TelstraClear Limited

Response to the draft Determination on the proposed price and non-price terms for access to and interconnection with Telecom's fixed PDN and access to Telecom's fixed PDN backhaul ("Wholesale Bitstream")

20 May 2005

PUBLIC VERSION

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2. EXECUTIVE SUMMARY

1. TelstraClear believes that a determination by the Commission in the terms set out in the Draft Determination issued on 21 April 2005 (**the Draft Determination**) would be a substantial step towards addressing the deficiencies in the Telecom commercial UBS service which have held back competitors entering and competing more effectively in downstream broadband markets.

2. However, TelstraClear also believes that there are matters raised in the Draft Determination where the Commission needs to go further if the step change in wholesale competition, which the Government seeks by the end of this year, is to be achieved.

3. While TelstraClear agrees with much of the Commission's approach to calculating the wholesale price, we believe that the wholesale prices end up being uncompetitively high for the following reasons:

   (a) separately calculating wholesale prices for business and residential end users inappropriately embeds Telecom's current retail pricing strategy (to charge significantly higher rates to business customers) in upstream input pricing;

   (b) any method of deriving the imputed retail prices from Telecom's existing retail prices must, consistently with Clause 3 of Schedule 1 of the Telecommunications Act 2001 (**the Act**), avoid distorting the wholesale price by the excessive rents which, as the MED's international benchmarking shows, Telecom has been able to extract because it faces limited competition;

   (c) the Commission's proposed straight line regression to identify and remove transmission charges is not appropriate because there is not a constant per megabyte price across all JetStream plans; and

   (d) instead, the simpler arithmetic approach set out in the annexed report by Network Strategies more effectively and robustly addresses the deduction of the national and international capacity and the risk of excessive rents.

4. While TelstraClear agrees with the Commission's proposed requirement that sundry charges (e.g., the reassignment 'churn' charge) should be calculated on the basis of incremental costs (not including common costs), it is unrealistic to expect a negotiated outcome if the TelstraClear commercial team is not given access to Telecom's claimed costs.

5. TelstraClear supports the Commission's proposed requirement for equivalency between OSS used for retail and wholesale services. However, TelstraClear believes that the overseas experience of the development of similar systems and the problems and delays in the industry developing industry solutions in New Zealand (as experienced for number portability) suggest that closer involvement by the Commission is required. TelstraClear requests that the Commission:

   (a) specify that the equivalence principle should be implemented, to the extent reasonably feasible, by electronic solutions; that an industry working group consider electronic versions which are appropriate for small and large operators, as in Australia and as with local and mobile number portability in New Zealand; and that the target date for implementation of the full OSS solution should be 18 months from the date of the final determination;

   (b) determine an interim OSS solution for electronic exchange of data crucial to the start-up of competition while the industry negotiates a final solution on OSS. While Telecom has indicated publicly that the reason it has not met its wholesale targets is because TelstraClear is standing out of the market, if a basic level of electronic exchange of data is not immediately put in place, TelstraClear would not be able to sign the volume of customers needed to achieve the wholesaling target;

   (c) make a determination on the costs of OSS consistent with the Commission's findings with regards to on-set costs in other contexts, such as number portability (i.e. each party to bear their own costs); and

   (d) as the interim OSS does not meet the Commission's equivalency requirements and the Standard Access Principles TelstraClear considers that the Commission should require Telecom to provide a rebate against inter-operator OSS charges to help offset the higher costs TelstraClear faces. This approach would be consistent with the principle in clause 3 of Schedule 1 that Telecom should not be able to recover "inefficiencies in the provision of the service giving rise to higher costs" and will provide Telecom with an incentive to implement that full OSS solution.

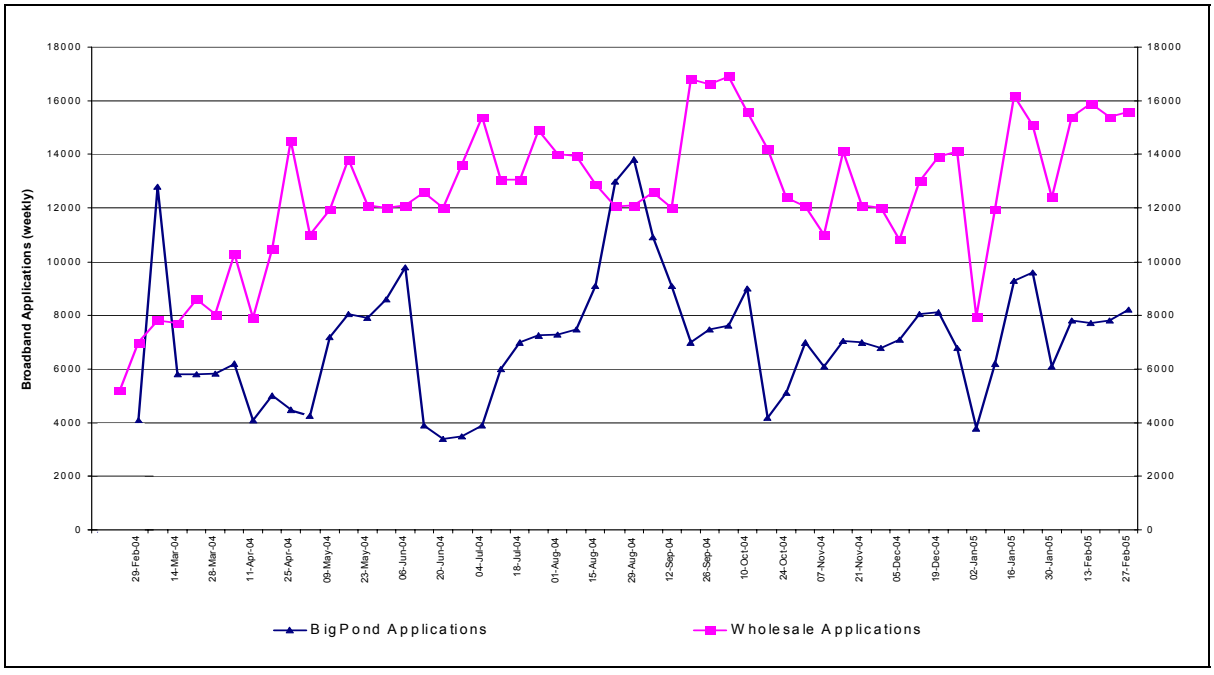
3. INTRODUCTION

6. The Commission's determination of the price and non-price supply terms for the wholesale bitstream service is timely. As the Minister for Communications has recently commented in relation to Telecom's residential broadband customer connections target "Telecom will get there on the 250,000 but is not on the current track to make the wholesaling target".

7. The failure to develop a vibrant wholesale market for broadband services is having a clear impact on broadband penetration in New Zealand. International data set out in Annex 1 shows that, despite growth in broadband services overall, New Zealand continues to fall further behind other countries in international comparisons of broadband penetration.

8. While Telecom is struggling to reach half of its 30% wholesale target, as figure 1 shows, there has continued to be a steady increase in the proportion of all Telstra new DSL applications represented by wholesale services, with wholesale now representing over 65% of all new applications today. BT's wholesale DSL service also account for 65% of the broadband market.

Figure 1: Telstra Retail and Wholesale DSL Applications 2004-2005



[Source: ACCC Report to the Senate on the decision not to take further enforcement action in relation to the part A competition notice issued to Telstra Corporation on 19 March 2004, 10 May 2005]

9. The supply terms for the wholesale bitstream service proposed by the Commission in its draft Wholesale Bitstream Determination will represent a necessary and substantial step towards achieving effective broadband competition in New

Zealand. However, TelstraClear believes that the Commission needs to go further if the step-change in wholesale services which the Government seeks by the end of this year is to be achieved.

10. Some of the Commission's proposed terms conform to world's best practice, such as the requirement for monitoring retail and wholesale service comparability, and the requirement for an unrate shaped service seems to establish a new international benchmark for regulated wholesale bitstream services. However, the Commission's proposal to leave the development of Operational Support Systems (**OSS**) to the Telecommunications' Carrier Forum (**TCF**) with limited guidance from or oversight by the Commission fails to take account of the overseas experience and the poor record in New Zealand of industry attempts to develop other industry solutions, such as number portability.

11. Further, while TelstraClear agrees with much of the Commission's pricing methodology, imputing the baseline retail price from all of Telecom's current retail prices distorts the wholesale price by flowing through Telecom's excessive retail pricing (when benchmarked internationally) which the wholesale bitstream service is designed to compete out. Competitors are likely to immediately face a price squeeze under the Commission's proposals.

12. The main body of the submission deals only with the matters on which TelstraClear either disagrees with the Commission or has further substantive views to put. Annex 2 lists TelstraClear's position on each of the proposed terms.

13. This public version of TelstraClear's submission has had removed from it:

    (a) TelstraClear-designated Restricted Information (**TCLRI**);

    (b) Telecom-designed Restricted Information (**TCNZRI**); and

    (c) Information that is both Telstra-Clear designated Restricted Information and Telecom-designated Restricted Information (**TCNZRI&TCLRI**).

    The material comprising TCLRI, TCNZRI and TCNZRI&TCLRI was provided to the Commission in accordance with clause 8 of the Commission's Confidentiality Order dated 9 November 2004, and is categorised as financial and cost/price .

4. MARKET DEFINITION AND COMPETITION ASSESSMENT

14. TelstraClear agrees with the Commission's proposed national market for wholesale bitstream services.

4.1 Product Dimension

Question 1: To what extent should the relevant wholesale product market be more broadly defined than bitstream only? In particular, please comment on the preliminary view that ADSL, cable, fibre and FWA-based broadband services should be included in the same market?

15. TelstraClear agrees with the Commission that cable-based access is in the same downstream retail market as DSL retail services. TelstraClear currently offers a cable-based wholesale service in Wellington.

16. TelstraClear agrees with the Commission that 3G services are not in the same wholesale access market as wholesale bitstream. In addition to the pricing differentials identified by the Commission, the speeds consistently achievable on 3G are substantially slower than the speeds achievable on DSL: if a 3G user is standing still, is the only one or one of the few users in the 3G cell and all other conditions are favourable, the download speed which is achievable is normally in the range of 64-256kbps. 3G services also suffer from the same shared spectrum problems as fixed wireless (**FWA**), and probably more so: if a number of 3G users concurrently download a bandwidth intensive service, not only will the limited available capacity in the cell be consumed, but the cell coverage area may actually shrink, leaving users further from the base station without service, including for lower intensity services such as voice and SMS (this is called "cell breathing").

17. TelstraClear agrees with the Commission that, contrary to Telecom's assertion, there is not a break in the chain of substitution in wholesale bitstream services based on speed. Shaping the wholesale bitstream service into different speed combinations is an activity downstream from the unbundled wholesale bitstream service that is undertaken by the retail competitor (or a downstream wholesaler) to create retail (or resale) products. The higher retail charges that Telecom or other operators such as Wired Country apply to services above 1 Mbits reflects their current perceptions of what retail consumers will pay for the convenience of faster downloading, along with higher costs of national and international transmission unrelated to the access component of the service.

18. Retail pricing of an end-to-end finished product should have no bearing on the pricing of an unbundled upstream access input. Current consumer expectations

about price and speed are also likely to have been shaped by the pricing which prevailed in the current uncompetitive market. The opportunities for innovation which wholesale bitstream was meant to bring would be undermined if future competitive strategies were constrained by current market behaviour.

19. TelstraClear agrees that asymmetric services supplied over fibre network are in the same market as downstream ADSL services. However, as we discuss below, we do not believe that asymmetrical services provided over fibre networks are a significant competitive constraint on Telecom due to the high cost and limited current and future reach of fibre.

4.1.1 Asymmetrical vs Symmetrical Services

Question 2: Bearing in mind the pricing referred to above, to what extent are symmetric and asymmetric services substitutable?

20. Both demand side and supply side factors strongly point to symmetrical and asymmetrical services being in separate markets.

4.1.2 Demand side

21. While Telecom currently does not offer a symmetrical DSL service, the symmetrical broadband services offered by some other operators are priced substantially above Telecom Jetstream services with the same download speed. The price of the 1 Mbps symmetrical service offered by Actrix over fibre is over 20% higher than the price of Telecom's asymmetric service with a higher down channel speed of 2-8 Mbps but a slower upchannel speed of 600 kbps[1]. The 1 Mbit symmetrical service offered by Wave on the Wired Country network has the same data cap as the Telecom asymmetrical service, but is over 50 per cent more expensive.[2]

22. The "traditional" symmetrical data services that Telecom offers are significantly above its retail Jetstream prices.

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1 The Actrix service has a higher download cap of 1 Mbps than the 600 MB cap for the Telecom service, which may also explain the price differential. However, the higher data cap also reflects the different, more data intensive uses to which the symmetrical service can be put compared to an asymmetrical service, even with much higher download speeds than the symmetrical service.

2 The Wave service appears to include some web services that may not be included in the Telecom service, which also may explain some of the price differential.

Figure 2: Retail prices for Telecom asymmetrical DSL services and traditional symmetrical data services

Price comparison (based on Average Model Price [3])	**Jetstream price ($ per month)**	**Frame Relay price ($ per month)**	**Difference**
Jetstream Every day (1024/128) compared with a 1 meg Frame Relay with CIR[4] of 128k assuming a CBD location, local transmission)	**[ ] [TCNZRI&TCLRI]**	**[ ] [TCNZRI&TCLRI]**	**[ ] [TCNZRI&TCLRI]**
Jetstream Plus (2048/128) compared with a 2 meg Frame Relay with CIR of 128k (assuming a CBD location, local transmission)	**[ ] [TCNZRI&TCLRI]**	**[ ] [TCNZRI&TCLRI]**	**[ ] [TCNZRI&TCLRI]**

23. Overseas, symmetrical wholesale DSL services are typically priced above asymmetrical wholesale services. As figure 3 shows, Telstra's wholesale price for the symmetric 512kbps wholesale DSL services is nearly one and a half times the price of the 512kbps asymmetric wholesale DSL service and equal to the price of an asymmetrical service with 3 times the downchannel speed.

Figure 3: Telstra's Wholesale DSL Service Prices – Symmetrical and Asymmetrical Services[5]

ADSL Downstream/upstream Rate	**Monthly Usage**	**Price (AUD)**
256/64K	0-300MB	13.50
256/64K	>300MB	29.77
512/128K	0-440MB	23.28
512/128K	>440MB	39.45
512/512	All	54.00
1500/256K	0-550MB	38.35
1500/256K	551MB-10GB	54.74

[3] DSPL 8, 16 March 2005.
[4] CIR is the Committed Information Rate.
[5] TelstraClear Wholesale eCRA 71A, page 14.

