Summary of Minutes of the Second Panel on Neutrality of Networks

1 Date and time: December 19 (Tues), 2006, 15:30 to 17:55

2 Location: Conference Room No.1, 1F Lower Wing of Central Joint Government Building No. 2, Ministry of Internal Affairs and Communications

3 Attendees:

(1) Members (Honorifics omitted)

Takanori Ida, Hiroshi Esaki, Kiyohisa Ohta, Harumasa Sato, Minoru Sugaya, Nobuko Takahashi, Toshihiko Hayashi (Chairman)

(2) Observers

ACCESS Co., Ltd.; Apple Inc.; Internet Initiative Japan Inc. (IIJ); Intec NetCore Inc; Intel Corporation; GOURMET NAVIGATOR INCORPORATED; KDDI CORPORATION; J-Stream Inc.; SOFTBANK TELECOM Corp.; D4DR inc.; TELECOM SERVICES ASSOCIATION; Japan Internet Providers Association (JAIPA); NIPPON TELEVISION NETWORK CORPORATION; NIPPON TELEGRAPH AND TELEPHONE CORPORATION (NTT); Institute for Hyper Network Society; FUJITSU LIMITED; Microsoft Corporation; Mobile Content Forum (MCF); Yahoo Japan Corporation; USEN CORPORATION

(3) Ministry of Internal Affairs and Communications

Mori (Director-General of the Telecommunications Bureau), Sakurai (Director-General of the Telecommunications Business Department), Taniwaki (Director of the Tariff Division), Ninomiya (Senior Planning Officer of the Tariff Division), Samura (Director of the General Affairs Division), Suzuki (Director of the Telecommunications Policy Division), Ohashi (Director of the Computer Communications Division), Imagawa (Senior Planning Officer of the Telecommunications Policy Division)

4 Agenda

(1) Presentations 1 (first half) by Panel observers

[Suzuki, President, Internet Initiative Japan (“IIJ”)] (Document 2-3)

- In recent years, the Internet has been used in various ways in the application layer. If all of the people in Japan continue to use their access lines in using these applications, the lines will be out of service. Building of infrastructures remains necessary for the future.
- The Internet is being used mostly by heavy users that account for 6 to 7% of all users, while the rest of the users rarely use it. It is unfair in its very use.

- Infrastructures for the Internet are built on a different concept than that for the conventional telephone system. It is difficult to understand what capacity is required because the Internet uses lines that happen to be free, and even if line capacity is increased, the Internet still uses the lines where they are free. It seems, therefore, that no incentive is created for building infrastructures.
- It is the application layer that has led the Internet. The discussion of the Internet as a free rider of the infrastructure will just stop the technical innovation in the application layer.
- It is necessary to create a framework to make physical infrastructures cope with new application technologies. It is also necessary to promote infrastructure building that stimulates the motivation to invest.

[Arima (Director), NIPPON TELEGRAPH AND TELEPHONE CORPORATION (NTT)] (Document 2-4)

- Increased traffic per se is not unfavorable, but the income does not increase on the ISP side, since the costs will increase along with the increase in traffic.
- When distributing images, the cost can be incurred between directly connected ISPs. The cost alone increases, however, between indirectly connected ISPs, and it is too late and difficult to shift the cost to users due to the fixed rate system that hampers collection of the cost.
- For the incentive toward improving infrastructures, secured cost collection is needed, but we can find no definite answer as to how the cost should be incurred by users. It will become definite after various models are tried.
- NGN requires discussions on cost bearing according to the difference in communication quality in addition to the existing cost bearing on the zone basis.
- NGN will be provided in a form that secures openness. Please use new IP networks and work out new applications.

[Shiraishi, President, J-Stream Inc.] (Document 2-5)

- The CDN that we provide has its servers installed at locations closer to the edge (ISPs' Network Operation Center (NOC)) in order to distribute the load on the network.
- As for the P2P communication that imposes a load on the network, it is necessary to shift to the hybrid type (those controllable at the Center) and not to the pure type from the viewpoint of effective use of the limited physical lines. The pure type can neither manage the distribution information of content nor control traffic, which increases excess traffic for searching content.
- With regard to the coexistence of CDN and P2P, P2P is suitable for content placed at hand

and frequently accessed, while CDN is suitable for highly real time content that you do not like to have downloaded.

