



**Telecom New Zealand Limited**

**Submission in respect of Callplus' application on access and  
interconnection with Telecom's fixed PDN service ("Bitstream  
Access")**

**12 April 2006**

**PUBLIC**

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## **A EXECUTIVE SUMMARY**

1. Telecom remains committed to the delivery of broadband for all New Zealanders through retail and wholesale. Our recent Wholesale Charter affirms our self-imposed commitment to the delivery of intermediate products such as UBS with consistent network performance and available at the same time as retail where a retail xDSL service is offered. Our recent retail launches and consistent wholesale UBS offerings evidence this approach.
2. Telecom continues to maintain that there should be retail and wholesale consistency accompanied by the ability to price discriminate. The negative impacts caused by no price discrimination are highlighted further when consideration is given to ADSL2+ and the incentives on investment to enable the delivery of higher speeds.

### *Higher speeds should be delivered in a controlled environment*

3. Telecom is committed to the delivery of increased speeds and quality in the broadband market. Our recent announcement of our intended investment in ADSL2+ technology accompanied by other investment will help us move in this direction. For example, Telecom expects to move to a speed higher than 3.5 Mbps downstream for some customers once Telecom puts in place a new spectrum management regime that enables higher speeds to be efficiently rolled out.
4. The service sought by the applicant is set out in Table 7 of Decision 568. A key objection to the findings of the Commission in Decision 568 that an unconstrained service should be rolled out is the Commission's assumption that any benefits outweighed any costs. Telecom substantially disagrees.
5. While the Commission accepted that there is a risk of interference from higher speed services which could result in degraded service quality or loss of ADSL services for some users, it did not consider that either Telecom or TelstraClear had quantified the extent of the risk or demonstrated materiality. While Telecom disagrees that the risks were not quantified, the Commission's view indicates that it made a decision without quantifying the risks itself. Telecom considers this is unacceptable. Telecom will seek to quantify these risks further but, most importantly, we will explain our movement to an improved spectrum management regime which will enable the delivery of higher speeds to occur in a manageable way within a controlled environment.
6. The risks of rolling out an unconstrained service are real. Telecom considers that the benefits in Decision 568 are misconceived. As Telecom previously submitted, the risks substantially outweigh the benefits to a handful of customers who might obtain higher speeds. A far more prudent approach is for higher speeds to be delivered under a controlled environment. Telecom considers that a new spectrum management regime should be put in place before higher speeds are offered.
7. Bit rate limiting increases the reach of broadband to more end users. In Telecom's view, this continues to remain a preferable solution for New Zealand. As explained at length in the Decision 568 proceedings, if New

Zealand moved to an ACIF mask as in Australia, reach would be reduced and approximately 70,000 lines may be unable to obtain broadband in the future.

8. Telecom is working on a new spectrum management regime which, in very simple terms, could be considered to be "bit rate limiting PLUS". Through such a regime Telecom would aim to retain bit rate limiting and the reach it affords New Zealanders but develop a number of new "levers" to improve the overall opportunities for higher speeds in New Zealand. Substantial analysis and assessment of the network is required. While this has commenced, some time is required to develop options for a new spectrum management plan and formulate the best and most efficient approach for Telecom's network. Telecom would then expect to consult before a plan was finalised towards the end of the year.
9. There are a number of potential speed/reach profiles which could be defined in a spectrum management plan. A requirement to provide an unconstrained service will likely disable a number of options, in particular options which emphasise maximisation of reach over maximisation of speed. The Commission must carefully weigh up any options it proposes to cut off.

*Price discrimination, innovation at retail and investment*

10. Telecom reiterates its previous submissions on the importance of price discrimination in relation to speed. Telecom and the industry have, in line with the Commission's views in Decision 568, removed the residential and business differential. If operators are also unable to charge different prices for different speeds, which in Telecom's view is the effect of Decision 568, this has a counter-intuitive effect on the very investment incentives required to get to higher speeds.
11. The issue is highlighted further by reference to an approach mooted in a consultation prior to Decision 568 regarding ADSL2+ which is discussed below. Telecom's understanding of Decision 568 and the application is that a maximum PIR of 7.6 Mbps is sought. Nevertheless, given our announcement of Telecom's proposed investment in ADSL2+ and submissions made during the Decision 568 proceedings on ADSL2+, for completeness Telecom set out its initial views on issues which arise should regulation stray into that territory.
12. Telecom is yet to finalise how it will roll out and commercialise ADSL2+ technology. Several matters are however clear. Telecom has significant investment in ADSL1 line cards. If the Commission made a determination that led to ISPs requesting that customers churn to ADSL2+ or some form of mass migration to ADSL2+, this would have significant impact on investment that Telecom has already made, leaving it stranded before its life cycle has been completed. Such an outcome would cause Telecom to reconsider its DSL2+ rollout strategy.
13. Telecom's current intention is to roll out ADSL2+ where this makes economic sense. With the exception of Conklin's, existing DSLAMs can accept new ADSL2+ line cards. Telecom would intend to utilise ADSL2+ capabilities for newer services such as video or TV based services or for

higher speed broadband that required ADSL2+ capabilities. Where necessary ADSL2+ cards would be used to support basic broadband services such as 256k and 2 Mbps plans.

14. Existing customers would remain on existing ADSL1 cards except where they wished to migrate to premium services that required ADSL2+ capabilities. An alternative approach would be to change out all the cards in larger exchanges and replace with ADSL2+ and reuse these cards in smaller exchanges to support growth. This would result in two broadband zones – ADSL1 and ADSL2+. Faced with the prospect of a significant investment in ADSL1 line cards being made redundant this strategy would be the optimal one for Telecom.
15. ADSL2+ does enable higher line speeds for shorter copper lines. However, beyond several kilometres the performance of the existing ADSL1 and new ADSL2+ converge. Similarly, investment in the next generation of DSLAMs (ISAMs) is an option to improve the services to be available in New Zealand. Telecom needs to consider substantial investment in loop shortening and other matters like ISAMs to work towards a wider coverage of higher speed broadband services.
16. No rational investor would continue to invest however if, as a result of introducing new technology, they were forced to write off many millions of dollars on existing investment and were not able to make any additional revenue from new investment. If the Commission eliminates the ability to price discriminate based on speed and other new services, it will need to carefully consider the impacts on investment in New Zealand's infrastructure for the delivery of new services, including higher speed internet access and the section 18 purpose of the Telecommunications Act.
17. To preserve appropriate investment incentives, the Commission must ensure that it does not seek to regulate technology which has not been rolled out yet (ADSL2+). If it does so, it is asking Telecom to invest in new technology with no prospect of earning additional revenue. Assuming this does not occur, the economics are expected to work such that development of an MSSA network is promoted rather than a best efforts internet network.
18. In other words, if it mandated that a higher speed service be rolled out at the same wholesale price as a 7.6 Mbps maximum service, no price discrimination will occur and Telecom will not recoup any additional revenue for its investment. If the Commission continues to maintain that the benefits of an unconstrained service outweigh the costs and that such an outcome represents the long term benefit of end users, in Telecom's view this must be a service which is up to the theoretical maximum of a PIR of 7.6 Mbps based on existing technology.
19. If the Commission were minded to mandate a service with a higher theoretical maximum PIR of greater than 7.6 Mbps it would be regulating investment and services not yet incurred or commercialised. It would create some difficulties imputing a retail price for such a service with a maximum theoretical PIR between 7.6 Mbps and 24 Mbps. No rational regulator would expect Telecom to promote the investment in higher speeds if they were to be rolled out for the same price as existing speeds.

Accordingly, if Telecom's understanding of Decision 568 and the application is not correct the opportunity to make full submissions is required on the impact of regulation of new investment and how a service not yet available at retail (or wholesale) could be priced in a retail minus way.

20. Finally, it is worth reminding the Commission that Telecom has committed through principle 2 of the Wholesale Charter to issue intermediate products consistent with retail where retail xDSL services are offered. So, for example, if ASDL2+ or other investment enables a higher speed retail broadband service to be rolled out, a wholesale intermediate product will be rolled out at the same time. This should be factored into the cost benefit analysis.

### *Pricing*

18. Telecom repeats its submissions on the importance of price discrimination and its relevance to the meeting of the section 18 purpose. Telecom continues to maintain that a range of services at retail and thus at wholesale is the most appropriate way forward. The Commission is aware that new commercial UBS services are available without residential and business distinctions and, at substantially lower prices than they were when the Commission last considered such issues.
19. Without the ability to price discriminate, the market is likely to, in Telecom's view, converge towards a single high value low priced plan. Competition will simply occur on price not on product variety and differentiation. While the Commission stated in Decision 568 (para 301) that TelstraClear might have incentives to implement price discrimination, the Commission omitted to comment on detailed submissions provided in the Decision 568 proceedings that provided that other operators would not have such an incentive. Thus, regardless of Telecom or TelstraClear incentives to price discriminate, this is unlikely to be sustainable.
20. In the absence of an ability to price discriminate it is likely that the convergence of the market to the highest speed for a single price will mean that entry level plans are likely to disappear.
21. In Telecom's view, the Commission's regression analysis in Decision 568 was seriously flawed in many respects. These views are outlined in our submissions. Telecom notes that the retail and wholesale markets have substantially changed since December 2005 and that, the Commission is not bound by its views in determining Telstraclear's application.
22. A weighted average pricing model is a substantially more robust approach. The Commission recognised the robustness of such a model in Decision 568 by setting it up as the revision mechanism. Telecom considers that the Commission should ensure consistency between the starting methodology and the revision methodology by using a weighted average approach. Telecom consents to the revision methodology in Decision 568 if the same method is adopted as the starting calculation. Telecom's position is otherwise reserved.

23. If the Commission pursues an unconstrained service as being in the long term interests of end users, the Commission should start its analysis with the most comparable service at retail. The current market highlights the 3.5/128 services as the most comparable. The Commission must then seek to impute the retail price of a higher speed, unconstrained service.
24. Telecom considers that the previously benchmarked rate of 16% is too high. However, should it be the case that this is what is sought, Telecom will not oppose the imposition of such a discount as part of the initial price.

