



A Section 9A Backhaul Study

Preliminary questions in understanding domestic backhaul services

16st September 2016

ABOUT VOCUS

1. Vocus New Zealand is the third largest fixed line operator employing over 600 staff In New Zealand. Our retail operation includes a number of challenger brands - Slingshot, Orcon, Flip and 2Talk. We are also an active wholesaler of services including access, voice and broadband over both fibre and copper.
2. Vocus has made significant investments in New Zealand. We are the largest copper unbundler with a presence in over 200 exchanges throughout New Zealand. In addition we operate a 4,200km fibre optic network that transits between virtually all major towns and cities, and connects directly into all major peering exchanges.
3. Our customers in New Zealand range from government agencies, integrators, large corporates, SMEs and residential households. We are committed to New Zealand's fibre future.
4. Vocus Group is one of the fastest growing telecommunications companies in Australasia and a major provider of voice, broadband, domestic and international connectivity and data centres throughout New Zealand and Australia.
5. If you would like any further information about the topics in this submission or have any queries about the submission, please contact:

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SUMMARY

6. Vocus New Zealand (**Vocus**) welcomes the opportunity to make this brief submission on the proposed s9A Backhaul Study.
7. Vocus agrees with the Commission's geographic classification and would suggest that the scope of any study is limited to Intra-Regional, Metropolitan backhaul and reviewing the existing regulated services. Our view is that it is clear that main trunk and regional backhaul routes are competitive.
8. In terms of Metropolitan backhaul, there is a blurring of the boundary between what is access and what is backhaul. Vocus consumes the UFB DFAS product, which is 'regulated' by the Crown Fibre contract, in Metropolitan centres for both inter-exchange connectivity and backhaul for our unbundled exchanges. The UFB DFAS product is used extensively in this manner and is critical to our operations. If UFB DFAS becomes a regulated service for backhaul in Metropolitan centres post 2020 then this would allay many of our concerns.
9. There is a competitive wholesale market for backhaul in New Zealand. Where Vocus has purchased UFB DFAS, we make available wholesale layer 2 services where there is demand from wholesale customers.
10. Intra-regional backhaul has not been a problem for Vocus to date, based on our experience of extending our network to 200 exchanges. We see this situation continuing as long as Chorus' current policy of national pricing for ICABS and Chorus Regional Transport (CRT) Services remains. A regulatory 'backstop' may be appropriate to ensure that national pricing remains.
11. Vocus supports an investigation into amending the designated backhaul services (including cabinet to exchange – SLU) or replacing them with new backhaul services under Schedule 3. We agree with Spark's concerns and note our concerns over the availability of reasonably priced larger handover dimensioning, particularly as UFB traffic increases. Vocus do not view these services as 'outdated copper services'.
12. The opportunity for fibre unbundling has been an integral part of the UFB future roadmap and unless wavelength unbundling became a more attractive form of unbundling, cabinet to exchange and exchange to POI backhaul will be as relevant to fibre unbundling as they are to copper unbundling. The existing UCLL and SLU backhaul services are first and foremost about access to cabinets and exchanges (which are owned by the LFC) and getting effective transmission over the fibre.

THE SCOPE AND KEY DIMENSIONS OF DOMESTIC BACKHAUL SERVICES

Q1: In your view, have we adequately defined the scope of our domestic backhaul services study? Please explain your view.

Q2: Do you agree with the geographic classification for domestic backhaul services? Please explain any proposed changes.

Q3: Please comment on backhaul technologies. In particular, in your view: (i) have we overlooked any current or emerging backhaul transmission technologies at any layer? (ii) are there any material technological or geographical constraints on where the technologies could not be used to provide backhaul services? (iii) Is Ethernet becoming the default technology of choice for backhaul services from main trunk to metropolitan? If so, why?

13. Vocus agrees with the geographic classification - main trunk, regional, intra-regional, metropolitan and international landing station.
14. In terms of scope of the study in Vocus' view it is clear that the main trunk and regional backhaul segments are competitive, as such we would suggest that the study focus on intra-regional, metropolitan and a review the existing regulated services.
15. Vocus agrees that Ethernet is becoming the de-facto standard

CONSTRAINTS ON BACKHAUL SERVICES

Q4. We invite comments on the regulated backhaul services. We are particularly interested in your view on whether the choice of backhaul transmission service depends in any way on the type of traffic that is to be conveyed ie,

(i) whether transmission requirements for UCLL differ from those for UBA, whether transmission requirements for UCLL differ from those required for mobile backhaul; and any other relevant potential application for domestic backhaul services;

(ii) what bandwidth options are required to meet future demand?

