

IDA – REVIEW OF DIRECT AND INDIRECT INTERCONNECTION ARRANGEMENTS BETWEEN TELECOMMUNICATIONS LICENSEES

Question 1

What are your views on the current direct and indirect interconnection arrangements? Do direct or indirect interconnection arrangements have any impact on technological and economic efficiencies? Please explain your views.

As stated by IDA in the introduction to this review, interconnection between licensees' networks is critical as it facilitates market entry and ensures seamless any-to-any communication for the benefits of the users throughout Singapore. However, the process to obtain interconnection with existing network operators suffers from the following:

1. **Transparency.** Besides the RIO published by IDA for the dominant licensee (SingTel), the new licensee has to approach all the various network operators to obtain their individual interconnection agreements. Each has its own set of terms and conditions which are not negotiable. These agreements are subject to confidentiality requirements.
2. **Hefty Cost.** The basis for the computation for the setting up of the interconnection is not made known to the licensee requesting for the interconnection. Only in the RIO is the basis for the computation for network opening known upfront to the licensee. In addition, there shouldn't be such costs as Application Fee, Security Deposit, Testing Fee, etc.
3. **Long and Cumbersome.** The process requires the new licensee to contact the existing operators to receive a copy of the interconnection agreements and then submit an application requiring many details to the existing operators. If there is some clarification, then the whole process will drag on for days or months as each party corresponds by fax and/or meetings.
4. **Bias.** Most of the terms and conditions of the interconnection agreement are biased against the new licensees or small operators. Financially, the whole agreement favours the existing network operators.
5. **Restrictive.** Each licensee must have an interconnection agreement with the every network operator only for his own service. There is no allowance for one licensee to represent other licensees in a single interconnection agreement including the sharing of the links.

The above are the reasons for the economic inefficiencies of the existing interconnection arrangement.

With the technological progress of IP for various telecommunication and broadcast services, there is a need for regulations to be introduced to mandate PSTN and IP network operators to interconnect on a different platform. The present arrangements are for the PSTN voice-only interconnection. This may not be the ideal point of interconnection as services are converging.

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Question 2

What is the competitive impact of the current direct or indirect interconnection arrangements? Would the adoption of direct and/or indirect arrangements have an impact on the type of services you would offer to your customers now and in the future, and the prices charged for these services? For instance, whether direct and/or indirect interconnection arrangements would affect the quality of service, user experience, compatibility or signaling issues, risk of service outages, etc. In addition, would the impact be similar for all licensees and services?

Although the current interconnection arrangements have brought about a lower cost for customers to make international telephone calls, the hurdle for the current and any new licensees is still high and the opportunity to be creative is stifled by the network operator's right to introduce new terms and conditions whenever there is a new service that is detrimental to their business.

As mentioned in Question 1, there is the tedious process and initial interconnection charges that is a hurdle for the new licensee. Each of these interconnection agreements is for a fixed period only and renewal is necessary.

The network operators are also introducing new terms and conditions, and charges. A case in point is the introduction by the SBO's of callback services. Although this is a commercial issue between the operators, these actions are stifling the market and increasing the costs for the operators and or users.

Another issue, not related to the interconnection agreement, is the advantage of the mobile network operators to bundle their IDD and mobile services. The mobile operators are offering free IDD calls to certain destinations. There is cross subsidization of the services

In terms of the other aspects like quality of services, etc, the present interconnection arrangements for IDD do not really impact them. This should be similar for all licensees.

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Question 3

Would the current direct and/or indirect interconnection arrangements be appropriate for emerging players, services and industry trends, such as IP telephony, new mobile data offerings, etc? Please explain your views.

It will be difficult to predict if the current interconnection arrangements are appropriate for emerging players, services or industry trends. The current arrangement is meant for PSTN services and the main technical interconnection is ITU-T Signaling System 7. This may or may not be the signaling interface for new services. An example is the IP telephony whereby the more appropriate signaling is SIP or H.323. In addition, there is ENUM for database enquiry and number portability.