*Remaining issues*

25. Telecom does not agree with the Commission's view on market definition or its view on the state of competition set out in Decision 568. Telecom's submissions are focused on the main areas of concern raised by those findings and on the provision of updating information.
26. Telecom is unable to respond fully on the proposed non price terms as we do not understand what the applicant is seeking. Urgent clarification is sought so Telecom can submit on these matters in cross submissions.

## **B FRAMEWORK FOR THE DETERMINATION**

27. Telecom has set out in detail in submissions during the Decision 568 proceedings its views on the legal framework. All of our previous submissions on the legal framework remain relevant. Those submissions are not repeated here but, for ease of reference they relate to the following matters:

- (A) the onus on the Commission and the scope of the Commission's jurisdiction;
- (B) the application of the section 18 purpose;
- (C) the application of the initial pricing principle; and
- (D) the application of standard access principles and their limitations.

## C REQUESTED BITSTREAM SERVICE

### Introduction

28. Telecom's understanding of the application is set out in paragraphs 2 to 13 of our comments dated 27 March 2006<sup>1</sup>. The service sought is set out in Table 7 of Decision 568. Telecom has not received any advice to the contrary or alternative definition of the service from the applicant.
29. Telecom accepts the upstream speed, shared virtual path, no data upload or download limits and the position on IP addressing as set out in Table 7 of Decision 568.
30. Comments in this Part are focused on the issues below.

### Downstream speed or peak information rate (PIR)

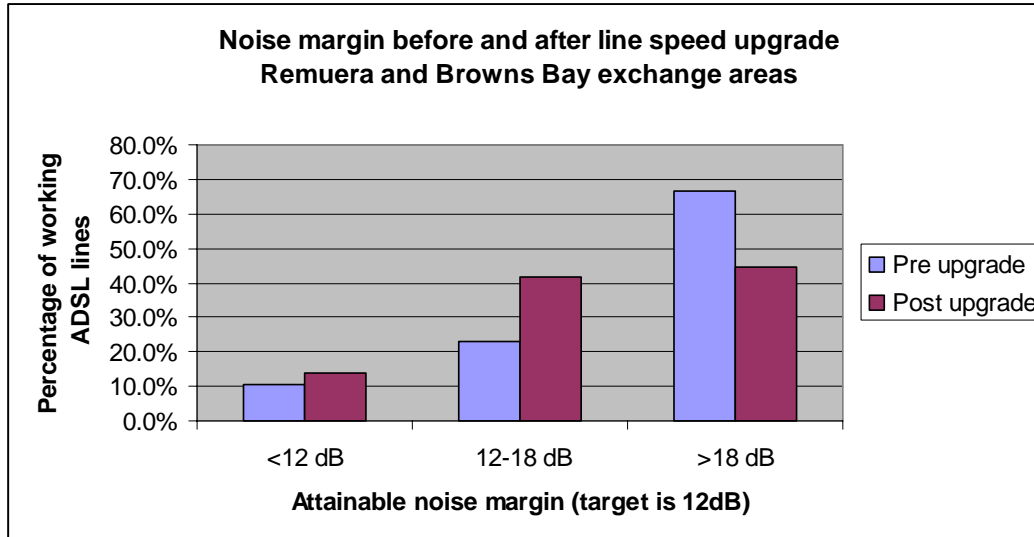
#### *Network performance*

32. Telecom is in the process of upgrading its speed plans in the market. The rollout of these enhanced plans has required the line rate on most DSL lines to be increased. This line speed change has coincided with the implementation of a network analyser tool that will monitor and report line performance metrics on a line by line basis<sup>2</sup>. The impact of this speed change has been closely monitored.
33. In line with previous submissions, the increase in line rate to 2560 kbps for the majority of users (and 4288 kbps for those on the highest speed plan) has had little impact on the reach of all services. However, at the time we migrate plans to higher speeds, a number of customers may not be able to achieve the target 2Mbps plan speed because their line cannot synchronise at 2560 kbps. Telecom will notify customers that they are unable to achieve the plan speed.
34. The significant result of the 256k to 2Mbps/3.5Mbps upgrade is the observable increase in noise in the cable. This is indicated by the reduction in the noise margin being achieved on lines. The higher the margin the better off customers will be because there is less risk that the modem will misinterpret the data stream.
35. This line speed upgrade has now been completed but the data for the entire network was not available at the time of this submission. The chart below shows measured data from the Browns Bay and Remuera exchange areas, which were the first areas upgraded. This clearly shows the reduction in attainable noise margin as a result of the speed upgrade.

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<sup>1</sup> Letter from Telecom (Parkes) to Commission (Borthwick)

<sup>2</sup> This tool is not yet fully functional or automated and implementation is being worked through.



36. In line with international best practice, Telecom sets its target noise margin to 12dB for ADSL. If the maximum line speed setting of a line already operating at close to the 12dB target is increased, the actual line rate achieved will not materially increase. Lines operating below the 12dB noise margin target are at risk of being unstable. Following this recent speed upgrade, over 40% of lines are now operating close to their target performance margin as a result of the overall increase in cable noise. Any further significant increase in DSL power used in the cable through further lifting of the maximum permitted line speed of a significant number of lines, puts these lines at risk of decreasing their speed and not achieving their plan speed, or becoming unstable.

37. Telecom plans to undertake further analysis as part of developing our spectrum management plan.

*Reach and speed trade off*

38. As traversed in public material during the proceedings relating to Decision 568 Telecom set out the trade off between speed and reach. Telecom explained that in New Zealand, a bit rate limiting approach had been used to manage spectrum in order to maximise reach. Telecom also set out that, if a spectral comparability benchmark the same as that implemented by ACIF for the Australian market, is applied the consequence would be that approximately 73,114 Telecom access lines should not be offered broadband service<sup>3</sup>.

39. Given these issues Telecom maintains that the appropriate balance between speed and service availability at present is a maximum ATM PIR in the vicinity of 3 to 4Mbps. A maximum DSL line PIR of 4288 Kbps, in line with Telecom's highest best efforts retail broadband plan (and which supports an IP packet PIR of 3584 Kbps), is considered an appropriate balance. We note that the Australian Communications and Media

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<sup>3</sup> Refer paragraph 13 of Telecom's 27 October 2005 submissions in the Decision 568 proceedings and a letter from Telecom (Oakley) to Commission (McLauchlan) dated 1 August 2005.

Authority produced a report dated February 2006<sup>4</sup>. This report represents independent, objective evidence that the practical, real world performance delivered to end users of an unconstrained downstream service with an IP packet upstream PIR of 128 kbit/s (referred to as unconstrained/128) is around 3.5 Mbps IP throughput. This is shown in Figure B.1 of the document. This shows that the end user benefits of changing from a 3584/128 service to an IP unconstrained/128 service are negligible even before allowing for the adverse impacts on reach and speed for other end users. Consistent with this, Telecom has offered a new suite of speeds to the industry including a 3.5Mbps IP service with a higher upstream speed. The service definitions and launch dates were consistent between retail and wholesale. This suite of services is currently our position but clearly matters will evolve over time and this is discussed further below.

40. Telecom advised the Commission last year that it did wish to work towards development of a fit-for-purpose spectrum management regime along with possible tools to mitigate the risk of service degradation over time in the cable network.
41. Telecom did not agree that the benefits outweighed the costs in mandating an unconstrained service in the absence of a different approach to a spectrum management regime. Telecom is concerned that, given service degradation issues, Telecom would have no choice but to reactively move to an ACIF benchmark approach which would require us to significantly reduce the number of New Zealanders offered any broadband service. Telecom considers that the risks of introducing unconstrained services before a spectrum management regime is put in place are material.<sup>5</sup> Those risks are that Telecom will have to retrospectively downgrade the plan or withdraw service from some broadband customers and Telecom's commitments to its committed bit rate business services customers may no longer be able to be met.

#### *Spectrum management regime*

42. Telecom's view is that New Zealand should move to higher speed ADSL line PIRs only once a sensible spectrum management regime is in place. Telecom considers that the Commission erred in its view that it should let unconstrained occur with an ability to deal with the consequences later through a spectrum management regime.
43. Accordingly, Telecom has been proactively working on these issues and is seeking to move to implementation of a new spectrum management regime in New Zealand later this year. It is our desire to increase the ADSL line PIR only within a controlled environment and with the minimum impact on reach and service degradation.

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<sup>4</sup> "Understanding your Internet Quality of Service 2004-05" A report on the data rates and reliability of internet connections in Australia – see Figure B.1 shows a cable unconstrained/128 service. It has a theoretical peak of 10 Mbps but, as shown, it delivers on average 3.5 Mbps. Our submissions have been based on an expectation of a similar result with an unconstrained/128 service.

<sup>5</sup> The Commission appears to have acknowledged that Telecom may have these views in paragraph 241 of Decision 568.

44. Telecom's previous Full Speed services have now all been grandfathered and Telecom expects a rapid migration of customers off those plans onto either retail or wholesale plans with a constrained IP downstream speed of up to 3584 kbps. Telecom will advise the Commission of progress with this migration through the course of this application. While Telecom had been dissuading customers from taking up Full Speed plans for some time by keeping those plans' prices high, it became particularly important to ensure that usage of these plans was rapidly minimised when the standard speed was raised from 256k to 2M.
45. While the majority of customers were on 256k plans, the steady decline in full speed plan penetration<sup>6</sup> provided for a manageable situation as the overall number of broadband services increased. This situation would have become unmanageable had an unconstrained bitstream access service been determined in the absence of an acceptable spectrum management regime.
46. With the migration of customers in conjunction with the launch of Telecom's new retail plans, the standard plan has rapidly moved from 256k to 2M. This means a substantial increase in spectrum consumption and it was no longer sustainable to have a series of Full Speed plans still available in the market, even at a high price. Telecom evaluated that the adverse effects of allowing only a slow migration away from Full Speed plans would be significant. Accordingly it launched as part of its product suite at retail and wholesale a set of 3584/512 plans at prices substantially below the prices of the corresponding Full Speed plan prices. For example the Xtra Broadband Pro plan with 10 Gbytes is priced at \$79.95 per month with calling compared to the previous Xtra Jetstream 10000 plan at \$1019.00 per month. At the same time Telecom grandfathered those Full Speed plans.
47. This is work in progress and Telecom will be aiming to disclose more to the Commission and the industry shortly. We do not expect to have our new spectrum management plan implemented until late 2006. While work has already commenced there are a detailed number of steps that need to be worked through. These include:
- (a) simulation prediction of scenario outcomes;
  - (b) configuration laboratory testing completed;
  - (c) validation of prediction against field data;
  - (d) impact assessment on existing network;
  - (e) supporting operational capability definition; and
  - (f) peer review from partners.
49. Any plan implemented prior to completion of this work is highly likely to be more conservative and would not provide an optimum trade-off between the various potential speed/reach profiles. Telecom intends to work to the latter objective.

