TELSTRA CORPORATION LIMITED

Response to the ACCC's draft pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS

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Executive summary

Telstra supports the adoption of a TSLRIC+ methodology in the ACCC's *Draft pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS* dated August 2009 (**Draft IPP Determination**) to estimate the cost of supplying the fixed network services. This is aligned with the ACCC's long-held access pricing principles, and is consistent with the long-term interests of end users as applied by the Commission and the Tribunal.

However, the implementation of the costing methodology and its subsequent translation into wholesale prices in the draft IPP Determination does not reflect the realities of the supply of Fixed Line Services in Australia.

The model developed by Analysys and relied upon by the ACCC (**Analysys Model**) in its current form greatly understates the efficient cost of providing the various services, and cannot be reasonably relied on because:

- it constructs a hypothetical network that fails to take into account relevant considerations such as actual conditions (including by treating physical obstacles as if they were not there) and basic engineering principles;

- it contains manifest errors, including errors in model logic, makes basic calculation mistakes and simply leaves out necessary equipment;

- it departs from standard modelling approaches adopted by regulators undertaking similar exercises, such as omitting customer lead-in infrastructure costs altogether; and

- the use of a positive tilted annuity approach – which defers capital recovery to the distant future - fails to account for declining traffic volumes on the fixed network from which to recover those costs.

The international benchmarking used by the ACCC fails to take account of fundamental differences - such as population density and product specifications - between Australia and benchmarked countries. As a result, this benchmarking fails to meet the standards for use of benchmarking made clear by legal precedent, and cannot be relied upon to assess the reasonableness of cost estimates derived from the Analysys Model or of the ACCC's proposed indicative prices.

When translating costs of supplying the fixed line services into wholesale prices, the ACCC fails to take into account the broader regulatory and commercial environment in which those services are supplied, including:

- Telstra in its role as a national retailer and universal service provider, and consistent with long held government policy and the retail price controls, prices key fixed line services on a nationally uniform basis;

- resale services, derived from Telstra's nationally uniform retail products, are acquired by wholesale customers at nationally uniform prices; and

- resale WLR and LCS services are acquired nationally. The ACCC's failure to indicate a price for the substantial number of WLR lines in Zone B rural areas, where take-up is broadly equivalent to Zone A metropolitan/regional areas, is inconsistent with the national market for resale services.

The Telstra Efficient Access model (**TEA Model**) provides a more credible, robust basis for determining prices than the Analysys Model because it uses accurate data. The TEA Model estimates forward-looking efficient costs by using forward-looking best practices, engineering standards and placement procedures and best-in-use equipment.

However, many of the identified shortcomings of the Analysys Model are capable of correction, and in this submission Telstra provides step-by-step proposals as to how this can be done (including by submitting the Analysys Model with the adjustments made to the ACCC).

Telstra proposes indicative prices that are supported by the adjusted Analysys Model for 2009-10 as explained below:

- a **nationally averaged indicative price for WLR of $27.60 for residential lines and $31.77 for business lines** and an **LCS price of 9.28 cents**. The adjusted Analysys Model produces a nationally averaged WLR cost estimate of $51.49, with $35.25 for Zone A and $123.24 for Zone B, and an LCS price of 10.55 cents;

- an **indicative headline price for OA and TA of 1 cent per minute** using the current geographic charging zones and the flagfall structure. The adjusted Analysys Model produces an OA and TA cost estimate of 1.06 cents per minute;

- while Telstra's position remains that ULLS should be averaged, the Zone A/B approach is a step in the right direction and, if the ACCC maintains this approach, Telstra proposes indicative prices for **ULLS in Zone A of $30 and in Zone B of $100**. The adjusted Analysys Model produces a cost estimate of $35.95 for Zone A and $121.34 for Zone B; and

- an indicative price for **LSS of $2.50**, which is more comparable with international benchmarks (noting that the Analysys Model does not address LSS).

Additionally, the ACCC should take into account the Government's National Broadband Network (**NBN**) vision for high-speed broadband supplied over fibre-to-the-premises (**FTTP**) to 90% of the population, and over wireless or satellite to the remainder of the population, at a cost of up to $43 billion.

In the circumstances, if the ACCC does not agree with Telstra's proposed indicative prices, a practical interim arrangement would be for the ACCC to roll over all of the current prices - *as a package* - as a holding position for the next 12 months. Telstra makes this submission for four reasons.

First, it would enable the ACCC to address the manifest errors in the Analysys Model, which must be done before it can issue soundly based indicative prices or price determinations.

