

Source: Bloomberg

416. Fourth, the traditional CAPM approach understates the required return to equity where the normal equity beta is less than one and overstates the required return to equity when the normal equity beta is above one.²⁰⁵ This reflects the generally simplifying assumptions made in devising the traditional CAPM conclusions. This tendency to understate the required return where the normal equity beta is less than one makes the ACCC's use of a 5 year/monthly frequency sourcing of raw equity beta information, the low outlier of all sourcing options, all the more egregious. CEG outline two options for addressing the bias in the traditional CAPM formula for the cost of equity.²⁰⁶

417. These options prove that a traditional approach to quantifying the appropriate equity beta could seriously and significantly under-value the "true" beta in the ULLS context. The cyclical aspects around the commodity boom undercut the mechanical estimates of equity beta in a manner that is not typical or representative of the appropriate equity beta in a forward-looking sense. Furthermore, empirical research suggests that the traditional approach to estimating the equity beta over-estimates the sensitivity of equity returns to beta and under-recognises the return applicable to a zero beta stock. The result of this combination of "errors" is to understate the required return to equity of stocks with traditional observed betas less than 1.0 such as Telstra.

Applying the Blume Adjustment to the Raw Equity Beta

418. Bloomberg adjusts the raw equity beta using the Blume adjustment. Telstra adopts the adjusted equity beta rather than the raw equity beta. The Blume

²⁰⁵ See CEG "Estimation of, and correction for, biases inherent in the Sharpe CAPM formula, A report for the Energy Networks Association Grid Australia and APIA" 15 September 2008 for a comprehensive outline of issues.

²⁰⁶ *Ibid* pages 50-51.

adjustment is routinely applied by Bloomberg (as well as other providers of beta data such as Merrill Lynch and ValueLine).²⁰⁷ The Blume-adjusted equity beta is a weighted average of the raw equity beta estimate (weight 0.67) and 1 (weight of 0.33) to account for observed tendency towards mean reversion over time (i.e. the mean beta for the overall market is 1).

419. Telstra considers that the Blume adjustment is important, particularly when direct estimations on historical data likely underestimate forward-looking equity betas for the reasons discussed above.

420. The ACCC rejects the application of the Blume adjustment, stating (at page 103):

The ACCC does not consider that the application of the Blume adjustment is valid in this case as the 2008 Undertaking relates to a stand alone regulatory asset whose risk is not likely to change overtime [sic]. There appears to be no basis to assume that the systematic risk of the ULLS service will revert towards the mean systematic risk of the market portfolio through time.

421. This perspective is incorrect for the following reasons.

422. First, the Blume adjustment is routinely applied by Bloomberg (as well as other providers of beta data such as Merrill Lynch and ValueLine).²⁰⁸ Indeed, the Blume adjustment is undertaken by Bloomberg, who supplies the equity beta estimates.

423. Second, the market average equity beta is 1. Raw equity beta estimates below the market average (i.e. below 1) are likely to be underestimated and estimates above the market average are likely to be overestimated. The Blume adjustment makes an adjustment to push the equity beta towards the more likely “market average” beta of 1.

424. Third, the ACCC’s conclusion that the risk associated with the CAN will not change over time is incorrect. The ACCC ignores technological alternatives to ULLS, most notably wireless and HFC options. The CAN and ULLS in particular provides the means with which telephony calls, internet traffic and other services are provided to end users. Demand for the CAN is very much dependent on demand for these other services, which is subject to a great level of change as consumers’ preferences and the competitive landscape changes. For instance:

- Many users will simply leave the CAN for facilities based substitutes such as fibre and HFC providers
- More and more users will abandon their land line phones for wireless.
- DSL services have dramatically reduced the need for second lines.

²⁰⁷ *Ibid* page 22

²⁰⁸ *Ibid* page 22

425. As a result, the systematic risk relevant for the CAN is highly unlikely to be constant over time as the ACCC assert. Thus, the ACCC's rationale for not using the Blume adjustment is invalid.

426. After applying the Blume adjustment, Bloomberg's estimates of Telstra's equity beta are:²⁰⁹

- 0.714 with a daily frequency
- 0.669 with a weekly frequency
- 0.771 with a monthly frequency

De-Levering the Equity Beta to Determine the Asset Beta

427. These estimates are then de-levered to calculate the asset beta. While the ACCC does not criticise Telstra's method of de-levering the equity betas, the result of de-levering is dependent on the equity beta being de-levered (discussed above) and the correct gearing ratio (discussed below). Telstra's de-levered asset beta's are:²¹⁰

- 0.615 with a daily frequency
- 0.576 with a weekly frequency
- 0.664 with a monthly frequency

428. In relation to benchmarking betas, the ACCC states (at page 103):

The use of benchmark betas is prevalent among regulators and finance practitioners and the ACCC considers it appropriate to include some comparisons with comparable operations. International benchmarking completed by the ACCC suggests an asset beta of 0.47 is appropriate for the total assets of a large telecommunications company such as Telstra (i.e. companies with both fixed and mobile networks). The ACCC's own estimation was completed using 5 years of monthly data which is common financial market practice.

429. The ACCC provides no analysis to support its contention that the average asset beta is 0.47, so Telstra cannot verify this. However, Telstra does note that the ACCC has again used the 5-year average asset beta measured with a monthly frequency with the only justification being that it is "common financial market practice".

430. As noted above, the Copenhagen Study that Ovum relies on actually suggests using a weekly frequency and advises against using a monthly frequency. Telstra's analysis shows that the same comparison over a 5-year period using a weekly frequency shows that the average beta is 0.72.

431. The ACCC also states:

The ACCC is also of the view that current estimates of RBOC are likely to have a higher risk on average than Telstra. This is because American

²⁰⁹ Telstra (2008), WACC, 4 April 2008, at paragraph 169

²¹⁰ Telstra (2008), WACC, 4 April 2008, at paragraph 171

telecommunications companies operate in the liberalised US telecommunications market which has a different market structure to the more heavily regulated Australian market. Another consideration is that US telecommunications firms arguably operate under a more risky form of regulation than TSLRIC. Accordingly, the ACCC does not regard contemporary estimates of the RBOC's betas to be appropriate point estimates of the systematic risk of the ULLS service.

432. Different market structures between countries are not only a feature of comparisons between Australia and the US, the same is true for comparisons between Australia and other countries, including those relied on by the ACCC (at footnote 292). Moreover, the ACCC does not cite any evidence to support its claim with respect to US regulation. This is all the more the case as the issue with regard to the beta is not the total risk associated with a form of regulation, but rather the degree of systematic risk.