ADSL Downstream/upstream Rate	Monthly Usage	Price (AUD)
1500/256K	>10GB	70.61

24. The higher quality and more bandwidth provided by symmetrical DSL does mean that any service provided over ADSL can be also provided over symmetrical DSL. But the reverse is not the case. The very reason symmetrical services are in a different product market to asymmetrical services is because symmetrical services do much more than the asymmetrical services. Symmetrical and asymmetrical services may be on a continuum, but they involve a clear trade-off between price and quality and are therefore not close substitutes. As Ofcom stated:

> *"[symmetrical and asymmetrical services are] likely to be used by different customers for different purposes. For example, asymmetric access may be preferred over symmetric access because the customer does not have high upload requirements and so is unwilling to pay the price premium for symmetric services."* [6]

25. The Commission's decision to limit the upchannel of the wholesale bitstream service to 128 kbps was precisely for the purpose of ensuring that the regulated service could not be used to supply downstream applications that can be provided over symmetrical DSL services.

4.1.3 Supply-side

26. The network infrastructure required to support high speed, high quality symmetrical services are substantially more costly than the network infrastructure required to support asymmetrical services. As discussed in TelstraClear's Initial Submission, the retail prices of Jetstream services would have to rise by over **[ ][TCLRI]** to economically justify the costs of TelstraClear connecting customers to its existing business networks.[7] For similar reasons, Ofcom concluded that fibre-based networks did not constrain BT's market power in the market for asymmetrical broadband services:

> *"On the supply side, it is technically feasible for symmetric service providers to offer asymmetric services using their existing infrastructure and existing*

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[6] Review of the Wholesale Broadband Access Markets, Identification and Analysis of Markets, Determination of Market Power and Setting of SMP Conditions, Final Explanatory Statement and Notification, 13 May 2004, (Ofcom Broadband Market Review), at paras 2.85 and 2.91.

[7] TelstraClear Initial Submission, 16 December 2005, para 119.

wholesale product. But it would involve them in using their capacity inefficiently, i.e. offering an asymmetric service over symmetric capacity. This exacerbates the cost disadvantage that symmetric services face relative to asymmetric services. Therefore, such supply is likely to be unprofitable and supply side substitution would not provide a competitive constraint."[8]

27. FWA networks are being used to provide some symmetrical services, but symmetrical services exacerbate the shared spectrum problems of FWA identified by the Commission. Available capacity is being consumed by end users in both directions, sometime simultaneously when two-way data intensive services are being used, such as video conferencing. While Private IP and Frame Relay are both carried over FWA, these services are very symmetrical and also consume significant capacity in both directions.

4.2 Geographic Dimension

Question 3: To what extent is Telecom's commercial UBS pricing geographically differentiated?

28. Telecom and TelstraClear have negotiated extensively on UBS pricing and Telecom has never offered TelstraClear geographically de-averaged pricing. As TelstraClear has the largest alternative network in New Zealand, it would be expected that if Telecom, as it alleges, is constrained by alternative networks in its wholesale pricing, it would have offered TelstraClear geographically de-averaged UBS prices.

29. In any event, Telecom does not contest that it prices its retail broadband access services on a national basis. This, in itself, is a strong indicator that there is a single national market for wholesale services. Wholesale markets are derived markets and the geographical scope of wholesale and retail markets generally should be the same. As Ofcom observed in May 2004:

"... the analysis of retail market definitions is logically prior to the definition of the wholesale markets. This is because the demand for the wholesale service is derived demand, i.e. the level of demand for the wholesale input depends on the demand for the retail service ... [T]he relevant wholesale market will generally,

[8] Ofcom Broadband Market Review, para 2.91.

although not necessarily, be as broad as the demand side substitutes in the relevant retail market".[9]

30. If, as Telecom alleges, separate wholesale markets did exist, Telecom would be expected to respond to competitive forces with nationally de-averaged retail prices, in response to competing operators' capacity to offer different retail prices in different regions due to different wholesale input costs. Whatever the wholesale prices offered or whether competitors are present in different geographical regions, Telecom continues to price downstream retail services on a national basis because it is unconstrained by competition. As Ofcom commented, it may not be appropriate to define markets for broadband services solely through an analysis of supply and demand substitution made possible by alternative network infrastructure in particular areas:

> "*... limiting the market definition exercise to demand and supply side substitution may have the effect of narrowing the geographic scope of the market due to the limited ability of consumers and alternative providers to demand or supply substitute. In general, in the telecommunications sector, defining a market solely by reference to demand side and supply side substitution tends to lead to unduly narrow models being defined.*"[10]

4.3 Competition Assessment

Question 4: Comment is sought on the preliminary assessment of competition in the defined market, in particular, in relation to the competition criteria listed in the Draft Wholesale Bitstream Determination.

31. TelstraClear agrees with the competition assessment criteria listed by the Commission for existing competition and potential competition, with the following comments:

(a) *the extent to which there is product differentiation*: Wholesale products, of course, are relatively undifferentiated, but product differentiation remains important in decisions about wholesale regulation. First, access to unbundled elements provides the opportunity for more product

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9 Ofcom Review of the Wholesale Broadband Access Markets: Final Explanatory Statement and Notification, May 2004, paragraph 2.17.

10 Ofcom Review of the Wholesale Broadband Access Markets: Final Explanatory Statement and Notification, May 2004, paragraph 2.12.8.

differentiation than currently exists and therefore providing access to unbundled elements will, consistently with the section 18 objective, "promote competition". Conversely, the lack of access to unbundled elements is an impairment to workable or effective competition. Second, the minimal opportunity for product differentiation in the case of simple resale compared to unbundled services is a reason (in addition to the reason discussed in paragraph (b) below) to discount resale market shares when considering the competitiveness of wholesale markets; and

(b) *the constraints imposed by the regulatory environment*: In assessing the competitiveness of a market for the purposes of deciding whether to impose access regulation, resale or unbundled services provided on the incumbent's network should be treated as part of the incumbent's market share. Otherwise, the assessment would be circular.

32. Based on the criteria identified by the Commission, TelstraClear agrees with the Commission's view that Telecom faces limited competition in the supply of wholesale bitstream service.

33. Telecom appears to read the Schedule 1 threshold test "faces limited competition" as if it reads "faces **no** competition". Telecom argues that the presence of a single competitor not only defines a separate sub-national market but means it no longer faces competition in that market.

34. However, the Schedule 1 test clearly contemplates that Telecom faces some competition in the relevant market and requires a judgment by the Commission about the degree of competition. The Commission has previously determined that limited competition means an impairment of "workable or effective competition".[11]

35. Given this definition of limited competition, the Commission correctly concludes that the recent reductions in Telecom's Jetstream pricing and the increase in data caps is not necessarily evidence that Telecom no longer faces limited competition. As the Schedule 1 test contemplates Telecom can face some, although not enough competition, some pricing response to competition (such as it is) is not inconsistent with an assessment that the market has not yet reached the point of being workably competitive. As the Commission also points out, Telecom may be reacting to the threat of regulation rather than competitive pressure. Further, Telecom may be pricing to pre-empt the spread of competition and to protect its

[11] Business Wholesale Determination (Decision 497), para 298.

existing customer base.

36. In a national market, none of the alternative network operators with their limited geographic reach can provide a significant competitive constraint on Telecom. However, even on Telecom's view of sub-national markets, Telecom continues to face limited competition in sub-national markets:

    (a) Telecom continues to charge the same retail price in areas where there is alternative infrastructure as it charges in areas where it is the only supplier;

    (b) TelstraClear agrees with the Commission that within their coverage areas, the FWA operators do not provide an effective competitive constraint on Telecom due the technical constraints of wireless; and

37. TelstraClear also believes that fibre networks do not provide an effective competitive constraint on Telecom in the supply of asymmetrical services because, as discussed above, while fibre networks can be used to provide asymmetrical services, they are much higher cost than Telecom's copper network. Fibre-based providers may offer asymmetrical services, but, as United Networks/Tangent was careful to say in its recent press release, the services are limited to buildings that are already connected to their networks[12]. The asymmetrical service is being offered as an incremental service where revenue from other services, such as symmetrical data services, have already justified connection to a multi-tenanted building.

[12] "Vector lights up business broadband", NZ Herald, 26 May 2005 or http://www.vectornetworks.co.nz/news/69/.

5. APPLICATION OF THE INITIAL PRICING PRINCIPLES

38. TelstraClear agrees with the Commission's methodology to derive the unbundled retail price component which is comparable to the wholesale bitstream service, but TelstraClear disagrees with:

(a) separate pricing for residential and business customers;

(b) the calculation of the residential and business starting prices based on the full range of current Telecom retail prices; and

(c) the Commission's regression analysis method of imputing the retail price.

5.1 Uniform Wholesale Price

39. The Commission appears to have misunderstood TelstraClear's position when the Commission states that "[t]he Commission accepts the position of the parties that a separate wholesale bitstream access price is appropriate for residential and business customers".[13]

40. TelstraClear did not disagree with the Commission's proposal to establish a single wholesale price for wholesale bitstream services for business and residential end users. We disagreed because Telecom's downstream retail decision-making about slicing customer segments and the relative pricing between them would distort competitors' own decision-making.

41. We disagree with separate residential and business wholesale prices for the very same reason. For example, a major target market for wholesale bitstream services is SMEs. Telecom, in effect, sub-divides the SME customer segment between residential and business services by defining SOHOs with three or less PSTN lines to be residential customers. TelstraClear (and other competitors) might shift the distinction between residential and business customers to move more SOHO into the business category or more SME into a residential or lower tier pricing category. Sometimes TelstraClear may be better off and sometimes worse off under the Commission's proposed approach, but that is not the point. Our flexibility to define our own downstream retail customer categories (or not to have any) will be constrained by the Telecom retail definitions. The distortion, based on customer numbers given the prevalence of SMEs in the New Zealand economy, may well be as significant as the Commission's original proposal to average business and

[13] Draft Wholesale Bitstream Determination, para. 164.

residential retail prices.

42. The Commission's approach also seems inconsistent with other statements made in the Draft Wholesale Bitstream Determination. The Commission rejected Telecom's argument that the product market should be sub-divided into business and residential markets because:

> *"[a] bitstream service as an input to a retail service does not differ depending on the classification of the end user as either residential or business. Differences in the level of customer support may distinguish between retail customer groups, but these are features of delivery of the retail service, rather than relating to the upstream input."*[14]

43. The Commission's approach is also inconsistent with the approach taken by regulators and access providers in other countries to the pricing of wholesale bitstream services. As set out in the attached report, Network Strategies examined wholesale bitstream pricing of incumbent operators in 9 countries[15] and concluded that it:

> *" ...has not found any operator which charges different prices for the same product depending on whether end users are business or residential customers. At the same time, it is apparent that certain product offerings are designed for different end-user segments (typically the contention ratio – for example BT's Home and Office offerings with connection ratios of 50:1 and 20:1 respectively)."*[16]

5.2 Requirements of the Initial Pricing Principle

44. The Initial Pricing Principle gives the Commission discretion to impute the base line retail price "having regard to any comparable service". The Commission faces a number of challenges in selecting the set of comparable products and in designing the method by which it imputes the base line retail prices.

45. The first challenge is to ensure that the wholesale price is not distorted by the uncompetitive retail prices that the wholesale bitstream service is meant to solve. The Act does not take the approach that the regulator need not worry about

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14 Draft Wholesale Bitstream Determination, para. 76.

15 Australia, Belgium, France, Ireland, Italy, Netherlands, Norway, Spain and UK: see Network Strategies Report, Annex 3, at Exhibit 1.

16 Network Strategies Report, Appendix 3.

excessive profits because "they will be competed out eventually". Instead, clause 3(1) of Schedule 1 directs that the Commission strip out the excess rents in setting both the initial and final prices. As the Commission itself has noted in deciding that the principle in clause 3(1) of the Act should apply to actual avoided costs (although not expressly referred to in the clause):

> "*The wording in clause 3* ***unambiguously prevents*** *the access provider from recovering inefficiencies and excess profits when the applicable pricing principle takes a retail price for the service and subtracts any "avoided costs saved" by the access provider … the Commission considers that* ***competitive forces*** *and the price cap* ***might not be sufficient*** *to remove all such elements from Telecom's prices*."[17]

46. The Ministry for Economic Development (**MED**) found that while the price for residential broadband services "compares well with the OECD average",[18] Telecom's retail prices for business broadband services were well above the OECD average:

> "*The price of business quality broadband service is significantly above those in the other OECD countries. For low data usage (~3GB per month) Telecom New Zealand's price was –80% above the 17 OECD country average, for medium data usage (~5 GB per month) it was ~160% above the 17 country OECD average. [paragraph 24].*"[19]

47. The MED's analysis of the international comparability of Telecom's residential broadband pricing also needs to be qualified. The MED comparison appears to be based on Telecom's 256 kbps service with a 1Mbits data cap. As figure 4 illustrates, the lowest priced services in other OECD countries usually have no data caps, some have higher speeds and can also be more feature rich than the Telecom service, including those that are priced lower than the Telecom service. In other words, the lowest price residential services in overseas markets already deliver more "value per dollar" for end users.

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17 The Commission's view on the "Actual Costs Saved" and "Avoided Costs Saved" Standards, Application of the Final Pricing Principle for Resale of Telecom Retail Services, 12 April 2005, para 27, emphasis added.

18 Benchmarking the Comparative Performance of New Zealand's Telecommunications Regime, June 2004, para 23.

19 Benchmarking the Comparative Performance of New Zealand's Telecommunications Regime, June 2004, para 24.

Figure 4: Comparison of low end residential plans for selected incumbent operators

	Downstream speed (kbit/s)	Upstream speed (kbit/s)	Price (NZD-PPP)	Monthly usage limit (Mbytes)	Excess usage charge (NZD PPP per Mbyte)
TDC	256	128	18.61	0	0.07
KPN	416	160	30.04	1500	n.a.
Telstra	256	64	30.56	200	0.15
TeleSonera	250	64	33.90	unlimited	n.a.
BT	512	256	34.63	1000	<0.01
France Telecom	512	128	35.32	unlimited	n.a.
Belgacom	512	128	42.04	400	0.01
Telecom New Zealand	256	128	44.40	1000	n.a.
Telenor	704	128	46.92	unlimited	n.a.
eircom	512	128	56.40	4000 (down) 1000 (up)	0.05
Telefónica	256	128	74.69	unlimited	n.a.

48. TelstraClear submits that in applying clause 3(1) to the Initial Pricing Principle the Commission can use international benchmarking to identify services where Telecom appears to be earning excessive rents. Although clause 3(1)(b) refers to returns about the level of a reasonable return on the capital invested, requiring the Commission to make a detailed margin and cost assessment before it can apply clause 3(1) in the case of an Initial Pricing Principle would be inconsistent with the nature of that exercise. As the Commission is using benchmarking to assess the avoided costs, it logically follows that it should be able to use benchmarking to identify the extent to which Telecom retail prices do include excessive rents.

49. The second challenge in imputing the base line retail price is that pricing based on differential speeds and data caps is a retail level construct which has no material bearing on the pricing of an upstream unbundled input. As the Draft Wholesale Bitstream Determination notes, "the cost of supply of a wholesale bitstream access service is not materially affected by the downstream and upstream speeds provided

on an individual circuit due to configuration of Telecom's access network, including aggregation between the DSLAM and the first ATM switch."[20] The Commission gives this as an explanation for including all of the Jetstream prices as comparable services. However, inclusion of all of Telecom's retail prices exacerbates the first challenge because Telecom's business Jetstream prices are the furtherest out of line with international benchmarks.