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<sup>6</sup> As disclosed to the Commission and discussed in paragraphs 221 and 222 of Decision 568

50. In the absence of differentiated pricing for higher speed services, any introduction of higher speed services in the network prior to completion of the spectrum plan may be extremely difficult to withdraw where they conflict with the final plan. Telecom believes it is therefore prudent not to undermine the objectives of the plan prior to its completion.

*ADSL2+ and future investment*

51. The Commission in Decision 568 regulated the Peak Information Rate as:

- (a) "The maximum theoretical line rate that the DSLAM can support allowing for standard DSL overheads.
- (b) The PIR may differ where Telecom has limited transport capacity between the DSLAM and ATM switch"

52. The maximum theoretical line rate that a DSLAM was able to perform at the time of Decision 568 and currently is 7.6 Mbps. This was traversed publicly in great detail during the Decision 568 proceedings. The Commission has recognised this as a fact<sup>7</sup>. Telecom understands that this is the position in Decision 568 and that this is what the applicant is seeking<sup>8</sup>.

53. If Telecom's understandings are incorrect this should be made clear in order that a proper opportunity to make submissions is available in advance of the draft determination. If the Commission were minded to regulate ADSL2+ investment and higher line speeds it would be seeking to regulate investment that has not yet occurred and to impute retail prices for services not yet commercialised or available. Absurd incentives will be created if the Commission sought to apply the same price for a higher speed service enabled by ADSL2+ and other investment. Substantial submissions would need to be made and considered if the Commission proposed to proceed in this manner. Our understanding for the position of Decision 568 is set out below and a discussion is also presented on future investment in ADSL2+ for the benefit of the parties and the Commission.

54. In a Statement of Consultation dated 12 October 2005 the Commission stated:

"The maximum PIR may increase in the future as Telecom utilises new network technologies for the delivery of ADSL services."

55. The Commission dropped this statement from its determination in Decision 568.

56. Telecom has recently announced its intentions for rolling out Next Generation Broadband. This includes the development and progressive installation of ADSL2+ equipment starting in June this year.

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<sup>7</sup> Paragraph 14 of the Statement for Consultation dated 12 October 2005 in the proceedings leading up to Decision 568.

<sup>8</sup> For example: Ihug's Chief executive Mark Rushworth has stated this publicly as recorded in "The Line" Articles entitled "Ihug signs 800 to 3.5 Mbit/s" dated 5 April 2006 and "ihug and Callplus sign on UBS" dated 27 March 2006.

57. Telecom's current intention is to roll out ADSL2+ where this makes economic sense. With the exception of Conklin's, existing DSLAMs are able to accept new ADSL2+ line cards. ADSL2+ does enable higher line speeds for shorter copper lines. However, beyond several kilometres the performance of the existing ADSL1 and new ADSL2+ converge. Thus, shortening of copper loops is also key to delivery of higher speeds as set out in submissions by Telecom in the Decision 568 proceedings. Similarly, investment in the next generation of DSLAMs (ISAMs) is an option to improve the services to be available in New Zealand.
58. Given the right investment environment, Telecom plans to use ISAMs to provide ADSL2+ services and then to provide the base platform for delivering MSSA services like video. These new services are not readily possible on the existing ASAM equipment, even with ADSL2+ technology. Telecom's intended ISAM deployment is the first stage of our planned MSSA investment in the local access network. Provided Telecom is in an environment where it is able to see a return from investing in the new platforms, Telecom will be incented to engage in a wide geographic roll out of such capability. Additional benefits will arise. The new generation DSLAMs require new Ethernet transport systems. Wide roll-out of Ethernet capability will have a positive spin off for many businesses and branch offices in provincial and smaller centres in New Zealand. It brings the potential of high speed Ethernet based services to places outside of the main metropolitan areas. To make higher speed internet services available to more of New Zealand, Telecom needs to consider substantial investment in loop shortening, the roll out of higher capacity Ethernet transport networks and of new generation DSLAMs that can handle the much higher traffic demands of services like video. These all require Telecom to see a clear incentive to invest.
59. The Commission should be clear in its draft determination that it is not seeking to regulate new investment. The most appropriate way to ensure this is to define only regulated services which correspond with Telecom's retail broadband services. Should the Commission decide, however, to regulate an unconstrained service, that unconstrained service should be set to a maximum PIR value of 7.6 Mbps. This accords with existing network capability and avoids adverse impacts on investment incentives.
60. No rational operator would invest to provide higher speeds if no increase in revenue could be derived from the investment – ie: an up to 24Mbps service would be priced the same as an up to 7.6 Mbps services. If the Commission continues not to support price discrimination and/or proposes to regulate new technology at the same price, this will be the result (quite apart from Telecom's concerns around the stranding of assets).
61. Incentives to invest in the technology and activity that will enable higher speeds will need to be reconsidered and Telecom may be incented not to deploy technology, to delay deployment or may be forced to severely limit the geographic availability of ADSL2+ (eg: Auckland, Wellington and Christchurch main exchanges only). Telecom has alternative deployment options for ADSL2+ including a complete change out of larger exchanges of existing line cards and replacing with ADSL2+ cards. The existing ADSL1 line cards could then be redeployed to support growth in smaller

exchanges for the foreseeable future. This would result in a two zone DSL network – a ADSL1 zone and a ADSL2+ zone.

62. Copper loop shortening requires significant investment and is key to the promotion of higher speeds in New Zealand. Telecom's incentives to invest here will be significantly affected if no additional revenue can be derived to pay for such investment. The planned investment in Ethernet capability to more provincial centres and smaller towns would be undermined.
63. Such an outcome would be very inefficient and would not best meet the purpose in section 18 of the Telecommunications Act. At worst, the majority of New Zealanders would be denied higher speeds through lack of investment – directly contrary to the Government's objectives. At best, it may result in Telecom providing new capability for customers that do not necessarily value it, while other customers are unable to access it outside specific exchanges.
64. If the Commission excludes ADSL2+ from its determination, the economics are expected to be such that investment in an MSSA will be promoted. However, should the Commission continue to seek to destroy the ability for speed price discrimination and seek to regulate new ADSL2+ technology, the Commission will substantially skew investment incentives away from an MSSA network and a speedier roll out of higher speed services in New Zealand.
65. Telecom currently has significant investment in ADSL1 line cards. If the Commission made a determination that a higher speed service (utilising ADSL2+ and/or shortened loops) should be priced the same as any other speed service, a number of perverse matters are likely to occur. First, ISPs may begin to request that all customers be churned to ADSL2+ and significant swap out of line cards may be demanded. This would have a significant impact on Telecom's existing investment, raising an additional risk that current investment becomes stranded prematurely. This would raise economic issues around premature replacement. This, coupled with the disincentives to invest above, cast significant uncertainty on why investment should occur at all.
66. As noted above, if the Commission were minded to mandate a service with a higher theoretical maximum PIR of greater than 7.6 Mbps it would be regulating investment and services not yet incurred or commercialised. It would create some difficulties imputing a retail price for such a service with a maximum theoretical PIR between 7.6 Mbps and 24 Mbps. No rational regulator would expect Telecom to promote the investment in higher speeds if they were to be rolled out for the same price as existing speeds. Accordingly, if Telecom's understanding of Decision 568 and the application is not correct, the opportunity to make full submissions is required on the impact of regulation of new investment and how a service not yet available at retail (or wholesale) could be priced in a retail minus way.

### *The need for a cost benefit analysis*

67. Telecom considers that the Commission's determination in Decision 568 failed to outline or consider the empirical basis on which it made the trade-off between reach, speed and differential pricing<sup>9</sup>. In particular, the Commission has not weighed the benefits of those customers whose service improves due to Decision 568 against the detriments of those customers whose service reduces due to Decision 568. Telecom encourages the Commission to conduct a proper cost benefit analysis in this determination in order to ensure that its determination of the price structure and device definition is for the long term benefit of all end users, not just some end users.
68. Factors the Commission will need to include are:
- (a) The customer benefit of unconstrained/128 over 3584/128 (especially given the ACMA result);
  - (b) Spectrum congestion issues before the implementation of spectrum management;
  - (c) Spectrum consumption issues after the implementation of spectrum management;
  - (d) Price discrimination effects for low end users;
  - (e) Reduction in broadband network effects if there is a reduction in end users;
  - (f) Reductions in Telecom's incentives to invest, especially in rural DSLAMs, loop shortening, and ADSL2+; and
  - (g) The likely pricing by ISPs buying unconstrained/128.
69. These matters are discussed further through this submission.

### Sustained Information Rate (SIR)

70. With regard to SIR, and following the approach outlined in Decision 568 and the subsequent agreement with TelstraClear, Telecom has moved away from the concept of weighted SIRs introduced during the Decision 568 proceedings. All services simply share the same Virtual Path which is dimensioned to ensure that all customers receive a minimum throughput reflecting the best efforts nature of the service. All customers, retail and wholesale, compete equally in the same shared virtual path for the available bandwidth. Telecom has, however, retained the use of the VP scheduler to enforce fairness. The scheduler equitably allocates available bandwidth to all end users active at the time so that no end user can consume more than their share of the available bandwidth.
71. The Commission should determine then that Telecom is to provide a minimum throughput for any regulated bitstream access service that is consistent with the minimum throughput provided for Telecom's corresponding retail best efforts internet plans. This would have the same practical effect as the conclusion at paragraph 257 of Decision 568, but better reflects the current provisioning practice within Telecom's network. As no SIR is being set there is no need for quarterly recalibration – the

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<sup>9</sup> Refer paragraph 4 of Telecom's 27 October 2005 submissions in the decision 568 proceedings.

retail and wholesale plans will be continuously consistent on any given Virtual Path.