- Content delivery on NGN is expected to be conducted via SNI (ANI), and what will be an essential factor is the fee.

[Major discussions]

(Member)

We engineers are afraid of a FLET'S network collapse. One probable cause could be the fact that the construction was designed to suit existing networks. The solution may probably be that either engineers should work harder, or the rules should become friendlier to technologies.

(IIJ)

The current network architecture is not based on a concept to cope with what is happening in the application layer. Convergence is apt to occur in the FLET'S network. This will not be solved unless the network is constructed in a mesh fashion.

(Member)

The biggest technical problem is that it has been constructed L2 over L3. If this is eliminated, the stress imposed will be lower.

(Member)

Does the place where the load is imposed (where the bottleneck occurs) change according to the manner in which the network is connected or the server is installed?

(Member)

Currently we are providing L2 that is closer to L3, and thus the load is imposed at the edge.

(NTT)

The load may be imposed for the current L2TP, but we will consider alternatives while leaving them as they are.

(Member)

Can we have a CDN server installed if we request it, or do we install one when requested by ISPs?

(J-Stream)

Basically, we will do peering as well as install servers upon request. Servers are currently installed at NOC alone, but we are thinking of installing them at ISPs, which are nearer to the edge for the purpose of distribution.

(Member)

NTT has asserted that they would secure openness for NGN. On the other hand, full-scale switching from ADSL to FTTH has started, aiming at extended broadband service. When

looking at the FTTH housing market in particular, it seems that the neutrality would be difficult to maintain due to NTT's increasing share. To facilitate secured openness, I would like to suggest that a venue be provided to discuss the fairness of use and the cost-sharing fairness in charging.

(NTT)

NGN will start growing from now on. I feel that it is dangerous to think that a definite image of openness should be decided in advance, as this will lower the flexibility of services and businesses.

(ACCESS)

We believe that the most important concept in NGN is to separate the service layer and the transport layer. We are concerned about Japan alone becoming isolated in the course of the global standardization of ITU-T. Would you, the regulation side, look at such points correctly, please?

(USEN)

We are providing an image distribution service, and often receive claims of invisibility due to the low speed of downloading on lines. Users cannot see, in the network quality, where in the house, network or ISP the cause lies. It is difficult for users to have any incentive to invest in a quality that is invisible to them. Is it not necessary to work out a mechanism that enables end users to see causative factors in real time? If that is practical, end users will be able to select quality through their reasonable determination. Providers will then provide services with awareness of that. In that sense, it seems that this is closer to a matter of transparency rather than neutrality.

(Member)

If this problem had been solved, the Internet would have become a fantastic system. It would be extremely difficult to make everything transparent, since security and the corporate secrets of each provider are involved. As for the routing between ISPs, however, it seems that fair control of paths and quality may be realized only if monitored properly, since quite a high level of technology is being used and routing is available as desired to some extent.

(IIJ)

As large content is distributed to users even though the band is narrow, users may be unable to download it or downloading may take quite a long time. I think that ISPs will survive on a natural selection basis.

(USEN)

The former FTTH service subscribers had a high level of Internet techniques that could correctly select providers. In these two or three years, users with less awareness are increasing.

(Intec NetCore)

Transparency may be achieved if all providers disclose information. However, usually they do not disclose it, since matters such as the competitiveness of providers are involved. Coordination may be required for disclosure of information.

(Member)

Is it not difficult to make everything transparent when business concerns, security, and corporate secrets of providers are involved?

(Microsoft)

The reasons for late video distribution may include those caused by personal computer performance per se and the band of the wireless LAN. Even if some users have the will to spend money to improve the situation, the problem is that there is no way to determine whether the cause lies in the personal computer, router, or ISP. I think the target of investment may converge only if the cause is known, but it is impossible to make any comparison now. It is therefore important to raise it as an issue.