Second, Telstra and the ACCC have both, in submissions to the Government's regulatory review, advocated moving to a regulatory asset base (**RAB**) approach to access pricing in telecommunications, consistent with energy industries. Moving to new access pricing principles is likely to require an adjustment in prices. Rollover of current indicative prices while this move occurs would give the industry certainty for the time being and permit the ACCC's resources to be focused on developing the RAB.

Third, rollover for an interim period will minimise the pricing disruption in the industry by avoiding a potential two-stage adjustment – from existing prices to new indicative prices now, and then from those prices to the ACCC's preferred new pricing approach when it is implemented.

Fourth, rollover will allow the pricing for current services to be re-assessed at a later date when there is more certainty around the NBN. The ACCC's proposed indicative prices present serious challenges for the NBN, not least that of migration of access seekers and end users to prices that reflect the cost of FTTP. The ACCC's expansion of deaveraging seems inconsistent with the Minister's promise of nationally uniform retail prices on the NBN.[1] Further, the low indicative price for LSS (which is capable of supporting services up to 20Mbps) seems likely to undermine the economics of the NBN.

In short, Telstra supports the continued move to cost-based pricing, but believes it must be done on a sound basis. We have suggested prices, supported by model adjustments that would achieve this. If the ACCC does not agree with this approach, however, the most practical option would be for the ACCC to roll over the current indicative prices as a package to enable a more stable and considered approach to major industry changes such as the NBN.

[1] See http://mobile.itnews.com.au/Article.aspx?CIID=157278&type=News and AFR, *NBN Chief runs into static over pricing*, 20 October 2009

A TSLRIC+ in a "real world" setting

1 This submission responds to the ACCC's draft IPP Determination.

2 Telstra supports the draft IPP Determination's use of a TSLRIC+ methodology to determine the price of access to the Fixed Line Services.[2] The Australian Competition Tribunal (**Tribunal**) has held that it will generally not be in the long-term interests of end-users to depart from TSLRIC+ pricing where access is regulated.[3]

3 While TSLRIC+ models the costs of a hypothetical network builder, the Tribunal has held that the modelling exercise must have regard to market realities.[4] The regulated services will need to be supplied in the "real world" – that is, over a network connecting actual customers, in commercial conditions and markets.

4 The draft IPP Determination fails to have regard to actual technical, physical and market conditions:

(a) the **Analysys Model** constructs a hypothetical network under fictional conditions, and contains numerous material errors (see section B.1 below);

(b) the **tilted annuity** employed by the ACCC does not reflect the reality of declining volumes on the fixed network (see section B.3 below);

(c) the **international benchmarking** exercises relied on by the ACCC have not been appropriately adjusted so that they reflect the actual context in which the regulated Fixed Line Services are supplied in Australia and other benchmarked countries (see section B.4); and

(d) the **structure of prices** does not align with the regulatory and commercial environment in which the regulated Fixed Line Services are supplied (see section C).

B Modelling and benchmarking for real world conditions

B.1 Analysys cost model

5 Analysys acknowledges that the risk associated with bottom-up models is that they are "theoretical so it can be difficult to demonstrate that they reflect a real network"[5]. Analysys appears to recommend a hybrid approach insofar as this approach attempts to "reconcile, or at least understand the differences between, top-down and bottom up approaches"[6].

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[2] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OA, ULLS, LSS*, August 2009, p 32. In relation to WLR and LCS the draft IPP Determination proposes RMRC for the period to 31 July 2009, and TSLRIC+ from 1 August 2009.
[3] *Seven Networks Limited (No 4)* (2005) ATPR 42-056, [137]; *Application by Optus Mobile Pty Limited & Optus Networks Pty Limited* (2007) ATPR 42-137, [107]; *Application by Vodafone Network Pty Ltd & Vodafone Aust Ltd* (2007) ATPR 42-150, [44].
[4] *Application by Vodafone Network Pty Ltd & Vodafone Aust Ltd* (2007) ATPR 42-150, [83].
[5] Analysys Mason, *Report for the Australian Competition and Consumer Commission: International Benchmarking Analysis – Analysis of WLR, LCS, LSS and PSTN OTA*, 18 August 2009, p 9.
[6] Analysys Mason, *Report for the Australian Competition and Consumer Commission: International Benchmarking Analysis – Analysis of WLR, LCS, LSS and PSTN OTA*, 18 August 2009, p 9.

