

APPENDIX A – PUBLIC VERSION

ASSESSMENT OF THE BUSINESS IMPACTS OF THE COMMISSION'S DRAFT DETERMINATION

Introduction

1. Wholesale Services has been asked to review the Commission's Vodafone interconnection draft determination to determine any potential business impacts.
2. As currently drafted – bill and keep, no pricing discrimination at retail and no description of what happens beyond the point of interconnection – means the current interconnection regime in New Zealand may well be undermined. Taken to its extreme, Telecom would not recover its interconnection costs for a potentially wide range of call types.
3. We do not think that such a potentially wide-reaching impact was intended by the Commission. So, to help understand the potential impacts of the decision as currently drafted, we set out below: a brief summary of the material aspects of the Commission's draft determination; a clarification of the distinction between a retail "local call" and interconnection input; a summary of the interconnection regime in New Zealand; and examples of the ways the existing regime could be undermined by the draft determination.
4. While our preference is for TSLRIC interconnection pricing, if the Commission is minded to determine bill and keep, it will be important to have a clear definition of what happens beyond the point of interconnection to help minimise any potential adverse impacts, particularly if the Commission limit's Telecom's ability to charge at retail.

The Commission's Draft Determination

5. The draft determination proposes bill and keep for interconnection between Telecom's fixed PSTN and local numbers allocated to Vodafone's network. The Commission defines the service with which Telecom must interconnect by reference to a "local call":

"3. A local call is a call where the number from which the call originates and the number of the intended recipient of the call are local numbers that have been allocated to the same local calling area.

4. *It is not necessary to define the features of a 'local call' beyond the link to a local number. In particular, the interconnection service should not be defined with reference to the characteristics of the proposed Vodafone retail services."*

6. The Commission goes on to state:

"51. In Decision 477, the Commission was not concerned with what happened to local calls once they had been handed over (i.e. what happens beyond the point of interconnection). This approach is consistent with New Zealand industry practice for interconnection agreements."

7. For the reasons set out below, there are a number of important reasons to define what happens beyond the point of interconnection, and not simply by reference to the use of local numbers. There also appears to be some confusion about the relevance of a retail local call and the interconnection input of an Intra-LICA Call, which may be why the reasons for defining what happens beyond the point of interconnection have not been identified by the Commission.

Definition of “Local Call” and “Intra-LICA Call”

8. There is a distinction between the definition of a “local call” as a retail service, and the interconnection input required to facilitate that local call. The distinction is important to understand.
9. The confusion is understandable – in Vodafone’s draft *Network Interconnection Service Contract 7 (NISC 7)* appended to their application, the term “Local Call” is used in the interconnection service definition in the Schedule to the draft NISC 7 to assist in describing the interconnection input service.
10. In Decision 477 the Commission defined retail “local call” as:

“A call where the number from which the Call originates and the number of the intended recipient of the Call are allocated to the same Local Calling Area.”
11. “Intra-LICA Call” was defined in Decision 477 as:

“A Call where the Local Number from which the Call originates in a carrier’s Network and the Designated Destination of the Call in the other carrier’s Network are allocated to the same LICA, ...”
12. The definition of “Intra-LICA Call” relied upon the term “Designated Destination” which was:

“...in relation to a Call and disregarding the application by anyone of call-forwarding or similar functionality that results in the Call being routed to a different point from which the answer line signal for that Call would emanate if that Call were answered, means the point in a carrier’s Network to which that carrier has allocated the Network Number provided by the other carrier as the called party number.”
13. The concept of “Designated Destination” points to what happens to the call beyond the point of interconnection, i.e. the Designated Destination is a “point” in the receiving carrier’s Network, and highlights the fact that what happened beyond the point of interconnection was in fact important to Decision 477. However, these terms were all agreed by the parties, so the Commission did not specifically need to turn its mind to the issue. This wider context highlights a number of risks that arise from the Commission relying only on numbering to determine what is an Intra-LICA Call.
14. Looking at Vodafone’s draft NISC 7, Vodafone clearly understands the need to define what occurs beyond the point of interconnect, and addresses the issue by defining the Local Call (which is used in the interconnection service definition) in terms that do

look beyond the point of interconnection, and deliberately distinguishes “Local Calls” from other types of calls.