#### Interleaving Option

72. Telecom provided detailed submissions on an interleaving option during the Decision 568 process about the potentially adverse impacts that turning interleaving off on a per port basis could have on its network and other end users. The DSL specifications include interleaving to enable carriers to better mitigate the impact of external noise and interference present on copper cables today.
73. Telecom now has a tool that enables it to monitor and report on performance on a line by line basis. However the adverse impacts of turning interleaving off may not become fully apparent until a material number of lines in a cable have interleaving turned off. Telecom therefore considers it prudent to undertake a trial where interleaving is turned off on a significant number of working lines in selected DSLAMs and performance monitored for at least 2 weeks.
74. As previously submitted, Telecom does not agree with turning off interleaving. Telecom is monitoring lines on an ongoing basis and is a position to identify issues with lines in cables where interleaving is turned off. Adverse impacts on any line can be identified. If the Commission confirms that interleaving can be turned off on a case by case basis, it should also:
- (a) reserve Telecom the ability to deal with any potential adverse effects by, for example, reapplying interleaving to the line or reducing power to the line;
  - (b) take into account the additional technical and operational effects, for example, management and consumption of available profiles; and
  - (c) permit Telecom to recover the cost of applying and removing interleaving, and undertaking remedial action to remedy adverse impacts.

## D MARKET DEFINITION AND COMPETITION ASSESSMENT

75. Telecom does not agree with the Commission's finding that Telecom faces limited, or is likely to face lessened, competition in a national wholesale market for the provision of broadband access (paragraph 21, *Decision to Investigate*). This finding is based on the market analysis and competition assessment carried out during 2005 and set out in Decision 568.
76. Telecom continues to believe that a proper assessment of the supply of retail broadband products in New Zealand demonstrates that:
- (a) the relevant market is not national – rather, the competitive dynamics of the supply of retail broadband services in metropolitan areas differs significantly from the level of competition in non-metropolitan areas of New Zealand; and
  - (b) Telecom does not face limited, and is not likely to face lessened, competition for the supply of retail broadband services in metropolitan areas of New Zealand.
77. Given the state of effective competition in metropolitan broadband markets, Telecom believes that there is no reasonable competition rationale for granting the applicant access to the regulated bitstream access product in metropolitan areas of New Zealand.
78. The reasons behind Telecom's views are explained in Annex A to these submissions. Only the most significant concerns arising from the conclusions in Decision 568 are traversed in these submissions<sup>10</sup>.
79. Notwithstanding the foregoing, if the Commission considers that a separate wholesale market exists it needs to be consistent in the geographic definition of this market with its previous decisions. In the LLU investigation (which gave rise to the bitstream access designation) and in the UPC agreement the Commission recognised that there was more than adequate competition at the wholesale level in 5 identified ESAs. Given that there was enough competition that had LLU been designated elsewhere it would not have been designated in those 5 ESAs, it is strange that bitstream access, a service much more readily competed with, is considered to have only limited wholesale competition even in those areas.
80. Telecom submits that if the Commission defines a wholesale market for bitstream access and disregards Telecom's submissions about its sub-national definition, it should still provide an exclusion in relation to those 5 ESAs which have already been determined to have sufficient wholesale-level competition.

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<sup>10</sup> Telecom refers the Commission to Section D of its May 20<sup>th</sup>, 2005 *Submission on the TelstraClear Draft Determination* for a full exposition of all aspects of its view on the appropriate market boundaries for the supply of broadband products.

## **E APPLICATION OF THE INITIAL PRICING PRINCIPLE**

81. The application indicates that it seeks the same pricing method as in Decision 568. The Commission calculated an initial price using a flawed regression model and then mandated a revision mechanism which used a different, weighted average methodology.
82. As the Commission is aware, and previous submissions during the Decision 568 proceedings disclosed, there are a number of different proposals that might be put forward for a suitable way to calculate the initial price. The Commission's role in any proceedings is to ensure that it calculates a price (and in doing so, selects an appropriate price mechanism) that gives best effect to the section 18 purpose.
83. The Commission is not bound by its determination in Decision 568. The Commission is faced with two new sets of proceedings and a significantly changed market environment since that determination was made. The Commission should proceed with an open mind given the substantial impacts on a dynamic market and investment incentives that any further determination will have.
84. As indicated in Part C, our submissions are based upon our understanding that Decision 568 and the application seek an unconstrained service with a maximum PIR of 7.6 Mbps. If this is not the case, Telecom seeks the opportunity to expand its submissions to deal with significant pricing issues that would arise around pricing a service with a PIR between 7.6 Mbps and, say, 24 Mbps which may become available in the future through investment as detailed in Part C. Telecom's position is that it is unsustainable and would not meet the section 18 purpose to have a single price for a service of any speed using either ADSL1 or ADSL2+ and/or other investment aimed at improving quality and speed of broadband in New Zealand.

### **A regression model is inappropriate**

85. During the Decision 568 proceedings Telecom sought to make compromises to work with the Commission's proposed regression methodology. Telecom sought also to apply a similar method in its commercial UBS pricing which prevailed at the time. Our current standard commercial UBS pricing no longer uses this method as further analysis has revealed a number of difficulties in its implementation.
86. The Commission's previous regression model was flawed in a number of respects. It did not reflect the reality of the market by not weighting price observations by their market frequency. The model did not properly take account of all new and relevant price points. In particular, it made arbitrary choices as to which plans to include in the model and ignored a large number of plans in the retail market (and this was the subject of litigation).
87. The Commission never provided any explanation for not correcting the errors around ISP cost and the exclusion of Homeline revenue from the bundle imputation calculation. Also the average tolls spend figure should be updated, not least because the tolls discount benefit is now available to

Business customers, not just Residential as before. The regression methodology was also inconsistent with the price adjustment methodology determined in Decision 568 with the price adjustment being more sensible.

88. The Commission ignored the effect of speed in setting price yet this means it ignores the commercial reality that all providers, including those with their own network, set price based on speed (we previously evidenced this in the New Zealand and overseas markets). For example the price differences between TelstraClear's "High Speed Economy", "High Speed", and "Light Speed" cable plans at <http://www.clear.net.nz/products/highspeed/business/index.html>. There are inconsistencies in the Commission's previous findings. On the one hand, the Commission says that it wishes to provide a service such that operators can price discriminate but on the other hand ignoring the role that speed plays in operators' prices.
89. The Commission may have been driven by a desire to dispense with the residential and business distinction and in order to deal with its dissatisfaction with the level of retail business pricing. Both of these issues have been taken on board in the market now.
90. The Commission has the opportunity to engage now in a robust approach to pricing in light of the new market environment.

### **General approach to pricing**

91. The clear wording of the service description in the Act requires that services be priced on a retail-minus basis. Accordingly Telecom's retail plans should define the range of wholesale plans such that prices can sensibly be applied to them. Telecom's latest commercial UBS suite identifies the range of bitstream access speeds that are consistent with retail.
92. Telecom submits here what approach to pricing should be taken in a general sense and submits that this should be applied to a range of bitstream access speeds. However these principles can be applied to the pricing of a single, unconstrained service notwithstanding Telecom's position that such an outcome would not be for the long term benefit of end users.
93. The new price model should look at the range of services actually provided at retail and relate each of them to each of the corresponding comparable bitstream access speeds.
94. Even in the absence of bit rate limiting or plans defined by speed at the wholesale level, there is still a need for both wholesale and retail prices to be differentiated. There are material economic costs associated with plans that use higher amounts of the limited spectrum capacity available within any distribution cable.
95. This is because the provision of bandwidth for the delivery of broadband services exhibits properties of a private good as an individual's use of bandwidth, say for a high speed service, limits the opportunity for other

customers on the same cable to receive a broadband service. This causes a trade-off between reach and/or speed among users sharing that cable.

96. Currently, on the supply-side this trade-off is managed either by bit rate limiting or a spectrum management plan. On the demand-side, this trade-off is managed by differential pricing by speed and customer preferences. However, Decision 568, and in particular the definition of the unconstrained service with a single wholesale price, does not make any allowance for the economic management of this trade-off by simply allowing the trade-offs to be managed by congestion, resulting in a negative congestion externality which is detrimental to all users.
97. The applicant is asking that the Commission define for it a high speed service at what it expects to be an artificially low price in order to cherry-pick a subset of the overall customer base. It is asking that the price be made artificially low by ignoring the impacts that the definition of such a service would have on other users sharing each of its end users' cables. As the resource will be used inefficiently, the applicant requires a low price to be able to compete with an efficiently-used resource.
98. The most appropriate means to set the range of prices is with a weighted average model. A weighted average model looks at the range of services supplied at retail and weights each service by the proportion in which customers are buying it. Thus any services with an unreasonably high retail price are given a correspondingly low weighting by the lack of sales relative to the rest of the suite. The Commission recognised the benefits of a weighted average approach when it defined the price adjustment mechanism in Decision 568. Such a model is robust and will by its nature ensure that access seekers can compete and that Telecom is adequately compensated. A new calculation of the average needs to be undertaken as there have been significant structural shifts in the retail market since Decision 568.
99. The weighted average method works whether it is desired to derive the price for a range of bitstream access services each corresponding to some retail services, or if it is desired to derive a price for a single service. In each case the most comparable retail services should be selected and the average calculated with the weights being the relative numbers of customers at retail of that service.
100. Even if the Commission determines to define a single unconstrained service at a single price, it is not adequate to take a figure calculated previously (the \$27.87) and update it for overall average price changes. This would not take account of the structural changes in the market, and would represent an inconsistent definition of the price from the way the price was to be adjusted. The initial weighted average price needs to be derived again based on the retail market as it exists at the time the determination is made, not related to some arbitrary time in the past.

