

Submission

In response to the Commerce
Commission's "Consultation paper –
Network footprint and demand, UCLL
and UBA pricing review
determinations"

WIK-Consult GmbH
Rhöndorfer Str. 68
53604 Bad Honnef
Germany

Bad Honnef, 5 October 2015

Contents

1 Introduction and acknowledgements	1
1.1 Introduction	1
1.2 Citation	1
2 The Commission's intention	3
3 Our conceptual view	5
4 Network footprint correction	6
5 Gap between network footprint and demand	7
6 Summary on questions of the Commission	10

1 Introduction and acknowledgements

1.1 Introduction

1. WIK-Consult has been appointed by Spark New Zealand (“Spark”) and Vodafone New Zealand (“Vodafone”) to support both companies in the course of the cost modelling and FPP process of the Commission. Nevertheless, this Submission is brought to the attention of the Commission as an independent expert report.
2. This Submission makes comments on the Commission’s recently published Consultation paper dealing with network footprint and demand. We refer to some of the arguments and analysis which we have provided in our previous Submissions and Cross-Submissions. Before referring to this background we will analyse and assess the Commission’s intended model changes.

1.2 Citation

3. To make citation a bit easier we use a few abbreviations. We refer to the Commission’s documents in the following way:
 - a) **Commission, Consultation paper of September 2015** stands for: Commerce Commission, Consultation paper – Network footprint and demand, UCLL and UBA pricing review determinations, 21 September 2015.
 - b) **Commission, UCLL July** stands for: Commerce Commission, Further draft pricing review determination for Chorus’ unbundled copper local loop service, Further draft determination, 2 July 2015.
 - c) **Commission, UBA July** stands for: Commerce Commission, Further draft pricing review determination for Chorus’ unbundled bitstream access service, Further draft determination, 2 July 2015.
4. We refer to our own Submissions and Cross-Submissions from previous consultations of the FPP process in the following way:
 - a) **WIK-Consult, Cross-Submission of 22 September 2015** stand for: Cross-Submission in response to the Commerce Commission’s “Further draft pricing review determination for Chorus’ unbundled bitstream access service” and “Further draft pricing review determination for Chorus’ unbundled copper local loop service” including the revised cost model and its reference documents, 22 September 2015.

- b) **WIK-Consult, Submission of 12 August 2015** stands for: Submission in response to the Commerce Commission’s “Further draft pricing review determination for Chorus’ unbundled bitstream access service” and “Further draft pricing review determination for Chorus’ unbundled copper local loop service” including the revised cost model and its reference documents, 12 August 2015.
 - c) **WIK-Consult, Submission of 20 February 2015** stands for: Submission in response to the Commerce Commission’s “Draft pricing review determination for Chorus’ unbundled bitstream access service” and “Draft pricing review determination for Chorus’ unbundled copper local loop service’ including the cost model and its reference documents, 20 February 2015.
 - d) **WIK-Consult, Cross-Submission of 19 March 2015** stands for: WIK-Consult, Cross-Submission in response to the Commerce Commission’s “Draft pricing review determination for Chorus’ unbundled bitstream access service” and “Draft pricing review determination for Chorus’ unbundled copper local loop service” including the cost model and its reference documents, 19 March 2015.
 - e) **WIK-Consult, Submission of 4 August 2014** stands for: WIK-Consult, Submission in response to the Commerce Commission’s “Consultation paper outlining our proposed view on regulatory framework and modelling approach for UBA and UCLL services (9 July 2014)”
5. We refer to Submissions and Cross-Submissions of market participants in the following way:
- a) **Spark, Submission of 13 August 2015** stands for: Submission to the Commerce Commission, Further draft pricing review determination for Chorus’ UBA and UCLL services, 13 August 2015.
6. All other documents which we cite are fully documented wherever we refer to them.
7. If we reference within the text to a “para. #” it means a paragraph in this Submission.

