



# **UNBUNDLED BITSTREAM ACCESS SERVICE PRICE REVIEW**

**JANUARY 2013**

**PUBLIC VERSION**

## **Executive Summary**

- 1** This submission is made by Kordia New Zealand and CallPlus.
- 2** The key points from our submission are:
  - Setting the UBA price too high has serious implications for competition. It incents Telecom to deploy their own equipment into cabinets and exchanges, with very serious impacts on Chorus' revenues, and competition. Competitors would have significantly higher costs than Telecom as a result of the 'barriers to entry' for deployment into cabinetised lines – over half the lines in New Zealand. Only Telecom as the dominant market player has the required scale.
  - Far from being a 'hapless victim' of the regulated rate; Chorus have many options to extract additional margin over and above the regulated price.
  - The Commission is clearly directed in the Act to set pricing based on cost. We do not consider that the Commission has the scope in the scheme of the Act to set a price that is above the benchmarked price as that is the clear requirement in the legislation. Furthermore parties have the 'safety net' of requesting a final pricing before the benchmark price takes effect.
- 3** We have considered submitting on the benchmark modelling and methodology. However, we think it is inevitable that the debate will radically change in comprehensive critiques and modelling by Chorus in its submission. When we did similar modelling in submissions on UCLL, Chorus provided comprehensive econometric modelling after submissions closed. They were allowed to submit on this, and, indeed, the final decision was made on the econometric model they put forward. We consider it is important for us, in the light of those matters, to focus our limited resource on dealing with the inevitably different debate.
- 4** We thank the Commerce Commission for the opportunity to submit on the draft determination to amend the price payable for the regulated service Chorus' Unbundled Bitstream Access made under s30R of the telecommunications Act 2001

## **No one should be surprised**

- 5** No one should be surprised about the reduction in prices as a result of the move to cost-based pricing. The issue has been clear since late 2010, over 2 years ago. It was clearly signalled to everyone and factored into the changes to the Act.

Kordia New Zealand and CallPlus Submission on the Commerce Commission Draft Determination on Unbundled Bitstream Access Service Price Review.

- Analysts were clearly aware of the risk at the time of the demerger (by way of example - Macquarie Securities Investor report 10 November 2011). Chorus itself made reference to the UBA price being reset on a cost basis in its investor handbook when it noted that there was a risk of copper pricing falling (Telecom Demerger Prospectus, Sept 2011 s3.6.5 & s9.2.6).
- In March 2011 the Commerce Commissioner advised the Select Committee that *"The move to a cost-based price for UBA after 3 years is likely to give rise to a decrease in the retail price of copper-based broadband services at that time."* (para 70 of the Commissions Submission 11 March 2011 to the Finance & Expenditure Committee).
- Cabinet Papers in late 2010 clearly factored in the risk of a reduction in UBA price as a result of the move to cost-based *"some submitters were concerned with pricing principles being developed without an understanding of the prices that would result, and the impact of those resulting price changes"*. Having considered the issues the Minister recommended a transitional period *"ensuring Chorus is economically viable during the transitional period and has time to adjust to cost-based UBA;"* .(Cabinet papers 13 December 2010 from the Minister for Communications & IT to the Cabinet Economic Growth and Infrastructure Committee, s23 and 53c).

## **Chorus are not a 'hapless victim' of regulation**

- 6 Chorus is not the hapless victim it portrays itself to be. In fact we have significant concerns about Chorus ability to apply charges, with little constraints, over and above the regulated UBA price, thereby increasing the real price over and above what RSP's currently pay as detailed later on.
- 7 We have already seen increases in the prices we pay to Chorus as a result of the changes to pave the way for UFB:
  - The cost of UBA increased to \$21.46 during the 3 year transition period. We had seen a steady decline in the retail minus price with a low of \$17.90 prior to the changes to the act. The Commission itself in its response to the MED discussion document disagreed with freezing the price of UBA as an appropriate transition measure, *"particularly since the UBA price has been falling since it was originally set"* (Oct 2010 Commerce Commission response to the MED discussion document 'Regulatory Implications of Structural Separation').

- Naked urban UBA increased in cost by \$4.62 (from \$19.84 + UBA to \$24.46 + UBA) as a result of averaging Local Loop Unbundling (LLU) price.
- We are facing a 18.5% increase in the urban copper costs on our LLU investments in 2014 and, like Chorus, have 2 more years to adjust.

