



Telstra's ULLS Undertaking – Impact of Average ULLS charges on Promotion of Competition

A REPORT PREPARED FOR OPTUS

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Executive summary

- 1 In December 2005, Telstra submitted an undertaking to the Australian Competition and Consumer Commission (ACCC) regarding the terms and conditions of access to the Unconditioned Local Loop Service (ULLS).
- 2 In that undertaking, Telstra proposed a uniform monthly charge for the ULLS of \$30, regardless of where the end-user was located. Previously, Telstra had proposed a four-band pricing structure, reflecting the different costs of serving end-users in different geographic areas.
- 3 Part XIC of the *Trade Practices Act 1974* provides that the ACCC must not accept Telstra's undertaking unless it is satisfied that the terms and conditions of that undertaking are 'reasonable'. There are a number of considerations that the ACCC must have regard to in determining whether an undertaking is reasonable. One of the important considerations is whether the terms and conditions of the undertaking are likely to 'promote competition' in relevant markets.
- 4 Optus has asked Frontier Economics to further analyse whether the uniform monthly charge for the ULLS proposed in Telstra's undertaking is likely to promote competition. In particular, Optus has asked us to consider:
 1. Whether Telstra's proposed average ULLS charge will promote competition relative to a ULLS charge based on a four band pricing structure.
 2. Whether an alternative structure for the monthly ULLS charge would better promote competition than Telstra's proposed uniform average charge.
- 5 To answer these questions, we first analysed the impact of averaging on competition in areas where entry is likely and price averaging will cause prices to increase (bands 1 and 2). We then looked at the impact of averaging on areas where prices are likely to decrease (bands 3 and 4) but the likelihood of competitive entry was lower. Finally, we conducted a review of alternative pricing approaches, both in theory and when applied in other jurisdictions where similar issues have arisen.
- 6 Our conclusions are as follows:
 - In metropolitan areas (bands 1 and 2), Telstra's proposed charge is not likely to promote competition relative to a four-band structure. On the contrary, our analysis suggests that competition is likely to be diminished, as the charge raises the marginal costs of Telstra's rivals and reduces the incentive to acquire and service customers in these areas.
 - In regional areas (bands 3 and 4), Telstra's proposed charge is also not likely to promote competition by facilitating new investment by access seekers. Cost information supplied by Optus provides strong support for the notion that the ULL charge will simply have no influence on the likelihood of competitive entry in these areas. Entry is simply too costly relative the benefits obtainable.

- It is clearly possible to implement other pricing structures to recover the costs of providing the ULLS, and it is plausible that other structures may better promote competition than the proposed uniform charge. As noted above, our view is that a four-band structure is more pro-competitive than a uniform charge. We find that there is some support for alternative structures (e.g. a two-part tariff) but that implementation difficulties mean that the most relevant alternatives are those that involve a further degree of band disaggregation. Our review of banding structures in Canada and the US suggests that there may be a case that even a four-band structure may be inferior to more bands. The scant availability of disaggregated cost data means that – unfortunately – the benefits of such an approach cannot be readily assessed.

1 Introduction

1.1 TELSTRA'S ULLS UNDERTAKING

7 On 23 December 2005 Telstra submitted an undertaking to the Australian Competition and Consumer Commission (ACCC) regarding the Unconditioned Local Loop Service (ULLS).¹ The ULLS involves the use of unconditioned copper cable between end users' premises and telephone exchanges. The ULLS can be used by parties that provide their own networks to the telephone exchange and connect with the ULLS to provide high speed data and voice services to end users.

8 In its December 2005 Undertaking Telstra proposed setting a uniform monthly charge for use of the ULLS of \$30 per month per customer regardless of the location of the customer. Telstra proposed that this price apply from 1 January 2006 until 30 June 2008. Charges for connection to the ULLS are addressed in a separate undertaking.

9 In previous undertakings submitted by Telstra, and in model terms and conditions for the ULLS released by the ACCC in October 2003,² the ULLS monthly charge has varied according to the geographic location of the customer. Customers have been grouped into one of four pricing bands and a different charge has applied for each of the four bands.

10 In June 2006, the ACCC issued a draft decision rejecting this undertaking as the proposed terms and conditions were not reasonable.³ One of the reasons for this rejection was that the \$30 per month average charge would not promote the long-term interests of end-users or competition in relevant markets.⁴

1.2 THE PROMOTION OF COMPETITION

11 Optus has asked Frontier to further analyse whether the uniform monthly charge for the ULLS proposed in Telstra's undertaking is likely to promote competition. Optus has asked us to consider:

1. Whether Telstra's proposed average ULLS charge will promote competition relative to a ULLS charge based on a four band pricing structure.

¹ Telstra Monthly Access Charge Undertaking to the Australian Competition and Consumer Commission Under Division 5 of Part XIC of the Trade Practices Act 1974 (Cth), dated 23 December 2005

² ACCC *Final Determination for model price terms and conditions of the PSTN, ULLS and LCS services*, October 2003

³ Section 152 BV (2) (d) of the *Trade Practices Act 1974* requires that the ACCC must not accept an undertaking unless it is satisfied that the terms and conditions are reasonable. In considering whether the terms and conditions are reasonable, the ACCC must have regard to whether the terms and conditions promote the LTIE. In having regard to the LTIE, the Act requires the ACCC to consider, amongst other things, whether the terms and conditions will promote competition in markets for carriage services and services supplied by means of carriage services.

⁴ ACCC, *Assessment of Telstra's ULLS Undertaking: Draft Decision*, June 2006, p. 64.

2. Whether an alternative structure for the monthly ULLS charge would better promote competition than Telstra's proposed uniform average charge.

- 12 We are instructed by Optus that second point must be considered because the obligation on the ACCC to be satisfied that an undertaking is reasonable can be interpreted as an obligation that the terms and conditions be more reasonable than a feasible alternative. It is therefore necessary to consider whether a structure other than the four-band charging structure that has been adopted in the past or the uniform monthly charge proposed by Telstra would better promote competition.
- 13 This report is organised as follows. We first outline, by way of background, a description of the ULLS service, the market(s) in which competition may be affected by the structure of the ULLS monthly charge, and prices that have been proposed by Telstra or the ACCC in recent exchanges (section 1).
- 14 In section 3, we consider whether the proposed average monthly ULLS charge will promote competition, assuming that if the undertaking is rejected future monthly ULLS charges will follow a four-band pricing structure.
- 15 In Section 4, we consider possible alternative tariff structures, namely a two-part tariff for the monthly ULLS charge, and a greater number of tariff bands that better reflects variations in the costs of supply.

2 Background

2.1 THE ULLS SERVICE

16 The ACCC defines the ULLS as follows:

The ULLS involves the use of unconditioned cable, primarily copper pairs between end-users and a telephone exchange, where the unconditioned cable terminates.⁵

17 Access seekers can connect their own networks to the ULLS to deliver high-speed voice and data services to customers. There is no prescribed bandwidth on the ULLS, enabling the access seeker to add its own carriage technology. Services that can be provided include local, STD and IDD call services, high-speed internet access, video on demand and other multimedia and data services. The ACCC notes that at present the key reason why access-seekers want direct access to the ULLS is to use xDSL technologies to provide these services.⁶

18 Whether or not accessing the ULLS and using xDSL technology is the most appropriate way to deliver these services depends in part on the distance of customers from the telephone exchange. The speed of service delivery deteriorates as the distance of the customer from the exchange increases. For example Optus advises us that its existing digital subscriber line network (DSLN) and planned extensions to the network are based on ADSL2+ technology which allows speeds of 12 Mbps within 1.5 km of the exchange. The rate at which speed deteriorates with customer distance from the exchange varies with the form of DSL technology used. In general however the speed falls significantly when customers are more than 2 km from the exchange and it is not technically possible, using xDSL technology, to ensure 'broadband' speeds when customers are located more than approximately 5-6km from the exchange.

