe and Japan need to provide clarity for regulatory policy (such as usage of numbering for VOIP services, as already the case in Japan) for VOIP in comparison with traditional PSTN voice regulation. A well-balanced, technologically neutral approach is recommended, reusing a list of well-specified fundamental service obligations applicable to VOIP when it is used as a substitute to PSTN voice. The implementation of regulatory obligations on VOIP services should always be specified in close cooperation with industry and manufacturers in view of economic and technical feasibility. Industry also recommends to align VOIP quality of service and performance requirements with the lighter mobile regime. Conversely, the regulation of PSTN voice should be evaluated in view of possible “lighter” regulation which could be applicable in a new IP-based environment. More generally, the EU should learn from Japanese leading experience in the field based on the successful VOIP adoption by Japanese subscribers (4 Mn end 2003).

3-EJ-7: Encourage “consumer confidence” and create a regulatory environment favoring investment

The enterprise world has been the first to adopt broadband. Businesses, of all sizes and all sectors have today adopted on-line broadband services, quite often, as the only method of communication for certain tasks. On the consumer side, broadband has first of all been a means to have faster and continuous access to the internet. Today, the “new wave” proposed by operators and service providers, is the arrival of Triple Play: VOIP, Internet access and Internet broadcasting.

The public policy challenge is twofold. On the investor side, we must ensure that this “new wave” is not hindered by regulatory uncertainty – for instance service providers should have no limitations to access the content they need. On the consumer side, a balance must be reached regarding safety and security in order to ensure a high level of trust and confidence. At the same time right-holders need a strong protection against IPR infringements. In this respect the implementation Digital Rights Management would provide a solution. The European Commission has recently set up a High Level Group on Digital Rights Management: this is a good initiative and the ICT Working Party is awaiting the report by this High Level Group with great interest.