15. To avoid confusion, we use “Intra-LICA Call” for the input service throughout the remainder of this paper.

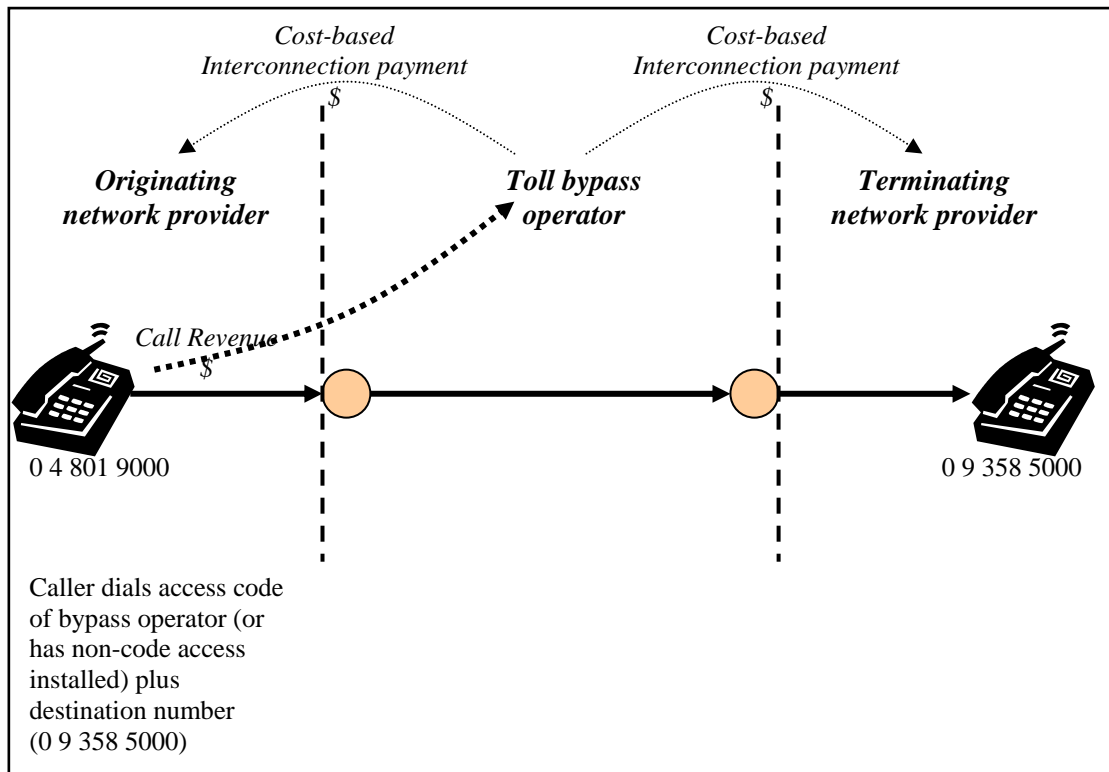
The New Zealand Interconnection Model

16. The existing interconnection model is based on a general pattern of single-ended charging for calls, and the need for the party that receives the call revenue to pay the parties who provide the inputs that make that service possible.
17. Some examples of this include:
 - a. For a toll bypass operator providing long distance services, the call revenue is received by the toll bypass operator (the access seeker) who makes payments to the operator(s) of the access networks on which the calls originate and terminate (the access provider(s)).
 - b. In the case of two access networks being interconnected and a calling-party-pays service being provided (e.g. business local calls, or toll calls), the originating access network operator receives the retail revenue from the caller and makes an interconnection payment to the terminating network operator.
 - c. In the case of two access networks and a called-party-pays service (toll free service using, say, 0800 numbers), the terminating operator receives the retail revenue and pays the originating operator.
18. These interconnection payment arrangements provide the rationale for an access provider to interconnect. Under regulation, these local distance inputs are provided at forward looking cost based (“cost based”) prices. Cost-based pricing is intended to ensure that access providers do not obtain monopoly rents from the provision of interconnection services.
19. The exception to this cost-based payment approach is “bill and keep” which, in New Zealand, is applied to Intra-LICA Calls between Telecom and other operators of fixed networks “Bill and keep” was seen as an exception to the cost-based pricing principle, and was designed to deal with a specific internet callsink (asymmetric traffic) problem created by the interplay between the TSO residential free calling obligation and the likelihood that ISPs would face lower costs of termination than that represented in the benchmarked cost-based price. It is important to note that bill and keep does not mean that providers do not incur costs, simply that interconnection providers recover their costs from end-users (either by way of the TSO levy or retail charges).
20. Thus Bill and Keep was adopted in relation to Intra-LICA Calls (as then understood) as a limited exception to deal with the specific problem of internet callsinks. The assumption was that cost-based pricing would continue to be the interconnection pricing method unless there was a specific issue to be resolved.