19 The length of the copper wire is on average longer in rural and regional areas, meaning that the ULLS may not be the best technology for delivering high-speed data and voice services. This was the conclusion reached by the ACCC:

The ULLS is most suitable for providing high-speed services in CBD and metropolitan areas. In many regional and remote areas, high-speed services are more likely to be appropriately delivered by alternative technologies such as satellite or newer generation (fixed or mobile) wireless networks.⁷

20 At present, we understand that use of the ULLS by access seekers is limited to exchanges and customers in bands 1 and 2.

⁵ ACCC, *Assessment of Telstra's ULLS and LSS monthly charge undertakings*, Final Decision, December 2005, p 3.

⁶ ACCC, *A strategic review of the regulation of fixed network services*, Discussion Paper, December 2005, p 32.

⁷ ACCC, *Pricing of Unconditioned Local Loop Services Final Report*, March 2002, p 19.

2.2 RELEVANT MARKETS

21 The ULLS is an input used to provide services in various downstream retail markets. The ACCC has previously defined the following retail markets as relevant to the ULLS:⁸

- The customer access market for the supply of customer access services by service providers to themselves and other service providers.
- The long-distance telephony market.
- The mobile telephony market.
- The local call market.
- The high bandwidth carriage services market for the supply of high bandwidth carriages services by services providers to end-users.

For the purpose of the discussion below we refer to these markets as the relevant markets in which competition may be affected by the structure of the monthly charge for the ULLS.

2.3 RECENT PROPOSALS FOR THE ULLS MONTHLY CHARGE

22 The ACCC declared the ULLS in 1999. Since declaration the monthly charge for the ULLS has been based on a four-band structure, in which the charge varies depending on teledensity in different geographic locations.⁹

- Band 1 - CBD areas of Sydney, Melbourne, Brisbane, Adelaide and Perth (approximately **c-i-c** customers connected to the CAN)
- Band 2 - urban areas of capital cities, metropolitan regions and large provincial centres (including other CBD areas not already included in band 1) - (approximately **c-i-c** million customers connected to the CAN)
- Band 3 - semi-urban areas including outer metropolitan and smaller provincial towns - (approximately **c-i-c** million customers connected to the CAN)
- Band 4 - rural and remote areas (approximately **c-i-c** customers connected to the CAN)

23 Information on the average customer distance from the exchange in each band does not appear to be available, although it would be an important driver of the cost of the ULL service.

24 We understand that the four-band charging structure was outlined in Telstra's original pricing proposal in June 2000.¹⁰ The four-band structure of the charge

⁸ *A strategic review of the regulation of fixed network services*, An ACCC Discussion Paper, December 2005, p 33.

⁹ ACCC *Pricing Principles for the ULLS Final Report*, March 2002, p 27.

¹⁰ ACCC *Pricing Principles for the ULLS Final Report*, March 2002, p 27, fn 25.

was not opposed by the ACCC in its final report on its pricing principles for the ULLS in March 2002¹¹ and nor did other interested parties raise concerns with the structure of the monthly charge.¹²

25 In October 2003 the ACCC released model terms and conditions for the ULLS which contained a four-band monthly charge. This banding reflects estimated differences in the costs of providing the ULLS in the four bands. In December 2004, Telstra submitted an undertaking seeking approval for the prices in the ACCC's model terms and conditions to apply for the periods 2004-05 and 2005-06. The proposed prices are outlined in Table 1.

Table 1: Monthly charges for the ULLS proposed in Telstra's 13 December 2004 Undertaking

	(\$/month/customer)
Band 1	13
Band 2	22
Band 3	40
Band 4	100

26 On 21 December 2005 the ACCC released a final decision rejecting the prices proposed in Telstra's December 2004 undertaking on the basis that the charges were higher than what is required to recover the costs of the ULLS.¹³ The ACCC noted that Telstra's proposed prices could be averaged (using the total lines in each geographic area) to give an average price of \$29.99 per month.¹⁴

27 The ACCC cited the following factors as relevant to its decision to reject the December 2004 undertaking:¹⁵

- Telstra proposed that the ULLS specific costs be recovered only from customers that are accessing the ULLS. The ACCC considers that these costs should be recovered from a broader range of services. Although it did not reach a definitive view on the relevant service or customer base over which the costs should be recovered it concluded that under any reasonable definition the ULLS specific cost component of the monthly charge would be significantly below Telstra's claimed amount.
- Even if the ULLS were to be recovered only from those customers using ULLS lines, Telstra's revised demand estimates mean that the per customer

¹¹ ACCC Pricing Principles for the ULLS Final Report, March 2002, section 4.3 and p 48.

¹² ACCC *Pricing Principles for the ULLS Final Report*, March 2002, p 19.

¹³ ACCC, *Telstra's Undertakings for the Unconditioned Local Loop Service Discussion Paper*, January 2006, p 2.

¹⁴ Ibid, p 2.

¹⁵ ACCC, *Assessment of Telstra's ULLS and LSS monthly charge undertakings - Final Decision*, December 2005, pxiii.

charge for ULLS specific costs included in the undertaking are unreasonably high.

- Telstra's estimated network costs are above those the ACCC considers consistent with the upper bound of efficient cost.
- ACCC considers the access deficit contribution component should not be included in the ULLS monthly charge.
- The ACCC considers the inter-exchange network cost component should not be included in the ULLS monthly charge.

28 As noted in section 1, on 23 December 2005 Telstra submitted a new undertaking proposing an uniform monthly charge for access to the ULLS of \$30 for all customers irrespective of their location. Telstra is seeking approval for this charge to apply from 1 January 2006 until 30 June 2008.

29 In June 2006, the ACCC issued a decision rejecting Telstra's latest undertakings. In broad terms, the ACCC maintained its opposition to the aspects of the undertaking referred to in paragraph 27, and also raised a number of objections to the averaging of ULLS charges.

30 We now turn to the issue of ULLS charge averaging and whether it could be said to promote competition.

3 Promotion of competition relative to four-band tariff structure

31 Optus has asked whether a uniform monthly ULLS charge, as proposed by
Telstra in its December 2005 undertaking, will promote competition relative to a
charge based on the four-band pricing structure outlined in section 2.1.

32 The likely effect on competition in different geographic areas will depend in part
on whether the proposed average monthly charge will result in an increase or a
decrease relative to the charge that is likely to prevail with a four-band structure.

33 It will also depend on other factors such as whether it is technically feasible and
economically viable (irrespective of the structure of the ULLS charge) to roll out
the DSLNs in remote and rural areas that are necessary to utilise the ULLS.

34 There is some uncertainty about the exact charges that would apply if a four-
band pricing structure was used rather than the proposed uniform monthly
ULLS charge. It is reasonable to assume that, if the charges are set to generate
the same expected revenue overall, the uniform charge will be significantly higher
than the corresponding charge for bands 1 and 2 in a four-band pricing structure,
and significantly lower than the corresponding charge for bands 3 and 4.