50. As we will now discuss, the straight-line regression method adopted by the Commission solves neither of these challenges, as well as having its own methodological flaws.

5.3 Commission's method of imputing the retail price

51. The use of a straight-line regression to isolate the access charge from the bandwidth charges assumes that there is a constant charge per unit of data volume. However, as figure 5 shows, the imputed per megabyte charge in Telecom's Jetstream business plans decreases significantly for services with higher data caps.

Figure 5: Estimation of unit price for data volume for business plans

Business plan	*Data cap (Mbytes)*	*Retail price less GST and ISP charge ($)*	*Price per Mbyte above 600 Mbytes ($)*	*% variation from Jetstream 1200 per- Mbyte charge*
Xtra Jetstream 600	600	61.33	n.a.	n.a.
Xtra Jetstream 1200	1200	120.00	0.10	0.0%
Xtra Jetstream 1800	1800	176.00	0.10	-2.3%
Xtra Jetstream 3000	3000	292.00	0.10	-1.7%
Xtra Jetstream 5000	5000	458.00	0.09	-7.8%
Xtra Jetstream 10000	10000	888.00	0.09	-10.1%
Xtra Jetstream 20000	20000	1,600.00	0.08	-18.9%
Xtra Jetstream 30000	30000	2,400.00	0.08	-18.7%

52. As Network Strategies concludes in the attached report, "[g]iven that there is clear evidence of the Xtra Jetstream traffic charges varying with the volume of traffic, if the Commission wished to pursue a statistical analysis some type of curve should be fitted to the data instead of a straight-line".[21] However, Network Strategies concluded that such an analysis would not be feasible to set the base line retail

[20] Draft Wholesale Bitstream Determination, para 159.
[21] Network Strategies, Annex 3, at page 11.

price because there were insufficient data points available:

> *"A very rough rule-of-thumb used by statisticians[22] suggests that the number of parameters should be no more than one quarter of the number of data points..... This type of analysis is called non-linear estimation, and requires specialised statistical software in order to determine values for the parameters. When we examined the above functional form using appropriate software, we found that the data is insufficient to develop estimates of the parameters."*

53. Network Strategies' analysis also suggests that TelstraClear's proposed approach in its Initial Submission will produce a wholesale price that is too high. We proposed that the Commission should compare the price of the lowest priced Jetstream service (Jetstream Go) with a Jetstream service with the same downstream and upstream speeds but a higher data (e.g. Jetstream Explorer) to isolate the differential that is represented by transmission. However, Network Strategies analysis shows that a comparison between two low data cap services may produce a distorted picture because of the curve in the imputed per megabyte price.

54. Network Strategies suggests applying a simple mathematical calculation to derive the imputed retail access price component. The price that is produced depends on whether the curve in per megabyte prices represents a discount for higher data volumes or conversely whether there is a premium on lower data services. If it is assumed that the curve is a volume discount, Network Strategies calculates the imputed retail access price from the business Jetstream services as $2.66.

55. However, if the reverse explanation of the per megabyte price curve is assumed, Network Strategies calculates the imputed retail access price as $13.74.

56. Applying the same approach, Network Strategies calculates imputed retail access prices for other Jetstream services:

    (a) a range of $7.06 -$41.06 for Venture plans; and

    (b) an upper bound of **[ ][TCNZRI]** for residential plans. Network Strategies notes that because of the different characteristics of residential plans, they cannot calculate the lower bound of the range for these services.

57. TelstraClear considers that the upper bound of the retail access price imputed from the Venture Plans should be disregarded as the services are the same in respect of

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[22] Chatfield, C. (1988) *Problem solving: a statistician's guide*, Chapman & Hall, London.

speed and data caps as the residential services. The only difference is the price, which reflects the likely higher retail and transmission network costs in selling to and servicing business customers. Telecom's downstream retail market strategy should be disregarded in setting the upstream input price, particularly given that the constrained competitive conditions of the market have probably contributed to Telecom's ability to price in this way.

58. The width of the gap between the lower bound of the retail access price imputed from the business Jetstream services and the upper bound of the retail access price imputed from the residential Jetstream prices appears to reflect a different mix between fixed and variable charges. While the overall business Jetstream prices are substantially above comparable prices in other countries, Telecom appears to earn most of its margin through the per megabyte charges, producing a relatively low imputed retail access price. While some of the residential plans are closer to international benchmarks, Telecom seems to follow the reverse retail pricing strategy and recoup proportionally more of the total charge through the access component than through the per megabyte component, producing a higher imputed retail access price. Hence, Network Strategies calculates per megabyte charges for business services of $0.08-0.10 per megabyte but $**[ ][TCNZRI]** per megabyte for residential services. This differential mix between fixed and variable components further illustrates the difficulties of using a straight-line regression analysis.

59. Using Network Strategies' approach means that access prices imputed from the business Jetstream service are less likely to include excess rents, contrary to clause 3(1) of Schedule 1 of the Act, because Telecom appears to recoup proportionally more of its excess rents through the per megabyte charge. However, TelstraClear acknowledges that, in the absence of cost information, it is not clear whether the lower bound of the range represents imputed retail access prices which are below Telecom's costs. Conversely, while the residential prices are closer to international benchmarks, an imputed retail access price calculated from those prices may not sufficiently reflect the avoided transmission function because Telecom chooses to load much more of the retail charge onto the access component than in the case of business services. Therefore, as recommended by Network Strategies, TelstraClear believes that the using the common range of imputed access prices across business Jetstream (excluding Venture plans) and residential plans is the fairest and most robust approach. The common range is $7.06-13.74 and the mid point in that range is $10.40.

60. An alternative, more conservative approach would be to select a price in the range between the lowest imputed access price $2.66 and a high end imputed price

represented by Network Strategies' residential upper bound price of **$[ ][TCNZRI].** The mid point in that range would be **$[ ][TCNZRI].** This would then form the imputed retail price that the benchmarked avoided costs (16%) should be deducted from.

61. In summary:

(a) the Commission's proposed straight-line regression is not appropriate because there is not a constant per megabyte price across all Jetstream plans;

(b) there are insufficient data points to plot a curve which more accurately describes the relationship between the access and traffic components of Telecom's retail prices;

(c) applying the arithmetic approach proposed by Network Strategies allows a series of ranges to be calculated for the imputed retail access prices across business and residential plans;

(d) given the different mix between fixed and variable components in Telecom's retail prices, the upper bound of the retail access price imputed from residential services is unlikely to deduct enough from the retail price to fairly reflect the traffic component, while the lowest retail access price imputed from retail prices may leave insufficient for the access component. Selecting a price in the common range provides the most robust approach. Alternatively, a price could be selected within the range between the highest and lowest imputed prices (excluding Venture plans for the reasons above); and

(e) either of these two approaches will produce an imputed retail access price which, given that setting the initial price is an approximation exercise, will fairly balance the objectives of ensuring that any excess rents are excluded, that the value of the avoided transmission capacity is fully recognised and that the remainder covers Telecom's costs for the access component.

62. Finally, TelstraClear believes that, in light of the recent High Court decision on the inter-relationship between the initial and final prices, the Commission should reconsider its past approach of erring on the high side in calculating initial prices. The High Court found that the Commission can apply the final price from the commencement date of the Initial Price and can make supplementary directions concerning any "wash-up", including interest. Accordingly, if the Commission has underestimated Telecom's costs, Telecom can be compensated when the final price is set. Given the long lead times involved in making investment decisions, it is

unlikely that Telecom will be discouraged from investing as a result of the application of an initial access price which turns out to be too low in the period pending the making of a final determination. However, an initial wholesale price that turns out to be too high on final review is likely to delay market entry and keep prices high during the period pending the final price review. Erring on the high side in setting the initial price, in TelstraClear's view, does more damage to the consumer interests than the risk of an initial price which is too low applying for a limited time period.

6. SUNDRY CHARGES RELATING TO SUPPLY OF WHOLESALE BITSTREAM ACCESS

63. TelstraClear agrees with the Commission's proposed principles for setting these charges.

64. Telecom has provided TelstraClear's commercial team with, and publicly announced, its revised commercial UBS churn fee proposal following the draft determination. However, this is the $36.42 per transaction figure, including common costs, deemed to be too high by the Commission. TelstraClear's commercial team has gone back to Telecom seeking details of the charge (based on incremental costs, excluding common costs).

65. TelstraClear has concerns about the practicality of the parties commercially negotiating a reassignment charge based on Telecom's costs when the TelstraClear commercial team does not know what costs are claimed by Telecom. The cost figure provided by Telecom is classified as TCNZRI in the Draft Bitstream Wholesale Bitstream Determination. As the Commission is aware, Telecom takes a very strict view of confidential information.

66. If the reassignment charge is to be set at or below Telecom's claimed incremental costs, there is no reason why Telecom should not be required to provide TelstraClear's commercial team with its claimed charge and a justification for it. The fact that the charge is to be arrived at by commercial negotiation if possible, does not mean that the charge should be any less cost based. Commercial negotiation is simply seen as a more convenient means of reaching the cost-based charge than a full determination by the Commission.

67. A successful negotiation cannot take place with such an asymmetry of information between the negotiating parties. Further, Telecom should be prohibited from imposing confidentiality obligations on TelstraClear's commercial team preventing them from sharing the information with the regulatory team, as confidentiality obligations have done in the past. It is important that both the commercial team and the regulatory team are able to share information so that there is consistency and accuracy of information in both fora.

7. NON-PRICE TERMS

7.1 Speed Configuration

68. TelstraClear believes that the Commission's proposed unrate shaped service, together with the requirement to turn off interleaving, will provide competitors with substantial scope, within the limitations of the wholesale bitstream service, to innovate.

69. TelstraClear notes that in Telecom's recent Quarterly Results Briefing, Telecom stated that its "[f]ocus on [Value-added Services] development over the next 12 months is around video, music and games".[23] As shown in the following table, based on the services identified in Telecom's presentation, the Commission's proposed technical terms for wholesale bitstream will enable TelstraClear to more effectively compete against Telecom in these and other VAS than Telecom's UBS offering (even at the higher 2 Mbits speed):

Figure 6: Service Characteristics required for downstream competition

Telecom service development focus	**Telecom's current UBS service**	**Commission's unrate shaped service with interleaving off**
streaming video (news, weather, sport, entertainment)	Only limited streaming video over the current solution provided by Telecom. Some sorts of video ('talking heads' reading the weather or news) could utilise 1.5Mbps downchannel capacity at approximate 'TV broadcast' quality, live action. However, sports and entertainment require 3.5-4Mbps with current technology. The new MPEG4 standard allows equivalent quality with 1.5-2Mbps downchannel capacity, but the processing power required to support this CODEC is beyond the capacity of practically all current personal	The difference between unrate-shaping and rate-shaping is essentially the amount of data that can be broadcast at any point in time given minimum contention and use within the network. By providing an unrate-shaped service TelstraClear will be able to stream video content with better surety that traffic will be received by our customers and less jitter/delay and buffering is required by customers. Essentially this leads to better network and traffic efficiency, as customers are able to view services and cancel if they do not want to view further. In the case where buffering and download is required this will require traffic usage from

[23] Telecom New Zealand Q3 05 Results Briefing, page 12, available at http://www.telecom.co.nz/binarys/tcnz_q3%2005_presentation.pdf

Telecom service development focus	Telecom's current UBS service	Commission's unrate shaped service with interleaving off
	computers. Because of the 2 Mbps restriction imposed by Telecom, bit rate delivery may hinder some video streams when network use is high and/or significantly over-subscribed. Streaming video quality will suffer if other applications, such as the web, are attempted simultaneously. Lower encoded streaming will be more feasible – particularly content streaming as available today from the Xtra web site for news stories and reports. The effect of lower encoded streams is that they are grainy at full screen resolution and sometimes only play in small windows (screen within screen).	the network and customer end.
music streaming, music downloads, music vending machines for songs, ring tones, ring back tones and music identification	Streaming music will generally be deliverable to reasonable quality levels with a 192 kbps downchannel due to the low encoding rates. However, the effect of interleaving with high over-subscription (affecting contention) is that some streaming may be delayed when network use is very high. A 2 Mbps downchannel may limit the amount stored in a music vending machine – typically it would only be possible to download to the vendor 90 tunes per day given low contention (no over-subscription) on the network.	The unrate-shaped service will allow TelstraClear to better cope with contention and over-subscription of the music download services to maintain better service levels and less service interruption. The availability of unrate-shaped services means that vending machines could download potentially up to 4 times more than with a 2 Mbps rate-limited service making them more useful to vendors.
multiplayer games environment	There are a number of effects that the 2 Mbps service speed limitation, and interleaving and contention (along with over-subscription) will have on the games environment. Firstly, many games require low trigger responses (responses from networks whereby latency and jitter are minimized).	TelstraClear believes that we can offer additional levels of service and differentiation of services with the ability to turn interleaving on or off. We believe that by offering this service we will enable a wider spectrum of games audience and will be providing value added

Telecom service development focus	Telecom's current UBS service	Commission's unrate shaped service with interleaving off
	Interleaving decreases the packet loss within the network but by doing so increases the delay. Within the Telecom environment interleaving adds at least 40 ms one way to gaming services that translates to a significant trigger delay (especially when added to other hops and network delay within the Telecom environment). There are instances where players in Australia playing on New Zealand gaming servers have less overall trigger delay than New Zealand gamers: that is a direct result of the Telecom network configuration and interleaving. Generally the bit-rate requirement is a function of the bit-rate requirement from the game. Typical current games are tolerant with the 256 kbps services but can be heavily affected by contention and network over-subscription. This currently extends to the 2 Mbps UBS services because of these 2 factors.	services to match this expectation. As multi-player games increase, we expect to extend our platforms further so that we can keep up with information exchange and bandwidth needs. An unrate-shaped service would allow TelstraClear to craft bandwidth required services at a pace that suites both our end users and core server requirements in shorter time-frames without having to rely on the incumbent to release progressively faster versions of its bitstream service, leading to more innovation and a more dynamic market.

Question 5: What are the potential instability risks that might arise from the provision of a wholesale bitstream access service with unlimited downstream speed to the maximum technical capacity of the DSLAM and a 128 kbps upstream speed?

Question 6: Would the nature of that service described above effect the provision of data streams on the network at OSI layer 2?

70. The Commission is right to dismiss Telecom's argument that a service comprising a downstream channel without rate shaping combined with a 128 kbps upchannel is inherently unstable.[24] While the upstream limit may constrain the achievable

[24] Bitstream Draft Determination, para 226

downstream speed for some applications, this does not make the downstream capacity of a service unstable.