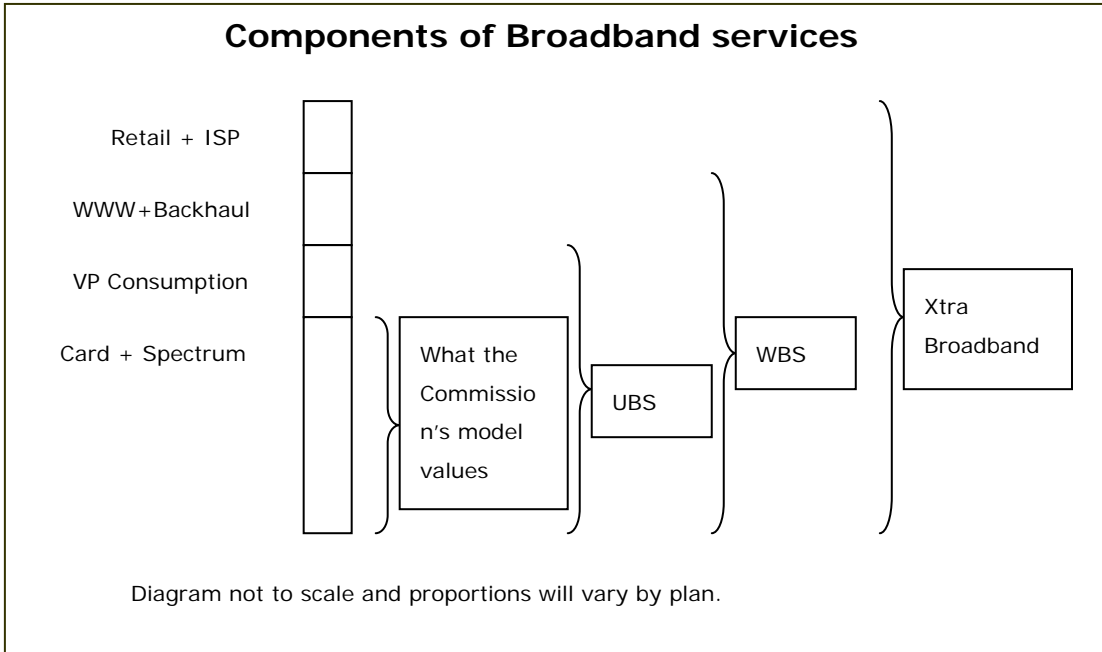
## **Pricing the access and VP consumption components of a bitstream access service**

101. As Telecom has submitted, it does not consider that an unconstrained/128 service being designated would be for the long term benefit of end users. If having carried out a robust cost benefit analysis, the Commission pursues this approach, Telecom submits here on how such a service should be priced. Much of the discussion also relates to how constrained speed services (whether bit rate constrained or spectrum constrained) should be priced.

102. Telecom considers that an unconstrained bitstream access should be priced based on the following robust propositions.

103. The most comparable retail plans in the market are the Explorer and Adventure plans both of which have the highest downstream speed currently available (3.5Mbps) and an upstream speed of 128. They are practically very close to an unconstrained/128 service as shown by the ACMA results referred to earlier.

- (a) Any pricing analysis needs a methodology to adjust for the differences between the retail 3584/128 plans and the intended regulated service.
- (b) Both the current 3.5M CUBS and the 3.5M retail services have the same spectrum consumption as each other.
- (c) An unconstrained/128 service may use the same spectrum if properly spectrum-constrained, but may use more, depending on the spectrum management plan. If there is a difference it is likely to extend out only to about 1 km.
- (d) The differences between plans of the same speed relate to backhaul and international internet access, but also to shared VP capacity. UBS services use proportionately more of this shared VP if the average GB used is higher than the corresponding retail service. Even a UBS service which uses a below-average number of Gbytes however is still consuming VP resource.
- (e) This can be represented in a diagram:



104. There needs to be a two-stage process to setting the price of an unconstrained/128 service. Firstly the Commission needs to set the price of a 3584/128 service, and then it needs to adjust for the differences between 3584/128 and unconstrained/128. The 3584/128 plan is the most comparable service to enable the Commission to impute a retail price. These plans are closest in speed among Telecom's currently available retail plans and were not available at the time Decision 568 was considered.

105. To make the Explorer and Adventure plans comparable with 3.5M UBS the Commission must analyse what proportion for the usage relates to backhaul and connection to the WWW, and what proportion relates to consumption of the VP (between the DSLAM and the first ATM switch). When comparing the WBS service and the UBS service in the above diagram, some traffic related parts go to zero (included GB to the WWW) and some become unlimited (VP consumption).

106. A naïve approach to pricing 3.5M UBS would be to look at the relative prices of Explorer and Adventure, conclude that Telecom charges \$2/Gbyte (incl. GST) for incremental Gbytes and use that to derive the price of a 0 Gbyte service. However such a service would operate at 64k for the whole month and represents the card and spectrum consumption costs only. This is the bottom segment of the above diagram. There needs to be an allowance for the VP usage otherwise Telecom would be uncompensated for the wholesale provision of this important network element.

107. Given Telecom's minimum throughput service performance model as outlined in paragraphs 70 to 71 all plans operate similarly at times of maximum congestion (the time when VP costs are driven). VP consumption therefore relates to the number of Gbytes used more so than the ticket speed of any plan. There is some averaging involved with this assumption as different plans may have different peak:off-peak ratios (unknown and effect probably small). Gbytes used seems to be a

reasonable proxy though, especially as Gbytes used applies even when plans are throttled.

108. Telecom considers that Gbytes *used* is a more appropriate metric than Gbytes *allocated* in plans (the monthly allowance) as this is what drives costs and is how customers obtain value from broadband services.
109. The Gbytes used can be measured for each ISP. ISPs with higher Gbytes used should pay a higher UBS price for the same speed service as they are using more of the shared VP capacity. As Telecom's usage is below average, measuring of Telecom's prices only, without regard for usage differences would create a cross-subsidy from lower use ISPs towards higher use ISPs.
110. Telecom's retail prices include premiums for more allocated Gbytes. This is consistent with the approach of other providers also. When this has been translated into Gbytes used and adjusted to allow for different ISPs' usage there needs to be a split of this retail charge into the proportion relating to WWW access + backhaul and the proportion relating to VP consumption. This can be allowed for in the avoided cost adjustment phase of the pricing by allowing for the avoidance only of those costs relating to backhaul and WWW access, and not for those costs relating to VP consumption.
111. This can be allowed for in the avoided cost adjustment phase of the pricing by allowing for the avoidance only of those costs relating to backhaul and WWW access, and not for those costs relating to VP consumption.
112. The steps the Commission should then follow to derive the correct bitstream access price for a 3584/128 service are:
  - a. Calculate the weighted average price of Telecom's Explorer and Adventure plans. The weights are the numbers of customers on each plan.
  - b. Calculate the weighted average number of Gbytes used between these two plans.
  - c. Adjust the price to allow for each ISP's usage being higher or lower than this average. Initially an estimate will need to be made, but this can be adjusted over time to actual values as part of the price adjustment process. The calculation should look at Telecom's implied retail price for a used Gbyte and add or subtract according to whether the ISP's used Gbytes are higher or lower than the Telecom average calculated at step b.
  - d. Impute out the effect of the tolls discount provided by Telecom at retail. Telecom has already submitted how this should be done.
  - e. Subtract the costs associated with running an ISP. Telecom has also submitted on this.

- f. Subtract the costs of backhaul, national, and international WWW capacity based on a cost per Gbyte multiplied by the number of Gbytes used by the ISP.
113. An analogous calculation should also be undertaken in relation to the 256k and 2M bitstream access services.
114. This calculation allows the proper 3.5M UBS price to be derived.
115. Telecom submits that a 3.5M service (and a 256k and 2M service) should be designated and thus the pricing analysis should stop here. There should be no unconstrained/128 service designated so no further pricing analysis should be required. If however the Commission does define such a service the following further steps are required.

### **Translating the 3.5M/128 price into a unconstrained/128 price**

116. As Telecom has noted from both the international evidence and the effect of what spectrum management plan may be deployed, a significant proportion of customers (potentially up to 80%) will see no difference at all between a 3584/128 service and a unconstrained/128 service. For those customers who will see a difference however an adjustment needs to be made to the 3584/128 price just derived. This only needs to relate to the incremental spectrum consumption in the access network, as VP consumption has already been adjusted for. This adjustment would need to applied to all unconstrained/128 customers even those experiencing no performance improvement over 3584/128 if a spectrum management plan was not in place.
117. This should be valued at the value of (i.e. the consumer surplus associated with) speed and availability for all other users (on average) affected by the spectrum increase associated with going from 3584/128 to unconstrained/128. It is not possible to derive the quantum until the spectrum management approach to be applied has been finalised, however as an indication it is likely to be of the order of \$2 per month. Telecom will submit further on this through this application process.

### **Evaluating the reasonableness of the result**

118. Some of the calculations which the Commission should undertake in order to fairly set the price for any regulated service are complex and could be subject to estimation error. Accordingly the Commission should cross-check its resultant numbers with the observable market behaviour in the market it defines for this application.
119. For example, if the Commission uses the same market definition as it did in Decision 568 (national wholesale market for the provision of broadband access), the Commission should look at what offers are being provided in the wholesale broadband market currently and the effect of those offers.
120. Telecom's current commercial UBS offer taken up by most of the industry is one of the key wholesale products being offered in this market.

The Commission can look at the price of the 3584/128 service (\$30 per month standard price) and the extent to which ISPs have been able to use this service to compete against Telecom’s retail offerings of equivalent speed. If the Commission were to find that ISPs were typically needing to price the UBS-based retail offerings above those of Xtra Broadband, this would indicate that the price might be too high. Conversely if it were to find that ISP offering were typically cheaper than Xtra Broadband ones, that would indicate that the wholesale price may be too low. Such an examination is not determinative of anything in itself, but it will assist in evaluating whether any determined price is appropriate relative to Telecom’s retail prices. It will also indicate whether an access seeker will be able to compete against Xtra Broadband given any particular determined price.

121. Telecom presents here some recent observations (post 2 April) of prices offered by a number of major ISPs for 3584/128 plans using the 3584/128 commercial UBS variant and a comparison with Xtra Broadband retail 3584/128 prices. Both Telecom and other ISPs offer a range of different speeds at a corresponding range of different prices. However this table shows only the 3584/128 options that various ISPs offer as this is the speed most comparable to the service designated in Decision 568.

**Table 2:**

ISP	Plan Name	Incl Gbytes	Price (incl GST)
Xtra	Explorer	5	\$49.95
	Adventure	10	\$59.95
Orcon	Surfer Medium	10	\$49.95
Ihug	Pay as you go	0.5	\$29.95
	Starter	3	\$39.95
	Light	15	\$49.95
	Medium	30	\$59.95
	Heavy	60	\$79.95

Slingshot	Sprint 10GB	10	\$49.95
Actrix	Faster	1	\$47.95
	(Incl. Gbytes are reset daily)	10.5	\$59.95
		21	\$69.95
		30	\$79.95
Quicksilver	Orbit 5	5 international	\$49.95
	Orbit 10	10 international	\$59.95
	Orbit 30	30 international	\$69.95
Maxnet	Dash	10	\$53.95
Worldnet	Megapass DSL 3.5M Go 2G	2	\$39.95
	Megapass DSL 3.5M Go 2G + 10 GBytes	12	\$49.95

Prices are after the benefit of a tolls discount where offered.