E.7.4 Imputation

433. The ACCC has rejected the argument that the marginal investors' valuation of imputation should determine the value of gamma in calculating the appropriate pre-tax WACC. The ACCC argues that investors in general clearly gain value from imputation (which essentially recognises some portion of company tax payments as a pre-payment of personal investor tax and thus reduces the investor tax burden) and that therefore it must be incorporated into WACC estimates.
434. Telstra believes the valuation of imputation depends on the perspective of the marginal investor that essentially determines the market price for the relevant share. The marginal investor for most (if not all) Australian listed entities is likely to be an international investor given their significant representation on share registers across Australia. The domestic supply of capital (what domestic capital providers are prepared to provide by way of equity funds) is less than the domestic demand for capital (what domestic businesses need in terms of capital). Thus domestic listed entities need to attract overseas investors. Moreover, those overseas investors are likely to have more elastic demand for Australian equities than do Australian investors. This does not mean that dividend imputation has no value to domestic shareholders – it does mean that the marginal investor determines the share price at which the relevant market clears and also that domestic shareholders, who would have been prepared to pay a higher amount for those shares (reflecting their valuation of imputation credits), enjoy some consumer surplus (i.e. would have paid more than the market clearing price).
435. The ACCC claims that franking credits have value to investors (including via off-market share buybacks) supporting a value of gamma above zero. However, Telstra argues this is consistent with investor surplus analogous to the phenomenon of consumer surplus found in most markets.
436. The ACCC quotes a selection of empirical estimates of the utilisation rate of imputation credits attached to dividends²¹¹. It then combines these estimates with the estimate from Hathaway and Officer²¹² of the proportion of imputation credits distributed (i.e. attached to dividends). Thus the ACCC reports that gamma is well above zero. However, surprisingly the ACCC does

²¹¹ ACCC Draft Decision, at page 109

²¹² Hathaway N. and Officer R. R. "The Value of Imputation Tax Credits, Update 2004" Capital Research, November 2004

not mention the actual estimate of gamma reported by Officer and Hathaway which is a combination of their estimate of utilisation (0.50) with their estimate of distribution (71%). Combined as recommended by Officer and Hathaway (similar to that applied by the ACCC) this suggests a value for gamma of 0.355.

437. The earlier estimate of the imputation effect by Hathaway influenced the ACCC's decision to apply 0.5 previously. The ACCC should now adopt the latest update by Hathaway and Officer. 0.355.
438. NERA Consulting report²¹³ more up-to-date estimates of the value of distributed imputation credits ranging between 0.2 and 0.4 based on analysis by SFG Consulting. Combining with a distribution rate of 71% implies a value for gamma of 0.14 to 0.28.
439. NERA also report on alternate ways of applying both the Officer and Hathaway estimates and those of SFG.²¹⁴ Both studies found that the value of a fully franked dividend was approximately equal to the original dividend cash dividend. This implies that it would be reasonable for the ACCC to ignore personal tax implications (including imputation effects) and essentially set gamma equal to zero.

E.7.5 Market Risk Premium

440. The ACCC has adhered to a long-held perspective that the Australian MRP should remain at 6% despite a wide range of empirical estimates (as distinct to regulatory applications) suggesting that a higher value is appropriate. These estimates are summarised in a paper by Gray and Officer²¹⁵ which details estimates of the simple arithmetic mean of *ex post* observed excess returns for the Australian market over the risk-free rate (proxied by 10-year government bond yields). The estimates range from a low of 6.43% (covering 1955 to 2004 inclusive) to a high of 7.70% (covering 1975 to 2004 inclusive). Gray and Officer's preferred estimate is 7.17% covering the 120 years from 1885 to 2004 inclusive. Officer and Bishop update this long-term calculation to include data up to 2007 and find that the average MRP across the period from 1883 to 2007 is now 7.5%²¹⁶. However, recognising some deficiencies with data for the period prior to 1958 (highlighted by Brailsford et al²¹⁷) Officer and Bishop recommend their estimate covering from 1958 (after data related problems) to 2007 (latest available at the time) which is 6.7%. Officer and Bishop highlight that both these historical estimates do not include an adjustment to include the impact of dividend imputation on the total return to investors (although they do consider such an adjustment may be necessary). This remains consistent with averaging over a long period of time to best capture the potential (likelihood) that these events are influential to varying degrees in guiding forward expectations of investors. Telstra considers that this provides significant empirical support for an estimate of the MRP around 7% and certainly that the "true" MRP is significantly above 6%.

²¹³ NERA "The Value of Imputation Credits A Report for the ENA, Grid Australia and APIA" 11 September 2008,

²¹⁴ *Ibid*, pages 27 and 30.

²¹⁵ S. Gray and R. R. Officer, "A Review of the Market Risk Premium and Commentary on Two Recent Papers" A Report Prepared for the Energy Networks Association, 15 August 2005

²¹⁶ Officer, R and S. Bishop "Market Risk Premium, A Review Paper" August 2008,

²¹⁷ Brailsford T, J Handley and K Maheswaran, "Re-examination of the historical equity risk premium in Australia" Accounting and Finance, 48 (2008) pp 73-97.

441. Officer and Bishop also provide the statistical confidence around the MRP estimate over the entire period (i.e. from 1883 to 2007). The 95% confidence range is from 4.5% to 10.4%. The mid-point of this range is 7.45%. The ACCC's preferred estimate (6%) is well below this mid-point and implies that the recommended MRP is below the "true" level.

442. The ACCC supports the retention of a 6% market risk premium (MRP) for Australia relying on the findings of Dimson, Marsh and Staunton.²¹⁸ Ovum also relied on this research and argues that historical *ex post* MRP estimates need to exclude components that are unlikely to persist. Telstra's response to Ovum addresses the issues associated with relying on this analysis.²¹⁹

443. Officer and Bishop comment about the efficacy of making judgements to exclude certain events or periods from consideration of the forward-looking MRP. In their view:²²⁰

There is no real guiding theory or model that informs us as to what drives the determination of a MRP. Consequently we have no real way of assessing what is an event that might lead to bias.

444. Any adjustments or exclusions for unexpected events (causing potentially "outlier" outcomes) are essentially arbitrary adjustments themselves are a further distortion and potentially applied in an *ad hoc* manner going forward. Officer and Bishop go on to argue that variation in the *ex post* MRP results directly from unexpected events and therefore, at the extreme, exclusion of all once off unexpected events would essentially exclude all variation in the *ex post* MRP. This further supports the approach of long-term averaging of MRP outcomes as this reduces the weight attached to any particular event or year thus reducing the impact on the average historical MRP.