71. There are limitations as to the downstream Transmission Control Protocol (TCP) throughput based on the need for the client machine to acknowledge receipt of packets. However, the Microsoft Windows operating system uses, as a default, a delayed acknowledgement. As a result, the theoretical downstream speeds will approach the constraints of Telecom's lines for more than 90% of TelstraClear customers.[25]

72. Further, TCP is not the only protocol that will be used by UBS customers. For example, streaming audio and video use User Datagram Protocol (UDP). UDP based services do not require acknowledgements to be returned back up the line, therefore streaming and video services may be piped down at 4Mbps and, concurrently, the customer has the ability to surf the web at 2Mbps. In this respect, TelstraClear considers that UDP traffic would not be limited by the limited upstream speed.

73. TelstraClear also believes that there are software-based solutions that address the need for acknowledgements in TCP in the dial-up environment which may be scaleable to UBS.[26] This issue has been considered in RFC3449.[27]

7.2 Service Monitoring

74. TelstraClear welcomes the principle enunciated by the Commission in paragraph 276 of the Draft Bitstream Determination that there should be no material difference in provisioning or fault repair between retail customers of either Telecom or TelstraClear when using services supplied by means of wholesale bitstream or its retail equivalent.[28] The Commission's proposed terms represent a significant step

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25 It is TelstraClear's view that more than 90% of its UBS customers will run Windows XP, 2000 98 or 95. A theoretical approximation of the performance of Windows would give the following maximum downstream TCP throughput:
- 1024 byte packets: 6.5Mbps
- 1462 byte packets: 9.3Mbps
The above performance estimate assumes a TCP client feature called "delayed ACKs" that is supported by default by Windows. For clients not supporting delayed ACKs, the performance will be half of the above:
- 1024 byte packets: 3.25Mbps
- 1462 byte packets: 4.65Mbps.
If end-users are not using Windows, the most likely alternate operating systems are Mac OS X and Linux. Both of these also support delayed acknowledgement.

26 For example Orcon have some software that accelerates 56k dial-up. It consists of client software that is installed on the customer's machine, which talks to a special server. It is possible that software could be written which attempts to compensate for the low upstream.

27 See RFC3449 for a discussion of the problem, and some steps that may be taken to mitigate it. http://zvon.org/tmRFC/RFC3449/Output/index.html

28 Para 276 Draft Bitstream Determination.

towards giving the Standard Access Principles a meaningful role in the supply of regulated wholesale services. TelstraClear has comments on:

- the scope of proposed KPIs;
- the KPIs defined in Annex A; and
- the process for establishing and measuring KPIs.

7.2.1 What should be measured?

Question 7: Do the suggested criteria appropriately measure the key service parameters necessary to assess whether the network performance of the wholesale bitstream service is consistent with the characteristics of the wholesale bitstream service used by Telecom to supply its Jetstream services?

75. TelstraClear considers that the Commission needs to clarify whether KPIs are to be developed for, and applied to, support processes such as ordering, provisioning and fault reporting rather than simply to those aspects of the service listed in Annex A of the Draft Determination.

76. In the UK, Australia and US, regulators have developed a fairly consistent set of KPIs that are to be applied to certain wholesale and retail services in order to measure support process. Figure 7 below illustrates the overlap of international perspectives of the list of the kind of KPIs appropriate to achieve the objectives of transparency, accountability and non-discriminatory performance in provision of core services.

Figure 7: International Best Practice re: KPIs applicable to wholesale network elements

KPI	OFCOM UK[29] BT	ACCC Telstra	USA Bell Atlantic Pennsylvania[30]	TelstraClear's comments on applicability to TCL
orders provisioned within KPI period or reported by relative timing between retail and wholesale and orders rejected	✓ on monthly basis[31]	✓ on quarterly basis	✓ on monthly basis	✓ on monthly basis
Fault Reporting	✓ on monthly basis	✓	✓	✓ on monthly basis
Maintenance and restoring service against KPI or reported by relative timing between retail and wholesale	✓ on monthly basis[32]	✓	✓	✓ on monthly basis
repeat faults	✓ on monthly basis	X	✓	✓ on monthly basis
Appointments kept	✓	✓	✓	✓

29 Services are DataStream end user access, Virtual Paths, WLR, FRIACO and Interconnection circuits (excluding FRIACO) including ATM interconnect.

30 The Joint Petition of Nextlink, Pennsylvania Public Utility Commission, Harrisburg, PA 17105-3265 – other applicants include RCN Telecommunications Services of Pennsylvania, Inc.; Hyperion Telecommunications, Inc., ATX Telecommunications, Focal Communications Corporation of Pennsylvania Inc., CTSI, Inc., MCI Worldcom, eSpire Communications and AT&T Communications of Pennsylvania Inc. for an Establishing of Formal Investigation of Performance Standards, Remedies and Operations Support Systems Testing for Bell Atlantic-Pennsylvania, Inc., 20 July 200.

31 Except the FRIACO and Interconnection circuits service which are quarterly.

32 As above.

7.2.2 KPI's defined in Annex A

A. Contention ratio:

77. Contention is a significant indication of service differentiation between services. As noted above, the use of different contention ratios is one of the main ways in which overseas operators distinguish between services targeted at residential and business end users. It is important to ensure, therefore, that if and when Telecom uses different contention ratios in its retail services, a matching approach is taken to wholesale bitstream services. Even if Telecom currently uses a 50:1 ratio for all its retail products, the KPI should provide for an adjustment if Telecom changes this approach in the future.

78. In addition, the specification states a "nominal contention ration of 50:1 for 95% of the time". The concept "of the time" must be defined as a more specific variable and related to the customer experience. TelstraClear suggests that the Indicated Rate be more accurately worded as:

> *"For residential users a nominal contention ration of <50:1 for more than 95% of the time. Measuring this contention shall occur over random 1 hour intervals*[33] *on a daily basis and rolled up and reported quarterly highlighting samples failing the 95% requirement."*

B. Jitter

79. The Commission appears to have mistakenly quoted a 500ms figure in this parameter. We believe this should reflect 50ms because a jitter factor of 500ms compared with the later quoted "latency" parameter would not be technically possible.

80. In addition, TelstraClear suggest the Indicated Rate be more accurately worded as:

> *"One way delay variation of <50ms averaged over a 1 minute interval for One way delay variation more than 95% of the time. Measuring one way delay variation shall occur over random 1minute intervals on a hourly basis and be rolled up and reported quarterly."*

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[33] "Random" sampling needs to be defined for all parameters as sampling at random time intervals (non-cyclic) within the specified time interval. For example, "Measurement will include sampling minute intervals at random intervals on an hourly basis" would mean 1 minute samples are taken at random intervals every hour.

C. Packet Loss

81. TCL considers that there are 2 factors which should be incorporated into this parameter:

(a) the effect that interleaving will have on this measure; and

(b) what defines whether a packet is lost.

82. As the proposed latency measure is not a high standard, TelstraClear does not consider that interleaving being "on" or "off" for a particular customer is likely to impact on performance against the proposed parameter. Therefore, TelstraClear does not consider that Telecom will need to alter the requested interleaving state for a customer when measuring latency.

83. To better define the parameter and remove any ambiguity, TelstraClear suggests using not only the ITU standards, but also RFC documents[34] and IETF. On this basis, TelstraClear proposes using the definition of packet loss in RFC 3393 which states that any packet that is delayed more than an "integral multiple of the round trip time" (that is, twice the one-way delay) will be considered lost.

84. TelstraClear suggests the Indicated Rate measurement be amended as:

> *"one way packet loss ratio will be a maximum of 3% averaged over the total bit rate transfer (up and down) for all customers. Packet loss will be measured in random 1 minute samples of full rate, 1,500 byte packets every hour. Quarterly reporting will summarise daily, weekly and monthly samples highlighting samples exceeding 3%."*[35]

D. Latency

85. TelstraClear considers that the Indicated Rate for Latency should be more accurately worded as:

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[34] TelstraClear acknowledges that the RFC documents are proposed standards as opposed to strictly standards, but RFC 3393 is very useful in defining the relevant parameters in conjunction with the ITU Standards.

[35] TelstraClear suggests 1,500 byte packets as, under network failure, short packets may get through while long ones are dropped. It is possible, for example, that 100% of long packets are dropped while less than 2% of short packets are dropped. Such a network would be considered "broken" from an end user's perspective yet would pass the proposed test.

"latency will be <50ms within the national network using 64 kbyte packets averaged over 1 minute for more than 95% of the time. Measuring latency shall occur in random 1 minute samples each hour. Quarterly reporting will summarise daily, weekly and monthly samples, highlighting samples where the minimum requirement was not met."

E. Limits on Access Principles

86. Given the strictures which the 128kbps upchannel limit places on downstream services provided by wholesale bitstream, it is important to ensure that upstream availability is close to the 128kbps limit as often as possible.

87. TelstraClear suggests a measurement quota that places a limit on the lowest speed or monitors the percentage of time that the maximum speed is attained by Telecom. TelstraClear proposes the performance of Telecom retail products against both the minimum and the maximum speed should be compared. We propose that the Indicated Rate be worded as follows:

"128 kbps will have a minimum speed of 32 kbps at any given time and the percentage of time that the 128 kbps speed is not attained will be measured. Measurement will include sampling minute intervals at random intervals on an hourly basis. Quarterly reporting will summarise daily, weekly and monthly samples compared directly with retail products with a nominal upchannel speed of 128 kbps meet or exceed that speed over the sample timeframe. Non discrimination between the reference frames should exceed the 95% confidence interval."

88. The second limitation on access principles (relating to the downstream throughput rate) must be measured against retail positions and compared accordingly. In addition to the wording already provided by the Commission at Annex A, we should further add:

"Measurement will include sampling minute intervals over 5 minutes at random intervals on an hourly basis. Quarterly reporting will summarise daily, weekly and monthly samples compared directly with retail products over that sample timeframe. Non discrimination between the reference frames should exceed the 95% confidence interval."

89. The third limitation on access principles (no real time network capability) must be measured against retail services. In addition to the wording already provided by the Commission at Annex A we should further add:

"Measurement will include sampling minute intervals over 60 minutes at random intervals on an daily basis. Quarterly reporting will summarise daily, weekly and monthly samples compared directly with retail products over that sample timeframe. Non-discrimination between the reference frames should exceed the 95% confidence interval."

90. Carrier grade availability is measured as 99.999% (95 minutes outage per year). Business grade availability is generally measured at around 99.9% (8 hours outage per year). TelstraClear considers that Internet grade service availability is a maximum of 99.9% (8 hours) and minimum of 99.5% (2 days).

7.2.3 Procedures for Setting and Monitoring KPI's

91. TelstraClear welcomes the Commission's proposal for parties to agree on the development of the details of the service monitoring regime and the involvement of an independent auditor.

92. TelstraClear proposes that the parties should first appoint the external auditor before the key performance indicators and the methodology for measuring them is finalized, rather than these two steps being conducted in parallel as paragraphs 247 and 248 of the Draft Wholesale Bitstream Determination appear to require. The experience of the DSPL audit process suggests that effectiveness of the external audit and the appearance of impartiality of the external auditor are reduced if the external auditor has to take the audit rules as developed by Telecom. If the details of the rules are not worked out in conjunction with the auditor, Telecom continues to determine the rules and the auditor is limited to a very narrow view of verification. As explained by PwC in its report annexed to TelstraClear's Initial Submission, the service monitoring process will require important judgments about where the point of equivalence within the bundled retail service is with the unbundled wholesale bitstream service.

93. TelstraClear believes that the service monitoring process will start on a more effective footing if the auditor is involved in this analysis and the development of the methodology. The auditor's views may also be of benefit to the Commission in resolving any disputes over the KPIs and measurement methodology which, as this is an entirely new process in New Zealand, are possible, if not likely to occur. The Commission's involvement and TelstraClear's responsibility for half the audit costs should be adequate safeguards to address any concerns that Telecom may have that the auditor will have an incentive to "overcook" the KPIs and measurement process.

94. TelstraClear agrees to pay half the costs of the audit on the basis that it will have

increased direct access to the auditor and greater participation in setting the audit methodology than is the case with DSPL.

7.3 Operational Support

95. TelstraClear welcomes the Commission's requirement that "Telecom provide a level of operational support to TelstraClear, whether manual or automated, such that there is no material difference in provisioning or fault repair in regard to the experience of retail customers whether retail services reliant on wholesale bitstream access are supplied to TelstraClear or Telecom."[36]

96. While TelstraClear also endorses the Commission's proposal that implementation of the Commission's OSS standard should either be agreed by the parties or dealt with by the TCF churn code, we are concerned that:

(a) the inter-operator processes, which are to apply in the interim pending development of the agreed OSS systems, are not specified. As Schema notes in the attached report, the implementation process for a full electronic B2B solution could take a significant period based on the overseas experience. If the implementation plan also had to deal with the interim solution, TelstraClear's entry to the market could be significantly delayed while it is being negotiated. As the attached report on eOR from Deloitte shows, use of eOR as the interim solution would substantially raise TelstraClear's supply costs and even existing resale processes would need to be improved to ensure TelstraClear's competitiveness;

(b) the Commission's statement of the high-level equivalence principle is unlikely alone to provide sufficient guidance for negotiation of a detailed OSS implementation plan. The industry negotiations over the number portability technical solution provide some hard lessons. Although the industry agreed on a similar high-level principle of "equivalent service" for number portability, it has taken over three years to agree on the technical solution that meets that criteria and its implementation is another 2 years away. TelstraClear believes that a more robust, detailed framework is required and the Commission needs to take a more active role in guiding overseeing the negotiations; and

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[36] Draft Wholesale Bitstream Determination, para 276.

(c) the Commission has not clearly set out the liability for costs of providing OSS in line with the equivalency principle. TelstraClear submits that, consistent with the Commission's views on onset pricing in the past and in regards to KPI monitoring in these proceedings, each party should bear its own OSS costs.