**8** The fact is separation creates significant risks for all parties, including ourselves and other competitors.

### **Significant threat to competition if the price is set too high**

**9** If the UBA price is too high this increases the incentive on Telecom to deploy their own equipment into both exchanges and cabinets and consume both the Sub Loop (SLU) & LLU services rather than UBA.

**10** However it is generally recognised that for cabinetised lines, which represent over half of lines in NZ, a Retail Service Provider (RSP) would need close to a 50% market share to make this viable. Hence no RSP has deployed its own equipment into Chorus' cabinets.

**11** If the UBA price is set artificially high we are therefore facing the prospect of Telecom as the dominant market provider being the only player with sufficient scale to have a viable alternative to Chorus UBA in cabinetised areas. If the dominant market player has a significantly lower cost base than its competitors, and is able to provide a significantly better service than the Chorus UBA service, there are serious implications for competition which are not in the long term best interest of consumers.

**12** The alternative is that Chorus and Telecom strike a deal to avoid Telecom deploying which again gives Telecom a significant cost advantage with the same result. The concern is that given the breadth of service both parties purchase from each other any non-discrimination of regulated services is inadequate and easily worked around.

### **Will a low UBA price inhibit UCLL investment?**

**13** The Commission is concerned about the impact on LLU investment if the price is set too low. On the face of it a lowering of the difference between UBA price and UCLL would be a disincentive further LLU investment. However CallPlus and Kordia, who have collectively deployed over half of the LLU deployments in NZ, are primarily

considering further LLU investment in order to achieve a better quality of the service to meet the consumers increasing appetite for better broadband.

- 14** CallPlus & Kordia consider that the most likely driver for further investment in LLU will be VDSL, with VDSL cards costing the same as ADSL2 cards. In making this investment LLU builders will stimulate the demand for faster broadband services, including UFB. The cost of the regulated UBA service will not impact on investment decisions as the service is not a direct substitute.
- 15** However the flow on will be that LLU investors will also want to purchase VDSL from Chorus, rather than regulated UBA, in cabinetised areas and areas that are not unbundled in order to be able to offer services nationally. Access Seekers submitted to the Commission that VDSL was simply another variant of a 'best effort' internet service with no real cost difference however the Commission determined that it did not fall within the regulated UBA service and could be offered on a commercial basis. (Commerce Commission's Determination 20th December 2010)
- 16** Chorus have historically offered the service at a \$20 premium which, as we foresaw in our submission (CallPlus submission 15th November 2010 "Consultation on new commercial UBA variant"), has consigned VDSL to *"a niche product in the market, constraining uptake and limiting the benefit that could be delivered at no incremental cost"*.
- 17** Throughout the UCLL re-benchmarking process CallPlus & Kordia have reiterated the importance of VDSL and the fact that it is an enabler for UFB, not the reverse. Chorus agrees with us – *"So we've talked about the transition to copper -- from copper to fibre -- being extensive. So we see next generation copper services, such as VDSL2 and next generation voice services, as supporting our customers' migration to fibre. For those customers who are later in the build program -- it is a long build program -- services such as VDSL2 will enable that they can be part of broadband speeds in New Zealand while they're waiting for fibre and we believe it provides a good transition path for them."* (Chorus Investor Day May 2012 transcript, [http://www.chorus.co.nz/file/5088/cnu\\_nz-transcript-2012-05-22t22\\_00.pdf](http://www.chorus.co.nz/file/5088/cnu_nz-transcript-2012-05-22t22_00.pdf) , Vic Crone Page 21 )
- 18** Chorus continued *"As mentioned, we see VDSL2 as a stepping stone to meet data speed requirements, with a clear migration path to fibre. This provides us with a short term revenue opportunity to make premises fibre ready for UFB and get the home wiring sorted prior to UFB."* In conclusion Chorus stated *"So let's finish up on what we've learnt so far and what we're finding so far around fibre. In a world where 97% copper and less than 1% is fibre we need a migration plan. What does that look*

*like? We've reduced our Chorus business fibre prices -- copper prices, to be the UFB wholesale prices. We're currently working through VDSL as the stepping stone to fibre, which is encouraging higher bandwidth use and supporting higher bandwidth applications. It also helps with those who come later in the deployment for UFB."*