16. Vocus supports Spark's view that there is no reason that the existing regulated services should be limited to a specific service and that the existing regulated services do not reflect the environment we operate in today. Fundamentally, the regulated services are transmission services between structures owned by the LFC: -
 - (a) Between the cabinet and exchange (SLU Backhaul)
 - (b) Between exchange and Access seekers point of interconnect (UCLL Backhaul)
 - (c) Between First data switch and Access seekers point of interconnect (UBA backhaul)
17. Vocus supports an investigation into either amending the designated backhaul services or replacing them with new backhaul services under Schedule 3. The services are outdated, however the need for access to exchanges and Chorus and LFC's cabinets remains. The regulated backhaul services were intended to address not only transmission but also importantly the issues of co-location and handover.

18. The availability of fibre unbundling has been a core component of the UFB future roadmap. Both of the above services will be relevant for fibre unbundling (unless wavelength unbundling develops to provide an alternative).
19. Regulated access service such as UFB DFAS may well address transmission issues from cabinets to exchanges, however building owners' consent to access to cabinets as well as viable co-location costs are also necessary components.
20. Another key issue for review is handover dimensioning. To date, we have experienced a number of issues with handovers:
 - (a) **The artificially high cost of 10G UBA handovers.** These are priced at \$1500; 5 times the cost of UFB 10G handovers and *almost 10 times* the cost of 1G UBA handovers. In our view Chorus is not passing through any of the economies of scale. This is in stark contrast to UFB, where a 10G handover is approximately *3 times* the cost of a 1G handover. Both Spark and Vocus have previously submitted on this issue.
 - (b) **Multiplication of handovers as a result of making them service specific.** An example is the proposed Boost handovers, which were to be separate handovers to the regulated handover with no justifiable technical basis.
21. It seems clear that we will require 100G handovers in due course and we are concerned that if left to a commercial basis, Chorus will seek to 'pocket' the economies from higher capacity handovers, driving costs and inefficiencies into RSPs.

Q5. We are also interested in your view on whether there are backhaul services which are not subject to competition that should be regulated? Please explain how your view is consistent with the section 18 purpose statement.

Q6. Have we adequately captured and described the local access nodes which are of interest to access seekers and network operators? If not, what additions, or alterations would you recommend?

22. The main trunk and regional backhaul services are in Vocus' view segments in which competition clearly exists. The main focus of the study should be metropolitan backhaul.

INTRA-REGIONAL

23. In terms of intra-regional backhaul, Vocus has unbundled approximately 200 exchanges so our comments relate to our experience of those 'provincial towns' rather than a national footprint.
24. Intra-regional backhaul services are largely competitive. We do note that in the following provincial areas we are unable to find any competing network to Chorus:
 - Dargaville
 - Cambridge
 - Te Awamutu
 - Huntly
 - Matamata
 - Taumarunui
 - Te Awamutu
 - Thames

- Tokoroa
- Waihi
- Whangamata
- Whitianga
- Waipukurau
- Hawera
- Westport
- Gore

25. In all cases but one we have been able to get acceptable pricing from Chorus. We are unable to get Chorus CRT to Westport and so we are paying considerably higher costs for an HSNS link.

METROPOLITAN

26. Metropolitan backhaul is almost exclusively Chorus and they have a clear monopoly.
27. The Commission has correctly described the local access nodes that are relevant. Vocus has not experienced any issues (other than the Christchurch issue detailed below) but this relies on the continued availability of the UFB DFAS service which is *'regulated'* by the CFH contract.
28. The advent of UFB has meant that there is an overlap between what is considered access and what is considered metropolitan backhaul.
29. Vocus, like Spark and others, supports a regulated UFB DFAS anchor product post 2020. Assuming this is the case, Vocus does not expect metropolitan backhaul issues to arise (provided previously mentioned issues such as handover, access consent and co-location issues are resolved). Regulated UFB DFAS enables competitors to Chorus to gain access at a reasonable price.
30. As the Commission notes (para 18) *"an RSP with infrastructure centralized in Auckland may, for example, require a layer 2 service of national, regional or metropolitan reach."*
31. If layer 1 services are available at a regulated price, then Vocus would expect that ourselves and other backhaul competitors will offer wholesale layer 2+ services on whatever basis a RSP requires. There is an active wholesale market for backhaul and Vocus already provides backhaul services, with a variety of pricing options, from exchanges to a number of RSPs.
32. As mentioned above, we have experienced one issue with getting access from our Christchurch POI in Chorus' exchange to Enable's UFB handover. Due to Enable being unable to enter Chorus Christchurch Hereford St and Riccarton exchanges, we are forced to meet Enable in a pit outside the exchanges. This has caused additional cost and time delay. At all other locations, we meet other carriers and LFCs inside the Chorus exchanges, avoiding delays and unnecessary costs.

