# Interconnection Committee—102nd Meeting Summary of Minutes

1. Date and Time

Tuesday, December 18, 2007; 10:00–12:00

2. Location

Conference Room 1001

3. Attendees (honorifics omitted)

(1) Committee Members

Toukai (Chair), Sakai, (Vice Chair), Aida, Sato, Naoe, Morikawa

(2) MIC Representatives

Takeuchi (Director-General, Telecommunications Business Department) Taniwaki (Director, Telecommunications Policy Division), Furuichi (Director, Tariff Division), Ninomiya (Senior Planning Officer, Tariff Division), Iimura (Deputy Director, Tariff Division), Secretariat

Summary of Meeting

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| Interconnection rules pertaining to next generation networks (second session for resolution of points at issue)<br><br>○ MIC explained the relevant documents. Subsequently, discussions were held to resolve points at issue. |

Details of Discussions

1. Unbundling of band control functions

Aida: There is a notion that band control functions alone should be unbundled independently. However, this is unreasonable. It makes more sense to consider a band control function package that is combined with transmission functions. In the case of optical telephones and IP telephones, bands are guaranteed without fail, and therefore, band control functions already exist in a sense.

Vice Chair Sakai: Essentially, charges for quality-assured packets are of course different from charges for packets whose quality is not assured. Moreover, it is difficult to decide how to divide costs. Interconnection charges for IP telephones and those for other best-effort network telephones are

naturally different depending on the packet.

Naoe: Usually, charges for band-guaranteed best-effort network services are set low. When a line is not busy, band control is not necessary. Therefore, I think it is a good idea to regard band control as a package of measures to deal with congestion and to set charges in the same way as charges are set for peak times.

Sakai: Relevant costs arise whether or not bands are guaranteed. Therefore, it is better to have these costs clearly indicated.

2. Unbundling of certification functions

Sato: I have no idea whether or not there is any higher-level-layer-based function that competes by providing services equivalent to those provided by some other function, but which is incapable of doing so unless unbundled.

Sakai: There is a possibility of unbundling certification functions. Band control functions will, rather than otherwise, end up belonging to a lower-level layer when the communication stage is entered.

MIC: There is no clear definition of the term "higher-level-layer-based function." We presume that higher-level-layer-based functions are, of course, included in newly provided functions. However, it cannot be said that all newly provided functions are higher-level functions. Those control-based functions—session control functions, transmission function-oriented certification functions and charging functions—are integrated within transmission functions. Namely, there is a set of basic control functions in which band control functions are included. On the other hand, it may be possible that there are things like common platforms connected to SDP-like higher-level layers. Moreover, there are functions involved with various services including position information and terminal profiles. Therefore, the above-mentioned two sets of items should be distinguished in discussions.

Aida: The term "higher-layer-based functions including band control functions" is included. In this regard, I think that it will be less misleading if such functions are divided into mere band control functions and so-called platform functions.

3. Ethernet services

Sakai: In some aspects of Ethernet services, it is unknown what unbundling is required in specific terms. When a certain operator is to use NTT's Ethernet networks to provide Ethernet services, it is

unclear how such networks will be borrowed.

Sato: I think it is necessary to look at things like the visualization of the market to find out what unbundling is required for service provision.

Morikawa: The following use pattern is conceivable: The center of an operator is connected to users with a band-controlled Ethernet network instead of purely meeting users' desire to have their bases connected; that is, a pattern whereby connection can be established even in the case of Layer 2.

MIC: An example of visualization is this: In the event that an NTT Ethernet network exists in an area where services cannot be provided through an operator's Ethernet network, access circuits are borrowed and connected to control switches, thereby providing services to customers' business establishments.

4. Unbundling

Naoe: By way of a basic concept of unbundling, I would like to propose that consideration be given after unbundling actually takes place. It is true that regional IP networks were unbundled, but no operators actually use them.

MIC: If an operator makes a request for unbundling, then we will study the request accordingly. This time, there was a request for the interconnection charges to be set for Ethernet services as well, which are high-speed versions, thereby permitting such services to be used. In this regard, Ethernet services have so far been prohibited from inter-prefectural operations. This time, however, it is desired that inter-prefectural operations be carried out beyond the scope of the NTT Law. Operators are requesting a guarantee of fair competition, with interconnection charges set taking the above situation into account. The point at issue is the setting of interconnection charges after unbundling is implemented, in keeping with the above request.

Sato: Unbundling could be implemented either of two times: when something that does not exist now in terms of technology comes out as a function in the future or when demand arises. Both are necessary.

MIC: Matters such as whether studies should be made of requests for unbundling are, at present, not included anywhere. However, if these matters are included in the competition safeguard system this time, the there will be an opportunity every year to judge the need for unbundling.