445. The estimates of Officer and Bishop have adjusted each year's estimate of the MRP included in the post-imputation period (i.e. from 1988 to 2007) and then averaged over the entire period (i.e. 1958 to 2007 and/or 1888 to 2007). Telstra considers that this then averages over a period in which imputation effectively causes a discontinuity and thus is not correct. Effectively the average is over a period which combines a sub-period where imputation was not operative (1958 to 1997) with a sub-period in which imputation was effective (1988-2007). However, this estimate (at least in a WACC context) is to be applied in a forward-looking manner and hence over a period in which imputation is (assumed to be) effective. The correct approach would be to adopt the long-term average imputation exclusive estimate of the MRP (6.7% or 7.5% from Officer and Bishop) and to augment it by the average add-on caused by imputation over the years in which imputation has been effective (1988 to 2007). This is best proxied by the second row in table 7 which covers the years over which imputation has been effective in Australia (i.e. 1988 to 2007). On this basis the add-on to the imputation exclusive MRP is between 0.9% if associated tax benefits were valued at \$0.50 per dollar rising to 1.7% if associated tax benefits were valued at \$1.00 per dollar.

446. Telstra's preferred treatment of the relationship between the MRP and imputation is as follows. The MRP should be based around 7% which equates closely to Officer and Bishop's average around 7% (6.7% from 1958 and 7.5%

²¹⁸ Dimson, Elroy, Marsh' Paul and Staunton, Mike "The Worldwide Equity Premium: A Smaller Puzzle" 7 April 2006, pages 24-27.

²¹⁹ Telstra's Response to Ovum, at section C.6.5

²²⁰ Officer, R. R. and Bishop Steven, "Market Risk Premium, A Review Paper" August 2008, page 38.

from 1883) on an imputation unadjusted basis. This reflects the logic of most estimates of the MRP. Imputation should be based on the marginal investor approach and set at zero. This combination of parameter values (MRP and gamma) is internally consistent.

447. In contrast, the ACCC approach is internally inconsistent, as it does not adjust the MRP to reflect its estimate of gamma. Unless the apparent inconsistency between gamma and the MRP is resolved, there is a significant risk that Telstra will not be able to recoup prudently incurred efficient costs, which would undermine incentives toward future prudent investment

E.7.6 Corporate Tax Rate

448. The ACCC states (at page 108):

The effective tax rate can fall below the statutory tax rate if firms can defer the payment of tax. Firms have commonly been able to do this through the use of accelerated depreciation. Primarily for this reason, in Australia the average effective tax rate of large corporations is estimated to be around 20 per cent even though the statutory tax rate is 30 per cent.

449. The ACCC also cites (at page 108) an economy-wide estimate from Budget Papers that date prior to 2004/05.

450. The corporate tax rate relevant for WACC calculations is that which is likely to reflect the tax burden over the entire useful life of the relevant asset. This correlates with the perspective of capital providers who are interested in likely returns over the assets' entire useful lives. If accelerated depreciation (of any form) is allowed as the ACCC suggests, that would result in an effective tax rate that is lower than the statutory tax rate in the early years of the assets' lives. The firm claims a higher amount of depreciation as a tax deduction than would be the case if depreciation was not back-loaded. However, in later periods towards the end of the assets' lives, the effective tax rate is higher than the statutory rate as the depreciation that can be claimed as a deduction against taxable income falls. Consequently, if a single tax rate is to be used over the entire life of an asset, it must be 30%. Conversely, if the ACCC wishes to account for a lower effective tax rate (less than 30%) in the early years of an assets life it must account for a higher effective tax rate (greater than 30%) in the later years.

451. It is reasonable to use 30% tax rate for three other reasons.

452. First, there is an inconsistency between the approach to depreciation the ACCC is advocating in the context of the calculation of the WACC (either accelerated or diminishing value) and the actual depreciation profile that results from application of the ACCC's (tilted) annuity costing approach. Under a (tilted) annuity approach the implicit depreciation profile is normally back-loaded (that is, depreciation increases across the life of the asset) and the effective tax rate would likely be higher than the statutory tax rate.

453. Second, the ACCC approach seems to shift, without explanation, from being based on the costs of a hypothetical new network to consideration of Telstra's

actual network. Even had accelerated depreciation been available previously, it is of no relevance to current conditions.

454. Third, Telstra believes that its approach to the corporate tax rate is consistent with the view of IRG cited by Ovum.²²¹ The IRG view is that any adjustment to the statutory corporate tax rate in a WACC-related context should only reflect factors that cause a permanent difference between the statutory and effective rates. Whilst accelerated depreciation results in a timing difference it does not generate a permanent difference and hence the statutory tax rate does not need adjustment.

455. The ACCC relies on an estimate of the national average effective tax rate cited from the 2006-07 budget papers.²²² Telstra does not consider that the average national effective rate of corporate tax provides any meaningful guide to the average tax rate relevant to a single asset over its useful life.

E.8 Depreciation (ACCC section B.8)

E.8.7 Tilted annuity

456. The TEA Model calculates the return of capital for the relevant assets using a straight-line (accounting) depreciation approach, and applies Telstra's cost of capital to calculate the return on capital. The sum of these two capital charges is determined for each year of the asset's useful life, and converted into a 'standard' annuity payment. The effect of this conversion is that the total capital charge remains constant over the life of the relevant asset.

457. Notwithstanding significant differences over some of the detailed assumptions behind the capital cost calculations, the ACCC's preferred approach differs from that proposed in Telstra's Undertaking in one fundamental respect. Rather than converting the sum of depreciation and the return on capital into a charge that is constant over the life of the asset, that is, a standard, 'flat' annuity, the ACCC would convert these costs into a 'tilted' annuity. Although the net present value of the payment stream implied by a tilted annuity is the same as that of a standard annuity, the application of a tilted annuity calculation to capital costs implies that the resulting charge is first lower, but soon significantly higher than the (constant) charge implied by a standard annuity. The one and crucial difference between Telstra's and the ACCC's approach is therefore that Telstra proposes to recover the cost of the capital it has invested to provide ULLS using a charge that remains constant over the life of the asset, while the ACCC favours a charging profile that increases very significantly over the life of the asset.