35 Below we:

- Outline Telstra's arguments regarding the promotion of competition.
- Consider the impact of the proposed uniform monthly ULLS charge in urban
and metropolitan areas (bands 1 and 2).
- Consider the impact of the proposed uniform monthly charge in regional and
rural areas (bands 3 and 4).

3.1 TELSTRA'S ARGUMENTS

36 In Telstra's main submission accompanying its December 2005 undertaking, the
arguments regarding the promotion of competition focus on whether an average
ULLS charge will promote competition in regional and rural areas. It states:

In terms of the promotion of competition criterion to the extent that retail basic
access prices are effectively required to be uniform on a national basis, and to
which retail charges for ADSL are also nationally uniform, having deaveraged
ULLS prices virtually guarantees that residential customers residing in rural areas
will never have network choices or share in the benefits of infrastructure
competition. This is because, with deaveraged ULLS prices, so long as Telstra's
retail prices are averaged there is little prospect of ULLS take-up, and the
infrastructure investment that accompanies it in rural areas.¹⁶

....

¹⁶ *Telstra's submission in support of the ULLS monthly charges undertakings dated 23 December 2005*, p33.

Thus in at least two ways, geographically averaged ULLS prices ensure that rural and remote customers reap the benefits of competition – directly, via Telstra’s ability to maintain uniform PSTN and broadband prices, and indirectly, via the increased incentives for ULLS take-up and accompanying investment in rural and remote areas.¹⁷

37 Telstra does not directly address the impact of a uniform monthly charge on competition in metropolitan and urban areas in its submissions in support of its undertaking. In its response to the ACCC Discussion Paper¹⁸ Telstra makes two arguments that are relevant to the question of promotion of competition when it discusses the impact on efficient investment. First it argues that the difference between the average ULLS charge and a de-averaged ULLS charge for band 2 will not be sufficient to alter the viability of ULLS based competition in the relevant areas.¹⁹

38 Secondly it argues that “...if access seekers are considering deploying their own access infrastructure rather than using the ULLS, then in low cost areas averaged prices will provide a greater incentive for them to do so, an outcome consistent with the Commissions objective of increasing infrastructure competition”²⁰

3.2 METROPOLITAN AND URBAN

39 As discussed below, Telstra’s argument regarding the impact of a uniform monthly ULLS charge on the promotion of competition in metropolitan and urban areas is incorrect. An average monthly ULLS charge will:

- Soften competition in metropolitan and urban areas by raising the marginal cost of Telstra’s rivals and reducing the incentive of all competitors to capture and serve customers in those areas.
- Have an asymmetric effect on the firms competing to supply services that use the ULLS as an input in bands 1 and 2. The move to the uniform average charge will increase the marginal costs for some firms but not for Telstra. It will decrease the expected net revenue from each customer served by Telstra’s rivals, reducing their incentives to compete in bands 1 and 2.

3.2.1 Softening of competition

40 The proposition that competition will be affected by actions that reduce the incentives of firms to compete for marginal customers comes from the standard models by which economists analyse strategic interactions among enterprises.²¹

¹⁷ Ibid, p 34.

¹⁸ ACCC, *Telstra’s Undertakings for the Unconditioned Local Loop Service, Discussion Paper*, January 2006.

¹⁹ *Telstra’s submission in response to the Australian Competition and Consumer Commission’s Discussion Paper in respect of ULLS dated January 2006*, p 5.

²⁰ Ibid, p 5.

²¹ A good survey is to be found in David Besanko, David Dranove and Mark Shanley, *Economics of Strategy*, 2nd edition, John Wiley, 2000, pp 268-81.

41 The normal way to analyse a softening of competition is by exploring the incentives facing firms within a market to invest in ways that soften competition among them.

42 In this case the change that will prompt the softening of competition is a move to an average ULLS monthly charge that increases the marginal cost to Telstra's competitors of acquiring an additional customer on its own network.

43 The intuition behind this effect is straightforward. The higher is the cost associated with each customer, the higher is the price needed for the firm to recover its costs. Firms will be less likely to aggressively reduce prices to compete for customers or look for other ways to lure away marginal customers. This enables all firms in the market to increase prices.

44 This argument was accepted by the Australian Competition Tribunal in *Virgin Blue Airlines Pty Limited* [2005] at paras 525-6.

The second consequence of the change in the fixed to variable cost ratio identified by Dr Williams is that airlines are less likely to chase incremental or marginal customers and less likely to be concerned about losing marginal customers to their rivals. If a competitor were successfully to attract passengers away from another airline, the higher the costs that the airline will save by losing those marginal passengers to its competitor, the less its incentive to respond to the competitor's activities. Dr Williams explained this as a "softening" of competition. We accept that this is a likely consequence.²²

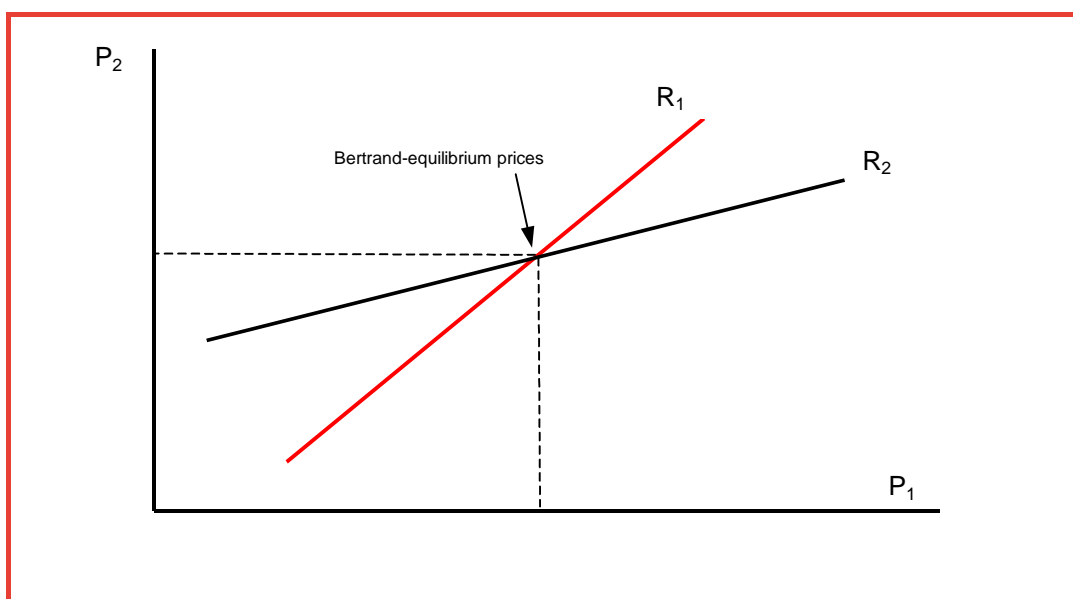
45 The softening of competition in bands 1 and 2 that will arise from Telstra's proposed average ULLS charge can be described more formally using a model of interdependent competition – we use the model of Bertrand competition in differentiated products. Alternative economic analysis could also be applied to Telstra's pricing behaviour²³, but we consider that Bertrand competition in differentiated products is an appropriate model given the patterns of competition in the downstream markets in which the ULLS is used as an input. In these markets Telstra and its competitors compete on a range of attributes including price, service quality dimensions (e.g. content), reputation etc. The range of attributes on which firms compete mean that products are close but not perfect substitutes. Firms select their price and the other attributes of their products and then stand ready to supply all the demand for its product at that price.