(Institute for Hyper Network Society)

A professional magazine once published the busy rate of the dial-up access points, and a function existed between providers and users to evaluate services and create “through the grapevine” advertisements. It may appear difficult to leave the things untouched, but it is necessary for the providers’ side to trust smart users.

(Member)

An effort is also required on the ISP side to be user friendly and not to impose a burden on users. In the field of financial products, the Financial Service Law has been established based on a concept that requires the indication of the minimum service conditions to users. If a communication service law like the Financial Service Law is established in the future, users may be thoroughly informed.

(2) Presentations 1 (latter half) by Panel observers

[Fujimoto, President, D4DR inc.] (Document 2-6)

- The architecture of the social platform has been changing due to the proliferation of the Internet. So far, information such as business information, advertisement/coupons and innumerable social information (Web, broadcast programs, and product data) had been provided separately, among which “web”, “search key word” and “advertisement” were linked together to make Google.
- It is necessary for information per se to turn into public property for it to be used widely by people.
- Preparing diversified options will require a civil minimum as well. The civil minimum in the

past included things such as the telephone system and direct calls to the police, but now things have changed. It will be necessary to discuss what constitutes the civil minimum and universal service.

- What should we do about the neutrality as an oligopolistic platform player? We may need to think of it as a set with the network.

[Aizu, Deputy Director, Institute for Hyper Network Society] (Document 2-7)

- We have an impression that the neutrality comes in a set with fairness, but what is fairness? The Internet has never been equal since its beginning. It is not reasonable to require those that are going to start from now to be equal from the very beginning.
- To the contrary, it is natural to use what has been obtained as much as possible in the case of best effort type networks, which offered many business opportunities for providers. After all, it was users who triggered all this.
- If the heavier users did not exist, the general technologies would not be enhanced either, so it is not desirable to curb the cutting edge.
- The discriminatory handling of P2P and networks is an issue like Winny, which cannot be contained in Japan alone and which calls for a global point of view.
- As for the infrastructure free-rider theory, does charging heavy users mean to pay them back for what they did not use? The fixed-rate system has its significance in that payment is made by all of the users. I think it could be solved to some extent through the innovation of technologies and services.
- We find the keywords “neutrality,” “fairness” and “equality”, but I would rather have “justice” instead of “fairness”.

[Saito, Deputy Director, Network Service Operation Department, FUJITSU LIMITED] (Document 2-8)

- When thinking of the neutrality of networks, it is important to discuss how to overcome technical problems in order to reduce infrastructure costs in addition to the fairness of use and the fairness of cost sharing.
- Before considering the cost sharing by users, discussion is required in order to provide networks at a reasonable rate in terms of both technology and strategy.
- Although traffic has increased, the cost per packet actually has not decreased compared to the growth of traffic, so it is necessary to discuss how to control such costs.
- Needs of companies include security and the higher availability of customization. From that point of view, role sharing between the application layer and the network is also important.
- The diversified competition in the platform layer and application layer has created new

services and markets. It is necessary to avoid imposing the burden on users as much as possible. It is important to provide services while ensuring fair competition conditions and open interfaces.

[Major discussions]

(Member)

How should we understand the difference between “fairness” and “justice”?

(Institute for Hyper Network Society)

Fairness is close to equality and it means that all have the same load. It may be fair for telecommunication providers to share the cost equally, but they do not actually assume a uniform amount, they just assume an amount according to their business size. Such handling seems to be just rather than fair. As for the 100% provision of the optical fiber facilities in rural areas, it may result in fair treatment to provide the facilities afforded by subsidies now. I wonder, however, if that is called justice.

(Member)

It was mentioned that the civil minimum should be provided rather than universal service. Where should we place the concept of justice?

(Institute for Hyper Network Society)

To be extreme, to be unfair may be acceptable. Under a common rule, it may be accepted to some extent that some gain and some lose, although that cannot be called fair and equal. It is impossible to make a clean and ideal society in the world of networks alone, and thus it will become dangerous unless something like “width” which utilizes the opportunity as much as possible will be admitted.