The tilted annuity approach leads to unacceptable price paths for consumers

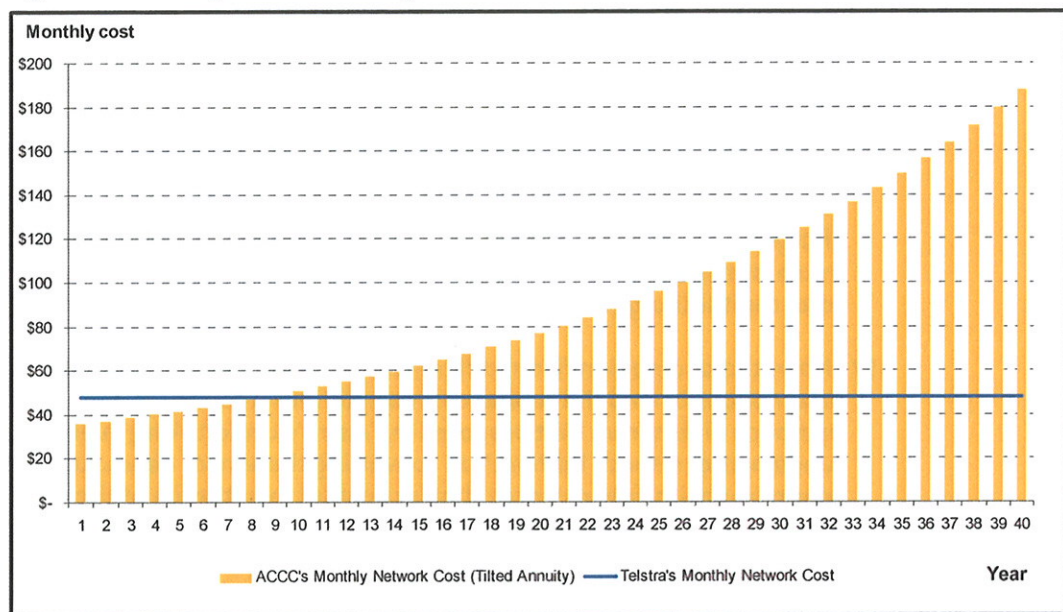
458. Figure 6, below, highlights the projected rise in monthly ULLS charges under the ACCC's approach. In Figure 6, the monthly ULLS cost has been calculated for Telstra's standard annuity approach and for the tilted annuity approach that the ACCC advocates, using the TEA model with Telstra's default input parameters, and for project life of 40 years. It is readily apparent that:

²²¹ Ovum (2008), *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model*, 6 August 2008, page 34.

²²² House of representatives, "Budget Paper No 1, Budget Strategy and Outlook 2006-07, Statement 5: Revenue" Box 5.2

- The tilted annuity approach results in a monthly ULLS charge *below* Telstra's flat charge for a limited number of years at the beginning of the useful life of the asset;
- However, the tilted annuity approach implies a very significant increase in prices – substantially in excess of Telstra's flat charge – in the latter years of the asset's useful life. More specifically, while the ACCC's monthly charge is below Telstra's estimated \$47.86 monthly cost up to and including Year 8, it exceeds Telstra's cost from Year 9 onwards, increasing to a monthly charge of \$50.77 by Year 10, \$77.15 by Year 20, and \$187.87 by Year 40.

Figure 6: Monthly ULLS unit charge



459. The observed steep rise of charges under the ACCC's approach is inherent in the tilted annuity calculation. That is to say, the sharp increase shown in the Figure arises from the back-loading that the 'tilt' in the ACCC's annuity causes. The figure does not depend on any 'special' assumptions that may have been made. Transforming the capital costs of an asset (that is, the sum of the return on capital and depreciation) into a tilted annuity essentially implies that there is a shortfall in the recovery of capital costs during the first years of an asset's life. If the full capital cost of the asset is to be recovered (including foregone return on capital during the years where the tilted annuity charge under-recovers capital costs), given the time value of money, this can only be achieved if charges increase very substantially later on, and in a manner that (given a positive cost of capital) is significantly greater than the initial shortfall.

460. No matter what the technical explanation is for the charging profile derived from the ACCC's approach to calculating capital costs, the broader implications for end-users are clear. The tilted annuity approach trades off a few early years of low prices against the prospect of sharp price rises later on in the life of the relevant asset. This raises a significant question of

generational fairness, since current ratepayers are substantially subsidised by future ratepayers for no apparent reason. That is to say no overarching efficiency societal benefit accrues from this generational shift in the burden of cost recovery.

461. This pattern is especially striking given that the ACCC expresses concern about the impact of moving from current ULL charges – which are \$16 – to Telstra’s proposed \$30 charge and considers that such an increase would harm access seekers, and through that effect, competition and end-users. However, that increase is slight relative to the very substantial increase the ACCC’s proposed approach to depreciation would imply.

462. The ACCC’s rationale for delaying capital recovery is also disingenuous. Assuming it was prudent public policy to under-recover the capital cost of ULLS for the first 8 years of the underlying assets’ lives, it is now time for the prudent policy maker to increase recovery. ULLS has been a declared service since 2000. The first 8 years of under-recovery have expired. To suggest it is equitable policy to begin another 8 years of under-recovery of capital cost is unreasonable.

The ACCC’s charging approach would not be observed in a competitive market

463. In its Draft Decision the ACCC refers to ‘the competitive market’ or ‘the competitive process’ as the standard that it ultimately seeks to achieve, and which it therefore applies in its assessment of Telstra’s Undertaking.²²³ Yet the steeply rising charging profile implied by the ACCC’s tilted annuity is fundamentally at odds with pricing outcomes that would be observed in a competitive market.

464. As a generally matter, it does not appear reasonable to believe that a new entrant in a competitive ULLS and downstream markets would invest billions of dollars constructing a customer access network and then immediately defer recovery of its investment to the distant future. Rather, absent special circumstances (such as unusually low initial demand), cost recovery would be expected to coincide with use of the assets. The risk of demand and technology changing in future in ways that undermined the scope for cost recovery makes it all the more likely that this would be the case.

465. In effect, in a competitive market, the price that can be charged for a particular product or service cannot be (significantly) more than the price charged by competitors for the same or a similar (substitute) product. Businesses that ignore this rule will quite simply be undercut and lose sales. The potential loss in sales is a particularly serious matter for capital intensive businesses like Telstra that must recover very significant invested capital costs before the business can post a profit.

466. Given that the ACCC says that it is seeking to achieve an outcome akin to what would be observed in a competitive market, the fact that charges calculated under its tilted annuity approach are rising steeply over time would then imply that competition for ULLS in Band 2 areas is expected to weaken

²²³ For instance, in setting out the rationale for the TSLRIC asset valuation approach, the ACCC says (P.36):

“In general, the forward-looking approach is more compatible with the competitive standard of efficiency, since in a competitive market, prices would be set on the basis of the prevailing technology.”