97. Implementation of OSS involves more than a technical or process discussion between systems engineers to implement a set of relatively uncontroversial principles. The design principles around which inter-carrier OSS are built go to the heart of the meaning of non-discrimination principles and thereby, the character and effectiveness of the wholesale regime. The lessons from the experience of OSS implementation in the UK, as described in the annexed Schema Report, and in Australia are, in TelstraClear's view:

(a) wholesale OSS systems should not be regarded as an extension or derivatives of retail systems. The access seeker/access provider's interface can be quite different to the retailer/end user interface. The relevant criteria are to achieve equivalence in the ability of access seekers to compete against the incumbent's downstream retail arm. Sometimes that will require exactly the same interface as the incumbent's retail arm, but in other cases the requirements of access seekers will be quite different, and a different benchmark point needs to be identified in the incumbent's internal supply chain;

(b) even putting to one side concerns about intentional discrimination, the incumbent, used to its unchallenged position as the primary supplier in the market, inevitably will design wholesale OSS from its own perspective and in its own image. Access seekers succeed by developing different, more efficient and more innovative ways of competing. An OSS system designed in isolation by an incumbent based on how it competes, or how it thinks it would compete if it were an entrant, is likely to fail to meet access seekers' needs. The incumbent has to view wholesale OSS from the perspective of access seekers and build to their needs;

(c) the difficulties in achieving non-discriminatory retail and wholesale OSS will be compounded where OSS which are used in common for retail and wholesale services (common OSS) are not operated neutrally within the incumbent. There are two basic approaches to the design, building and operation of OSS. As depicted in figure 8, the incumbent's OSS can continue to be treated as a "retail-prime" system which is controlled by or managed for the retail business and the wholesale interface is little more than a "post box" to the retail OSS. Under this model, the wholesale OSS remains tightly

bound to the incumbent's way of doing business in the retail market and to its future retail priorities. Under the alternative model, as depicted in figure 9, the incumbent instead conceives of the common OSS as a neutral resource for the retail and wholesale lines of business. The wholesale function also can assume a level of autonomy over the wholesale "front of house" systems. This addresses the point made in paragraph (a) above because the interface with wholesale customers can evolve along a different pathway from the retail interfaces to better meet wholesale customer requirements, while retaining non-discriminatory "back office" OSS, such as the service qualification and activation systems;

Figure 8: "Retail-Prime" OSS Approach

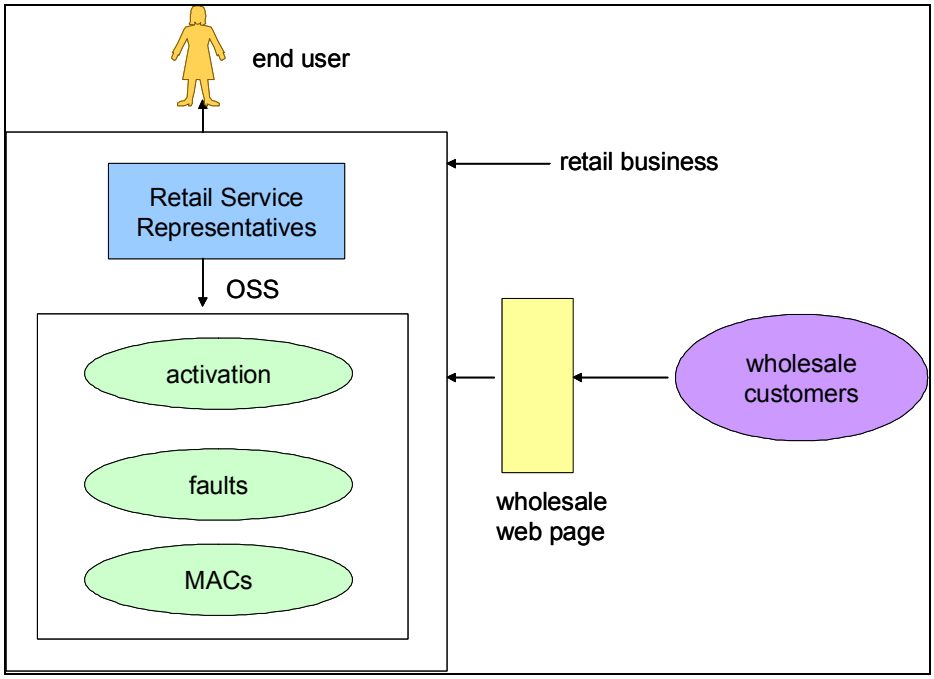
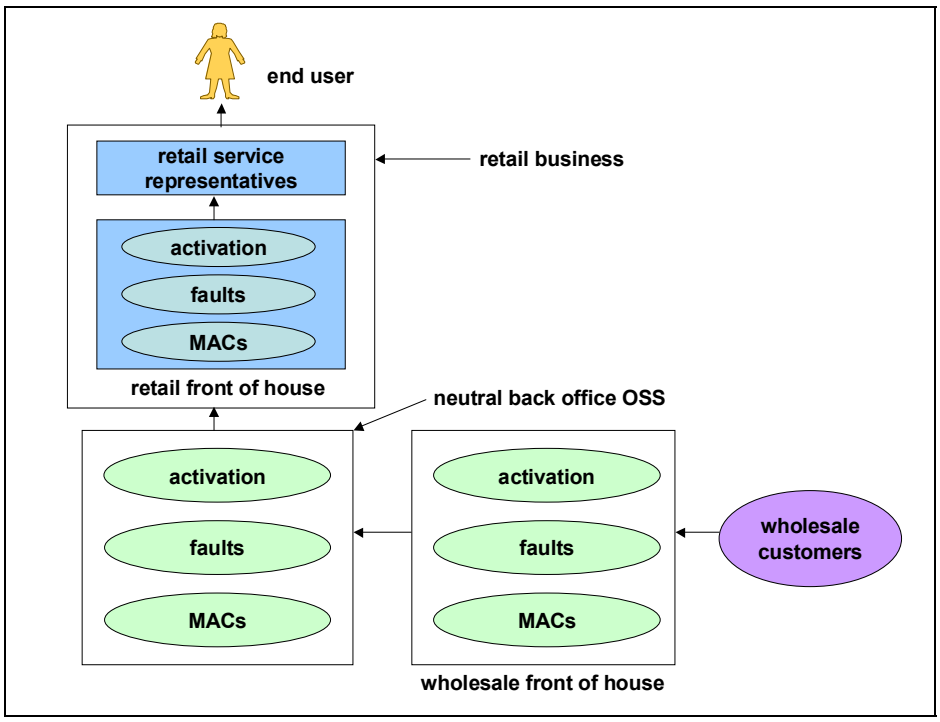


Figure 9: Neutral OSS



(d) an incumbent in the early stages of the development of a wholesale market will struggle to make the necessary leap in approach to wholesale OSS in the absence of external regulatory pressure. While the incumbent may not be monolithic in its resistance to wholesale and its desire to protect retail, if left to its own devices, the pace of the internal shift to a wholesaling strategy will be too slow for the development of an effective competitive market. As the Australian experience shows, this does not require the continuing involvement of the regulator in the details of inter-operator relationships, but clear initial direction and oversight is required from the regulator so that wholesale incentives can gain traction within the incumbent and, once wholesale incentives have been "unlocked" from retail incentives, the commercial dynamics will carry development of more efficient wholesale OSS forward under its own momentum. As Schema notes in their report:

> "*The involvement of the regulator to establish high-level principles for implementation, to set the timetable and to oversee key milestones and involvement of alternative service providers in the definition of requirements is paramount to the development of effective competition,*

generated by the timely availability of effective wholesale access product(s)".[37]

98. The fundamental difference between Telecom and TelstraClear over OSS is that Telecom says it will consider as a future objective for eOR the capability for electronic exchange of data which TelstraClear regards as crucial to our ability to enter the market now. The ability to efficiently process high volumes of interactions in both directions between the access seeker and Telecom is fundamental because:

(a) wholesale bitstream is, by its nature, a mass market service;

(b) to meet the Government's goal of lifting New Zealand into the top half of the OECD, broadband growth will need to exceed 150% or more per year on a sustained basis; and

(c) the economic value of a wholesale bitstream service is undermined if the inter-operator processes prevent the access seeker efficiently performing the avoidable retail functions.

99. Unless there is an interim minimum form of electronic data exchange, competition based on wholesale bitstream will continue to struggle to get out of the starting blocks. The reason Telecom is not reaching its wholesaling target (but appears to be meeting its total target through its own retail channel) is not, as Telecom has indicated, because TelstraClear is standing out of the market. Instead, Telecom's inability to meet its wholesale target, in our view, reflects the substantial inefficiencies in the inter-carrier OSS currently being used by Telecom for wholesale compared to its OSS used for Telecom retail services. TelstraClear believes that a large part of Australia's success in vaulting ahead of New Zealand in broadband penetration is the availability of efficient electronic interfaces offered by Telstra Wholesale. An immediate "electronic fix" in the interim OSS is required because New Zealand is likely to fall further behind if electronic data exchange has to wait for a full OSS solution to be agreed and implemented.

100. The posting of data to a Telecom extranet web page, which is the functionality provided by eOR, is not the same as the electronic exchange of data between operator OSS. Electronic data exchange has two key features:

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[37] Schema Report, Annex 5, page 2.

(a) the access seeker only needs to enter the order or other data once into its own systems and it can then write and run a program which automatically assembles the same data into the format required by Telecom and automatically despatches the data files periodically to Telecom; and

(b) the access seeker can periodically receive from Telecom a file with status updates, such as order rejections, order confirmations, installation notices and fault clearance reports. The access seeker can then write and run a program which automatically imports the data to its OSS, providing an automatic update of individual customer accounts without the access seeker staff having to make individual checks or requests of Telecom (i.e. the confirmation data from Telecom is "push" and not "pull").

101. For access seekers, eOR is actually a manually intensive process because, as Deloitte's explains in their attached report:

(a) all customer information for a new order or for a move, add and change has to be re-keyed into the Telecom eOR page. Data entered in the TelstraClear OSS to open a new customer account cannot be automatically uploaded. Re-keying adds costs and raises risks of errors and rejections;

(b) **[**

]

TCNZRI&TCLRI[38];

(c) eOR does not automatically alert TelstraClear of a change in status in a service request on the Telecom side, such as if Telecom rejects an order for error, or Telecom requests further information or Telecom confirms that an order has been filled or a fault cleared. Instead, TelstraClear staff must periodically manually check the eOR web site service request by service request to check if there has been a change in status; and

(d) **[**

[38] Deloittes Report, Annex 4, at para 7.

] TCNZRI&TCLRI[39] **[**

] TCNZRI&TCLRI

102. Deloitte compared the costs of current TelstraClear processes for customer activation against the cost of the likely processes which would be required on the TelstraClear side of eOR. Deloitte concluded that eOR would substantially increase TelstraClear's costs in each of the main processes involved in connecting a customer to broadband services supplied by means of wholesale bitstream. Figures 10, 11 and 12 set out Deloitte's estimates of the additional costs under different scenarios of order volume. Taking into the account all of the different tasks to be performed for orders, Deloitte estimate TelstraClear's cost would increase between approximately **[ ] [TCLRI]** per month. If the objective for total volumes and wholesale volumes are to be met, TelstraClear anticipates it would, as the main competitor, be connecting customers at the higher end of this range.

Figure 10: Additional Cost Per Month Based on Low Estimated Volumes (**[ ] TCLRI** Orders Per Month)

[

] TCLRI

[39] Deloittes Report, Annex 4, at para 5.

Figure 11: Additional Cost Per Month on Medium Estimated Volumes ([ ] **TCLRI** Orders Per Month)

[

] TCLRI

Figure 12: Additional Cost Per Month on High Estimated Volumes ([ ] **TCLRI** Orders Per Month)

[

] TCLRI

103. While a full electronic B2B platform provides a sophisticated, feature rich portal through which data can be electronically exchanged, electronic data exchange can be achieved on an interim basis through much simpler, "cruder" means, such as by electronically sending and receiving files (i.e. FTP or XML files). This method of electronic data exchange is currently used between Telecom and TelstraClear for OSS supporting various services associated with business line, and for residential

line resale.

104. Accordingly, TelstraClear requests that the Commission require that, pending the implementation of the agreed solution which fully implements the Commission's OSS equivalence principles, Telecom implement an interim OSS solution as follows:

(a) the interim OSS solution must provide for the electronic exchange[40] of data between the Telecom OSS and the TelstraClear OSS by means of file transfer of the following wholesale bitstream information:

(i) orders;

(ii) order rejections and confirmations. There should be a finite list of valid reasons for rejection and corresponding codes to be agreed (with scope for this list to be added to by agreement). All reasons for rejection to be given at the same time, except those that cannot be detected until later in process (the parties are to agree which codes this applies to);

(iii) order fulfillment notices and status;

(iv) fault reports;

(v) fault report confirmations;

(vi) fault clearance notices; and

(vii) FTP event files (at least) daily –XML format – to be sent of all request activity and any changes to order status (finite status options to be agreed);

(b) the file exchange process will be based on the current file exchange approach used between the parties for residential line services (except where amended by agreement) and the parties must agree the interface specifications and an implementation plan within 30 calendar days of the date of the final determination. If the parties cannot agree, either party may refer the request to the Commission for resolution;

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[40] Emailing zipped files is not electronic file transfer because the email has to be manually opened and the data loaded into the receiving OSS systems. Electronic file transfer involves direct electronic transfer of information between the sending and receiving OSS.

(c) the file exchange system interface must be available for TelstraClear to undertake integration testing no later than 60 calendar days after the date of the final determination; and

(d) the file exchange system interface must be in place and operational by no later than 90 calendar days after the date of the final determination, unless agreed by the parties or otherwise authorised by the Commission.

105. The Draft Determination provides that implementation of the full OSS solution could be agreed bilaterally between Telecom and TelstraClear or by the TCF Churn Code Working Party. TelstraClear sees advantages in a common churn platform which applies across all access seekers, including because churn between two access seekers is likely to become more common in the future and, like number portability, a single solution will make this more efficient.

106. However, TelstraClear has three concerns about relying on a wider industry process over bilateral negotiations. First, industry processes tend to take longer than bilateral negotiations and the industry process should not hold up TelstraClear's entry to the market in the interim. It took the TCF five months to have the first number portability code out for public consultation. By comparison, six months has already past on the Churn Code development and the Code is still in the early stages of development. Further, the issue of the lack of enforceability of TCF codes approved by the Commerce Commission is yet to be resolved. Hence, there is need for the Commission to specify the terms of an interim solution.

107. Second, the TCF rules require that codes are developed in accordance with the project scope. Given the existing project scope, the TCF's Churn Code Working Party is not the appropriate place to develop OSS as the Working Party is largely focused on reducing invalid reassignment in the reassignment process and is not considering other processes which occur after the reassignment has taken place, such as faults which occur after the churn has taken place, or moves, add and changes.

108. Third, Telecom has consistently stated that the TCF Churn Code Working Party's mandate is only to agree on the principles, policies and broad process steps for reassignment (e.g. who sends what form to whom) and not on how the processes are to be implemented, which they say should be the choice of each operator. Telecom has particularly objected to any discussion of a requirement for electronic OSS. Specifically, Telecom refused to include the following additions suggested by TelstraClear to Telecom's Churn Code project proposal:

(a) identify limitations of the proposed interim third party reassignment processes in order to define policies and processes that promote efficient outcomes going forward as part of the Code development process; and

(b) identify and define electronic processes and electronic interfaces for reassignment between the parties in order to ensure churn times and rejects are minimized and efficiency gains from use of electronic processes are realised for the long term benefit of end users.