Sakai: It is advisable that discussions be held on an individual basis about whether unbundling is

feasible, depending on specific interconnection patterns. No specific request has been made for band control. If no request is made in specific terms, the matter cannot be discussed.

Aida: I do not think that it is the case that neither NTT East Corporation nor NTT West Corporation will increase standard interconnection points over those that are currently proposed. Be that as it may, when I think about the fact that CATV will be served by these interconnection points, I would like to request that at least one standard interconnection point be provided per prefecture. I would also like to request that it be so arranged, if possible, that connection can take place at individual accommodation stations at the request of operators, just as in the case of GC interconnection.

5. Interconnection charges

Sato: There are two key points. The first one is this: As regards interconnection charges using NGNs, costs are not yet known and therefore there is no choice but to set temporary charges and to reconsider them when information about pertinent charges and accounting data is available. Otherwise, this issue cannot be dealt with realistically. The second one concerns FLET'S services. In the case where there is a certain service and a certain cost at present, and where this service is to be changed over to a one that is a little better on the next network, then what should be done about the interconnection charge? Is this a subject for a discussion on the timing of migration? The two key points just mentioned cannot be dealt with unless special matters other than conventional interconnection charges are discussed.

Aida: Individual routers are supposed to become more expensive than current ones. It is conceivable that routers for regional IP telephone networks, those for optical telephone networks, and those for Ethernet networks will be manufactured separately. Then there is an issue of what things will be like if these routers are unified into one type. A calculation must be made to obtain the answer.

Sato: When consideration is given to "building and keeping," it is necessary to determine costs. In this regard, I think it is necessary to formulate a new accounting principle for NGNs. In this regard there are NGN access and core network access. Core networks are divided by infrastructure, platforms and functions. Therefore it is necessary to establish a new accounting system based on a new concept.

Chair Toukai: Over the past year, concepts of telecommunications business accounting and interconnection accounting were consolidated, thereby basically ensuring the verifiability of the current scheme. It is likely that various discussions will take place and pertinent conclusions will be incorporated into the accounting system. Regarding the issue of cost drivers, existing networks and NGNs will coexist for a considerable period of time. Accordingly, the issue of what cost drivers

should be used for facilities with NGNs and the existing networks, as well as about how to distribute costs, must be straightened out. Another point is that interconnection accounting implemented under current accounting separation pertains strictly to the practice whereby accounting separation is performed with respect to fixed-system bottleneck facilities. How to delve further into this point and into the accounting separation philosophy for NGNs is an issue. I am not particularly inclined to agree to incorporate them into the current interconnection accounting.

6. Migration

Aida: Isn't it possible for ISPs to act flexibly when dealing with end users' changing over from conventional regional IP networks to NGN networks? If interconnection operators are to go on maintaining interconnection points for such conventional networks and for NGNs by paying attention to demand, then these operators will be burdened accordingly. In the course of migration, ISPs should be diligent in replacing core wires at accommodation stations. Otherwise, communication will be slower, leading to user dissatisfaction. It is possible that this very situation will occur.

Sato: When a user is considering migrating, my understanding is that he or she is contacted by an NTT salesperson, decides whether or not to make the changeover, and if he or she decides to make the changeover, indoor work is carried out. Is my understanding correct? Also, am I right to understand that the user chooses which way to go, regardless of the ISP?

MIC: When a user connected to an accommodation router makes the changeover to an NGN, it is necessary for the line connected to the accommodation router to be reconnected to the NGN.

Sato: Everyone will migrate if the same service is provided at 20 percent less cost. What sales strategy is going to be applied? I presume that there is a sales strategy based on the answers to the following questions: Will the overall cost be lower if the two types are integrated into one than if the two types are owned? Is it possible for so many users to subscribe to regional NGNs all at once? Will the capacity to accommodate users increase with the passage of time?

Sakai: Charges are not supposed to be raised. Is this certain?

MIC: Basically, NTT says that if services are similar, then similar charges will be imposed.

Sakai: Is it possible that if an NGN is subscribed to, it may turn out that no connection is established with the ISP at a higher level, resulting in the subscriber having to change ISPs?

MIC: It is possible. The services currently taken into consideration by NTT East Corporation and NTT West Corporation include best-effort services and optical telephone services. Call charges for optical telephones and television telephones are nearly equivalent to those of the past. In connection with this, companies, including NTT East Corporation and NTT West Corporation, are conducting research on the additional function portion with the aim of making them as easy to use as possible.

Sato: Is it possible that unit prices will rise, resulting in recovery being difficult?