In describing the interests of persons who have rights to use the service, the ACCC says (P.53):

“Terms and conditions that favour one or more service providers over others and thereby distort the competitive process may prevent this from occurring and consequently harm those interests.”

significantly. To be precise, the ACCC's calculation suggests that competition is expected to fall away so much over the life of the asset that, by the time the asset is at the end of its useful life, Telstra is able to set the network cost component of ULLS prices to over five times the value it can initially charge. The ACCC's view further implies that consumer demand for products delivered over ULLS is very highly inelastic.

467. In fact, the notion that Telstra does not and a new entrant would not face competition for its ULLS is demonstrably wrong. The risk of competitive bypass to Telstra comes from a number of sources:

- Parts of Telstra's copper loops and local network may become effectively obsolete as a result of the decision to build a National Broadband Network incorporating Fibre to the Node (FTTN) architecture;
- Optus' hybrid fibre coaxial (HFC) cable network, which already covers 3 million homes, is a competitive threat to ULLS in major metropolitan areas;
- Voice and broadband services delivered over wireless networks are increasingly substitutable with Telstra's fixed CAN; and
- Alternative network operators are investing in their own fixed and fixed wireless networks to supply voice and broadband services.

468. In short, given the extent of existing and potential competition that Telstra will face for its ULLS in Band 2 areas, the charging profile that the ACCC's tilted annuity implies would never be observed in a competitive market. Any attempt to implement such a charging pattern would accelerate competitive by-pass, so that total costs could never be recovered. This is all the more so as many of the alternative technologies have costs that are falling over time, most notably for wireless.

469. Additionally, the ACCC ignores the fact that the number of CAN fixed lines has been shrinking in recent years and projections are the number of lines will continue to shrink, when it comes to the conclusion that it is in the long term interests of end users to defer capital recovery well into the future. The ACCC's approach will result in future prices that will be even higher than those in Figure 6, since the cost deferred until later must be recovered from fewer subscribers than are on the network today.

The ACCC's charging approach exposes Telstra to significant financial risks

470. The time profile of charges implied by the ACCC's tilted annuity approach is not just at odds with competitive pressures affecting demand for ULLS, but also creates a significant financial risk for Telstra that it will never recover the efficient costs of the capital in which it has invested. As discussed above, the ACCC is deferring cost recovery for decades. This long time horizon increases risk exponentially.

471. The tilted annuity approach requires a high degree of 'backloading' of depreciation and the return on capital, because it:

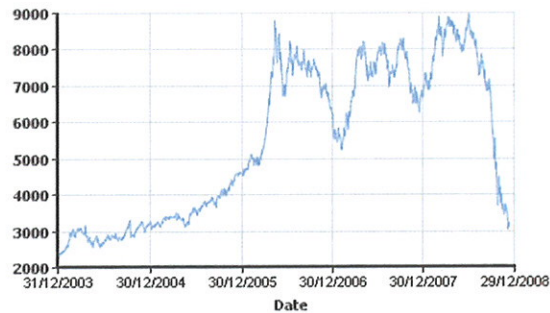
- Guarantees that Telstra will not be able to recover anything like its actual capital costs (that is, the sum of depreciation and the return on capital) for the first few years of the asset's life; and
 - Significantly postpones the point in time when the cash flow from this capital charge is sufficient to recover at least an average proportion of the capital costs Telstra has incurred.
472. In order to convey any semblance of capital recovery, the application of a tilted annuity to calculate capital charges assumes that all shortfalls in the recovery of capital costs can be made up at a later point in time, by simply raising ULLS charges.
473. There are no reasons to believe that this is indeed the case:
- As discussed above, ULLS Band 2 services already do and will continue to compete with FTTN services, Optus' HFC cable network, and wireless services from a number of sources. There is therefore no basis in fact for any expectation that Telstra would be able to dramatically raise charges for ULLS Band 2 services at some point in the future.
 - As noted above, the ACCC, in its decision with respect to Telstra's application for an exemption from the requirement to provide ULLS to SingTel Optus in areas where SingTel Optus has deployed its HFC, argues that it is unable to bind its own future decisions, reducing the credibility of any promise of future cost recovery, especially one so far deferred. Moreover, the pattern of past ACCC decisions is hardly such as to imply that deferred depreciation will indeed be brought to account, as ULLS charges were more than halved before rising marginally.
474. As a consequence of the tilted annuity approach, these two factors imply that Telstra will not be able to recover the full costs of the capital assets required to provide ULLS. The ACCC Draft Decision is silent on how Telstra will be compensated for this financial risk.

The tilted annuity approach is only required to address a problem of the ACCC's own making

475. In its Draft Decision, the ACCC provides only one justification for its tilted annuity approach (P.123):
- The ACCC considers that the application of a tilt to regulated cash flows under the TSLRIC regime is appropriate for fair compensation because assets are re-valued periodically by the regulator to reflect a current hypothetically efficient network in each regulatory period. The ACCC considers that if a zero tilt is applied then Telstra may receive an abnormal return when its assets are re-valued upwards in future regulatory periods in response to price trends.*
476. The 'price trends' referred to by the ACCC relate primarily to trends the prices of copper and of labour, respectively. In recent years, these prices have increased as a result of a world-wide increase in commodities prices and a buoyant Australian economy. However, all indications are these trends have now been reversed:

- ABARE's most recent (September 2008) forecast of copper prices suggests that the average world copper price is forecast to decline by 8 per cent in 2009, and that the growth in world copper supply is forecast to exceed the growth in demand;²²⁴
- ABARE's forecast appears to have begun to eventuate, as shown by the London Metals Exchange spot prices for copper (see Figure 7), which have fallen to early 2004 levels;

Figure 7: Copper Prices (USD/tonne)²²⁵



- The World Bank estimates that metals prices show long term mean reversion, implying that periods of high prices are followed by offsetting periods of low prices;²²⁶
- There is a widely held expectation that unemployment in Australia will increase significantly, in part because of the slump in commodities prices and because of the global economic environment. A step increase in unemployment would almost certainly have a depressing effect on wages growth.

477. These recent changes in what had been perceived to be 'long-term' price trends illustrate the contradictions and complexity that are inherent in an approach that implies the revaluation of long-lived assets in response to short-term price movements. That is, under the ACCC's 'forward-looking' cost approach, the value of the relevant assets is increased in response to short-term increases in input costs, which thus requires the application of a tilted annuity to prevent Telstra from making what is purely a 'paper profit'. If this approach were applied consistently by the ACCC, it would imply that in a time of falling input prices, Telstra would need to write down the value of its assets, but then be compensated for the revaluation through an annuity with a 'reverse tilt' (that is, a charging profile that decreases significantly over the life of the asset, and whereby Telstra recovers the majority of its costs early on). ULLS customers would go from being charged an unreasonably low price today, increasing to a seemingly absurdly high price in the future, to being charged a seemingly absurdly high price today, decreasing to a very low price in future.