109. The attached Deloitte report sets out a proposed approach to the design of electronic inter-operator OSS, using best practice tools from large IT system design experience. Based on this approach, TelstraClear requests that the Commission determine, in addition to the high level principle of equivalence of Telecom wholesale and retail OSS and in addition to TelstraClear's proposed minimum interim electronic OSS measures to enable cost-effective market entry, that:

(a) The TCF would be requested to establish an OSS Working Group comprising Telecom, TelstraClear and other interested parties.[41] A representative of the Commission would attend the OSS Working Party meetings, as currently occurs with the Churn Code Working Party. The OSS Working Party and the Churn Working Party would need to work together to ensure that the requirements developed by the latter are fed into and consistent with the churn component of the electronic system. The OSS Working Party should consider engaging an independent expert to assist in its review of OSS issues, much as was done in the course of the development of the LMNP solution;

(b) the equivalence principle should be implemented, to the extent technically and economically feasible, by an electronic solution between Telecom and access seekers. The TCF Working Party should consider implementing two solutions:

(i) an applications programming interface (API) which allows full direct electronic bonding between the access seeker's OSS and Telecom's OSS. This approach is most efficient for access seekers which have large volumes of service requests, such as TelstraClear; and

(ii) a web server HTTP service interface for browser based sessions using

[41] Rule 9.2 of the TCF Handbook recognizes that the Commission may refer matters to the TCF "[I]n addition, the Commission (as set out in Schedule 2 of the Act) may invite the Forum to create and/or amend a telecommunications access code for approval by the Commission."

the same rules as the API solution. This solution involves a lower level of electronic integration and may be more efficient for access seekers which have a lower volume of service requests.

A single solution is likely to be too expensive for small operators and not efficient enough for large operators. TelstraClear notes that Telstra in Australia has implemented two versions of its electronic OSS interface along the lines described above and the TCF number portability working group has also agreed on two similar solutions for the industry number portability management system (IPMS) to accommodate large and small operators.

(c) Telecom should agree with TelstraClear a project proposal to be provided to the TCF within 30 calendar days of the Commission's final determination that describes the process for developing in consultation with the TCF an inter-carrier OSS that conforms to the Commission's equivalency principle. Failure to meet this requirement would enable either party to refer the matter back to the Commission. The draft project proposal shall identify milestones and milestone dates for the following key steps:

(i) agreement on which OSS processes are to be included in the initial electronic version and how the remaining processes are to be addressed, such as by wholly manual or partly manual and partly electronic processes;

(ii) agreement on the KPIs to which the OSS manual and electronic processes are to be designed and how they are to be benchmarked against the equivalent Telecom processes;

(iii) agreement on dates by which any manual or part manual improvements will be implemented;

(iv) agreement on the system, solution architecture and technical interfaces;

(v) technical specification finalised;

(vi) system ready for end-to-end testing;

(vii) completion of system build ready for access seeker acceptance testing;

(viii) acceptance testing with access seekers completed and system accepted; and

(ix) the operational 'go live' date for this electronic B2B version. This go live date must be within 18 months of the date of the Commission's determination;[42]

(d) if the project proposal and project scope cannot be agreed by the TCF, according to its processes, within 60 calendar days of the Commission's final determination, either party or the TCF may refer the matter to the Commission for resolution;

(e) Telecom shall provide the Commission and the TCF with a written monthly report of progress against the project scope. If Telecom anticipates that a milestone will not be met, Telecom must raise this with the TCF to discuss any workarounds or adjustments which need to be made to the workplan; and

(f) if agreement cannot be reached by the parties on implementation, amendment or performance of the project scope, either party or the TCF may refer the matter to the Commission for resolution.

110. TelstraClear also submits that the Commission should determine the parties' liabilities for the costs associated with OSS even if the terms of OSS procedures are left to the TCF or to commercial negotiation. The Commission has accepted the importance of setting charging principles in advance of system development in other contexts like number portability. The issue of who pays for the service closely affects the design of the service and it will be directly relevant to the parties' attempt to resolve the outstanding issues regarding OSS without resort to a further determination by the Commission.

111. TelstraClear submits that the Commission should make a determination of OSS charges in the manner set out in paragraph 16.1(b) of TelstraClear's section 20 application of 4 November 2004 commencing these proceedings:

> *"Telecom and TelstraClear should bear their own costs in designing, deploying, modifying, operating and maintaining their own operational support systems required to support the Requested Services and to interface with each other's operational support system."*

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[42] The development times in Australia and the UK have been longer. However, the Telstra experience is that development timeframes have progressively shortened because, while Telstra initially had to build bespoke solutions, vendors are now releasing off the shelf solutions, which can be modified for local conditions in shorter timeframes.

112. TelstraClear submits that this approach to OSS provision is consistent with overseas practice as discussed in section 7.4 of TelstraClear's Submissions on 16 December 2004. TelstraClear notes that electronic OSS was introduced in Australia at no cost to access seekers as OSS costs were considered part of the incumbent's costs of wholesale business.

113. The requested determination of OSS charging principles is also consistent with:

- the Commission's statement of cost-allocation principles for the onset costs of wholesaling. The Commission considered that each party bearing their own onset costs was consistent with the principles of cost minimisation, aligning costs with benefits, practicality and effective competition and therefore best served the purpose expressed in section 18 of the Act; [43]
- statement in the Draft Determination in relation to KPI monitoring where the Commission has found that KPI implementation, maintenance and compliance costs were "comparable with the onset costs of wholesaling retail services and … should be borne by the party incurring them";[44] and
- the Commission's approach to other inter-operator processes, such as number portability.

Question 8: Do the parties agree that the ITU definitions for the parameters are the appropriate definitions to use as the basis for measurement of key parameters?

114. TelstraClear agrees with the ITU definitions subject to TelstraClear's amendments suggested Section 7.2.2.

7.4 Interleaving

Question 9: Does Telecom seek to recover the additional costs necessary to turn interleaving off for individual ports?

115. TelstraClear believes these costs should be minimal as the process is performed remotely by keystroke entry.

116. If Telecom requests the Commission to determine a charge, TelstraClear requests

[43] The Commission's view on "Actual Costs Saved" and "Avoided Costs Saved" Standards: Application of the Final Pricing Principle for Resale of Telecom Retail Services, 12 April 2005, paragraphs 42 to 44.

[44] Draft Determination, paragraph 252.

access, on an RI basis, to the costs information for scrutiny.

7.5 Future Wholesale Bitstream Availability in New Areas

117. TelstraClear agrees with the Commission's proposed requirement that Telecom notify TelstraClear of the expected completion of upgrading of its network immediately the operational decision has been made to carry out the upgrade. This will ensure that TelstraClear and other access seekers have an equivalent opportunity to prepare marketing plans to launch services in that exchange area.

118. TelstraClear disagrees with the alternate formulation that Telecom notify TelstraClear of the upgrade "in any event not later than the earliest date on which Telecom accepts a customer request to provide ADSL services in that area". Telecom will have already developed and implemented its marketing plan by this late stage. It is unclear whether the first limb of the Commission's proposed test – notification when the upgrade decision has been taken – is a mandatory requirement. If the first limb is mandatory, it is unclear, why the second limb is required, and if it is not a mandatory requirement, in what circumstances Telecom would or could decide to fall back to the second limb. If the intention is to have a more certain, externally verifiable deadline, TelstraClear proposes that the second limb should be the installation or completion of testing of the DSLAM in the exchange.

7.6 Service Transferral

119. TelstraClear anticipates, on the basis of Telecom's submissions in the Private Office proceedings, that Telecom will argue that the Commission only has power to implement half of its proposed terms for part month billing: that is, while the Commission has power in access proceedings to determine the billing arrangements between operators, it has no power to determine the retail charging arrangements of the losing retail operator.

120. Section 30 empowers the Commission to specify "the actions (if any) that a party to the determination must do or refrain from doing". This is a very broad power and would readily cover the charges that a losing operator reassigning a service to another operator can charge the reassigning customer. Exit charges clearly can constitute barriers to switching and the Commission's proposed terms are consistent with the section 18 objectives.

121. The Commission has utilized a similar power in respect of designated multi-network services to prohibit the Donor Network Operator (DNO) charging a retail outport charge to end users.

7.7 Rebates

122. TelstraClear does not agree that enforcement of the Commission's terms in the High Court under section 61 provides a reasonable alternative to the service rebates TelstraClear requested. However, on the basis that the Commission's proposed terms should establish a more transparent and effective KPI reporting regime in order to demonstrate compliance with the standard access principles, TelstraClear does not press its request for rebates.

123. However, TelstraClear does believe that the Commission should address both TelstraClear's costs of using a less inefficient interim OSS solution and Telecom's incentives to move to the full OSS solution through a rebate approach. While TelstraClear accepts that it will take time for the parties to agree and Telecom to develop the OSS solution that fully complies with the Commission's equivalence principle, TelstraClear should not be penalised with higher costs and lost sales / market opportunity in the interim. Telecom will necessarily be supplying the bitstream service for an interim period at service levels which are not consistent with the Commission's equivalence principle and the Standard Access Principles[45]. These non-equivalent OSS processes will place TelstraClear at a competitive disadvantage to Telecom and will raise TelstraClear's costs of supply ("raising rivals' costs") during the period before introduction of fully compliant OSS. This could go on for 18 months or more. While the Deloitte report compares the added costs to TelstraClear of using the proposed eOR system over the current processes and not the current processes with the full OSS solution, the Deloitte quantification of the extra costs to TelstraClear provides some guidance on the significant adverse impact on TelstraClear of Telecom not immediately supplying the OSS in accordance with the Commission's equivalence.

124. TelstraClear also notes that Telecom's estimated costs for reassignment appears to be calculated on a current cost basis using its current, largely manual systems (including the added costs Telecom faces dealing with the inefficiencies and errors caused on the access seeker's side of the current interface by reason of the lack of automation). The full OSS system which is eventually introduced should substantially reduce Telecom's own costs. Telstra has estimated that it achieved

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[45] Telecom has made very little progress towards more efficient OSS although the SAPs have been in place for four years and Telecom, as it outlined to the Commission during the Business Wholesale proceedings, has been progressively modernising its retail OSS. Further, the clear trend over the last several years in international best practice, which is also a SAP requirement, has been to introduce wholesale electronic OSS.

efficiency gains of 40% (as did access seekers) when the full OSS solution was introduced in Australia. As such, permitting Telecom to recover the full costs of the current reassignment process would be inconsistent with the principle in clause 3 of Schedule 1 of the Act, which provides that the access provider should not be permitted to recover "inefficiencies in the provision of the service giving rise to higher costs". While clause 3 applies, strictly speaking, to the avoided retail functions and the inefficiencies apply here in the wholesale process, the basic principle remains relevant, especially where the retail process is more efficient than the wholesale process.

125. TelstraClear proposes that:

(a) until Telecom makes available an OSS which fully complies with the Commission's equivalence principle, Telecom shall provide TelstraClear with a rebate applied against the service transferral fee, the new connection fees and other OSS charges that reasonably compensates TelstraClear for the additional costs it faces by reason of Telecom's interim OSS not complying with the equivalence principle;

(b) the rebate shall be TelstraClear's sole remedy for the interim OSS not complying with the Commission's equivalence principle or the Standard Access Principles, subject to Telecom complying with the obligations set out above to develop the full OSS; and

(c) the parties are to agree on the rebate within 30 calendar days of the implementation of the interim electronic OSS, otherwise either party may refer the matter back to the Commission for determination.

126. TelstraClear's approach has the following advantages, in that it:

(a) **addresses** the problem of the interim non-equivalent solution **raising rivals costs**;

(b) provides Telecom with an i**ncentive** to move to the full OSS solution; and

(c) provides Telecom with **certainty** about its risk exposure in not immediately providing an OSS solution which complies with the Standard Access Principles.

7.8 Other Non-Price Terms

Question 11: TelstraClear request that the other non-price terms of Decision 497 should apply to the supply of the wholesale bitstream service and backhaul service. What additional non-price terms do the parties consider should be included.

127. TelstraClear has written to Telecom suggesting the parties negotiate to resolve the other non-price terms which will apply to wholesale bitstream and which of those terms will be included in the Commission's determination.[46]

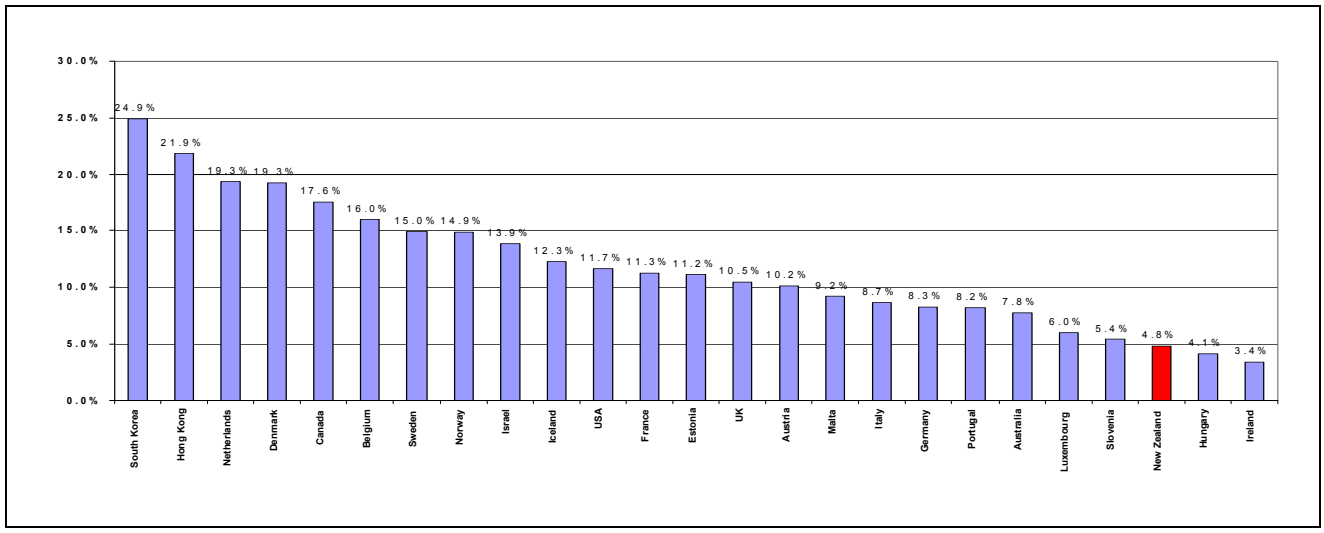
[46] TelstraClear letter to Telecom, 18 May 2005.

ANNEX 1 INTERNATIONAL BROADBAND PENETRATION

Regulatory intervention is clearly needed if New Zealand is to reach the Government's goal of being in the top half of the OECD for broadband penetration. On the basis of the figures discussed below, New Zealand is further from that goal now than at the time of the Commission's Unbundling Report.[47]

As figure 1 shows, while 14 OECD countries had broadband penetration below 5 per cent as at December 2003[48], New Zealand lags in a group of 9 countries, which also included Turkey, Poland, Mexico and Hungary, which still have broadband penetration below 5%[49].

Figure 1: International Comparison of Broadband Penetration Rates 2004



Source: Point Topic

While Telecom says it will achieve its goal of 250,000 broadband subscribers by the end of 2005, New Zealand is not even holding its own in international comparisons. As figure 2 shows, countries whose broadband penetration lagged at the time of the Local Loop Unbundling Inquiry at levels near New Zealand's, such as the UK and Australia, have leaped ahead while other countries that had broadband penetration lower than New Zealand's are rapidly catching up, such as Ireland and Hungary.