2 The Commission's intention

8. The Commission plans to make certain corrections to the address points included in the UCLL network footprint after consultation in order to exclude address points representative of vacant sites and include multiple network connections at a single address point. After further work with its geospatial experts to correct the network footprint, the Commission, however, is not satisfied with the resulting gap between network footprint and demand. Therefore, it intends to make a further correction as a “compensatory measure” to reduce (actual) demand. With this compensatory measure the Commission aims to achieve a predetermined relation between network footprint and demand.
9. The original intention of the Commission was to model a network coverage which would connect all buildings along New Zealand's road network.¹ The Commission implemented this intention in the model by using a geo-spatial database (provided by Corelogic) on address points and the road network. The Commission identified two potential issues with its approach: the approach may include address points without any building ('vacant sites') and may exclude multiple network connections at a single address point ('under-counting').²
10. Upon comments of parties in their August 2015 Submissions the Commission further investigated potential errors in determining its UCLL network footprint.³ The Commission found that 102,890 address points are included in the network footprint that are categorised by Corelogic as either 'vacant' or 'likely vacant'. The Commission decided to remove those address points from the network footprint. We agree with this decision of the Commission. The network should not connect address points which do not represent demand.
11. Two fibres per dwelling is a lead-in dimensioning we agree with. Therefore we agree to the Commission's statement in para. 15.2 of the Commission's Consultation paper of September 2015.
12. The Commission's decision to correct the network coverage by removing vacant sites from the network footprint reduced the gap between connections (network footprint) and customers (actual demand) from 8.6% to 3.6%.⁴
13. From Statistics New Zealand's latest Census data (for 2013) the Commission is aware of a share of about 7.5% unoccupied residential dwellings. The Commission then takes this share as an accurate representation of the appropriate gap between network footprint and demand. To achieve this outcome, the Commission intends to adjust actual demand downwards in the model such that the target gap is

¹ See Commission, UCLL July, para. 953.

² See Commission, UCLL July, para. 956f.

³ See Commission, Consultation paper of September 2015, para. 14f.

⁴ See Commission, Consultation paper of September 2015, para. 17.

achieved.⁵ Effectively the Commission proposes to reduce real and actual demand artificially by 73,271 customers.

⁵ See Commission, Consultation paper of September 2015, para. 21 and 23.

3 Our conceptual view

14. From our point of view, and as set out in our conceptual arguments we conclude that the Commission should not be concerned about a small gap between network coverage and demand. We developed and presented arguments to support this conclusion in previous Submissions⁶ and Cross-Submissions.⁷ We repeatedly have argued that ideally, the appropriate network footprint of the HEO should cover 100% of actual demand, not more and not less. There should be no difference, if the data is accurate, between the number of connections over which the total modelled cost should be spread and the number of connections which determines the footprint of the network.⁸ In the real world, of course, inaccuracies in measurement, timing, and estimation mean that there may be a small gap between network coverage and demand in the model parameters.
15. Accordingly, we have addressed the presence of a gap between network footprint and actual demand as, in effect, a conceptual error in the model. We stated in our August 2015 Submission:

“If the HEO’s network covers a larger footprint than the one determined by actual demand, the incremental costs of covering the difference in demand has to be regarded as an investment which the HEO undertakes to meet the difference between potential and actual demand with a certain probability. The cost and risk of that incremental investment should be covered by the HEO and the potential revenues of potential demand. It is inappropriate that actual demand has to cover those costs. This holds in particular under the constant demand assumption of the Commission.”⁹

16. This statement still describes our current view. It follows that the Commission should not be concerned about a small gap between network footprint and actual demand. From a conceptual point of view the Commission could even target a gap of zero, if the evidence is available to support it. Current users should not pay for an extension of the network footprint to potential users in future. That is an (incremental) investment which the HEO has to perform on its own risk and assessment of getting it rewarded from potential users in the future. There is no reason why current users should pay for rewarding this (incremental) investment.

⁶ WIK-Consult, Submission of 12 August 2015, 20 February 2015 and 4 August 2014.

⁷ WIK-Consult, Cross-Submission of 19 March 2015 and 22 September 2015.

⁸ See also similar arguments made by Spark, Submission of 13 August 2015, para. 110ff.

⁹ WIK-Consult, Submission of 12 August 2015, para. 353.

4 Network footprint correction

17. Following our conceptual view we fully support the Commission's approach of correcting the UCLL network footprint by removing address points that belong to vacant sites.