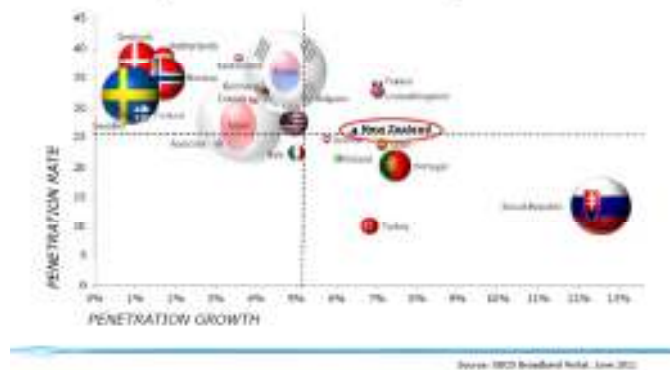
- 19** By 2014 it is likely that commercial VDSL service, rather than the regulated UBA service, represent a significant portion of the Chorus broadband revenues. What the price will be in 2014 is currently a matter for Chorus to decide; creating competition concerns as other than Telecom there are no other parties realistically able to deploy their own equipment into cabinets.
- 20** It should also be noted that the business case for LLU deployments factor in the cost of UBA as the practical reality is that we purchase UBA in conjunction with Access Seeker Voice (UCLFS) for cabinetised lines from the unbundled exchange, over half the lines. Therefore a lower UBA price actually helps the business case for an exchange, unless our cost to provide a service in unbundled exchange cabinetised areas is higher than the price of wholesale voice and UBA, which is not the case even under the draft determination.

### **A lower price UBA will support increased broadband penetration**

- 21** Chorus themselves have stated that there is room to grow the broadband market. A lower price for UBA will have a flow through benefit for consumers and grow broadband penetration thereby growing Chorus' revenue. *"We've got leaders in there such as Denmark, Netherlands and Sweden, who have broadband penetration between 30% to 40%. So we do believe there is further room to grow in broadband and that's what we're seeing in our connection numbers."* (Vic Crone, Chorus Investor Day May 2012, Para 3 Page 12 & following slides <http://www.chorus.co.nz/file/5995/investor-day-other-presenters.pdf> )

## NZ market snapshot

> Broadband penetration 26% with room to grow.



**22** Lower UBA pricing flows through to consumers. When UBA pricing reached \$17.90 CallPlus offered a broadband service at \$24.95 and Orcon offered a \$19.95 price point. These price points have since been removed from the market.

### Will the regulated price be the real cost of UBA?

**23** The regulated service, determined in 2007, is an anachronism in terms of its service description with a requirement for a mere 32kbps.

**24** Chorus already constrain the Basic UBA (BUBA) access product to 45 kbps at the handover point. This allows them to generate additional revenues above & beyond the regulated service. A commercial offer exists to provide a range of dimensioning options up to 150kbps. Chorus extract revenues over and above the regulated price based on a matrix of handover dimensioning and backhaul distance ranging from \$0 up to \$8.97 per connection per month. The reality is we do not purchase the regulated BUBA service now, instead we buy the higher speed service as the regulated service would provide consumers with a very poor quality of service. Ironically this is a return to the speed differentiation the unconstrained bitstream description sought to avoid. In comparison both of our own LLU based services are dimensioned considerably higher than this, generally in excess of 700kbps.

**25** Currently the BUBA constraint is not applied to EUBA as there is no real cost implication for Chorus in not doing so. However Chorus have in the past indicated they are considering applying a similar regime to EUBA. We have outlined the serious impact this would have on the quality of service consumers currently receive outside of LLU areas.

- 26** This remains an area of considerable uncertainty & risk. Chorus' intentions are unclear however there is currently no regulatory constraint to prevent this. The reality is that if Chorus were to exploit the inadequate legacy service description in the original UBA determination then all RSPs, other than Telecom, would need to purchase a far higher dimensioned access and backhaul service at a price determined solely by the monopoly provider to maintain our current service levels and avoid excessive churn.
- 27** Whilst CallPlus & Kordia will likely be purchasing non-regulated bitstream variants (VDSL or higher performing UBA) rather than the regulated UBA product the price of the regulated product remains critical as it is transparent and the baseline for commercial discussions.
- 28** Telecom on the other hand due to its scale has presence in first data switches, does not purchase Chorus' backhaul products (and may even make revenue out of this by providing backhaul to Chorus for the commercial variants) and has the option in 2014 to avoid the UBA access service by deploying into cabinets. The sub-loop backhaul and co-location prices are of particular concern to us; interestingly both these services were based on fibre investment costs provided to the Commerce Commission by Telecom not international benchmarks. (*para 426 Sub-Loop Co-location & Backhaul Decision 672*)
- 29** It is not Chorus that faces the biggest risks from these changes it is competition.