122. In all of these cases ISPs are offering a cheaper price for the same number of Gbytes or more Gbytes for the same price as Xtra. This shows that ISPs are comfortably able to compete at a price of \$30 for the 3584/128 service. It also indicates that a price somewhat above Telecom's standard 3584/128 commercial UBS price would still enable ISPs to compete with the 3584/128 service.

123. Telecom submits that its commercial 3584/128 UBS service represents a comparable service within the service description for bitstream access. As such the pricing of that service should be taken into account when determining the price of any regulated service, whether a service corresponding exactly (a 3584/128 bitstream access service), or one

related but which should be priced higher (an unconstrained/128 bitstream access service).

### **Benchmarking**

124. The application seeks the same outcome as Decision 568 except as stated in the application. One of those exceptions is that the applicant seeks a benchmarked discount of 18% rather than 16%, the latter which flows from a previous Commission benchmarking report (attached at Annex A of Decision 568).
125. As the parties have already discussed with the Commission, there is no agreement between the parties as to the appropriate benchmarked discount for the initial price. Telecom received advice that there was no need to make detailed benchmarking submissions. Accordingly, Telecom assumed that the applicant was not seeking that the Commission carry out a new benchmarking report in order to assess whether 18% is appropriate and is accepting the use of the previous 16% discount for the initial price. This latter position has now been confirmed.
126. Telecom considers that the 16% discount represents an over-statement of its avoided costs when wholesaling bitstream access services, but is prepared to accept it for the purposes of this application for the sake of narrowing the issues and aiding expedition of the process.

### **Revision mechanism**

127. Telecom accepts the revision mechanism described in paragraphs 423 to 432 in principle. It notes that an independent revision mechanism is not required if the pricing is calculated on a weighted average basis in accordance with this submission. In that circumstance it is simply a matter of redoing the original calculation every quarter or when prices change.
128. As the Commission noted in paragraph 431, this approach is robust for adjusting prices, and that same robustness should be applied to the setting of the initial prices.

## **F SUNDRY CHARGES RELATING TO SUPPLY OF BITSTREAM ACCESS**

### **Reassignment charges (churn fee)**

129. The Commission mandated a reassignment charge of \$20.99 in Decision 568 so Telecom assumes the applicant seeks this charge. Telecom reiterates submissions made in the Decision 568 proceedings.

### **New connections and Moves, adds, changes (MACS)**

130. In Decision 568 the Commission provided that Telecom may charge for a new connection calculated on a retail minus basis – ie: deducting from the standard new connection charge the avoided costs saved discount of 16%. The same approach was mandated for MACs in paragraphs 449 and 450 of Decision 568.

131. Telecom agrees with this approach and thus, the applicant's request, assuming the applicant's request is for a 16% discount.

### **Access line rental**

132. Telecom's retail prices for broadband services are set on the assumption that Telecom will receive an access line rental in addition to broadband revenue, as is standard practice overseas. As previously noted in paragraph 35 of Telecom's 27 October 2005 submission in the Decision 568 proceedings, Telecom understands that Decision 568 applies this condition.

## **G NON PRICE TERMS**

### **Term of the determination**

#### *Commencement date*

133. Consistent with our submissions during the Decision 568 proceedings, the commencement date is appropriately the date that the determination is made so long as a reasonable and clear approach is taken to the implementation required. Our initial views on the implementation timeframe are set out below.

#### *Expiry date*

134. The applicant appears to be seeking a 24 month term. In contrast to Telecom and TelstraClear for Decision 568, there is no agreement between the parties on the appropriate term. Telecom reiterates previous arguments that the Act requires a fixed expiry date. Telecom has not yet formulated a view on the appropriate term of a determination.

### **Implementation timeframe**

135. Our initial view is that our timeline submitted in the Decision 568 proceedings remains the minimum timeframe within which Telecom could implement an unconstrained/128 service. Additional complexities may however arise and Telecom wishes to flag these early and reserve the opportunity to update its position.

136. Telecom's network and wholesale resources (internal and external) are currently stretched as they are in the midst of developing, among other things, One Office Active and Advanced, a data tail to be offered under principle 2 of Telecom's Wholesale Charter and migration issues that are pending. In addition there will be new retail services rolled out, and where appropriate, in line with Telecom's Wholesale Charter, consistent intermediate products at the same time. It is likely that there will be a need to prioritise as all such matters will not be able to be completed at the same time. This may affect whether the 18 week minimum timeframe is sustainable or alternatively, require delay in other products or matters for retail and wholesale.

137. Telecom will need to comment further after the draft determination.

### **Operational Support Systems**

138. Telecom notes that the determination in Decision 568 on these issues relates to particular requests from TelstraClear. Telecom assumes that the applicant's requests are the same as there is no other information available as to what is sought.

139. Telecom is committed to the consistency referred to in paragraph 487 of Decision 568 through principles 1 and 3 of Telecom's Wholesale Charter.

### *Online Order and Tracking (OOT)*

140. Decision 568 noted that TelstraClear was satisfied that Telecom's eOR for broadband system (or Online Order and Tracking, "OOT") was acceptable as the "interim solution" but that three modifications should be made (paragraph 458 of Decision 568). As to those three issues:

- (a) addition of a time/date status change field.
- (b) the use of agreed reject codes and free text fields.
- (c) The provision of multiple user logins will occur in May.

141. All of these matters have been completed or are about to be completed. It is therefore unclear what is being requested. Telecom assumes this part of the application should be withdrawn.

### *Longer term B2B solution*

142. In relation to a longer term B2B solution, Decision 568 appears to recognise Telecom's industry roadmap, that it is difficult to set feasible timeframes for a high level roadmap prior to discussions between parties on more detailed aspects of the system.

143. Telecom is hindered in its ability to respond because it is unclear what the applicant seeks. It is similarly therefore difficult to comment on any need for a dispute resolution mechanism given that it is unknown where any areas of disagreement might be.

### *OSS price terms*

144. The Commission proposed that each party bear its own costs in relation to the implementation, operation and maintenance of OSS required to support a regulated bitstream service and the cost of interfacing with the other party's OSS. Telecom agrees with this term of Decision 568 and thus with the applicant's request.

### **Other non price terms**

145. No other non price terms have been requested by the applicant. Any other terms required will need to be commercially negotiated.

## Annex A

### Market Definition and Competition Assessment

#### Market Definition

1. Telecom continues to submit that the appropriate market boundaries for analysing broadband competition are as follows:

<b>Product Dimension</b>	<b>Functional Dimension</b>	<b>Customer Dimension</b>	<b>Geographic Dimension</b>
Asymmetric and Symmetric Broadband Internet Access services supplied over ADSL, Fibre, Coaxial Cable & Fixed Wireless Access.	Wholesale, Retail	Residential, Business	Each Metropolitan Area, Non-metropolitan.

2. The Commission's market definition exercise in Decision 568 erred in two fundamental ways:
  - i. it analysed the wrong functional level of the market (the wholesale level, rather than the state of competition at the retail level); and
  - ii. it found that a national market exists for the supply of broadband products in New Zealand.

#### *The importance of analysing the right functional level of the market*

3. It is necessary for the Commission, and is common practice, to first analyse the retail functional level of the market at issue, for two key reasons:
  - iii. if there is no problem with competition at the retail level of the broadband market, regulatory intervention at the wholesale level of the market(s) is not to the long term benefit of end users and is likely to create market inefficiencies and economic disincentives to innovate and invest in new services; and
  - iv. it is impossible to correctly analyse the dimensions of the relevant wholesale market without first defining the relevant retail market(s). This is because demand for wholesale broadband access services is derived from the demand for retail

products, so necessarily the relevant retail economic markets must be analysed first.<sup>11</sup>

4. The Commission stated in Decision 568 that it considered it appropriate to analyse only the wholesale level of the market because:
  - v. the regulated service is a wholesale service; and
  - vi. it is the availability of different forms of wholesale access, that determines the level of competition at the retail level<sup>12</sup>.
5. Telecom does not consider that these are appropriate reasons for ignoring the state of competition at the retail level of the market. It is correct that the regulated service is a wholesale service. However, it is intended to be supplied only in those circumstances where there is limited competition in the retail market and for the purpose of advantaging end users relative to the current circumstances in that retail market. This necessarily involves a full assessment of the state of competition in retail broadband markets.
6. It is also incorrect to imply that wholesale access – alone – determines the level of competition at the retail level. The Commission's own Guidelines set out the other facts that determine competition at the retail level, including the important competitive constraint of rivalry between firms.
7. Telecom is concerned that the competitive constraint of inter-firm rivalry was not properly analysed in Decision 568 because the Commission failed to properly analyse the level of competition at the retail functional level of the market. The level of inter-firm rivalry operating in broadband markets in New Zealand is discussed below.

*The markets for the supply of broadband services in NZ are not national*

8. There are significantly different competitive conditions operating at the retail level of the metropolitan as opposed to non metropolitan areas of the broadband market in New Zealand. Telecom considers that a "non-metropolitan" market is defined as a geographic region where, effectively, customers only have the Telecom network as an option for their broadband, and there are no neighbouring broadband networks that could switch easily to the supply of the Telecom customer.
9. A full definition of the proposed metropolitan and non metropolitan boundaries was set out in Telecom's submission of 20 May 2005, section D3.3. The Commission is referred to that submission for further detail.