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Question 4

What are the specific criteria that you will consider in deciding whether to establish direct or indirect interconnection arrangement with another licensee? Please explain each identified criterion in detail, and how the satisfaction/dissatisfaction of that criterion would affect the final decision to opt for direct or indirect interconnection arrangement.

Ultimately, the key criterion on whether to establish direct or indirect interconnection arrangement boils down to cost. The cost structure for direct or indirect interconnection is different. Direct interconnection has a higher component of fixed (for a certain amount of traffic); whilst indirect interconnection has a higher component of variable cost (depending more solely on the volume of traffic).

The criteria for determining direct or indirect interconnection are:

- 1 Traffic Volume or Density. The minimum interconnection link between the two networks is one E1 (or a capacity of 30 voice circuits). Assuming a certain profile of traffic, an E1 link can carry up to 450,000 minutes per month. Depending on the costs of the E1 link and the transit charge through another licensee's network, it may be more appropriate to establish the indirect interconnection.
- 2 Signaling System. Although the main signaling system for interconnection between two network operators is the ITU-T Signaling System No. 7, availability of ISDN is a factor in the consideration. Again, this boils down to cost of the links.
- 3 Third Party or Operator Facility. This criterion will allow the cost of the E1 interconnection link to be lowered. In the SingTel RIO, the price of the link is said to be controlled and this is higher than the market price.
- 4 Balanced and Fair Interconnection Agreement. The current interconnection agreements of the network operators are lopsided with the operator having all the advantages

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Question 5

In your negotiation with other licensees for direct or indirect interconnection arrangements, were there difficulties encountered in reaching an agreement? If yes, please explain in detail what these difficulties were and how they were resolved. Would regulatory intervention have been necessary? If so, what should be the regulatory approach or solution?

Some of the difficulties encountered with other licensees in establishing or reaching an agreement are:

1. Long Lead-Time. The initial contact with the other licensees is often by fax. This is often followed by a fax reply and the dispatch of a copy of the draft agreement. The whole negotiation is done via fax. This has not been resolved.
2. Communication Medium. There is no telephone number or email address of one licensee. Although fax communication is available, there is the possibility of the missing fax document. This has not been resolved.
3. Biased Agreement. Most of the terms and conditions of the interconnection arrangement are often biased in favour of the big operator. These terms are often not negotiable e.g. security deposit, shareholders, etc

Since this interconnection is a regulatory requirement for all licensees, a standard regulatory arrangement and agreement should be established that is fair to all licensees. To speed up the interconnection, the standard agreement should be maintained by IDA.

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Question 6

Should IDA harmonise the requirement for all licensees to be responsible for the provision and costs of interconnection links on their side of the point of interconnection? Should IDA prescribe that all licensees, including mobile operators, either share the costs of interconnection links on a 50:50 basis, or fully bear the costs of interconnection links which only convey their own traffic? Please explain your views.

As mentioned above, harmonizing or standardizing the interconnection agreement and arrangement by IDA will resolve most of the difficulties in establishing the interconnection.

In terms of the costs, there should be equitable sharing of costs like the interconnection links. There should also be settlement cost as the terminating operator is responsible for completing the call so that the originating operator can collect a fee from the customer.

In terms of opening access code or numbers, there should not be such costs as application fee, one-time network opening fee, testing fee, etc. These are part and parcel of the network maintenance that every operator must performance to give access to all users in Singapore.

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Question 7

Are there any other considerations relating to this review that IDA should consider, over and above those mentioned in the above regulations?

We would like IDA to consider holding the ownership of an Interconnection Exchange (similar to a Signaling Transfer Point) or outsource to an operator. This will allow licensees to have a single point of service for interconnection to all existing operators. This has the effect of harmonizing the interconnection arrangement and agreement.

In terms of the voice circuits, it can be left to the operators to negotiate whether they want to transit through the Interconnection Exchange or have direct links for their traffic.