## **Benchmarking**

- 30** Under the Act the Commission has to set prices based on costs. We think that overall the Commission has met its obligations and done a good job in finding a benchmark. The Commission should not be concerned with regard to the paucity of benchmarks in this instance as there is a safety net in FPP available to all parties.
- 31** We think that Denmark and Sweden are comparable with New Zealand for the purposes of benchmarking with the exception of the handover dimensioning. As explained above the Chorus service being benchmarked is significantly below the performance levels of the services in the two benchmarks. As the handover costs are a relevant factor in the cost of the service, this means that the costs in the benchmarked service are likely to be higher than Chorus'.
- 32** We are unsure if the deployments in Denmark & Sweden have both Voice Cards and Broadband cards in the DSLAMs. Most unbundlers in NZ deploy paired Voice and Broadband cards in their DSLAMs however Chorus in contrast only deploy broadband cards – effectively doubling the capacity and halving the cost per user.



**33** The Commission is undertaking a benchmark as required. By way of a sanity check, CallPlus and Kordia's experience of unbundling a significant number of exchanges is that the actual port cost is significantly lower than the \$8.93 in the draft Determination. [ ] COI

**34** Chorus with their much larger scale and higher utilisation would experience even lower costs than ourselves. There is no need to build in any artificial uplift to the draft pricing such as selection of the upper quartile. More importantly a safety margin is not required as this price does not take effect until late 2014 and it should be remembered that:

- Costs for unbundling continue to fall.
- Parties have the option to resort to a final pricing principle (FPP) well ahead of the pricing taking effect.

## **Section 18**

**35** We outline in the appendix below why, when setting price on this review, the Commission cannot depart from a solely cost-based price.

### **Core Charges - Connection costs**

**36** We note that in the submission the Commission has not changed all the connection charges. It has only changed the UBA Service New Connection. This is not the only current charge and we would like the Commission to clarify whether it meant to consolidate the connection charges into one or that in its view there was no change to the other connection charges.

### **Indexing approach**

**37.**In the UCLL decision the Commission adopted an indexing approach. The Act permits indexing against a benchmark, so long as it is "comparable". In our view, unlike with UCLL, there is no "comparable" benchmark.

**38** If you have any questions on this submission please direct to:

**Graham Walmsley**

General Manager - Wholesale & Regulatory

CallPlus

Kordia New Zealand and CallPlus Submission on the Commerce Commission Draft Determination on Unbundled Bitstream Access Service Price Review.

[Graham.Walmsley@callplus.co.nz](mailto:Graham.Walmsley@callplus.co.nz)

**Susie Stone**

Chief Product officer

Kordia New Zealand

[Susie.stone@kordia.co.nz](mailto:Susie.stone@kordia.co.nz)

# APPENDIX

## How Sections 18 and 19 apply to UBA price review

### Summary

- 1.1 Before the application of sections 18 and 19 is considered, the Act is clear that the Commission can only determine an IPP price for the UBA uplift solely on a cost methodology based on benchmarking. Other non-cost factors cannot be considered, whether efficiencies or otherwise.
- 1.2 The price point adjustment (typically, 25th or 75th percentile or the median) can only be used to achieve the price based solely on cost, prior to the application of s18 and 19.
- 1.3 The s18 discretion, which must be considered by the Commission, can only be considered so long as the price is determined on cost. The rules on cost based pricing in the IPP provide the limits of the discretion.
- 1.4 The discretion cannot be applied, as the Commission enquire, at the price point stage, nor at any other stage, if to do so takes the price away from being solely cost based.
- 1.5 This price review is only one of a wide variety of Commission and Ministerial decisions where s19 applies to require consideration of s18 purposes. Those decisions lie on a spectrum. At one end, Schedule 3 investigations give wide discretion to adjust decisions to meet s18 objectives: indeed s18 is the dominant and often the only consideration for Schedule 3.
- 1.6 At the other end of the spectrum are decisions that are tightly confined by other parts of the Act, most notably the typical price reviews such as the IPP here. In between are other levels of discretion. For example, often when price determinations are made, non-price terms are decided at the same time. The Commission will often be able to choose from two or more different non-price terms on an issue. They can be quite different and the Commission can choose the term that best reflects s18 purposes.