46 When firms compete in this way each firm's optimal (profit maximising) price depends on its rivals' prices. Firms' reaction functions (firms' optimal prices for any price of its rival) are illustrated in Figure 1 for a simplified two firm case with linear demand functions.

Figure 1: Firm reaction functions: firm's optimal price given the price charged by its competitor

²² Australian Competition Tribunal, *Virgin Blue Airlines Pty Limited* [2005] ACompT 5, paragraph 525.

²³ For example, given the existing retail prices, a move to significantly raise the monthly charge for the ULLS for customers in band 1 and 2 might be explained using models of predatory (vertical price squeeze) behaviour.



47 Intuitively the firm reaction functions might be described as representing the extent to which it is optimal for a firm to compete aggressively (undercut the price of its rival) in order to attract customers.

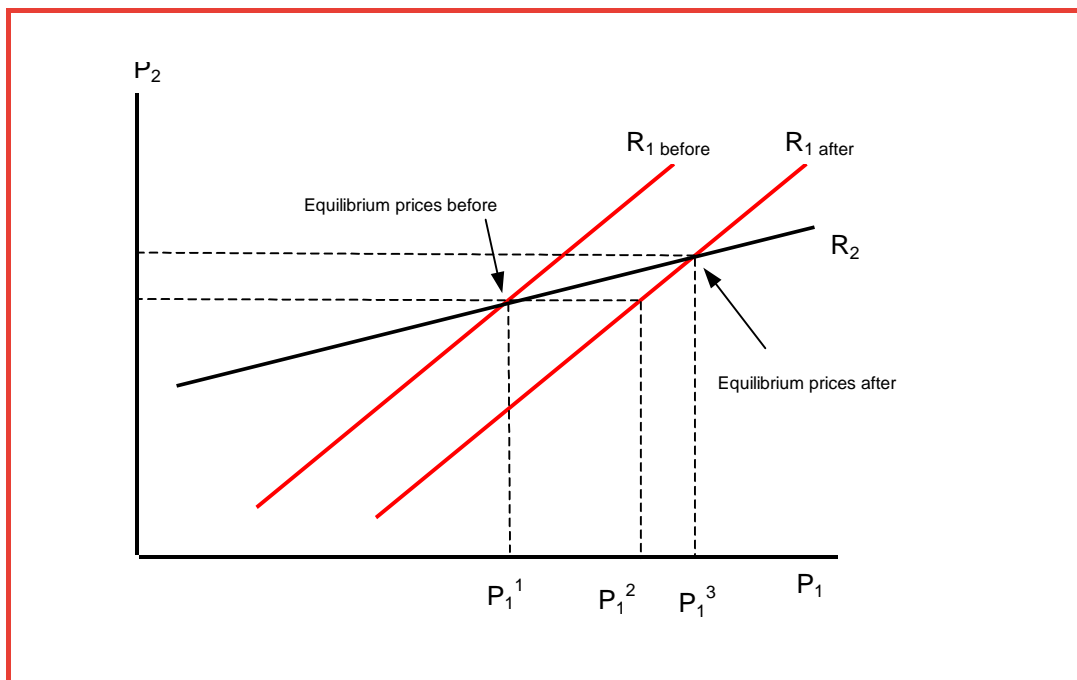
48 As shown in Figure 1, each firm's profit maximising price is higher, the higher is the price charged by its rival.²⁴

49 Bertrand-equilibrium prices occur at the intersection of the two reaction functions. At this point each firm is choosing its profit maximising price given the price of its rival: no firm can do better by changing its price.

50 The move to a uniform monthly ULLS charge will increase Telstra's rivals' marginal cost of supplying customers in bands 1 and 2. In terms of the diagram if we think of firm 2 as Telstra and firm 1 as its rival, a uniform ULLS charge will shift firm 1's reaction function from $R_{1 \text{ before}}$ to $R_{1 \text{ after}}$ as is shown in Figure 2.

Figure 2: Impact of a move to a uniform ULLS

²⁴ Or conversely, in a Bertrand model of competition, when a competitor reduces its price(s), the firm's profit maximising response is to also reduce its prices.



51 As illustrated in Figure 2, all else equal, if a uniform monthly ULLS charge is introduced Firm 1's optimal price for customers in bands 1 and 2 will be higher. The increase in firm 1's (Telstra's rivals') price occurs because of two effects:

3. the increase in marginal cost leads firm 1 to increase its prices (this is discussed further in section 3.2.2 below). In the diagram this could be represented as the increase in P_1 (associated with the parallel shift of the reaction function from P_1^1 to P_1^2); and

4. a strategic effect: the increase in firm 1's prices raises its competitor's (Telstra's) profit maximising price, which in turn means it is profit maximising for firm 1 to further increase its price (from P_1^2 to P_1^3).

52 At Bertrand-equilibrium prices, as illustrated in the diagram, both the price charged by firm 1 and by Telstra will be higher.

53 It is clear that Telstra's proposed move to a monthly ULLS charge will soften competition for the supply of services to customers in the relevant markets in bands 1 and 2:

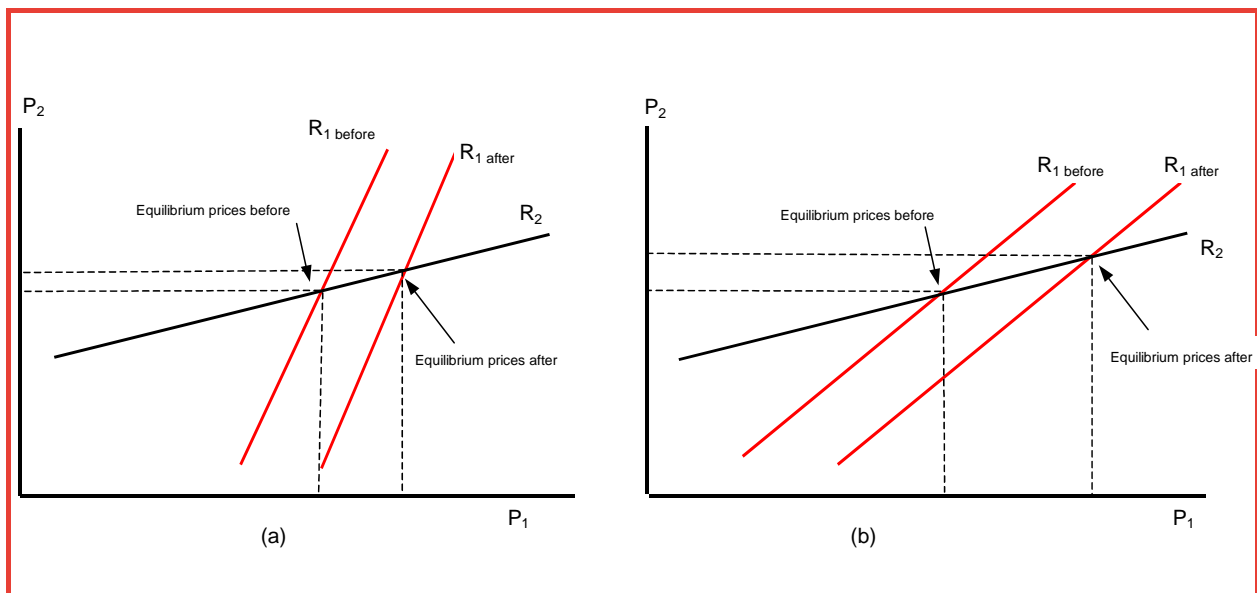
- equilibrium prices will rise as a result of an increase in Telstra's rivals' marginal cost;
- Telstra will not face any increase in marginal cost as a result of the move to uniform ULLS charges but will still benefit from higher prices; and
- Telstra's rivals are likely to have a diminished incentive to compete aggressively. Because of the asymmetric effect on firms in the market (Telstra not facing an increase in marginal cost even though its rivals will) the expected net revenue from each additional customer served by Telstra's rivals is likely to fall. This is discussed further in 3.2.2.