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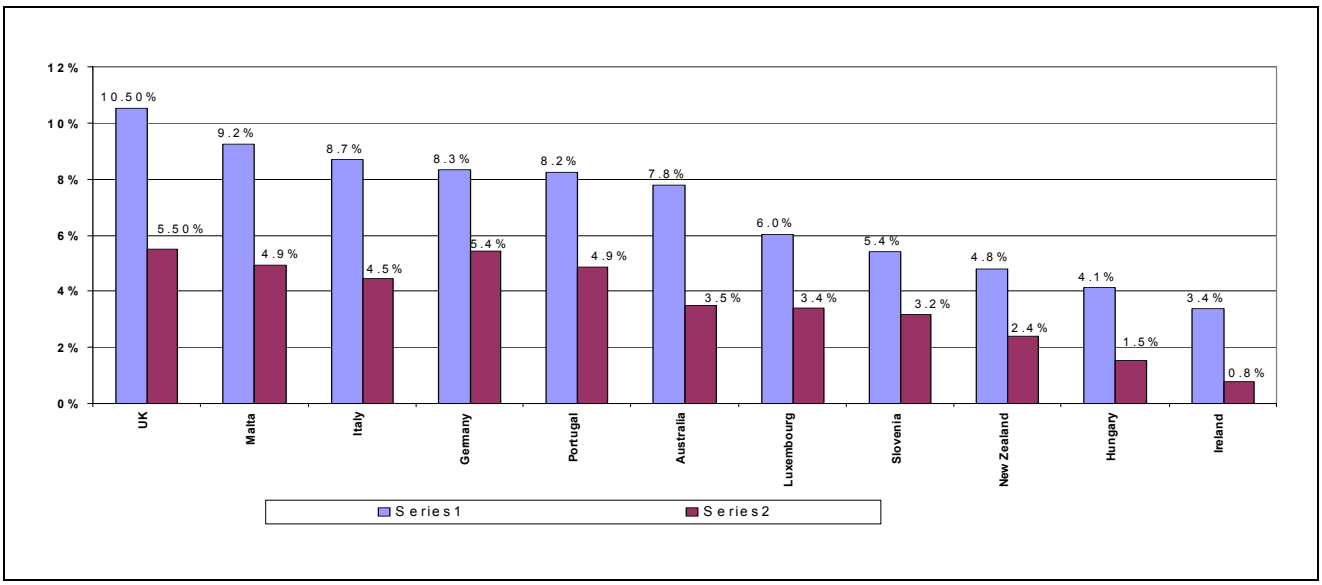
47 Commerce Commission Final Report in the Section 64 Review and Schedule 3 Investigation into Unbundling the Local Loop Network and the Fixed Public Data Network, December 2003.

48 Turkey, Slovak Republic, Mexico, Greece, Czech Republic, Poland, Ireland, Hungary, New Zealand, Portugal, Australia, Spain, UK and Italy (ranked from lowest to highest broadband penetration). Based on data from Point-Topic.

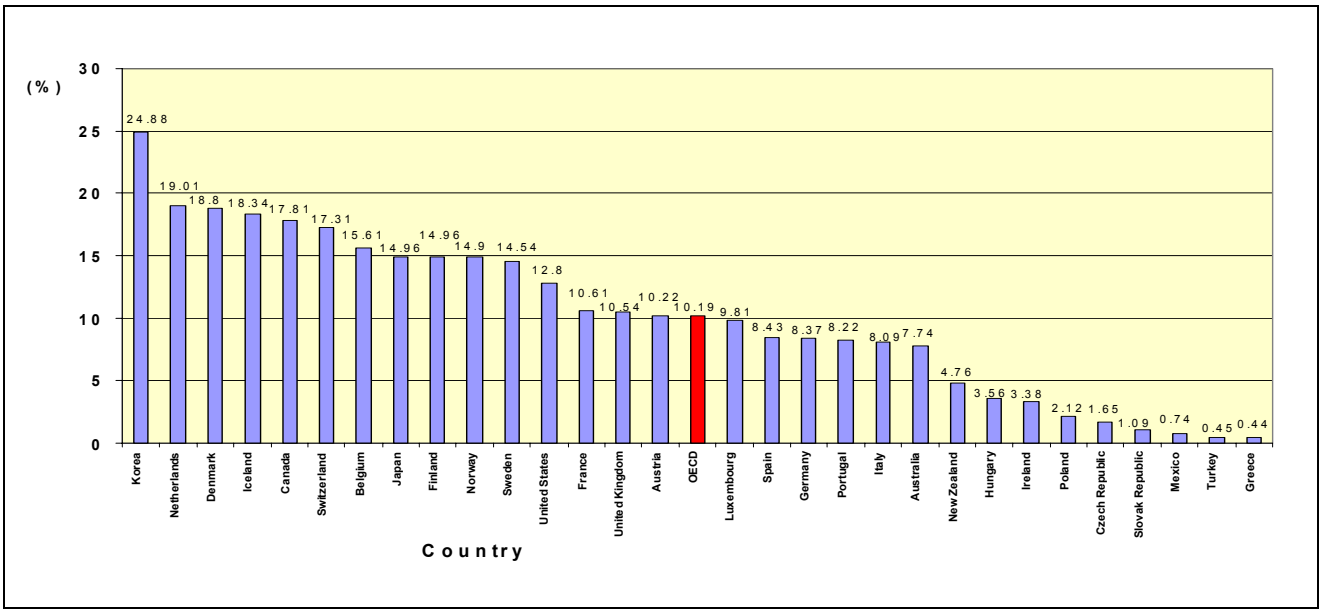
49 Turkey, Slovak Republic, Mexico, Greece, Czech Republic, Poland, Ireland, Hungary and New Zealand (ranked from lowest to highest broadband penetration).

Figure 2: Comparison of Broadband Growth Rates 2003-2004



Source: Point Topic

Figure 3: OECD Comparative Broadband and ISDN Penetration Rates



Source: OECD

From OECD figures[50] and illustrated in figure 3 above, there is little variation in the ranking of New Zealand's broadband penetration as compared to other OECD countries. The OECD figures are slightly different to the Point Topic figures (including because Point Topic covers a wider range of countries),

50 www.oecd.org.

but show a similar story about New Zealand's relatively poor performance. Whilst Australia appears one ranking above New Zealand in this context, the actual percentage difference between the two countries puts Australia significantly ahead of New Zealand with 7.74% broadband penetration, compared with New Zealand at 4.76%.

SOURCE DATA

Figure 4: Broadband Data

Country	Population	2003				2004				Percentage change on 2003
		Total broadband	Business broadband	Consumer broadband	Broadband density	Total broadband	Business broadband	Consumer broadband	Broadband density	
South Korea	47925320	11178499	1285872	9892627	23.3%	11921439	637977	11283462	24.9%	6.6%
Hong Kong	6810100	1230607	85230	1145377	18.1%	1490000	162993	1327007	21.9%	21.1%
Netherlands	16285200	1894420	218079	1676341	11.6%	3151088	379234	2771854	19.3%	66.3%
Denmark	5397640	667788	122467	545321	12.4%	1039544	151820	887724	19.3%	55.7%
Canada	31720400	4653043	347092	4305951	14.7%	5589013	359916	5229097	17.6%	20.1%
Switzerland	7317677	837000	104000	733000	11.4%	1220000	143571	1076429	16.7%	45.8%
Belgium	10372469	1277977	176343	1101634	12.3%	1661920	243442	1418478	16.0%	30.0%
Sweden	8976100	958539	135043	823496	10.7%	1345104	258391	1086713	15.0%	40.3%
Norway	4580600	377000	77700	299300	8.2%	681600	82575	599025	14.9%	80.8%
Israel	6765700	640000	77800	562200	9.5%	940000	115847	824153	13.9%	46.9%
Finland	5219000	420800	153210	267590	8.1%	666965	206225	460740	12.8%	58.5%
Iceland	289000	31000		31000	10.7%	35500	4508	30992	12.3%	14.5%
Singapore	4196500	374000	49698	324302	8.9%	502000	64159	437841	12.0%	34.2%
USA	290809792	25175775	1863867	23311908	8.7%	33933207	2614023	31319184	11.7%	34.8%
France	59900268	3435988	391236	3044752	5.7%	6753600	871655	5881945	11.3%	96.6%
Estonia	1351000	65448		65448	4.8%	150681	19580	131101	11.2%	130.2%
UK	58117200	3183039	364598	2818441	5.5%	6100036	750000	5350036	10.5%	91.6%
Austria	8073000	587300	63541	523759	7.3%	822075	110218	711857	10.2%	40.0%
Guernsey	55800			0	0.0%	5233	726	4507	9.4%	0.0%
Malta	400000	19700		19700	4.9%	36909	5009	31900	9.2%	87.4%
Italy	54951600	2445600	464697	1980903	4.5%	4767945	755008	4012937	8.7%	95.0%
Germany	82531672	4486479	690470	3796009	5.4%	6863600	1053520	5810080	8.3%	53.0%
Portugal	10407000	505460	48185	457275	4.9%	856939	100493	756446	8.2%	69.5%

Country	Population	2003				2004				Percentage change on 2003
		Total broadband	Business broadband	Consumer broadband	Broadband density	Total broadband	Business broadband	Consumer broadband	Broadband density	
Australia	19941300	698700	163275	535425	3.5%	1548300	307335	1240965	7.8%	121.6%
Luxembourg	451500	15355	4501	10854	3.4%	27112	7122	19991	6.0%	76.6%
Slovenia	1997000	63000		63000	3.2%	108000	16418	91582	5.4%	71.4%
New Zealand	4009200	95700	22171	73529	2.4%	192000	29900	162100	4.8%	100.6%
Hungary	10334200	156300	35739	120561	1.5%	426054	68295	357759	4.1%	172.6%
Ireland	3978900	30200	9683	20517	0.8%	134268	31860	102408	3.4%	344.6%

Source: Point Topic

Figure 5: OECD Broadband and ISDN Data

Country	Percentage	Country	Percentage	Country	Percentage
Korea	24.88%	United States	12.80%	Australia	7.74%
Netherlands	19.01%	France	10.61%	New Zealand	4.76%
Denmark	18.80%	United Kingdom	10.54%	Hungary	3.56%
Iceland	18.34%	Austria	10.22%	Ireland	3.38%
Canada	17.81%	OECD	10.19%	Poland	2.12%
Switzerland	17.31%	Luxembourg	9.81%	Czech Republic	1.65%
Belgium	15.61%	Spain	8.43%	Slovak Republic	1.09%
Japan	14.96%	Germany	8.37%	Mexico	0.74%
Finland	14.96%	Portugal	8.22%	Turkey	0.45%
Norway	14.90%	Italy	8.09%	Greece	0.44%
Sweden	14.54%				

ANNEX 2

SUMMARY OF TELSTRACLEAR RESPONSE TO DRAFT DETERMINATION

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
THE FRAMEWORK FOR THE DRAFT DETERMINATION The Commission sets out the legislative framework within which it must make its determination, noting that the purpose of Part 2 and Schedule 1 is to promote competition in telecommunications markets for the long-term benefit of end-users.	8-18	Agree	
SCOPE OF THE WHOLESALE BITSTREAM ACCESS SERVICE **Access Principles & limits on the application of Standard Access Principles** The Commission accepts that the technical service parameters of the service requested by TelstraClear are consistent with the underlying network supporting Telecom's retail Jetstream services. The Commission accepts that the standard of service TelstraClear requested is consistent with the regulated description for wholesale bitstream.	19-31	Agree	
MARKET DEFINITION AND COMPETITION ASSESSMENT **Introduction** The Commission outlines general principles of market definition,	32-44	Agree	

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
using the following criteria: • product dimension • geographic dimension • functional dimension • temporal dimension (not relevant in this case).			
<u>Section 64 Local Loop Unbundling Review</u> The Commission summarises the results of the Unbundling Inquiry where markets for broadband services were analysed to determine whether access should be granted to Telecom's local loop infrastructure.	45-50	Agree	
<u>Telecom's commercial unbundled wholesale bitstream service</u> The Commission notes that Telecom's UBS offering is offered at a uniform national price throughout New Zealand.	51-52	Agree. Telecom has never offered TelstraClear geographically deaveraged prices.	Section 4.2
Relevant Markets	53-100		Section 4.1
<u>Product Dimension</u> The Commission examines various local access products to determine if they can be regarded as substitutes for wholesale bitstream access, concluding that:	58-79		
• Cable-based access is in the same market as wholesale bitstream access. The Commission notes that TelstraClear has deployed a limited cable access network in Wellington and Christchurch but does not provide a wholesale access product over this network.		Agree	

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
• Fibre-based access offers comparable services to retail ADSL services even though services provided over fibre-based access "tend to be high-speed and symmetric services". The Commission notes that fibre-based access retail services "appear to be competitively priced against Jetstream plans".		Agree in same market for asymmetrical services. However, fibre-based symmetrical services are not in the same market. Symmetrical services are priced significantly above asymmetrical services. The higher quality and more bandwidth provided by symmetrical services gives them significantly more functionality than asymmetrical services. The high cost of deploying fibre networks also demonstrates supply-side factors that place symmetrical and asymmetrical fibre-based services in different product markets.	
• Despite technical limitations of FWA, a number of suppliers have started offering broadband services using FWA and pricing their services competitively with ADSL. The Commission notes that the technical limitations on FWA may not be relevant as the regulated wholesale bitstream product is "restricted to an internet-grade service".		Agree	
• Mobile 3G services are not supplied within the same market as Jetstream services. The Commission notes price variables between Telecom's Jetstream and 3G Mobile Broadband plans.		Agree	
The Commission concludes that "the product market can therefore be defined as the market for wholesale broadband access, including copper-based wholesale bitstream, cable, fibre and FWA (but excluding 3G mobile services".		Agree, subject to comments on symmetrical and asymmetrical services above.	