5 Gap between network footprint and demand

18. The Commission is of the view that the resulting gap between network footprint connections and actual demand of 3.6% is not consistent with the Statistics New Zealand's latest Census data on unoccupied residential dwellings or its statement that "about three-quarters had no occupants at all", (which the Commission has taken as representing a gap of 7.5%).
19. For us it is not a surprise that statistical results using different sources from different data base information sets lead to different results. This follows from different definitions, different data gathering processes, different qualifying dates and many other reasons. The Commission does not provide any argument or assessment why the gap generated by Statistic New Zealand is more appropriate than the one generated by Corelogic. Our colleagues from Network Strategies have identified a number of reasons why the gap generated by the Statistics New Zealand data would not give rise to a reliable estimate.¹⁰ Network Strategies also has worked out that the rate of unoccupied business premises is significantly less than that of residential dwellings. Unoccupied residential dwellings is therefore not representative for all buildings in New Zealand.
20. There are indications, that a gap significantly lower than 7.5% appropriately reflects the situation in New Zealand. The New Zealand Census' data relating to unoccupied dwellings base on the following definition: "*Unoccupied dwellings: private dwellings that were empty or whose occupants were all away temporarily at the time of the census.*"¹¹ While the Commission (correctly) deducted one quarter of dwellings classified as unoccupied because all the occupants were temporarily away at the time of the Census,¹² it considered about three quarters which had no occupants at all. It did not exclude holiday homes and second dwellings. The Commission's assumption that all these empty dwellings should not be counted in demand is inappropriate for a variety of reasons. Empty dwellings of the last categories sometimes still have a fixed line connection paid by the owner although that dwelling is empty for some time. This follows from the avoidance of transaction costs and also for marketing reasons: It can be essential for re-renting a dwelling that it has a broadband connection. Customers expect a functioning fixed line and do not accept waiting for a new connection for several days or weeks. For these reasons a 7.5% gap significantly overestimates the amount of unconnected dwellings.

¹⁰ See Network Strategies, Network footprint and demand, Report for Spark New Zealand and Vodafone New Zealand, October 2015, Sections 2 and 3.

¹¹ <http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-about-housing/definitions.aspx>.

¹² See Commission, Consultation paper of September 2015, Footnote 10.

21. Although the degree of unoccupied dwellings is characterised by a lot of national specificities, small gaps of a few percentage points are not uncommon in other jurisdictions. For example the rate of unoccupied dwellings in the UK amounted to 2.6% in 2014.¹³ In the Netherlands it was even as low as 1.5% and in Sweden 1.7% in 2009.¹⁴ There are of course also examples which can be identified which exceed 7.5%. In short, a gap of 3.6%, based on sound adjustments to the Corelogic data set falls into a plausible range based on high level comparisons.
22. Another aspect also has to be considered: In some countries dwellings are classified as unoccupied if they are offered for rental, even if they are still occupied.¹⁵ We cannot evaluate whether this is also done in the New Zealand Census, but this represents an additional potential source of overestimation when assessing the level of the gap in New Zealand.
23. Besides this statistical identification problem of the “correct” gap we are more concerned about the approach to making the adjustment which the Commission intends to implement. Effectively the Commission is unsatisfied with the accuracy of its network footprint estimate. The two database approaches to which the Commission refers both relate to the network footprint, and yet generate divergent results.
24. To make the relationship between actual demand and network footprint (“the gap”) compatible with the gap which is appropriate in the Commission’s view, the Commission does not propose to correct the network footprint in the model. Instead, it proposes to change the level of the actual demand, and intends to reduce it by 73,271 connections. This is methodologically incorrect and inappropriate in our view.
25. If the Commission intends to adjust to achieve a certain gap it has to adjust its network footprint. We conceptually reject the need to normalise the data to any particular point as a necessity for the reasons set out above. The level of actual demand is a hard fact based on actual operator data. It is inappropriate in our view to artificially adjust it. Instead, only if there was strong and reliable evidence to support it, and only for consideration as a third best adjustment, the Commission would have to expand the network footprint from a 3.6% gap to a 7.5% gap.
26. We acknowledge that the approach developed in para. 25 sounds as arbitrary as the one proposed by the Commission. In fact, it is more methodologically sound. The difference is that this approach addresses the problem (if there is one) directly

¹³ <http://www.emptyhomes.com/wp-content/uploads/2011/05/Empty-homes-in-England.pdf>, p. 6

¹⁴ Housing statistics in the European Union, http://www.bmwf.w.gv.at/Wirtschaftspolitik/Wohnungspolitik/Documents/housing_statistics_in_the_european_union_2010.pdf, page 63.