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<sup>11</sup> Paragraphs 205-6, *Telecom Submission on Draft Determination, 20 May 2005*

<sup>12</sup> Paragraph 108, *Final Determination, 20 December 2005*

10. When examining these (shorthand) definitions of metropolitan and non-metropolitan market, it is plain the competitive conditions differ between the two geographic areas.
11. Where customers have choice (i.e. in metropolitan areas), Telecom would not be able to increase its prices due to the competition from other broadband suppliers in the area. Yet in non-metropolitan areas, Telecom would be able to sustain a profitable small price rise as these customers have no choice except Telecom for their broadband requirements.
12. The discussion at paragraphs 111 – 133 of Decision 568 primarily focuses upon Telecom’s national pricing policy to ignore these competitive differences. The Commission considered that Telecom’s national pricing policy was an indicator of a national market. It went on to note that the policy is mainly driven by the operational difficulties Telecom would face in implementing geographically de-averaged pricing. This approach by the Commission is an explicit deviation from the standard “SSNIP” test usually used for defining markets. The Commission states at paragraphs 111-112 of Decision 568 that the SSNIP test may lead to:

*“extremely narrow markets....Consideration is therefore usually given to the extent to which there may be a uniform or common pricing constraint, and to define geographic markets on that basis”.*
13. Telecom previously raised the following issues:
  - vii. the Commission has never raised concerns previously about its standard “SSNIP” test for defining geographic markets;
  - viii. the Commission’s (new) qualification of its SSNIP test goes against standard regulatory practice in other jurisdictions – it is standard regulatory practice in the US, EC and Australia to use the SSNIP approach to define markets; and
  - ix. it is incorrect to consider a “common pricing constraint” to be anything other than an application of the SSNIP test – i.e. a uniform price can be indicative of a single geographic market, but only when the competitive conditions in the market lead to the uniform price.
14. No rationale is provided for such a deviation from the SSNIP test in Decision 568. We request that the Commission addresses these issues in its draft determination so that the parties have a fair opportunity to respond.
15. In Decision 568, the Commission did not appear to dispute that demand and supply-side substitution opportunities are different in rural and urban areas of New Zealand. For example, at paragraph 132 the Commission stated that it accepted there will be different levels of competitive intensity, given the localised deployment of competing infrastructure.

16. However, the Commission still drew a conclusion that a national market does exist, based on its judgment that other factors such as “pricing and marketing and other constraints” (paragraph 132, Decision 568) are working to force Telecom to price nationally.
17. At paragraph 114 of Decision 568 the Commission explicitly expressed its view that:

*“It is appropriate to examine **any** geographic pricing constraints faced by Telecom in supplying a particular service”*
18. Telecom considers that it is not robust to place weight on any factors other than those driving competitive conditions in a market.
19. Competitive conditions defining market boundaries are commonly recognised internationally as only those demand or supply side substitution effects that operate to constrain a hypothetical monopolist in any attempt to exert a ‘SSNIP’.
20. The Commission placed considerable weight on Telecom’s national marketing as an indicator of a national market in Decision 568. It noted Telecom’s statements that geographical pricing differentiation would add considerable complexity to national marketing campaigns and to billing (paragraph 128). The Commission concluded that this “complexity” factor drives Telecom’s national pricing and thus a national market must be operating (paragraph 130).
21. It is correct that the complexity is a significant factor driving Telecom’s national pricing. However, complexity in national marketing and billing is not a *competitive* constraint that is preventing Telecom raising prices profitably in rural areas, if it so chose. Rather, the complexity is an internal factor, that could be overcome if Telecom judged it worthwhile.
22. The analysis of market boundaries must be based on competitive constraints (i.e. demand and supply side substitution), not on a judgment of firms’ operational challenges in implementing price rises.
23. Telecom reiterates that demand and supply-side substitution constraints are significantly different in metropolitan vis-à-vis non metropolitan areas of New Zealand, and, accordingly, it is appropriate to define metropolitan and non-metropolitan market boundaries<sup>13</sup>.
24. Markets are defined in order to establish an accurate framework within which the level of competitive constraints upon a firm(s) can be accurately assessed. It is important that market boundaries are not driven by other factors that do not relate to competition at all – such as

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<sup>13</sup> The evidence supporting the different demand and supply-side substitution constraints operating in metropolitan and non-metropolitan areas of New Zealand was set out in paragraphs 247 – 262 of *Telecom’s Submissions on the TelstraClear UBS Draft Determination, May 20<sup>th</sup> 2006*.

internal operational constraints on a firm. Taking non competitive-related factors such as these into account will distort the competitive assessment of the market at issue.

### **Competition Assessment**

25. Telecom considers that the Commission is incorrect in its preliminary conclusion that “Telecom faces limited competition, or is likely to face lessened competition in the national wholesale market for broadband access” (paragraph 21, *Decision to Investigate*).
26. As set out above, sub-national metropolitan and non-metropolitan geographic markets represent a significantly more accurate framework from within which to examine the state of competition for broadband access within New Zealand.
27. Furthermore, Telecom does not consider it faces limited competition, or is likely to face lessened competition in the metropolitan retail and wholesale markets for broadband internet access.
28. Telecom agrees that it faces limited competition in non-metropolitan retail and wholesale markets within which it supplies broadband internet access services.
29. Telecom does not face limited competition in metropolitan broadband markets primarily because of the effective competitive constraints represented by:
  - x. the presence in the market of a strong competitive fringe of rival broadband firms (“interfirm rivalry”); and
  - xi. the constant threat of new entry into the broadband market by well-resourced aggressive international competitors (for example, Vodafone).
30. The Commission did not place sufficient weight on these constraints in Decision 568. The reasons for this view are explained in detail below.

#### *The level of independent rivalry in the broadband market*

31. A proper assessment of the degree to which competitors in a market engage in independent rivalry is critical to developing a theory of competition, or limited competition in a market.
32. Decision 568 did not focus enough attention on the healthy inter-firm rivalry demonstrated by broadband firms in metropolitan markets in New Zealand. The level of rivalry has become significantly more evident in the past year. Customers are enjoying the positive outcomes of this rivalry as broadband prices decrease and quality improves.

- 33. These changes in the market demonstrate explicitly the effective competitive constraint placed on Telecom by other firms in metropolitan retail broadband markets.
- 34. The competitive pressure placed on Telecom by even small rival broadband firms is evident from examining a simple timeline of the broadband market over the last 12 months.

*February 2005*

- 35. Woosh announces that its introductory plan is now priced at \$29.95 per month (speed 250Kbps, cap 200MB). The entry level plan used to be \$34.95.

*October 2005*

- 36. ihug launches 2Mbps broadband plans, with the basic plan now priced at \$29.95 with tolls, other players (Orcon, WxC, Slingshot) follow suit or change about the same time. Telecom also responds with a \$10 reduction in the prices of its Residential 2M services.

*September-November 2005*

- 37. Woosh rolls out its phone service, selling phone and Internet bundles (Phone + Broadband starts at \$54.00).

*Early November 2005*

- 38. Woosh increases the speed of some of its plans, so that many plans are now around the 500Kbps mark.

*Late January 2006*

- 39. Woosh announces a \$5 decrease in its broadband plans, so that the entry level plan is now \$24.95 (still with a speed of 250Kbps/data cap of 200MB). Phone and net bundles now start at \$49.00.

*Early April 2006*

- 40. Most players announce changes to speed and caps (using consistent UBS products rolled out at the same time as retail). Telecom retail introduces a new entry level broadband plan at a price of \$29.95 with tolls.
- 41. The outcome of the recent round of competitive interaction is marked:

**Table 1: Residential "Entry Level" Broadband market changes**

Lowest price broadband plan available for:	Price December 2004 (monthly)	Price April 2006 (monthly)

Telecom	\$39.95 (256 kbps with 1 GB datacap)	\$29.95 (256 kbps with 0.2 GB datacap)
TelstraClear	\$39.95 (2 Mbps with 1 GB datacap)	\$29.95 (2 Mbps with 1 GB datacap)
iHug	\$44.95 (1 Mbps with 1 GB datacap)	\$29.95 (3.5 Mbps with 0.5 GB datacap)
Woosh	\$39.95 (>256 kbps, 1 GB datacap)	\$24.95 (256 kbps, 0.2 GB datacap)
Pacific.net	\$70 (312 kbps, datacap unknown)	\$49.95 (512/512 kbps, 1 GB datacap)

42. Businesses are benefiting from more aggressive broadband competition, too. Although it is difficult to monitor changes in competitors' broadband plan prices (as it is usually 'Price on Application'), competitors are continuing to expand their networks and the capacity of those networks. Recent moves in the business market that Telecom is aware of include:

- xii. TelstraClear is to invest \$20 million in a fibre backbone network connecting key cities in the lower South Island. The 950 km fibre lay will extend TelstraClear's national fibre network, linking Dunedin to Gore, Invercargill, Queenstown and Christchurch. TelstraClear estimates that the move will benefit 20,000 business customers in the Lower South Island with the build expected to be completed within 2 years.
- xiii. Matamata-Piako District Council has announced that an unnamed Wellington-based telecommunications provider is to lay fibre-optic cable in the Waikato.
- xiv. Vodafone New Zealand has announced that it will be upgrading its existing WCDMA network to high speed downlink packet access (HSDPA) and launching "3G Broadband" by the end of 2006. Vodafone has pitched this as a DSL comparable technology that will free New Zealand consumers and businesses from their "dependency" on the fixed line. The move will increase their theoretical maximum data throughput from 384Kbps (delivered currently by WCDMA) to 1.8Mbps.
- xv. Publicity-shy Wellington telco FX Networks will spend tens of millions of dollars setting up an alternative fibre-optic backbone that will connect Auckland, Wellington, Christchurch and Dunedin.