Potential Impact of the Draft Determination

21. By defining the Intra-LICA Calls by reference to local numbers only (coupled with bill and keep), the draft determination potentially has the effect of extending the Intra-LICA bill and keep exception to categories of calls for which it was not intended, and risks undermining the interconnection regime that currently exists in New Zealand. Taken to its extreme, the Commission's proposed terms could be applied in such a way that Telecom cannot recover its costs for a wide range of call types.
22. To highlight these risks, we provide a number of examples which are contrasted with the standard toll bypass arrangement.
23. Toll bypass operators make use of origination and termination on other operator's networks. Under the established interconnection principles, the toll bypass operator obtains the call revenue from its retail customers, and pays a cost-based price to the providers of interconnection.

Figure 1: Toll Bypass



24. If a toll by-pass operator can find a way of using local numbers, rather than toll bypass codes, under the parameters and definitions of the Commission's draft determination the operator could avoid charges for any calls handed over within the LICA Group.
25. The following paragraphs provide examples of potential arbitrage opportunities. Due to the damaging impact such arbitrage opportunities would have on Telecom, these examples have been provided on a Commission Only basis.

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What is the Impact?

35. These are just a few examples of how, without a clear definition of Vodafone's service beyond the point of interconnection, the parameters of the Commission's draft determination result in a significant extension of the bill and keep regime in a way that Telecom cannot recover its costs while other operators obtain a cost advantage. There are many more examples of how service providers could operate in a way that they do not contribute to the cost of the input service that they use.
36. There can be no question that operators who provide an input service should be entitled to recover their costs. If they cannot, this would obviously have a detrimental effect on end-users as operators either increase the price of other services or stop investing.
37. In summary, what happens beyond the point of interconnection is relevant, because, if it were not, then any call can potentially be classified as an Intra-LICA Call and be subject to the bill and keep exception. This would lead to a situation where providers of access networks would not be compensated for the economic effects of being interconnected, and the foundations upon which interconnection rests will be undermined.

How can these Potential Problems be Mitigated?

38. If the Commission wishes to impose bill and keep the problems identified above (which are only compounded when coupled by a limitation Telecom's ability to charge at retail) can be mitigated by:
 - a. Clearly distinguishing between the definition of a retail "local call" and the term used in the interconnection service definition – an "Intra-LICA Call"; and
 - b. Defining what occurs beyond the point of interconnection – including the defining "HomeZone" and clarifying what constitutes a "Local Call" for Vodafone's purposes (this guidance will also assist us progress the drafting of non-price terms with Vodafone).
39. Doing this will ensure that the scope of the Commission's determination is appropriate confined such that the commercial balance currently struck between services subject to bill and keep, and others subject to cost-based charging, are not undermined.
40. Of course, if the Commission restricts Telecom's ability to charge at retail, this proposal will not be a complete answer, as the TSO will prevent Telecom from recovering its costs.
41. We note the Commission's concern that Telecom may wish to reclassify calls as a result of any value added after handover. We confirm that this is not Telecom's concern, and that it is the nature of the *service* (rather than individual call) that is

relevant in developing appropriate interconnection arrangements for the reasons set out above.

42. If an operator chooses to design a service which is inherently mobile or nomadic, for example, it chooses to design a service which is not local. The fact that some calls which result from that service happen to terminate in the same LICA as the one in which they originated is incidental to the service that the operator has designed.
43. We also note the Commission's view that the practice of call forwarding highlights that what happens on the other side of the interconnect divide is irrelevant. However, this ignores two key points:
 - a. Call forwarding is explicitly recognised within established interconnection terms as an exceptional event and an exception to what is expected under the concept of Designated Destination; and
 - b. Telecom and other operators of access networks do not allocate local numbers to customers exclusively for the purpose of allowing them to receive the call forwarding service.