UNDERSTANDING SUPPLY BACKHAUL SERVICES

Q7. We invite any comments on the existing suppliers of domestic backhaul services. We are particularly interested in the following: (i) the extent to which existing suppliers self-supply backhaul services; and (ii) any major changes that recently occurred, or are expected to occur in the foreseeable future, in the provision of domestic backhaul services?

Even with an extensive national network, Vocus is still very reliant on third parties, particularly Chorus, either for primary metropolitan backhaul purposes or diversity.



Q8. We also invite comments on expansion conditions in the provision of domestic backhaul services. We are particularly interested in:

- (i) any factors that could impede expansion in the provision of domestic backhaul services;
- (ii) whether excess capacity is available, and where;
- (iii) whether there is a lack in capacity for backhaul services such as mobile backhaul services
- (iv) and how long expansion to add capacity incrementally takes.

33. Vocus does not see any issue with respect to continuing to scale our own network to meet demand from customers in a timely manner.

Q9. Please explain

- (i) to what extent are transmission services currently supplied on a link-by-link basis, and to what extent is transmission services supplied as a national service?
- (ii) what are the drivers to supply backhaul services as a national service rather than the traditional link-by-link basis?; and
- (iii) Whether there is a developing trend towards supplying domestic backhaul on the basis of a national service rather than on a link-by-link basis

34. Vocus supplies transmission on either a link-to-link or a national basis. The driver for which option is the needs of the customers.

Q10. In the instance when a RSP requires a national deal from a non-Chorus provider, would that non-Chorus provider have to deal with Chorus to provide transmission capacity on a national level?

35. Generally for a national deal we would have some dependence on Chorus. However it depends on the requirements of the customer: -
- (a) If a RSP needed connectivity to the UBA handover points and UFB handover points nationwide then Vocus could provide an on-net solution.
 - (b) If a RSP required a national service from exchanges within our UCLL footprint we could provide the service but we would be reliant on underlying Chorus ICAB or third party links in many instances.

Q11. In your view, what is the likely impact of RBI and UFB on backhaul services eg, demand, supply, capacity, coverage and price?

Clearly large increases in demand for content are driving the need for higher capacity in the backhaul networks. Today we face continual requirements to invest to keep up with demand for backhaul services, and we expect this to continue. The demand for backhaul services is increasing as the access quality improves, driven for example by RBI.

UNDERSTANDING DEMAND

Q12. In your view, what non-price service attributes are important to demand for domestic backhaul services? Please explain your reasons.

Q13. In your view, what are the major recent changes and expected changes in the foreseeable future in the demand for domestic backhaul services?

Q14. For each of the options described, we invite comments, and evidence to support your comments, on:

(i) whether you agree with our description of the options available to purchase domestic backhaul; (ii) in your view, what drives the choice of each option;

(iii) the differences (if any) in the customers buying each of the options;

(iv) In your view what relative share of the backhaul market is purchased under each of the above options?

36. Vocus has built and provided services to customers on all of the options outlined in the paper. Connect8 is an example of where we share build: we also consider consortium build opportunities where appropriate.
37. We actively wholesale backhaul services to many RSPs. The arrangements may differ, with some link-by-link, some offering interconnect connectivity leveraging our caching capabilities, and some priced per broadband customer. It simply comes down to what a customer's needs are.

UNDERSTANDING HOW IT'S PRICED

Q15. Explain whether pricing structures are moving away from the traditional pricing model. If so, please explain the new alternative pricing structure(s) and the rationale for adopting new pricing structures.

38. Vocus anticipates that there will be a niche developing as cloud based computing evolves for bandwidth whereby customers have the ability to turn up and down capacity on demand or purchase bandwidth by time of day. This is a logical extension of 'bursting' which is common in commercial agreements.

OBSERVABLE PRICE TRENDS

Q16. In your view, what are the drivers of the significant drop in commercial backhaul prices in New Zealand?

39. Evidence of competition in the market

Q17. Are you concerned about any pricing behaviour in the provision of backhaul that may raise potential competition concerns?

Q18. Please provide evidence on any price differentials between routes that you would deem to be competitive and uncompetitive.

40. See earlier comments on Intra-regional pricing (para 24)

ASSESSMENT OF COMPETITION

Q19. We invite views on the criteria for assessment of competition for domestic backhaul services. We are particularly interested in your view on

the most appropriate criteria that should be used in future competition test assessments, and also what criteria should remain intact;

how far is close enough to a Chorus exchange to be a competitive constraint on Chorus and why?

41. At this time Vocus has no issue with the test based on competitor network within a distance of the Chorus exchange. There may be a case for reducing the distance but we do not have a considered view on what the distance should be at this point in time.