¹⁵ Housing statistics in the European Union, http://www.bmwf.w.gv.at/Wirtschaftspolitik/Wohnungspolitik/Documents/housing_statistics_in_the_european_union_2010.pdf, p. 124f.

at the point where it occurs and does not lead to an additional compensating distortion.

27. Only if the Commission can be properly satisfied with the completeness and reliability of the evidence that the gap should be greater than 3.6% should it make an adjustment. Cost modelling often has to deal with the situation that the exact location of buildings which the network has to pass are not known and estimates or adjustments must be made. This situation typically happens if the address points information used is newer than the building data relied on. In our experience, the usual technique which can be used in this case is to distribute the demand on to the address points deleted before in an equal random manner.
28. If, and only if, the Commission can reasonably conclude the proposed adjustment to achieve a 7.5% gap between network coverage and actual demand can clearly be relied on to increase accuracy, we recommend that the Commission applies this distribution approach to expand network coverage from a gap of 3.6%.

6 Summary on questions of the Commission

29. Question 1: Do you agree that a 3.6% gap between the UCLL footprint and demand is too small, and an adjustment should be made?

We do not agree that a 3.6% gap is too small or that this gap necessarily implies that an adjustment need be made. For the conceptual reasons set out above (and in our earlier submissions), if completely accurate information is available, we believe the Commission could accept a gap of 0%. Therefore there is no need at all to make an adjustment. Given that absence of completely accurate information, we recommend that the Commission should, as a second best approach, make no further adjustment and accept the 3.6% gap as the best estimate of the gap based on the most reliable information available to it.

30. Question 2: We have Census data that suggests that the gap between the UCLL footprint and demand is closer to 7.5%. Do you support this statistic? Do you have any other data sources that support a different gap?

We note that the statistic is based on a range of classification standards used by Statistics New Zealand consistent with international principles for population and housing census compilation. This approach to data gathering may not be sufficiently accurate or relevant for use in the estimation of the network footprint for the construction of a TSLRIC model. Accordingly, based on the information available, we do not support the use of this statistic in the current process.

There are a variety of reasons why the Corelogic data and the Statistics New Zealand data may lead to divergent results. Our colleagues from Network Strategies have described a variety of reasons why the Statistics New Zealand data do not provide most reliable information for use in estimating the UCLL network footprint. Even a short term absence of the occupants can result in being classified as “unoccupied” respectively “empty”. These definitions may be useful for statistical reasons, but are not fit for purpose when designing telecommunication access networks. In particular data constructed using NZ Statistics’ standard definitions, is not representative for decisions on the connection status of business premises. The Commission should therefore rely on the corrected Corelogic data base information as the most reliable information available to it. We are unaware of other data sources which could be used to develop a better estimate.

31. Question 3: Do you agree with our proposed adjustment to demand? Do you have any alternative methods for implementing a gap between footprint and demand?

In our view, and for the reasons detailed in our submission, the adjustment on the demand connections which the Commission is intending to conduct is methodologically incorrect. We have detailed our first best (conceptual), and second best (pragmatic) recommendations in our submission and summarised them above.

If the Commission decides not to follow our preferred practical recommendation, (to rely solely on the corrected Corelogic data), and, only if it can reasonably satisfy itself as to the accuracy and relevance of the NZ Statistics data, we think there is an alternative method to implement the gap. Only where reliable and relevant data is available, we recommend, (as a third best approach only), to make an adjustment for a gap between footprint and demand first by fixing the level of demand based on the demand data already available, and then to adjust the network footprint upward on the basis of a statistical approach. In short, the Commission should then distribute the demand on to the address points which were previously deleted before in an equal random manner to achieve the level of the gap which can reasonably be supported based on reliable data estimating the quantum of the gap.

Imprint

WIK-Consult GmbH
Rhöndorfer Str. 68
53604 Bad Honnef
Germany
Phone: +49 2224 9225-0
Fax: +49 2224 9225-63
eMail: info(at)wik-consult.com
www.wik-consult.com

Person authorised to sign on behalf of the organisation

General Manager and Director Dr. Iris Henseler-Unger

Director
Head of Department Postal
Services, Logistics, and Transport Alex Kalevi Dieke

Director
Head of Department Regulation
and Competition Dr. Ulrich Stumpf

Head of Administration Karl-Hubert Strüver

Chairman of the Supervisory Board Winfried Ulmen

Registered at Amtsgericht Siegburg, HRB 7043

Tax No. 222/5751/0926

VAT-ID DE 123 383 795