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
The Commission rejects Telecom's suggestion that the wholesale market in which wholesale bitstream is provided should be delineated along customer and speed lines. Such delineation based on customer segments may be relevant at the retail level but not for wholesale services like wholesale bitstream. The division of services based on speed is not justified as "it is not clear that there would be a sufficient break in substitutability around any particular service speed to justify a separation of markets in this way".		Agree	
Functional Dimension The Commission defines the relevant functional dimensions of the market (the level in the production or distribution chain) to be the wholesale level.	80-83	Agree	
Geographical Dimension The Commission considers the geographical market to be defined through common pricing constraints. The Commission concludes that, given Telecom's single national prince for wholesale UBS, there is a national geographical market for wholesale bitstream services (with "differing levels of competitive intensity" in the areas where alternative infrastructure has been deployed). The Commission notes that Telecom has claimed its pricing of the UBS service is differentiated by metropolitan and non-metropolitan geographic areas but has provided no evidence to support this. The Commission seeks clarification from Telecom on this point in Consultation Question 3.	84-99	Agree. Telecom's uniform retail pricing also is relevant to the geographic dimension of the wholesale market. As Ofcom has noted in finding national retail and wholesale markets for asymmetrical DSL services, the wholesale market is a derived market from the retail market. If as Telecom claims there are separate wholesale markets and Telecom is responding through geographically deaveraged wholesale bitstream prices, it would be expected that this also would be reflected in geographically deaveraged retail pricing. The uniform retail pricing either indicates that there are not separate upstream geographic markets or if there are separate	Section 4.2

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
		geographic markets Telecom continues to face limited competition in those markets because it can maintain uniform prices regardless of the presence of competitors in sub-national markets.	
Competition assessment National wholesale market for the provision of broadband access The Commission concludes that Telecom faces limited competition in the national wholesale market for the provision of broadband access.	101-150	Agree	
Existing Competition The Commission notes that: • There are competing networks deployed in parts of New Zealand but: (a) Telecom's share of wholesale broadband access connections remain significant; (b) Telecom has a large market share for the retail broadband market even when fixed wireless access is included; (c) FWA may not provide a competitive constraint on fixed suppliers of broadband access in the next two years.	104-134	Agree TelstraClear submits that alternative fibre-based networks deployed in parts of New Zealand do not pose a competitive restraint on Telecom in the relevant market. The costs of deploying fibre-based networks means that those networks can only competitively provide asymmetrical access services in very limited circumstances: where the building is already connected to the network and asymmetrical access services are incremental to revenues obtained from other services.	Section 4.3

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
• Telecom's lower price and high service level retail plans since the Unbundling Inquiry have been released in the context of competitor developments as well as actual and proposed regulatory intervention. Price reductions by Telecom are, at least in part, a response to the threat of regulation.		Agree	Section 4.3
• Barriers to competition exist with Telecom's commercial churn fees being "significantly in excess of the costs Telecom incurs in churning a customer to a competitor".		Agree	Section 4.3
• Telecom's national retail pricing strategy balances any local competitive restraints that may exist from alternative infrastructure deployment. The existence of alternative infrastructure for higher speed and symmetrical services in some areas has not driven the availability of equivalent functionality in Telecom's national service.		Agree. See comments above on the limited competitive constraint imposed by alternative fibre networks.	Section 4.3
<u>Potential Competition</u> The Commission concludes that new entry may be possible through use of FWA technology operators but such entry "is likely to be limited in its ability to constrain fixed market participants". This conclusion is based on the Commission's findings that: • there are significant barriers to entry for fixed line operators (sunk costs, effect of scale economies/economies of density); • these entry barriers may be reduced for FWA operators but "there are some limitations in terms of FWA-based services being able to compete with fixed broadband services such as ADSL, particularly	135-148	Agree..	Section 4.3

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
with respect to increasingly bandwidth-intensive services".			
APPLICATION OF THE INITIAL PRICING PRINCIPLES **Retail Prince Imputation** The Commission's imputation of a retail price to determine wholesale bitstream access prices is based on findings that: (a) the speed of retail services used in the imputation process is not relevant (the cost of supply of wholesale bitstream service not affected by downstream and upstream speeds provided over an individual circuit);	151-201	Agree	Section 5
(b) separate prices should not be imputed for each customer segment based on Telecom's existing speed and service plans. This would detract from the access seeker's ability to differentiate their service and "reinforc[e] Telecom's chosen price structure";		Agree	
(c) however, separate prices should be imputed for residential and business customers as this is "unlikely to hinder materially service innovation or prevent further price discrimination of end-user services";		Disagree. Customer segmentation is a downstream retail strategy which should not constrain wholesale pricing. The Commission itself acknowledges that customer segmentation is not relevant to the costs of wholesale bitstream but relate to the avoidable retail functions. The Commission appears to have misunderstood TelstraClear's position. In its cross-submission, TelstraClear agreed with the Commission's original	Section 5.1

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
		proposal to set a single wholesale charge for downstream residential and business services but disagreed with the approach of deriving the charge from an averaging of residential and business plans because the high charges for business services would distort wholesale competition for residential and SME end users. TelstraClear proposed deriving the imputed access change from the lowest priced services (which are low speed residential services) because the upstream input, as the Commission noted, should not be affected by higher speeds in the avoided national and international capacity.	
(d) ISP charges for Xtra should be removed from the input price to determine the imputed price;		Agree	
(e) a percentage discount should be deducted for "calling discounts" attributable to Jetstream when purchasing other Telecom services in conjunction with other Telecom service;		Agree	
(f) costs of modems, routers and installation are presently recovered separately from the retail price and do not have to be deducted from the input price, although Telecom does offer free installation and modems from time to time;		Agree. Wholesale installation charges should be assessed applying the AMP methodology from Decision 497, which would mean that the impact of free installation would be reflected in the AMP.	
(g) national and international transmission charges are to be removed from the input price using a linear regression analysis		Disagree. For the following reasons:	Sections 5.2

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
taking the adjusted monthly line rental (excluding GST) as the dependent variable and the data cap / usage allowance as the independent variable to assess the wholesale bitstream access price alone.		• the straight line regression approach is not appropriate because there is not a constant relationship between price per megabyte across plans; and • the straight line regression will be distorted by the excessive rents which Telecom has been able to earn in the currently non-competitive market (as illustrated by the MED international benchmarking). Network Strategies has proposed a simpler arithmetic approach which allows a common range of imputed access prices to be derived across residential and business plans. A price can then be selected within this range. Alternatively, a price could be selected between the lowest imputed price and the highest imputed price (disregarding the outlying high range derived from the Venture Plans).	and 5.3
Benchmarking Avoided Costs Saved The Commission adopts previous benchmarking studies of retail avoided costs for wholesale services and applies a 16% discount rate "subject to data updating". Previous benchmarking study is included as Annexure B. The costs of national backhaul and international transmission have already been deducted from the input price, so that these costs are	195-201	Agree	

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
not relevant when calculating avoided costs saved.			
Initial Price payable for Wholesale Bitstream Access – Residential: $26.19		Disagree. Using the approach of a price within the common range of imputed access prices found by Network Strategies, the price should be $10.40. The alternative method of a price between the lowest and highest imputed access prices produces a price of **[ ] [TCNZRI].**	Section 5.3
Initial Price payable for Wholesale Bitstream Access – Business: $25.87		Disagree (see above).	Section 5.3
SUNDRY CHARGES RELATING TO SUPPLY OF WHOLESALE BITSTREAM ACCESS <u>Reassignment charges</u> The Commission finds that Telecom's reassignment charges should be based on the costs Telecom efficiently incurs as a result of transferring customers from retail to wholesale provision. These costs should not include a common cost mark-up because common costs are incurred as a result of Telecom's wider wholesaling activities. The Commission directs Telecom and TelstraClear to negotiate reassignment costs based on its findings and notes that it will set the charge on request if agreement has not been reached within 30 days of the final determination.	202-219	Agree, but the Commission should require Telecom to provide its estimated costs for the purposes of commercial negotiation. If the charge is to be cost based, an information asymmetry is created between TelstraClear's negotiation team and Telecom's if the costs are not provided.	Section 6 55-58

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
<u>New Connections</u> The Commission adopts a retail minus approach to new connection charges, using a 16% discount for avoided costs saved. <u>Moves, Adds, and Changes ('MACs')</u> The Commission adopts a retail minus approach to MAC charges using a 16% discount for avoided costs saved.		Agree, but subject to a rebate to compensate for the inefficient OSS solution (see Section 7.7 below) Agree, but subject to a rebate to compensate for the inefficient OSS solution (see Section 7.7 below.)	
NON-PRICE TERMS - WHOLESALE BITSTREAM SERVICE **Speed configuration** The Commission requires Telecom to provide a non-rate shaped service on the downstream channel to the maximum capacity of each DSLAM. Telecom may apply rate-shaping in respect of the upstream speed at 128 kbps. This will allow access seekers to differentiate their own retail offerings from Telecom's. Telecom has raised questions regarding the stability of a non-rate shaped service with an unlimited downstream capability and the Commission has requested clarification on this point in Consultation Question 6.	220-301	 Agree TelstraClear submits that full downstream speed services are not made unstable by the upstream constraint. Practically, the "full/non-rate shaped" speed will only be constrained for some applications. TCL consider it possible with a 128 kbps upstream speed despite certain limitations of the downstream TCP that is likely to only effect very small number of customers. Also, alternative UPD traffic not limited by the limited upstream. Any adverse effect of asymmetry is limited to TelstraClear	Section 7.1 Sections 7.1 and 7.2

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
		customers.	
Request for service equivalence The Commission requires Telecom to provide the Commission and TelstraClear with quarterly reports on service parameters for the wholesale bitstream service to ensure that service equivalence is achieved with Telecom's design parameters for its Jetstream service. Appendix A sets out the service parameters to be measured. Costs of implementing and maintaining a monitoring system for measuring service parameters are to be borne by Telecom.		Agree to Appendix A KPIs, subject to comments below: (a) KPIs should include support processes like ordering, provisioning and service reporting; (b) KPIs need to be clarified with regards to: • contention ratio • jitter • packet loss • latency; and (c) KPIs should include a measurement of the upstream channel that places a limit on the lowest speed or monitors the percentage of time that the maximum 128kbps is obtained by Telecom.	Section 7.2
Telecom's quarterly reports are to be subject to an external audit by an auditor agreed by Telecom and TelstraClear, or failing agreement within 30 days of the final determination, appointed by the Commission. Direct costs of the audit function to be borne by Telecom and TelstraClear equally.		Agree to external audit but would propose appointment of the auditor before KPIs and measurement methodology is finalised in order to assist in that process.	Section 7.2.3

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
Interleaving The Commission requires Telecom switch interleaving off if requested to do so by TelstraClear for a wholesale bitstream supported customer. Telecom may impose efficient charges for this at a level approved by the Commission based on its incremental costs. The Commission notes that there is no reasonable technical impediment to individually configuring ports for interleaving and that any consequences of turning interleaving off will be limited to the particular port.	253-266	Agree. TelstraClear believes the costs to be minimal and requests access to any cost information Telecom may provide.	Section 7.4
Usage limits on data downloads By common agreement of the parties, the Commission requires that the wholesale bitstream service must be provided without usage limits on data downloads.	267-268	Agree	
Retail / Wholesale concurrency The Commission does not require Telecom to provide a wholesale equivalent of new Jetstream services not currently provided. The Commission notes that this requirement was agreed by the parties but finds that it is not required given the Commission's decision that a non-rate shaped downstream service should be provided to the maximum technical capacity of the DSLAM.	269-270	Agree	
Operational Support The Commission requires Telecom to provide OSS to TelstraClear "whether manual or automated, such that there is no material	271-279	Agree to the Commission's high level principle of equivalence.	Section 7.3

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
difference in provisioning or fault repair in regard to the experiment of retail customers whether the retail services reliant on wholesale bitstream access are supplied to TelstraClear or Telecom". The Commission declines to make detailed determinations regarding OSS or minimum service levels, instead noting that these matters are under consideration by the Telecommunications Carriers Forum (TCF). The Commission expects OSS matters will be either dealt with by the TCF Code or by agreement between the parties. The Commission notes that either party may request the Commission to determine "any residual operational support issues that the parties are unable to agree upon". The Commission finds that the "efficient provision of OSS is an important aspect for the provision of wholesale services".		TelstraClear requests that: (a) The Commission order an interim OSS solution for the electronic exchange of data to be in place and operational within 30 days of the final determination. (b) The Commission gives more guidance on the manner in which the high level principle of equivalence proposed by the Commission should be implemented, including to set a timetable for implementation of 18 months, a requirement for implementation of the equivalence principle through electronic interfaces to the extent reasonably feasible, and consideration of versions of the electronic solution which provide full electronic bonding suitable for large operators and a web server solution suitable for smaller operators, as is available in Australia and also for LTNP in New Zealand. (c) The Commission make a determination that each party should bear their own OSS costs.	
Static IP Addresses The Commission determines that Telecom should provide a wholesale bitstream service that does not prevent TelstraClear from	280-286	Agree	

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
providing static or dynamic IP addresses. The cost differential between Telecom providing static and dynamic IP address is minimal.			
Future wholesale bitstream availability in new areas The Commission requires Telecom to deal with service requests by TelstraClear on the same basis as new JetStream connections, taking into account wholesale as well as retail demand when considering sunk investment in deployment of ADSL to new areas. Telecom must give notice to TelstraClear of any expected upgrade of its network in an area to support ADSL "immediately the operational decision has been made … and in any event, not later than the earliest date on which Telecom accepts a customer request" to provide ADSL in a new area.	287-291	Agree Agree with first formulation ("immediately the operational decision has been made"). Disagree with alternative formulation ("not later than the earliest date on which Telecom accepts a customer request"). TelstraClear proposes the alternative formulation should be the completion of testing.	Section 7.5
Service Transferral The Commission requires that: • refunds are given to JetStream customers churning to TelstraClear for the unused portion of the customer's Jetstream service within the relevant billing period; and • TelstraClear be charged for wholesale bitstream access for the churned customer only from the date on which service transfer is implemented.	292-297	Agree. The Commission has power under section 30 to make these determinations.	Section 7.6
Rebates	298-299		Section 7.7

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
The Commission declines to impose service level rebates. The Commission considers such sanctions to be unnecessary because the Commission's determination will be enforceable as a judgment of the High Court in its civil jurisdiction under section 61 of the Telecommunications Act.		TelstraClear will not make further submissions at this time in favour of service level rebates given the system of KPIs to be imposed by the Commission. TelstraClear proposes that the Commission require the parties to agree a rebate against new connection, service transferral and MAC (if any) charges until an OSS fully compliant with the Commission equivalence principle is introduced. This approach: • offsets the higher costs Telecom's provision of the bitstream service at non-equivalent levels causes its rivals; • is consistent with the principle in clause 3 of schedule 1 of the Act that costs attributable to inefficiencies in provision of the service not be included; • provides Telecom with an incentive to transition to the full OSS solution; and • provides Telecom certainty by providing an exclusive remedy for claims by TelstraClear against Telecom for beach of the Standard Access Principles.	
Other non-price terms The Commission requests additional information from the parties regarding the application of the non-price terms of Decision 497 to	300-301	The parties are to discuss between each other.	109

Draft Report	Draft Determination Paragraph No.	TelstraClear Submission on Draft Report	TCL Submission Section No.
the wholesale bitstream and backhaul service.			
DATE OF COMMENCEMENT AND EXPIRY **Date of Commencement** Date of initial determination is the date of commencement **Date of Expiry** Determination to expire 24 months from the date of the Commission's initial determination. The Commission may set a new expiry date in a subsequent price review application.	302-306	Agree. Agree.	
Appendix A: Network Performance Measurement Parameters		See comments on the non-price terms above.	
Appendix B: International Benchmarking Study of Avoided Costs Saved		See comments on the application of the initial pricing principle above.	

ANNEX 3 NETWORK STRATEGIES REPORT

ANNEX 4 DELOITTE REPORT

ANNEX 5 SCHEMA REPORT