- 1.7 Viewed in this overall context and the spectrum of decision making, it is consistent to have the s18 discretion narrowly confined within the cost based IPP limits, even if that may mean that usually there is no discretion. There is a wider context.
- 1.8 That approach is consistent with statutory interpretation principles. To interpret otherwise would be wrong and would usurp the Parliamentary role, as the leading New Zealand case points out.
- 1.9 The relativity obligation is a s18 obligation and so is interpreted in the same way.

### **Determining the cost price, prior to considering s19**

- 1.10 The UBA Service Description in Part 1 of the Telecommunications Act requires the UBA IPP price to be the UCLL price plus "additional costs incurred in providing" UBA calculated on a benchmark basis. The Commission – correctly – has concluded that the IPP exercise is to derive a proxy for the final price based on TSLRIC (see the UCLL STD 2012). The IPP is solely about cost.
- 1.11 Before s19 is addressed, the position is unequivocal. The Commission must determine the UBA incremental price solely by reference to the additional costs (as benchmarked). There is no room for discretion.
- 1.12 Complexities and optional approaches underpinning determination of that IPP price mean there can be considerable variations in approach and outcome. But it is particularly important not to lose sight of the objective, before s19 is applied. It is to get, objectively, the IPP price solely based on cost. Viewed this way, there is only one possible price: the price based solely on a cost methodology. Any variation applies only to Commission choices, from a complex set of data and approaches, to derive the cost price. Differences emerge because of differing choices from the cost data and methodology.

### **PRICE POINT CHOICES**

- 1.13 Therefore, for example, the price point choices – typically as between the 25th and 75th percentile or the median – cannot be discretionary in the sense that they can be used to deviate from a pure cost methodology. The deviation is only permissible if it more reliably determines the cost-based price. For example, if the data set – by rote application of statistics - produces a price that the Commission considers may be too high, it can exercise discretion to use the price point analysis to drop the IPP price to make it more accurate. In the MTAS STD it was recognised

that the Commission can superimpose such discretionary judgment on what falls out of the data set. What is important is that it can only use that discretion for that strictly cost-based purpose (before s19 is considered).

1.14 We have emphasised this price point issue as the Commission's draft UBA price review decision is focussed on the s18 and 19 discretion applying to the price point choice. As we develop below, we submit that non-cost discretion is not available on the price point or elsewhere.

### **How do Sections 18 and 19 apply?**

1.15 As noted above, the starting point is that, absent s19 issues, the price can only be the price based solely on cost considerations. Does s19 change this?

1.16 The overall context and scheme of the Telecommunications Act is particularly important in answering that question. In particular, an IPP price decision is only one type of decision to which s19 applies. There is a spectrum of recommendations, decisions and determinations to be considered (together, we'll call those "decisions" in this appendix). At one end of the spectrum (e.g.; Schedule 3 investigations) the Commission (and the Minister) have considerable flexibility in fulfilling the s19 obligations. Indeed, under Schedule 3, the primary framework for making decisions is section 18. At the other end of the spectrum, such as price determinations, there is little room for flexibility: often there will be no room for flexibility, but not always. Considered in the wider scheme of the Act, the IPP in the service definition and s19 can be interpreted consistently and appropriately.

### **WIDE ARRAY OF DECISIONS COVERED BY S19**

1.17 Section 19 requires not only the Commission but also the Minister to apply s18. That obligation extends to all decisions under:

- (a) Part 2 of the Act (dealing with designated services and specified services);
- (b) Schedule 1 (the service descriptions);
- (c) Schedule 3 (recommending addition of services to Schedule (plus removal and change) and Minister's decision on the recommendation);
- (d) Schedule 3A (recommending undertaking in lieu of Sch 3, and Minister's decision on recommendation).

1.18 Section 19 compulsorily applies s18 to a wide array of decisions including:

- (a) Decision whether to investigate application for determination (s20);
- (b) Determination if the Commission decides to investigate (s27). This usually includes both price and non-price terms (s29 and 30);
- (c) Initiating STD process (s30C);
- (d) STD, including – usually price and non-price terms (s30N-P);
- (e) Whether to investigate as to Residual terms application (s30Z);
- (f) Residual terms determination (price and non-price, usually) (s30ZD);
- (g) Whether to investigate Multinetwork services (s31AA);
- (h) Multi-network price and non-price determination (s39,40);
- (i) Pricing review for final price (FPP)- normally price and non-price terms (s51-52);
- (j) Clarification of determination (s58);
- (k) Reconsideration of determination (s59);
- (l) Schedule 3 decision by Commission to investigate (and/or Minister’s decision there should be an investigation);
- (m) Commission decision on Sch 3 investigation;
- (n) Ministerial decision to accept or reject Sch 3 recommendation to add, delete or change Sch 1 service descriptions. (s69 and Sch 3);
- (o) Commission’s decision whether to accept undertaking (Sch 3A);
- (p) Minister’s decision whether to accept undertaking (Sch 3A).