43. Telecom has recently revised down its business broadband prices to much lower levels. Business broadband prices now range from a low \$29.95 per month to \$149.95 per month (for the highest speed 3.5 Mbps plan, with a generous 40 GB data cap). Previous prices ranged from \$67.44 per month to \$337.44 per month (for the highest speed of 2 Mbps, with a 15 GB datacap).
44. These new business broadband plans represent a significant improvement in price levels and a large increase in value per dollar spent – download speeds and data allowances have also improved dramatically.
45. The timeline of competitive interactions set out above, and the corresponding price decreases by Telecom, is solid evidence of an effective state of competition in the metropolitan broadband markets in New Zealand.
46. It is particularly interesting to note that the firm that precipitated residential broadband price declines and quality improvements (Woosh) uses Fixed Wireless Access technology.
47. The facts from the past year must call into question the Commission's conclusions in Decision 568 that firms utilising FWA technology are not an effective competitive constraint upon Telecom because of the "functionality and cost limitations of FWA technology" (paragraph 145, Decision 568).
48. Furthermore, Telecom does not believe that the Commission is correct in its view in Decision 568 that current FWA technology limitations are likely to remain over the next two years. FWA technology is changing rapidly, particularly with the recent advent of WiMax technology. This is discussed further at paragraphs 69 – 82 below.
49. Telecom also disagrees with the Commission's analysis at paragraph 163 of Decision 568, where it states that competing fixed networks are unable to provide competition to Telecom because their networks are "geographically limited".
50. In Telecom's view, it would be appropriate for the Commission to take into account the overall picture of the competitive interactions in metropolitan markets in New Zealand. That is, whilst it may be correct that one firm (such as Woosh, with a small market share) will not elicit a competitive response from Telecom, the pressure from all small firms (matching Woosh's moves in the market) will be too much for Telecom to be able to ignore.
51. The presence of this strong "competitive fringe" is an effective competitive constraint preventing Telecom from being able to exercise market power in metropolitan markets.
52. Further to the competitive round described above, at the time of writing this submission, Vodafone has just announced a recent aggressive move in the broadband market. In a three-month promotion, Vodafone has cut the price for wireless broadband from

\$149 plus GST a month to \$49 a month plus GST for a gigabyte of data.

53. Vodafone has announced this as an explicit competitive move against Telecom, stating that the plans were designed to compete head on with Telecom's fixed-line plans<sup>14</sup>.
54. This aggressive move by Vodafone serves to comprehensively demonstrate the effective level of inter-firm rivalry in this market. The aggressive entry by Vodafone means that the structure of this market is such that Telecom is now competing against two "first tier" telco firms (TelstraClear and Vodafone) plus a strong competitive fringe of second-tier telecommunications companies.
55. The added bonus is that, currently, Telecom broadband customers in non-metropolitan markets also benefit from the competitive pressure Telecom is experiencing in areas where it faces network competition. This is because Telecom currently operates an internal policy of 'rolling out' competitive prices from metropolitan markets into non-metropolitan markets.
56. The strength of this competitive fringe of small broadband firms can only be expected to increase over the period of any Determination. As the Commission noted in Decision 568, the number of broadband firms in the market is increasing, and network build is expanding (paragraphs 160-161, Decision 568).
57. It is concerning to note that in Decision 568, the Commission dismissed previous price decreases by Telecom as inadequate evidence of effective competition because it considered that the price drops were not entirely driven by competition<sup>15</sup>. Rather, the Commission considered that these price drops were driven, "in part" by proposed and actual regulatory intervention.
58. Telecom requests that the Commission carefully reconsider this approach. Given the ever-hovering cloud of regulatory intervention, any competitive response by Telecom can always be dismissed as due, in part, to regulation. This is a perverse result as a finding of limited competition and the scope for regulation will be guaranteed, whether or not it is accurate.
59. As long as there is clear evidence of other firms moving in the market, and a credible theory of competition, Telecom submits that the Commission must exercise caution before regulating and placing weight on Telecom's market place responses when assessing the state of competition in the market.

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<sup>14</sup> "Vodafone cuts broadband prices", [www.stuff.co.nz](http://www.stuff.co.nz), 4 April 2006

<sup>15</sup> Paragraphs 170 – 173, *Final Determination for TCL Bitstream Access*, Commerce Commission, 20 December 2005

60. Any other approach increases the risk that the Commission makes an erroneous finding of limited competition in a market. This, in turn, is likely to lead to regulation being imposed where there is no requirement for it. As the Commission is aware, to regulate where there is no need incurs significantly more costs upon society than failing to regulate where there is a real market failure that needs to be addressed.
61. The strength of the rivalry between broadband firms can only be expected to increase over the period of any determination. This is clearly demonstrated by Vodafone's very recent aggressive mobile broadband move described above. As the Commission noted in Decision 568, the number of broadband firms in the market is increasing, and network build is expanding (paragraphs 160-161, Decision 568).

#### *Market Share Trends*

62. Telecom has been successful in maintaining a high market share of broadband connections in New Zealand. The Commission in Decision 568<sup>16</sup> appears to interpret this high market share as evidence of market power. Telecom continues to believe that the market evidence does not support this interpretation.
63. A high market share is only evidence of market power where it appears the market share has not been acquired through pro-competitive activity. For example: in the classic monopoly case where customers have only one choice of supplier and there are no demand side alternatives for the product being supplied.
64. However, in the case at issue, in metropolitan areas alternative broadband access competitors are competing effectively and aggressively to acquire customers at the retail level. This is occurring both at the retail level through vertically-integrated operators (such as Woosh) and at the wholesale level where network owners are wholesaling access to their networks (e.g. Wired Country).
65. Telecom's market share in metropolitan areas is evidence of Telecom competing effectively for broadband customers. Telecom has competed effectively by ensuring its retail broadband prices are competitive and customers are receiving value for money. Customers are responding positively to these offers.
66. The Commission's interpretation that market share equals market power is unsustainable. There is clear evidence that Telecom is responding to competition.

#### *The Threat of New Entry*

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<sup>16</sup> Paragraphs 141 – 162, *Final Determination for TCL Bitstream Access*, Commerce Commission, 20 December 2005.

67. The Commission acknowledges in Decision 568 that new entry is occurring and that:

*“the continuing recent deployment of FWA by operators such as Woosh suggest that some...entry barriers may not be as significant for wireless entry...the Commission considers that further fixed wireless deployments are likely in the near term”*

68. However, as noted at paragraph 49 above, the Commission considered that the competitive threat from FWA will be limited because the FWA technology has coverage and bandwidth capability limitations. This conclusion does not appear to pay due regard to the rapidly developing field of WiMax FWA technology.

69. WiMax is a form of FWA technology that has the significant potential to overcome most of the bandwidth and coverage disadvantages faced by current FWA operators in New Zealand.

70. WiMax is a standards-based technology which enables the delivery of broadband wireless broadband access. In New Zealand, WiMax is most likely to operate in both the 2.3 and 3.5 GHz radio frequency bands. A number of well-resourced Telecom competitors hold spectra in the 2.3 and 3.5 GHz bands, including Woosh, Compass, Vodafone NZ, TelstraClear and BCL.

71. It is anticipated that WiMax technology will be able to provide broadband access at sustainable speeds of 10 Mbps. In addition, WiMax will allow connectivity without the need for direct line of sight with a base station and it will allow high bandwidth applications to run across long distances.

72. The advantages of WiMax technology are significant when compared to the FWA technologies currently operated by Telecom competitors.

73. There are also strong signs in the market that WiMax broadband networks will be up and running within the next two years.

74. The most critical development to the future of WiMax has been the recent final ratifications of the WiMax interoperability and equipment standards by the IEEE 802.16 group and the international WiMax forum. Standards IEEE 802.16 a and d (WiMax mobile) have now been fully ratified, giving carriers and end-users the confidence that equipment from different vendors will work together. The IEEE 802.16d mobility standard was approved late last year.

75. The approval of these standards is the critical tick of approval WiMax vendors and telcos have been waiting for worldwide before being able to proceed with confidence in investing in WiMax network and equipment build.

76. The WiMax Forum also announced in January the certification of the first tranche of fixed wireless broadband network products that meet WiMax inter-operability standards<sup>17</sup>.
77. These developments are expected to give broadband FWA network operators in New Zealand the impetus they need to go forward and invest seriously in WiMax. Telecom is aware that several telecommunications firms in New Zealand were already trialling WiMax last year, in anticipation of standards approval by the WiMax forum.
78. For example, in September last year, BCL announced its intentions to trial a WiMax network targeting urban centres before the end of 2005<sup>18</sup>.
79. Telecom itself has made a financial commitment to WiMax by seeking to purchase management rights for a 7MHz pair of 3.5 GHz spectrum from Counties Power Limited.
80. Furthermore, these WiMax developments make the competitive constraint of the "threat of new entry" very real to Telecom. Simply put, Telecom would not be acting rationally if it were to attempt to increase prices/decrease broadband service quality (i.e. exercise "market power") in any geographic areas where its actions could then attract new entry from well-resourced competitors such as Vodafone, TCL or BCL.
81. As noted above, all three telcos hold rights to spectra in the 3.5 GHz range and WiMax technology is rapidly developing internationally. Telecom believes that Decision 568 did not pay due regard to this threat of new entry acting as an effective competitive constraint upon Telecom.
82. Further adding credence to the theory that Vodafone is preparing to become a direct competitor in the broadband market, Vodafone has announced that it plans to launch "3G" broadband by the end of 2006. The upgrade to its mobile network will mean, as noted above, that the mobile network is capable of delivering broadband speeds of up to 1.8 Mbps. And as already noted, Vodafone holds management rights to spectrum in the 3.5 GHz "WiMax" radio frequency band. This means Vodafone has the potential to offer broadband services of up to 10 Mbps, if it were to engage in a WiMax broadband network build.
83. Telecom submits that the developments outlined above are enough to overturn the Commission's finding at paragraph 163 of Decision 568 that:

*" FWA networks may be limited in terms of supplying more bandwidth-intensive end-user applications over time"*

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<sup>17</sup> "WiMax Forum announces First WiMax Forum Certified Products"  
[http://www.wimaxforum.org/news/press\\_releases/Certification\\_Announcement.pdf](http://www.wimaxforum.org/news/press_releases/Certification_Announcement.pdf)

<sup>18</sup> "BCL to trial WiMax equipment",  
[http://www.bclnz.com/index.php/ps\\_pagename/mediarelease/pi\\_mediareleaseid/51](http://www.bclnz.com/index.php/ps_pagename/mediarelease/pi_mediareleaseid/51)

### *Conclusion*

84. Telecom considers that the market evidence outlined above clearly supports a finding of effective competition in metropolitan broadband markets in New Zealand. The Commission's finding of limited competition in Decision 568 appears to lack a credible theory setting out how Telecom would be able to exercise market power. The Commission is not bound by its findings in Decision 568 and is required to make a fresh decision in this application.
85. Telecom does not accept that it faces limited competition in geographic areas where other firms have deployed competing broadband networks. The market evidence demonstrates that Telecom is not able to exercise market power in these geographic areas. If the Commission continues to disagree it should explain its position in relation to the five ESAs outlined in the introduction to this Part of these submissions.
86. Further, Telecom considers that the level of competition from other broadband firms is likely to intensify in the near-future, as discussed above.