478. Overall, and beyond the adverse effects described in the previous sections, the broader approach taken by the ACCC – to arbitrarily revalue some parts of

²²⁴ http://www.abareconomics.com/interactive/08ac_Sept/htm/copper.htm

²²⁵ London Metals Exchange, Copper Grade A Price Graph, http://www.lme.co.uk/copper_graphs.asp

²²⁶ Daniel Lederman and William Maloney Natural Resources, World Bank Publications, 2007.

the regulatory asset base, but to offset this by an equally arbitrary manipulation of the corresponding capital charge – is neither economically correct, nor consistent with economic or real world outcomes:

- In economic terms, the value of an asset is determined not by what was (or might have been) spent on its creation, but by the income stream that the asset generates. In other words, as a matter of economics, the value of Telstra's ULLS assets would only increase if there was an expectation of a sustained increase in ULLS charges and therefore income streams.
- In practical terms, companies also do not restate their asset values in response to input price trends. With the exception of telecommunications, the regulatory asset base of regulated businesses in every other sector in Australia is determined on the basis of efficiently incurred expenditure, which is then 'rolled forward' over time. Private sector businesses who own long-lived assets similarly do not revalue their asset base in response to short term cost trends.

The ACCC's tilted annuity approach highlights numerous contradictions

479. Beyond the serious shortcomings described in earlier sections of this paper, the tilted annuity approach is inconsistent with a number of other statements made by ACCC in its Draft Decision.
480. In its discussion of the TSLRIC concept the ACCC notes that, although this implied an application of the concept outside its original focus for PSTN assets, the ACCC's final 2007 ULLS Pricing Principles concluded that TSLRIC should be applied to ULLS (P.34f.). The application of TSLRIC would therefore imply a revaluation of ULLS network assets in each regulatory period. These statements highlight the fundamental inconsistency in the ACCC's approach whereby:
- The ACCC claims that it is not in a position to alter its approach of frequent asset revaluations, which in turn creates the need to apply a tilted annuity to capital charges; while
 - The ACCC implies that it is nonetheless in a position to credibly commit to implementing a very substantial increase in charges in future periods – the only way in which the costs of ULLS can be recouped. This is despite the fact that the ACCC has never implemented such large-scale increases in allowed access prices.
481. A more realistic assessment is that through the tilted annuity, the ACCC is making a commitment to future recovery that merely by its quantum and its duration lacks all credibility, and is designed to avoid 'biting the bullet' today without any real intention of doing so tomorrow.
482. Finally, the ACCC uses plainly contradictory approaches in deriving different components of ULLS costs. While the ACCC relies on a tilted annuity with a steep backwards loading for the depreciation charge, it claims, for the purposes of assessing the WACC, that Telstra can secure the benefits of accelerated depreciation provisions (P.107). The result of the ACCC's approach is that the claimed benefits of accelerated depreciation are used to reduce the WACC but are then entirely negated through the tilting of the annuity.

Conclusions

483. In its Draft Decision the ACCC proposes an approach whereby the capital costs of providing ULLS – the sum of depreciation and the return on capital – would be recovered via a back-loaded charging profile. That is, the ACCC’s tilted annuity approach implies that charges for ULLS start out low, but increase very significantly over the life of the asset, so that the costs of ULLS cannot be recovered until late in the useful life of the relevant assets.
484. The tilted annuity approach raises a number of serious problems for end-users and Telstra alike:
- The steep rise in charges leads to unacceptable price paths for consumers – the tilted annuity approach implies that ULLS charges must increase more than five-fold if Telstra is to recover its costs and creates issues of generational equity; while
 - At the same time, such a rise in ULLS charges is entirely at odds with the risk of competitive bypass to ULLS from FTTN, HFC, and wireless networks technologies.
485. These factors imply that the time when Telstra can recover the capital cost of ULLS assets is postponed far into the future, and that the most likely outcome is that Telstra will never be able to recover a substantial portion of its investments. The tilted annuity approach therefore exposes Telstra to significant financial risks that are not addressed in the ACCC’s Draft Determination.

E.8.8 Asset lives

486. Neither the access seekers nor their consultants criticise any specific asset lives used in the TEA model, with the exception of copper cables. In fact, Network Strategies is of the view that the other “*equipment [asset] lives look reasonable*”.²²⁷
487. The majority of the asset lives²²⁸ adopted in the TEA model are those previously accepted by the ACCC²²⁹. In respect of the network management asset life, Telstra has used 11 years. This understates costs given that the ACCC has previously endorsed an asset life for this category of assets of 10 years.²³⁰
488. In respect of the remaining asset categories²³¹, the TEA model adopts asset lives determined by Telstra because the ACCC did not consider and therefore did not set asset lives for these asset categories. The following matters are those which Telstra takes into account in determining asset lives each year:
- future technology which Telstra may adopt for strategic purposes;

²²⁷ Network Strategies, *Report for Optus: Review of Telstra TEA Model Version 1.1, ULLS Undertaking*, dated 5 September 2008.

²²⁸ This applies to the following asset lives: main ducts and pipe, distribution ducts and pipes, lead-ins, optical fibre, multiplexing systems, local switching, software, and copper distribution cable.

²²⁹ In the PowerTel Final Determination Statement of Reasons, the ACCC noted (at page 98) that in its consultation paper to the draft final determination, it proposed to accept the asset lives proposed by Telstra.

²³⁰ In the PowerTel Final Determination Statement of Reasons, the ACCC noted (at page 98) that in its consultation paper to the draft final determination, the ACCC proposed to accept the asset lives proposed by Telstra.

²³¹ This applies to the following categories of assets: power systems, network buildings, other indirect information technology and buildings.

- any major plans or programs which may impact on asset service lives;
- Telstra's future business plans;
- product obsolescence/emergence;
- infrastructure obsolescence;
- replacement due to maintenance costs;
- international trends and benchmarks in the telecommunications market, including the trends of Telstra's equipment suppliers;
- regulatory requirements and trends;
- mortality of assets;
- supportability of assets; and
- contract life.

489. Those are the very criteria which determine economic asset lives, the use of which the ACCC has endorsed.²³²

Asset lives of copper cable

490. Telstra has already comprehensively addressed Optus' criticisms in relation to the main cable asset life set out in the *Optus Public Submission to the Australian Competition and Consumer Commission on Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper*, dated August 2008.