Other interconnection models

44. While not directly impacting on the Commission's current decision, it is important for context to understand other possible interconnection models. This is particularly important as the Commission appears to mix aspects of two different interconnection models in its draft determination.
45. As noted above, the existing interconnection model is based on a general pattern of single-ended charging for calls and payment by the party that receives the call revenue to pay the parties who provide an input into the service.
46. If the industry no longer had call charging, or had double-ended charging models, then, provided that the arrangements for call handover put an appropriate value on the investment in network reach made by each party, zero interconnection payments (bill and keep) would be an acceptable general outcome.
47. Such a model would work as follows:
 - a. Each carrier defines the number, and the boundaries, of the geographic areas into which its network will be divided. Each of these geographic areas has a nominated interconnection handover point to serve it.
 - b. If service provider A delivers traffic to the nominated service provider B handover point serving the destination customer, then B will terminate that traffic at no charge. The reciprocal service will be provided by A for B. Thus "local" interconnection is on a "Bill and Keep" basis. Each party provides the link carrying the traffic it is injecting from its own network to the handover point established by the other.
 - c. If a service provider does not deliver traffic to the correct handover point it will be charged for transport across the other service provider's network. It is

envisaged that transport services will be contestable, so service provider A will have the choice of purchasing a transport service from B, or of obtaining transport to B's designated handover point from a third party transport provider.

48. In other words, each provider is responsible for the long distance carriage of their own traffic, and for the local termination of the other party's traffic. Interconnection payments are not required in respect of the locally terminated traffic because each party receives all the revenue required from its end customers.
49. For example, a regional service provider in Southland wishing to provide data to a Telecom customer in Auckland will be responsible for the transport of data to the Telecom point of interconnect in Auckland, for free termination by Telecom to the Auckland customer.
50. Where a regional service provider does not have national coverage on its own network, it may interconnect with Telecom locally (in Invercargill, say) and pay Telecom or a third party for the long distance transport to Auckland.
51. This model is similar to the model used by the internet industry internationally, where parties "peer" with similar parties to exchange traffic which terminates locally, and will pay upstream providers for transport. We also see this model developing in relation to other IP services, where agreement between parties is required in order to ensure that the required quality of service ("QOS") is delivered from end-to-end.
52. Provided there is agreement as to the necessary QOS, then in this model it is no longer relevant what happens beyond the point of interconnect in terms of size of the operator's network, technology employed, or nature of the service provided the customer because this model truly is bill and keep.
53. Conceptual theoretical work has been conducted by FCC economists who advocate this kind of model:

Our goal is to find a default rule that, ideally, need never actually be applied by a regulator. The point of a Coasian approach is that if rights (i.e., default rules) are well defined, the parties can and will work out efficient resolutions (more efficiently than a regulator could achieve). We develop a simple default rule that assigns interconnection costs in an efficient, non-arbitrary and competitively neutral manner, even when one carrier has market power. The rule is first to identify those facilities that are solely incremental to interconnection, then to split the cost of providing these facilities equally between the two carriers. Each carrier would recover these and all its other costs from end user customers, not from interconnecting networks. For several basic types of networks, we demonstrate below that this simple default rule results in efficient, competitively neutral interconnection. We argue that this result can also be generalized to more complex networks. We believe this rule provides a conceptual solution to the problem of interconnection between dissimilar networks in the presence of market power, and

that it provides a default that can enable interconnectors to reach competitively neutral and, with respect to interconnection, efficient outcomes.¹

54. The Commission's approach in the draft determination is to take a view that it need not inquire into the nature of the service beyond the point of interconnection, but apply the traditional interconnection model which is fundamentally dependent on that factor. The Commission could, in theory, choose the alternative interconnection model which is not dependent on what happens beyond the point of interconnection, but only if the parties are free to make their own choices as to the characteristics of the retail services they supply to their customers.

¹ Jay M. Atkinson and Christopher C. Barnekov, "A Coasian Alternative to Pigovian Regulation of Network Interconnection", Working Draft, September 2004.
<http://web.si.umich.edu/tpc/papers/2004/348/CoasianAlternative040901b.pdf>