Promotion of competition relative to four-band tariff structure

54 It is also worth noting that the extent to which competition will be softened (and to which Telstra benefits) from the move to uniform monthly ULLS charges will depend on the degree of product differentiation in the market or, expressed in a different way, the extent to which the services supplied by one firm are a close substitute for the services supplied by another firm. This can be explained by reference to the diagram in Figure 3. If firm 1's product is highly differentiated from firm 2's product, the slope of firm 1's reaction function will be very steep (almost vertical). That is, this depicts a situation in which firm 1's pricing decisions have a small impact on firm 2's optimal prices so a change in firm 1's marginal cost will result in a small change in the equilibrium price for firm 2 (see Figure 3(a)).

55 If however products are relatively close substitutes, an increase in the marginal cost of firm 1 results in a larger increase in the Bertrand-equilibrium price for firm 2 (see Figure 3 (b)).

Figure 3: Softening of competition with close substitutes



56 In the case of services supplied using the ULLS it is reasonable to assume that they are close but not perfect substitutes. This is likely to mean that the softening of competition (the increase in retail prices) and the benefits to Telstra from uniform monthly ULLS charges will be greater than for a market in which services are highly differentiated.

3.2.2 Asymmetric effect on firms

57 Telstra will not face any increase in its marginal cost of serving customers in bands 1 and 2 as a result of a move to a uniform ULLS charge. Telstra does not pay the ULLS charge and even following operational separation of the business any charge that 'Telstra retail' pays 'Telstra wholesale' will remain purely notional. As shown in 3.2.1, however, it will be profit maximising for Telstra to charge a higher price as a result of the softening of competition in the relevant markets.

Promotion of competition relative to four-band tariff structure

Telstra is therefore unambiguously better off in serving customers in bands 1 and 2 even if the uniform monthly ULLS charge is set to generate the same expected revenue as charges in a four-band structure.

58 By contrast, Telstra's competitors are unlikely to be better off as a result of the softening of competition. As illustrated in Figure 2, firm 1's (Telstra's rival's) profit maximising price in band 1 and 2 increases as a result of the move to uniform monthly ULLS charges. But it does so because of an increase in its marginal cost. If that is fully passed through to end users, then the firm is no better off. However, if Telstra's rivals are constrained in passing on the increase in marginal cost in full they may be worse off. That is if they are constrained from increasing retail prices to a level that enables them to fully recover the increase in costs arising from the change in the ULLS charge, Telstra's competitors will be worse off, notwithstanding the softening of competition in the market.

59 The extent to which firms will pass through an increase in marginal costs as an increase in prices depends on a number of factors including the shape of the demand and supply functions, the level of competition in the market, and the extent to which a cost increase is firm specific rather than industry wide. It is difficult to predict exactly what level of cost pass through is likely, and therefore it is hard to ascertain the extent to which Telstra's competitors' net revenue may fall if uniform monthly ULLS charges are introduced. But the economic literature on cost pass through provides some insights.

Cost pass through

60 It is generally established that an industry wide increase in marginal costs will be passed through to some extent as higher prices. The rate of cost pass through will depend on the competitiveness of that market, the shape of the demand curve and the elasticity of demand at the relevant point on the demand curve.

61 The standard textbook results show that for a monopolist, the *minimum* rate of pass through of a change in cost is 50 per cent. That is, a 10 percent increase in marginal cost result in the monopolist increasing its prices by a minimum of 5 per cent. This minimum rate of cost pass through will occur when demand curves are linear. If demand curves have the common shape (convex to the origin), a dollar increase in marginal cost will result in an increase in prices of more than a dollar²⁵

62 In perfectly competitive markets, a firm faces a horizontal demand curve; so that it may appear that firms cannot raise prices at all in response to an industry-wide cost increase. However, such an increase leads all firms to lower their output

²⁵ See, for example, the standard microeconomics text book by Hal. R. Varian, *Microeconomic Analysis*, Third Edition, W.W. Norton & Company Inc, p 236-237 for a proof and explanation of the rate of cost pass through for a monopolist. The proof and intuition of the conclusion that, with constant elasticity demand curves, the percentage change in price will equal the percentage change in marginal costs, and the dollar change in price will be more than dollar change in marginal costs is outlined in Jerry A. Hausman and Gregory K. Leonard, "Efficiencies from the Consumer Viewpoint" *George Mason Law Review* (1999), pp 707-727, at p 709.

(shift in the supply curve), which leads to higher prices. The extent to which the increase is fully passed through depends on the relative position and shape of the supply and demand curves.

63 In any event, given that Telstra is not affected, the move to a uniform monthly ULLS charge is not an industry wide cost increase. It is best described as a firm-specific cost increase for firms supplying downstream services using the ULLS to customers in bands 1 and 2.

64 The degree of cost pass-through will increasingly depend on the form of competition observed in the market. For a firm specific cost increase when firms compete in the manner described in section 3.2.1, the rate of cost pass through for the firm facing the change in marginal cost will be higher the more competitive is (the more competitors are in) the market:

- For a two firm case, Telstra's rival who experiences the cost increase will pass on a minimum of two-thirds of the cost increase as an increase in its prices. Telstra will increase its price a minimum of one-third of its rival's cost increase.²⁶
- If there are more firms in the market, the rate of cost pass through will increase.

Summary

65 The predicted rate of pass of a change in marginal cost through will depend on, among other things, the form of competition in the market.²⁷ Telstra's rivals will be worse off in any circumstances in which they are constrained from passing on 100 per cent of the increase in marginal cost that results from the move to uniform monthly charges, notwithstanding the 'softening' of competition in the relevant markets. In these circumstances, expected net revenue associated with serving each customer in band 1 and 2 will be reduced, reducing rivals' incentives to chase marginal customers and contributing to a reduction in competition in the relevant markets.

66 By contrast, Telstra is unambiguously better off as a result of the softening of competition, even if the average monthly ULLS charge is set to generate the same expected revenue as the charges in a four-band structure. Telstra will face no increase in marginal cost but its profit maximising prices will increase. It is difficult to see how such effects could be considered to promote competition.

²⁶ See Jerry A. Hausman and Gregory K. Leonard, "Efficiencies from the Consumer Viewpoint" *George Mason Law Review* (1999), pp 707-727, at p 725 for an explanation and proof of this result for Bertrand competition with differentiated products. As discussed in para 61 if firms face a convex demand curve (e.g. a constant elasticity demand curve) the rate of cost pass through will be higher for both the firm experiencing the cost change and its rival.