## **SPECTRUM OF DECISIONS**

1.19 As we note above, some of these decisions allow considerable s18 discretion.

1.20 When price is being determined, often the non-price terms are determined at the same time. Whether or not non-price terms are decided at the same time, they usually allow the Commission to exercise considerable discretion in the approach in order to achieve s18 objectives. For example, a service can often be specified and delivered in more than one way; the Commission can choose between options based on the non-price term that best meets s18. That term could be quite different from another way of dealing with the same issue.

1.21 At the other end of the spectrum lie decisions such as price, where the price model is clearly identified in the Act. The s18 discretion can only be applied within the

confines of the Act, and those confines for the UBA price uplift include the requirement to have pricing based solely on cost. There might be circumstances where s18 can be applied as to cost models such as the typical IPP and FPP in the Act, but that will be unusual.

1.22 Typically, the Commission addresses price and non-price terms at the same time, with wide discretion on the latter in practice but not on the former. Additionally the s18-driven non-price terms drive the price terms, as the scope and nature of the service determine its price. Section 18 comes into play indirectly as to price.

## **RECONCILING S19 WITH THE REST OF THE ACT**

1.23 There is no difficulty in reconciling s19 with the IPP in this way, including because, in the context of the variety of decisions covered by s18, the IPP is only one of many on a spectrum to be considered and interpreted within the overall scheme.

1.24 Additionally, on all the decisions listed above, the s19 obligation does not allow the Commission (or the Minister) to go outside the directly applicable provisions in the Act. As to non-price terms, for example, the s18 discretion can only be exercised within the confines established for non-price term in the service definition. The only difference is one of degree: price determinations usually have a narrower confine. To allow otherwise would render the legislated requirements –such as the IPP – irrelevant. That would not make sense.

1.25 There is a further important point indicating that s19 is subject to the price remaining only a cost-based price. Of importance in this review is the addition in 2011 of s18(2A). As noted above, s18 and therefore s18(2A) applies to numerous decisions. The opportunity has not been taken to expressly extend the application of s18 including s18(2A) to apply so as to enable the Commission to depart from purely cost based pricing. The Act at that point read, and most sensibly reads, as we submit above: the fact there has been no change indicates the submitted interpretation remains unchanged. Section 18(2A) can apply to multiple decisions: Sch 3 investigations as to services impacting investment in UFB; non-price terms impacting UFB and so on. To try and strain the interpretation by considering only the narrow area of price determination is to wrongly overlook the broader context.

## THE STATUTORY INTERPRETATION PRINCIPLES

- 1.26 To allow s19 to move the price from a pure cost-basis would violate the clear obligations in the Act not to do so. The Courts (and therefore the Commission) should always look to interpret an Act to avoid that outcome. The submitted interpretation does avoid that outcome in a manner, considered in overall context, is consistent with both s19 and the IPP.
- 1.27 To take a different approach would be for the Courts effectively to legislate to fill "gaps". *"Gaps" do not exist if the legislation can be interpreted sensibly as it stands*" (Statute Law in NZ 4th Edition (Burrows) page 213: see also Central Plains v Ngai Tahu [2008] NZCA 71).
- 1.28 *"Whatever the purpose of an Act may be, there is only so far one can "stretch" the meaning of the words of the provision under consideration.... There are often cases where the words are so clear in a particular sense that it is simply not possible to give them a different sense to satisfy the requirements of a wider purpose that the Act may seem to bear"* (Burrows at Page 225 - 226). The courts (and the Commission) cannot "usurp the policy-making function, which rightly belongs to Parliament" (Northland Milk Vendors v Northern Milk [1988] 1 NZLR 530, 542 per Cooke P).

## RELATIVITY

- 1.29 Finally, as relativity is a s18 consideration, there can be no price change based on relativity unless that change is purely cost based. Again, looking to the wider context is important. The service description for example also includes non-price terms where there often is discretion. It is misleading, and erroneous, to address the issue only in the context of the IPP.

## ENDS