491. In relation to distribution cable, the ACCC set an asset life of 20 years in its final determinations of previous access disputes.²³³ Accordingly, Telstra has adopted that asset life.

492. Network Strategies "expect[s] [that] the lifetimes of main cables to be no shorter than the lifetimes of the distribution cables"²³⁴. However, Network Strategies provides no justification for this assertion, and clearly has not taken into account the impact that the FTTN roll-out would have on the asset of life of main - in distinction to - distribution cable.

493. Finally Ovum states that "the asset lives used in the TEA model do not match the asset lives as reported in Telstra's annual reports".²³⁵ However, it does not advocate the use of those asset lives in the TEA model, other than noting that their use leads to lower costs. No doubt the use of much longer asset lives

²³² In the PowerTel Final Determination Statement of Reasons, that ACCC considered that asset lives "should reflect the economic lives of the assets" (at page 91).

²³³ See, for example, the publicly available final determinations of the ACCC in access disputes between Telstra and the following access seekers: PowerTel, Chime, Primus and Optus.

²³⁴ Network Strategies, *Report for Optus: Review of Telstra TEA Model Version 1.1, ULLS Undertaking*, dated 5 September 2008, p vi.

²³⁵ Ovum (2008), *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model*, 6 August 2008, section 3.2.

generally will lead to lower cost, but that does not mean that the use of such asset lives is reasonable.

E.9 International benchmarking

494. In the Draft Decision the ACCC uses international benchmarks to assess the reasonableness of Telstra's proposed monthly charge and concludes that "*the ULLS charge averaged for all international countries is significantly below the Proposed Monthly Charge*".²³⁶
495. If the ACCC has no access to detailed, Australia specific information on the costs of supplying ULLS, international benchmarks could be relied upon to assess prices in an undertaking, provided that the benchmarks in question are appropriate comparators.
496. In this Undertaking, the ACCC has access to detailed, Australia specific cost information, namely the TEA model. Accordingly, the ACCC should rely on this information. In fact, the ACCC has previously endorsed using a bottom-up cost model rather than merely "*adjusting cost estimates from other jurisdictions*".²³⁷ However, rather than using the best available information, the ACCC is instead using the worst available information (being international benchmarking). The ACCC's reliance on international benchmarking is surprising given that previously, it has argued against its use by both Optus and Telstra (see section C.3). In fact, the ACCC is now relying upon international benchmarking without making the adjustments that both it and the Tribunal previously considered important in order for an international comparator to be appropriate. The ACCC has not provided any justification for why its use of international benchmarking should not be subject to the same standards as Optus' and Telstra's, nor has it shown that the comparators it uses are appropriate.

E.9.1 Telstra has provided very detailed, Australia specific data

497. The TEA model, unlike any international comparator, takes into account the topographical and demographic constraints of connecting customers to the CAN in Band 2 in Australia. In addition, the TEA model includes very detailed inputs which are Australia specific, including labour costs and WACC. Each of these inputs is able to be assessed by the ACCC to determine whether or not they are reasonable. If the ACCC is concerned about the reasonableness of an input chosen by Telstra, it is open to the ACCC to choose another input within what it considers to be a reasonable range, in order to determine how that input impacts upon the costs determined by the TEA model.
498. Given that the ACCC has available to it such an opportunity for a rigorous assessment of the ULLS costs in Band 2 in Australia, international benchmarking is neither necessary, nor appropriate.

²³⁶ ACCC, Draft Decision, p 42. In doing so, the ACCC refers to Ovum's *Europe & Americas additional benchmarks tables and charges - benchmarking period Q2 2008*, July 2008.

²³⁷ The ACCC said that, were all necessary adjustments made to comparators, "possession of such information sufficient to make a comprehensive adjustment is tantamount to that necessary to construct a bottom-up model, and use of that information for that purpose would be superior to using it for adjusting cost estimates from other jurisdictions" ("Optus Final Decision", p 124).

E.9.2 The comparators relied upon by the ACCC have not been shown to be appropriate

499. The ACCC has acknowledged that it had previously “generally placed less weight on the use of international benchmarks when comparing ULLS prices due to the difficulty of finding an appropriate comparator for the low population density area in Band 4.”²³⁸ However, this is an understatement of the ACCC’s previous position. The ACCC has previously submitted to the Tribunal that “before international benchmarks could be resorted to, [the Australian Competition Tribunal] must be satisfied that, notwithstanding the difference between Australia and the relevant international jurisdictions, those benchmarks were reasonable comparators. It submitted that relevant differences might include matters such as the definition of the regulated service, the applicable regulatory framework, the geographical price structure, the cost of capital, the prescribed cost standard (if any) and population concentration (as opposed to population density).”²³⁹

500. The Tribunal accepted the ACCC’s submission.²⁴⁰

501. Clearly, the ACCC has not held the international benchmarks it relies upon to the same standard it set for access providers. The ACCC has not shown that the 14 comparators on which it has relied are appropriate. Indeed, no justification is given as to why these 14 countries were selected as appropriate comparators in the first place, or why other countries were not selected. Given that any benchmarking exercise inevitably hinges on the choice of comparator countries used, it is difficult to understand why the ACCC would offer no explanation. For example, why was Norway considered to be an appropriate comparator country? Is its regulatory regime the same as Australia’s? Is TSLRIC used to set the regulated prices in Norway? Is its urban population density the same as Australia’s? The answer to the last question, for example, is no. These questions have not been posed, let alone answered, by the ACCC.

502. Further, the adjustments which the ACCC and the Tribunal considered must be made to a comparator in order for it to be “appropriate”, have not been made. Ingenious Consulting Network, in a report for Telstra (see Attachment 3), has identified a number of considerations which should have been, but were not, taken into account, including timing considerations for various comparators (some of which were set up to four years ago).²⁴¹ The one adjustment that has been made - exchange rates - is also problematic, as neither the methodology for determining the prices in Australian dollars nor the timing of the conversion to Australian dollars are set out.

503. Accordingly, the ACCC should not be relying on international benchmarking, but rather on the detailed, Australia specific information on costs derived using the TEA model.

²³⁸ ACCC Draft Decision, at page 42

²³⁹ *Telstra Corporation Limited (No 3)* [2007] ACompT 3, at [383]-[385].

²⁴⁰ *Telstra Corporation Limited (No 3)* [2007] ACompT 3, at [383]-[385].

²⁴¹ Ingenious Network Consulting, *Commentary on the use of international benchmarking in setting interconnection rates*, December 2008, p 7.