²⁷ If, for argument's sake, we assume that the way in which firms compete in the relevant markets is best described by a different model - dominant firm with a price taking fringe - the results suggest that any firm in the price taking fringe will be constrained in passing through a firm specific cost increase as an increase in prices. In the extreme when the fringe is perfectly competitive, a firm will not be able to pass through any of the firm specific increase in marginal cost. See Ashenfelter, Ashmore, Baker, and McKernan, "Identifying the Firm-Specific Cost Pass-Through Rate," *FTC Working Paper 217*, January 1998, pp 6-7 for a proof and discussion.

3.3 REGIONAL AND RURAL AREAS

67 Telstra's arguments regarding the effect of an average ULLS monthly charge on
 the promotion of competition in regional and rural areas are also incorrect. As
 outlined below, irrespective of the structure of the ULLS charge, rolling out
 competing DSLNs in these areas will remain financially unviable. We also note
 there are technical issues associated with providing ADSL services using the ULLS
 in these areas – however, we put these concerns to one side for this analysis.
 Even considering the financial aspects alone, it is quite clear that an average
 monthly ULLS charge will not have any material effect on the use of the ULLS
 or competition in the provision of services that use the ULLS in regional and
 rural areas.

3.3.1 Analysis

68 To understand the likely effect of Telstra's average ULLS charge on the
 profitability of investment in bands 3 and 4, we sought data from Optus on its
 current and forecast costs of serving ADSL and telephony subscribers via access
 to ULLS.

69 The purpose of our analysis was to determine whether an average ULLS charge
 would be likely to have any impact on the 'business case' for investment in bands
 3 and 4. To do this, we estimated the expected net profits available from rural
 customers:

$$70 \quad \Pi = P - C_{\text{ULLS}} - C_{\text{DSLN}} - C_{\text{Retail}}$$

71 Where:

- P is Optus' expected average revenue from rural customers for a bundle of ADSL and retail telephony services. We considered that it was most appropriate to base this on Optus' expected average revenue for services supplied using its own network for its existing customer base.
- C_{ULLS} is the ULLS charge payable by Optus. C_{ULLS} will be either the \$30 per customer per month (the rate 'with' Telstra's undertaking) or some other rate that would apply 'without' Telstra's undertaking.
- C_{DSLN} is the average incremental cost to Optus of rolling out DSLN to customers in bands 3 and 4.
- C_{Retail} is the average incremental cost to Optus of other activities necessary to supply retail services to customers in bands 3 and 4 using the ULLS. These costs largely include customer acquisition costs, billing and customer service costs, any incremental organisational costs, any incremental costs associated with IT systems etc.

72 In undertaking our analysis, we further considered whether the costs in both C_{DSLN} and C_{Retail} included only the incremental cost associated with supplying customers in bands 3 and 4. If, for example, certain IT systems are needed to supply customers using the ULLS service but there is no change in the systems needed to accommodate incremental customers from bands 3 and 4, it would be more accurate to characterise the incremental cost as zero. That is because a firm

operating in a competitive market would only consider the incremental costs associated with the investment.

Average revenues (P)

73 Optus has provided us with data that captures the average revenues it recovers from existing users of its ADSL and telephony services. We assume that Optus will supply all customers with a bundle of telephony and ADSL services. These data are summarised in the table below.

ADSL	c-i-c
Telephony (local services plus pre-selectable calls)	c-i-c
Total per customer, per month revenue	c-i-c

Table 2: Average revenue from ADSL and telephony customers

Source: Optus business planning data

74 We expect that this would provide a reasonable estimate of the likely revenues expected for a customer served in bands 3 or 4. That is not to say that current revenues will be unaffected by changing technology. Rather, we consider that these effects will occur in both directions, such as the increasing use of VOIP services (which might diminish voice revenues), and the increasing use of content services such as IPTV or video-on-demand (which might increase revenues). The net effect is very difficult to forecast, such that current revenues probably provide the best indication of future revenues.

Incremental retail costs (C_{Retail})

75 These costs fall into two categories – the costs of acquiring customers and the costs of servicing customers. We sought to estimate Optus' monthly incremental retail costs by:

- identifying (net) incremental acquisition costs, and amortising these over the average customer life; and
- identifying the incremental costs of servicing ongoing customers.

76 Acquisition costs for ADSL and telephony subscribers include such items as modem costs, wholesale Telstra charges for line activation and customer transfer, commissions paid to Optus dealers and agents, and advertising and promotion expenses. We consider there are strong grounds for considering all of these costs to be incremental to the acquisition of new customers. These are amortised over a period of **c-i-c** years, **c-i-c**.

77 Ongoing costs include such items as customer service and bad debt expenses. Again we consider these costs to be incremental to the acquisition of new subscribers, or at least the vast majority of such expenses.

78 In supplying a retail service to telephony customers, Optus must also purchase interconnection and other call termination services from other carriers (for

example, mobile termination and international settlement). We have also included these costs in the C_{Retail} calculation.

79 Our assessment of the Optus data is summarised in the following table. We consider these are reasonable estimates of the incremental retail costs that would be incurred in serving retail customers in bands 3 and 4.

Amortised acquisition cost for average ADSL / telephony customer	c-i-c
Ongoing cost of serving average ADSL / telephony customer	c-i-c
Total per customer, per month cost	c-i-c

Table 3: Estimate of incremental retail costs in serving customers in bands 3 and 4

Source: Optus business planning data

Incremental network costs (C_{DSLN})

80 Optus provided us with data on its estimates of the incremental costs of rolling out a DSLN in bands 3 and 4. The costs broadly relate to:

- Fibre costs, to connect the exchange to Optus' data network; and
- DSLAM costs, to connect customers to the fibre in the exchange.

81 In order to derive an estimate of the per customer, per month costs of investment, we first needed estimates of:

- The length of fibre required to connect the exchanges;
- The cost of the fibre;
- The cost of the DSLAMs;
- The time periods over which the costs of those assets would be recovered (amortised); and
- The number of customers likely to connect to the Optus service in each exchange.

82 Optus provided us with the first four data items. The following assumptions were used in our analysis:

	Band 3	Band 4
Fibre distance (average km)	c-i-c	c-i-c
Cost per metre	c-i-c	c-i-c
DSLAM capex costs (per exchange)	c-i-c	c-i-c
No of exchanges in band	c-i-c	c-i-c

Table 4: Inputs into network incremental cost estimates

Source: Optus

83 It was also necessary to amortise the costs involved, as Optus would not expect to recover these costs from consumers in the first few months or years of the investment.

84 We adopted an asset life for DSLAMs of **c-i-c** years, and an asset life for fibre of **c-i-c** years. We understand those assumptions are considered reasonable by Optus.

85 A further assumption was the percentage of customers in an exchange that would subscribe to Optus's services. We used a range of percentages, but the base results are presented assuming a **c-i-c** per cent penetration.

	Band 3	Band 4
Total annualised cost	c-i-c	c-i-c
Total number of customers in band	c-i-c	c-i-c
Number of customers acquired (30%)	c-i-c	c-i-c
Cost per customer per year	c-i-c	c-i-c
Total per customer, per month cost	c-i-c	c-i-c

Table 5: Network incremental cost estimates

Source: Optus, Frontier calculations

86 These baseline results indicate that it would not be feasible to recover the costs of an investment made across either band 3 or 4.

87 We tested these results against a number of sensitivities with regard to costs, numbers of customers acquired and asset lives. None of these reduce the monthly network cost per customer below **c-i-c**. The most important cost driver is the length of fibre required to connect the exchanges.