(D4DR)

The civil minimum is not uniform, either. Once the base is determined, innovation may be allowed, and then all you have to do is to check whether the distribution of information is being carried out with viciousness or not. The three points of civil minimum, innovation and the vicious check may come in a set.

(Member)

What do you say to the cost sharing for the provision of infrastructures and incentives?

(NTT)

The low profit rate is a problem for us, too, to continue our business.

(Member)

Someone said that information must be used properly, but why are student discounts available for cellular phones while they are not available for content?

(Member)

Student discounts are provided for cinemas, which implies that similar discounts for content also exist.

(Member)

The fact that content users cannot be identified may be one of the reasons for the absence of student discounts for content.

(Microsoft)

We apply student discounts for development-related products. This is under the concept that we would like students to just use our products to understand their quality, and we expect the students to purchase them after they get their jobs, or to ask their companies to introduce the products.

(Member)

We may consider a business strategy to offer new products at low prices (or for free) when they are released, and update them to obtain trust and collect on the prior investment.

(Member)

Can we not see this from the aspect of globally acceptable technical innovation?

(Member)

In the automobile industry, they sometimes show their advanced technologies in F1 racing and then extend them to cars for general users. In addition, in the world of the Internet, technical innovation may not advance unless highly skilled users like F1 users exist. On the other hand, are you conscious of heavy users being responsible for developments that will ultimately be beneficial to the general public, or do you think that heavy users using software freely will bring about something? Perhaps, the business model of communication may not serve as a business if it is only used by some heavy users. I suppose that it will become a business only if it is used in mass by general users after the model is popularized. We cannot yet see how the interaction between some advanced users and technical development provides a return to general users.

(Member)

When we analyze the Internet, the outcome depends on who has the asset. Advanced users create a service without using facilities provided by ISPs, and enter the business domain of ISPs when the service prevails. They are rewarded by managing the asset. Almost all cases so far must have been like this. Providers need to render the service into a more ready-to-use form when it is to be made available to general users.

(D4DR)

A court decision was recently given on Winny. It is difficult to balance technical challenges and the existing regulations. In that sense, it would be appropriate to make verification in, for example, an experiment in a special zone. Also important is starting new businesses in

companies. Valuing venture development is tantamount to valuing heavy users.

(Yahoo)

The relationship to innovation has also been discussed in relation to the neutrality in the United States, where the focus is on the business model rather than technical innovation. One of the factors that led to the development of Amazon's business model is that free access to the Internet has been allowed. It would not have developed as such if content users had been charged for something like a shared rate. When thinking of the development of the business model rather than technical innovation, it may be highly possible for deterrents to appear.

In addition, networks basically support daily livelihoods, while technical progress is also an important factor for them. Since what matters is how businesses and new lifestyles will be formed in the livelihood, the level of influence on such matters must be taken into consideration when thinking of the neutrality.

(Microsoft)

Interests among stakeholders must be adjusted when you attempt to accomplish something new. I am afraid that adjustment among stakeholders will be difficult when a big business carries out innovation. The support for the Windows compression technology could not have been raised without the social demand. We often see that it takes five or ten years for new attempts to be accepted in a mass market.

(Member)

Students have so far supported the development of the Internet. How do we set the position to support new attempts? How to secure a position that will not hamper innovation is important.

(Intec NetCore)

We are interested to know how innovations starting from companies are treated. I expect new innovations to come from the fused sector of communications and industry. In that case, the biggest problem may then be found in the "starched" part in the fusion, but there are few who know both. As for NGN, how providers such as NTT can collaborate with other types of trades seems to have a significant impact on innovation.

(Mobile Content Forum)

Access to networks per se is not yet fair in various industries. The identification information and charging infrastructures that are necessary for doing business are yet to be provided. First, it is essential that network access be provided equally. I would suggest that discussion be conducted on the premise that the access issue has been closed in addition to the problem of costs.

End