MIC: Regional IP networks are also used by ADSL users. In that sense, regional IP networks will remain as long as ADSL users remain.

Naoe: We consider two patterns, one for users, and the other for service providers like ISPs. The first pattern involves various locations and types of interfaces. Regarding the second pattern, we take into account providers that provide many services simultaneously at the pertinent time. Is it the case that ISPs can accommodate people connected to conventional IP networks only if connection is established with NGNs? Will users be asked to change accommodation destinations?

MIC: It is assumed that a network terminal device will be installed in the home of each user. Only people with an established connection from access circuits in NGN accommodation routers can use the services of ISPs that have established ISP connection with NGNs. ISPs' sites on regional IP networks are located in the homes of users connected to regional IP networks. There is only a one-to-one correspondence in each case.

Aida: If the desire is to not lose ADSL users, connections should be shifted to regional IP networks. If the desire is to gain new customers, connections should be able to be established freely. Thus ISPs have almost no choice.

Toukai: When seen from a long-term point of view, it is meaningless if all charges, including interconnection charges and user charges, do not decrease from their present level. Or it should be guaranteed that the charges will remain about the same as they are now but the quality will increase. I think that you already have an understanding of the above. It is necessary to straighten out the cost-based concept within the scope of the Telecommunications Business Law.

Sato: Traffic will be low at the beginning. Therefore, if interconnection charges are calculated on the basis of traffic costs, then interconnection charges will be high at the beginning, which will discourage migration. If traffic does not increase within a very short period during the early stages, we will consider the cost concept from a broader perspective, or we will give consideration to performing some type of distribution within the framework of the Telecommunications Business

Law. In some aspects, we cannot pass judgment unless NTT shows us some information, such mid- and long-term plans, including the answers to the following questions: To what extent has NTT forecast demand for the coming five years? What charge strategy does NTT apply and how are the users standpoints incorporated?

7. OLTs

Sakai: Up to now, when fiber optic cables are borrowed on a cable-by-cable basis, there has been no difference in the rent per unit, even if two or three cables are borrowed. This time, the rent for the first cable is more than one-eighth of the price of a cable. That is, the rent is one-quarter or one-third of the price of a fiber-optic cable. The rent for the second cable is a little lower. As the situation currently stands, if only one fiber optic cable is used only for one company, does the fiber optic cable subscription interconnection charge differ depending on how many cables are used by the company in question?

MIC: Yes, that is right.

Sakai: The method of setting the charges for lines is different from the cost-based method. Therefore, it is difficult to set such charges.

Toukai: In this regard, permitting interconnection operators to pay on a branch-by-branch basis may result in a moral hazard, as stated here.

MIC: According to NTT's explanation, NTT will go on providing services by means of eight-branch circuits for the time being. Four- or eight-branch circuits are generally regarded to be appropriate on the basis of a careful examination of what the situation will be in around 2010. The current discussion is not premised on the assumption this assumption will change greatly.

Sato: When investments were made in fiber optic networks, users were not secured. Therefore, costs would have become too high if only fiber optic networks had been taken into account. Consequently, the portions of costs pertaining to prior investments and future-oriented investments were distributed in proportion to the actual number of users. Namely, the method of cost distribution was changed by separating the costs of used portions from those of unused portions. This method is similar to the one applied in the past.

Aida: As regards access, there are bottlenecks everywhere. In urban areas, in the case of large competing operators, access can be made feasible if each station owns a router for that purpose, as far as core network portions are concerned. In rural areas, this is difficult to achieve. Anyhow, it is

interesting that both ISPs and CATV operators can do anything if each station owns a router. It is easy for them to provide various services on core networks built by NTT.

8. Network function provision plan

Sato: In terms of equivalent network functions, it is impossible to make preparations for providing equivalent services unless information is received in the somewhat early stages. In this regard, it is true that core networks are located on a higher-level layer, but their functions range from those similar to operations used for platforms to similar to infrastructure and communication services. Therefore, appropriate boundaries must be set. It is also necessary to discuss the need for disclosure of information on networks with respect to the following points: Networks in what areas should be taken into account; to what extent information should be disclosed; competition in what areas are referred to for this purpose. I do not mean that there should be discussions about whether to handle things uniformly.

9. Band guarantee

Morikawa: NGNs and Internet networks are connected via gateways. I think that bands are guaranteed as far as communications over NGNs are concerned. Content providers establish direct connections with NGNs.

Aida: In the past, users' access lines created bottlenecks. Content providers should consider so-called content delivery networks. It is not satisfactory if a content provider is connected to a regional IP network or an NGN at one POI by means of one thick line. All providers should establish connections at a number of locations.

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