Promotion of competition relative to four-band tariff structure

88 Optus indicated that there were significant variations in the length of fibre runs required in bands 3 and 4 – in band 3 alone the estimated variation was between 10km and 1,000km. That raises the issue of whether entry would be feasible only in relation to those short fibre runs (which might result in increased competition, albeit on a limited scale).

89 We therefore undertook a further scenario, which we called the ‘selective entry’ scenario for band 3. We did not have access to data regarding the distribution of exchanges in band 3, so we assumed that fibre lengths were normally distributed around the **c-i-c** average (with a standard deviation of **c-i-c**), but that Optus only provided service in relation to a relatively small number of closer exchanges.²⁸ We assumed that Optus would connect **c-i-c** exchanges with an average fibre length of **c-i-c**.

90 These assumptions reduce the entry costs substantially, but the annualised network costs would still be over **c-i-c** million per year spread over **c-i-c** customers, or **c-i-c** per customer per month. Increasing penetration to **c-i-c** per cent of customers in an exchange area – a seemingly unachievable target, at least in the short run – would reduce the network cost to **c-i-c** per customer per month.

91 Given the possibility that the data may show significant skewing, we also tested this scenario assuming other distributions of line lengths, including the log-normal distribution. This distribution can better describe data where there is likely to be data skewing (with a small number of high values) and all values are constrained to be non-negative. Again we used the line length at the **c-i-c** percentile (**c-i-c**) and assumed Optus connected **c-i-c** exchanges with this average length. That reduced the network cost per customer per month to **c-i-c**.

3.3.2 Conclusions

92 Summarising the results, we have assessed the likelihood that Optus could make profitable investments in bands 3 and 4, as a result of Telstra’s proposed \$30 ULLS charge. To do this, we have estimated profit as being a function of retail revenue, retail costs, network costs and the ULLS charge. We consider investment in band 4 to be completely uneconomical. For band 3, we have estimated the various revenue and cost items as follows:

- **c-i-c** for average retail revenue;
- **c-i-c** in average incremental retail cost; and
- **c-i-c** of average incremental network cost.

93 The costs will be incurred in addition to the \$30 in ULLS charges, meaning that even in a limited scale, low-cost entry scenario for band 3 only, total costs are likely to be a minimum of **c-i-c** – more than **c-i-c** per customer per month above expected revenues. Even if the ULLS charge was zero, investment would still not be attractive.

²⁸ This was calculated by estimating the line length at the 10th percentile of exchanges, when sorted by line length ($240 - 1.28 \times 100 = 112$).

- 94 Although there may be some expectation that revenues might increase as a result of higher quality broadband services, we believe it is clear that there is little prospect of Optus (or any other access seeker) providing ADSL and telephony services using ULL as an input in band 3 – even on a selective basis. It simply does not make financial sense under current assumptions. That conclusion holds regardless of the charge levied by Telstra and the structure it takes.

4 Impact of alternative tariff structures on the ‘promotion of competition’

95 The design of tariff structures to promote competition in downstream markets that rely on the ULLS service must balance the following factors:

- The desirability of setting ULLS prices to attract customers who value the service(s) more highly than the marginal cost of supply, as these prices maximise efficiency.
- The need to ensure that ULLS service providers are able to recover the fixed cost and common costs associated with their investments.

96 The trade off involved is familiar to regulators in a variety of industries featuring activities with substantial fixed and common costs. The ULLS service has the further particularity in that the cost of providing the service is driven by population density (the greater the density the lower the cost) and the length of the copper wire (the longer the wire the higher the cost). Geographical variation in ULLS costs arises as a consequence of geographical variations in these factors.

97 In this section we consider whether a tariff structure other than a uniform monthly charge or a four-band charge that may promote competition (while preserving incentives for investment). Specifically we consider whether a two-part tariff or a greater number of tariff bands may better promote competition.

4.1 TWO- PART TARIFFS

4.1.1 Application of two-part tariffs to the ULLS

98 Many jurisdictions apply what may, superficially, be considered to be a two-part tariff, in that ULLS charges typically consist of two components: a one-off connection charge and a monthly rental charge. However, this structure is considerably different from the classic two-part tariff as generally envisioned by economists. The classic two-part tariff consists of:

- A fixed component that is intended to allow the access provider to recoup the fixed costs associated with the provision of a particular service.
- A variable component that is predicated on usage by the access seeker.

99 The objective is to preserve cost recovery without distorting the consumption decisions of the access seeker.

100 Current “two-component” ULLS tariffs work in a very different way. The monthly rate is intended to recover a number of costs, some of which are fixed and related to the ability to access the ULLS (ULLS specific costs), some of which are tied to assets common to the core networks (network assets which are common to other services and may be fixed or variable), and some of which are variable and associated with access to the ULLS. Examples of fixed and common network costs are the cost of underground or overhead drop cables, and distribution and feeder cables, ducts and trench costs. Variable ULLS specific

costs are typically labour and other costs associated with repairs and maintenance, etc.

101 Implementing a classic two-part tariff would effectively mean setting a fixed component levied on a periodic basis (say monthly) and a variable charge that reflects variable ULLS specific costs, which are a small component of total costs. As discussed below, however, it may also be necessary to take into account variations in access seekers' demands in setting the fixed component.

4.1.2 Examples

102 There are few if any examples of classic two-part tariffs being used for access to the ULLS. There is an example in the UK of an access provider publishing a specific schedule of charges for maintenance and repair work, which as we saw constitute the bulk of variable costs. For example, OpenReach (the local loop operator established in January 2006 by British Telecom as part of an undertaking with OFCOM) provides a schedule of charges listing specific and separate amounts for monthly rentals, and various repair and maintenance charges.²⁹

4.1.3 Comment

103 The application of a two part tariff in respect of ULLS along the lines described above may promote efficiency insofar as it causes the access seeker to bear the costs of decisions to use certain aspects of the ULLS. From the point of view of promoting competition, we need to examine whether a switch to a two-part tariff affects barriers to entry in activities depending on the uptake of the ULLS as well as whether it affects competition for the marginal customer amongst existing providers of ULLS-dependent activities.

104 One way in which a two-part tariff could potentially lower barriers to entry is by affecting the allocation of risk relating to the uptake of ULLS based services. One possibility would be to have a fixed rate that is modulated as a function of the transactions carried out by the party using the ULLS. If the fixed rate is calculated in such a manner as to include efficient capital expenditure incurred by the access provider up to a certain date, and is then apportioned to each party in proportion to expected transactions, such an approach would mimic a joint venture. A new entrant with a smaller customer base would incur a relatively low fixed rate, which would then increase as the number of customers increased.³⁰

105 However, the advantages of such an approach may be attenuated when we consider that:

- access seekers' demand is highly uncertain. If the above approach is adopted it may create an argument for re-allocating fixed costs at some point in the future;

²⁹ Openreach BT, Local Loop Unbundling – Metal Path Facility Price List, at www.openreach.co.uk

³⁰ P.L Williams and J. Gans, "Access Regulation and the Timing of Infrastructure Investment", *Economic Record*, Vol 75, No 229, 1999, pp 127 – 137.

- the identity and number of the parties likely to be seeking access to the ULLS over the relevant forecast period is unknown. If new parties entered the market and commenced using the relevant infrastructure, it may be appropriate to re-allocate costs, reimbursing parties for some proportion of the fixed costs incurred; and
- one of the main cost drivers is the influence of customer location (since this impacts on both density and line length). As a result, the fixed charge would need to be modulated by geographic area. The greater the influence of location on the capital expenditure associated with the core network and the ULLS, the greater the importance of geographic modulation.