Attachment 1 Access seeker profitability analysis

504. An analysis of profitability based on publicly available information indicates that, at current ULLS prices, an efficient supplier of broadband services could earn significant margins by supplying bundled broadband and fixed voice services using ULLS. Moreover, an efficient supplier would still earn significant margins at the \$30 price for Band 2 set out in Telstra's Undertaking.
505. EBITDA (Earnings before interest, taxes, depreciation and amortisation) and EBIT (Earnings before interest and taxes), which are commonly employed measures of financial profitability, have been estimated for both iiNet and Optus.²⁴² The estimates have been derived by calculating bundled broadband and fixed voice revenues, and then subtracting from these:
- The costs associated with ULLS charges;
 - Other costs of goods sold (COGS); and
 - Other operating expenses;²⁴³
506. Estimates of EBIT (Earnings before interest and taxes) have been derived by subtracting estimates of depreciation from EBITDA.²⁴⁴
507. Table 6 and Table 7 present estimates of iiNet and Optus profitability, at the ULLS price determined by the ACCC for 2007/08 in Band 2 areas of \$14.30. The tables show that iiNet and Optus likely earn significant EBITDA and EBIT margins supplying bundled broadband and fixed voice services using ULLS at this price. As noted in the tables below, the iiNet amounts represent estimates for the 2007 and 2008 financial years, whereas the Optus amounts represent estimates for the June Quarters of 2007 and 2008.
508. Table 8 and Table 9 present estimates of iiNet and Optus profitability using Telstra's Undertaking ULLS Band 2 price of \$30. The tables show that iiNet and Optus would likely continue earning significant EBITDA and EBIT margins supplying bundled broadband and fixed voice services, at such a price.

²⁴² The analysis focuses on iiNet and Optus because, for these firms, data and information relevant to estimating ULLS profitability is publicly available. Moreover, amongst competitors to Telstra, iiNet and Optus are likely to be relatively more efficient competitors.

²⁴³ For iiNet, publicly available data also enables the calculation of the Gross Margin for the services at issue, this being calculated as Revenues minus COGS. Data limitations mean that the Gross Margin cannot be separately calculated for Optus.

²⁴⁴ For Optus, because of data limitations, depreciation has been approximated by a capital expenditure charge.

Table 6: iiNet Bundled ADSL and Voice Profitability – ULLS price of \$14.30 (FY2007 and FY2008)

Financial Year	2007	2008
Revenues	\$154,790,957	\$183,375,203
ULLS Monthly Rental Charges	\$20,741,292	\$24,343,348
Other COGS	\$13,039,456	\$12,954,747
Total COGS	\$33,780,748	\$37,298,094
Gross Margin	\$121,010,209	\$146,077,109
Gross Margin (%)	78.18%	79.66%
Marketing expenses	\$4,425,814	\$6,074,058
Office costs	\$7,137,134	\$7,990,419
Administrative expenses	\$6,885,291	\$11,932,969
Total Opex	\$18,448,238	\$25,997,447
EBITDA	\$102,561,971	\$120,079,662
EBITDA (%)	66%	65%
Depreciation	\$16,779,322	\$18,857,209
EBIT	\$85,782,649	\$101,222,453
EBIT (%)	55.42%	55.20%

Source: iiNet, 2008 Annual Report, and other publicly available iiNet presentations.

Table 7: Optus Bundled ADSL and Voice Profitability – ULLS price of \$14.30 (June Qtr 2007 and June Qtr 2008)

	June Quarter 2007	June Quarter 2008
Revenues	\$47,250,000	\$84,099,000
ULLS Monthly Rental Charges	\$6,756,750	\$12,398,100
Other COGS & Expenses (estimate)	\$6,142,500	\$11,271,000
Total COGS and Operating Expenses	\$12,899,250	\$23,669,100
EBITDA	\$34,350,750	\$60,429,900
EBITDA (%)	72.70%	71.86%
CAPEX charge	\$4,087,370	\$7,500,000
EBIT	\$30,263,380	\$52,929,900
EBIT (%)	64.05%	62.94%

Source: Publicly available Optus management reports, and SingTel Optus, Regulatory Update, SingTel Investor Day 2006, 29 June 2006 –Singapore, Paul Fletcher, Director, Corporate & Regulatory Affairs.

Table 8: iiNet Bundled ADSL and Voice Profitability – ULLS price of \$30 (FY2007 and FY2008)

Financial Year	2007	2008
Revenues	\$154,790,957	\$183,375,203
ULLS Monthly Rental Charges	\$43,513,200	\$51,069,960
Other COGS	\$13,039,456	\$12,954,747
Total COGS	\$56,552,656	\$64,024,707
Gross Margin	\$98,238,301	\$119,350,497
Gross Margin (%)	63.47%	65.09%
Marketing expenses	\$4,425,814	\$6,074,058
Office costs	\$7,137,134	\$7,990,419
Administrative expenses	\$6,885,291	\$11,932,969
Total Opex	\$18,448,238	\$25,997,447
EBITDA	\$79,790,063	\$93,353,050
EBITDA (%)	52%	51%
Depreciation	\$16,779,322	\$18,857,209
EBIT	\$63,010,741	\$74,495,841
EBIT (%)	40.71%	40.62%

Source: iiNet, 2008 Annual Report, and other publicly available iiNet presentations.

Table 9: Optus Bundled ADSL and Voice Profitability – ULLS price of \$30 (June Qtr 2007 and June Qtr 2008)

	June Quarter 2007	June Quarter 2008
Revenues	\$47,250,000	\$84,099,000
ULLS Monthly Rental Charges	\$14,175,000	\$26,010,000
Other COGS & Expenses (estimate)	\$6,142,500	\$11,271,000
Total COGS and Operating Expenses	\$20,317,500	\$37,281,000
EBITDA	\$26,932,500	\$46,818,000
EBITDA (%)	57.00%	55.67%
CAPEX charge	\$4,087,370	\$7,500,000
EBIT	\$22,845,130	\$39,318,000
EBIT (%)	48.35%	46.75%

Source: Publicly available Optus management reports, and SingTel Optus, Regulatory Update, SingTel Investor Day 2006, 29 June 2006 –Singapore, Paul Fletcher, Director, Corporate & Regulatory Affairs.

Attachment 2 Access seeker profitability analysis (Spreadsheets)

[Attachment 2 - iiNet and Optus business cases.xls]

Attachment 3 International Benchmarking Report

[ICN Report on International Benchmarking.pdf]

Attachment 4 State of infrastructure-based competition

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