106 If these factors are taken into account, the competition-promoting price structure will converge on one featuring fixed rates that differ by geographic band and vary according to uptake of the ULLS by the access seeker. The charge will approximate a periodic (eg monthly) per customer charge that varies on a geographic basis.

107 The problems with implementing a classic-two part tariff may explain why there are few examples of this approach.

4.2 GREATER NUMBER OF TARIFF BANDS

108 The arguments in the previous section suggested that establishing tariff bands on a geographic basis presented certain advantages.

109 As already highlighted, geographic variation in the capital expenditure associated with the local loop stem from two main factors: customer density, and line length. The latter can be affected by a number of factors, including differences in topography and settlement patterns. Consequently, the actual cost of local loop services may vary considerably over even short physical distances.

110 The optimal approach to setting cost reflective tariffs for the ULLS will involve a trade-off between the factors (density, line length) that push towards geographic differentiation, and the cost associated with the fine-grained assessment of capital costs for different customer groups.

111 While the decision to implement geographic differentiation in ULLS tariffs depends on a number of factors, most jurisdictions that have pursued differentiation have tended to be ones with wide ranging differences in population density. We shall consider some examples from Canada and the United States. In both these jurisdictions, the question of geographic differentiation has been given added focus owing to the development of explicit subsidy schemes to support the provision of ULLS in high cost areas.

4.2.1 Examples

Canada

112 Canada's tariff structure for ULLS is based on seven bands as described in Table 6.

Table 6: Structure of ULLS monthly charges in Canada

Bands	Description
A	Include core exchange of major urban areas
B	Non core exchange of major urban areas
C	Exchanges with greater than 8000 residential Network Access Services (NAS)
D	Exchanges with fewer than 8,000 (NAS) and greater than 1,500 NAS, and a local loop length of less than 4 km
E	Exchanges with fewer than 1,500 Nas
F	Exchanges with fewer than 8,000 (NAS) and greater than 1,500 NAS, and a local loop length greater than 4 km
G	Those wire centres or exchanges without year-round road access or found in remote parts of the incumbent local exchange carrier (ILEC's) serving territory

Source See CRTC, *Telecom Decision CRTC 2005-4, Implementation of competition in the local exchange and local payphone markets in the territories of Societe en commandite Telebec and the former Telus Communications (Quebec) Inc.*

113 We note that the criteria for band determination involve a population criterion, as well as a line length criterion.

114 The Canadian regulatory authority (the CRTC) make it clear that, along with the promotion of competition, the rationale for adopting a geographically differentiated tariff structure was to support the delivery of telecommunications services to rural and remote areas.³¹ The argument is that by explicitly identifying areas that are costly to serve, the delivery of services can be promoted through a direct subsidy paid to service providers. For the purposes of subsidisation, the high cost areas identified by the CRTC are band E to G.

United States

115 In 1999, the Federal Communications Commission considered the averaging issue in the context of its Universal Service Order. It considered that de-averaging, if feasible, should take place at the Census Block Group, Census Block, or grid cell.³² This was seen as important in efficiently targeting universal service support, and preserving efficient signals for the promotion of entry.

116 The proposal that the relevant unit for cost measurement be small, and that its specification be left to states, reflected that costs both varied widely within states,

³¹ See Canadian Radio-television and Telecommunications Commission, *Decision CRTC 2001-238, Restructured bands, revised loop rates and related issues*

³² A census block is the smallest unit for measuring population data in a census. It is not homogenous in size: it could vary from a city block to many square miles. There are 8 million census blocks in the US. A census block group is an aggregation of such blocks.

and also varied widely across states. Thus, while the standard deviation of the cost per loop (calculated at the wire centre) associated with the major incumbent is US\$1.80 in Washington D.C., it rises to around 20 in New York State and Indiana, to nearly 60 in California and over 200 in Nevada and Wyoming.³³ Clearly, with such wide discrepancies, a highly averaged approach is likely to dampen competition, particularly in low cost areas, by masking true costs.

117 State based jurisdictions adopted a variety of methodologies in attempting to comply with FCC guidelines. Some considered the local switch centre or wire centre as the relevant unit. In one case, a state identified wire centres, and then assigned a base rate to each of these. The area around the wire centre to which the base rate applied varies as a function of distance from the centre and density. All areas in the state to which the base rate applies have the same rate – thus implicitly building a base rate “band”, whose area of application varies by wire centre.

4.2.2 Comment

118 In terms of promotion of competition, it is worth noting in the Canadian context, that substantial pressure has emerged from incumbent local exchange carriers (ILECs) for a further disaggregation of existing bands into smaller units along the lines considered by the FCC in the United States. The factor motivating the ILECs is a desire to see state subsidies supporting service delivery correctly apportioned.³⁴ The concern is that at higher levels of aggregation the provision of subsidies in excess of true costs for a large number of customers will cause over-entry; or conversely under-entry in areas where costs are higher than the subsidy calculated on an average basis.

119 Some pressure for further differentiation of tariff bands has emanated from access seekers, and has usually focused on bands in low cost areas. For example, it was suggested that that the band structure be further refined so as to allow the de-averaging of local loop costs between downtown cores and non-downtown cores of major urban centres; and also to further de-average prices for non-core urban exchanges. This is seen as a step that would facilitate a greater level of entry in some urban low cost areas than is seen at the moment.

120 In practice, the decision to pursue further de-averaging has involved considering the trade-off between the benefits of a more granular tariff structure and the costs associated with the implementation of the change. These costs include the cost estimation cost referred to earlier; but also the complexity to regulator in overseeing a multiplicity of tariffs.

121 In most cases, the differential between predicted rates have been within a few percentage points of the prevailing single rate, and thus the net benefits of

³³ See Jason Abel and Vivian Witkind-David, Geographic Deaveraging of Wholesale Prices for Local Telephone Service in the United States: Some Guidelines for State Commissions, *National Regulatory Research Institute*, 2000.

³⁴ See, for example, CRTC, *Decision CRTC 2001-238 Restructured bands, revised loop rates and related issues*, paragraph 23.

introducing an across the board change to the tariff structure have been relatively small. The alternative that has been used has been to reclassify individual centres from one band to another for operators who can substantiate the need for such a reclassification.

122 Given the very large estimated differences between the costs of serving customers in different bands, it does appear possible that the benefits from further disaggregation might outweigh the costs. That is particularly apt in relation to the aggregation of band 2, in which the current propensity to invest is highest and which contains over 7 million lines. However, such a judgement cannot be made without access to more detailed cost and density data.

123 As an aside, further examination of cost and density data might also provide a technically sound and transparent basis for the separation of particular exchanges into bands, which we understand is not currently available. This lack of transparency potentially masks wide cost differences and also allows Telstra to arbitrarily shift exchanges between bands to discourage competitive entry.

4.2.3 Conclusion on tariff bands

124 Existing tariff bands represent a substantial degree of averaging, and a more granular structure has been advocated by regulators, access providers, and access seekers in jurisdictions such as the US and Canada. Moving to a finer grained unit of measurement is likely to promote competition, but it would be appropriate to demonstrate that the benefits of moving to more tariff bands outweigh the costs associated with this.

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