6 Yet, despite its own warnings, Analysys has built a model which does not adequately account for real world conditions by:

(a) treating physical obstacles, for example, railway lines, as if they were not there;

(b) failing to comply with basic engineering principles, for example, by ploughing impossibly large groups of cable or assuming large nests of cables can turn impossibly tight corners; and

(c) leaving out crucial equipment, such as the costs of the distribution network to the property boundary. Nigel Attenborough in his report (see **Submission Supporting Documents, Volume 1, Document 1.2**) says of this error[7]:

> "I am unaware of any other regulator who has used an access network cost model which excludes the cost of lead-ins. In my view it is not a reasonable approach for a regulator to take."

7 The Analysys Model also contains computational errors or basic errors in model logic: for example, the costs of fibre lines are included in the calculation of copper line costs. Nigel Attenborough says of this error[8]:

> "This is equivalent to calculating the unit cost of production of a motor car by taking the total cost of cars and dividing by the total number of cars and trucks produced.. ..This is patently nonsensical."

8 The materiality of the errors is so significant that the Analysys Model cannot be relied upon in its present form. Table 1 below summarises some of the more glaring errors in the Analysys Model[9]. These are a subset of a larger catalogue of errors Telstra has identified which are set out in a report included in the **Submission Supporting Documents, Volume 1, Document 1.1**.[10]

Table 1: Summary of specified errors identified in the Analysys Model

Error in Attachment A	What is the error?	Why is it an error?
Plant and equipment errors		
Error 1	Does not include the joints to connect the distribution copper cables or main copper cables to pillars	Cables cannot be physically connected together or to plant such as pillars without joints. The Analysys Model uses joints in some situations, such as connecting lead-ins to distribution cable but omits joints in other situations.
Error 2	Does not take into account the fact that joints and pits/manholes are required to connect two cables with different diameters	A pit or manhole is needed above the point at which two cables are to be joined for installation and maintenance.

[7] Expert report of N Attenborough, 8 October 2009, p 19 (**Submission Supporting Documents, Volume 1, Document 1.2**).
[8] Expert report of N Attenborough, 8 October 2009, p 17 (**Submission Supporting Documents, Volume 1, Document 1.2**).
[9] A more detailed description is set out at Attachment A with, where it has been possible to do so, a materiality analysis of each error.
[10] While some errors cannot be remedied because they are fundamental to the design of the model, some adjustments to the Analysys Model are able to be made in respect of other errors and Telstra provides a detailed description of the adjustments.

Error in Attachment A	What is the error?	Why is it an error?
Error 3	Omits the cost of jointing 300 copper pairs in each 400 copper pair cable	While using 400 pair cable, the Analysys Model costs jointing of only 100 of those pairs, although it assumes the other 300 pairs are also used (which is not possible if they are not jointed).
Error 4	Does not include the cost of joints needed to join fibre cables together	Analysys says that the per metre fibre costs include the joints, but no breakdown is provided. The number of joints required will vary widely depending on deployment conditions .
Error 5	Excludes the cost of distribution cable, trenching and conduit required from a customer's boundary to the distribution pit	Property owners are obliged to provide an open trench across their own land, but the carrier must lay its network to the customer's boundary line. Nigel Attenborough says in his expert report that "I am unaware of any other regulator who has used an access network cost model which excludes the cost of lead-ins. In my view it is not a reasonable approach for a regulator to take."[11]
Error 6	Provides for road crossings to serve homes on the opposite side of the street from the distribution pit but does not provision sufficient cable inside the road crossing conduit to enable the cable to reach the opposite side	The Analysys Model assumes (as the TEA Model does) that the network will be on one side of the street and therefore houses on the other side of the street need to be connected by under-street connections. The model includes the costs of digging and conduit, but the length of the cable included in the Analysys Model is too short to connect premises on the other side of the street.
Error 7	The serving pit architecture is inconsistent with the distribution network architecture used in the geoanalysis and access network module	The network assets required to serve all locations within the model are calculated external to the model in a 'geoanalysis and access network' workbook. However, the network design assumed in this workbook is not the same as the network design actually used in the Analysys Model.
Error 8	Assumes that IEN and CAN cables share the same trench but the dimensions of the trench and pits are not large enough to fit both cables	In an apparent attempt to reduce trenching costs, the Analysys Model assumes a high level of collocation of IEN cables with CAN distribution cables, but fails to deal with the knock-on cost consequences. Distribution trenches, which mainly run down ordinary suburban streets, are narrow and there is not enough room to accommodate additional cables, particularly thick IEN cables.
Error 9	Grossly underestimated the costs of building the core network	The Analysys Model creates a core network with a cost of $145 million. Telstra believes that, based on its own core network investment, this substantially understates the

[11] **Submission Supporting Documents, volume 1, Document 1.2** [para 4.8]

Error in Attachment A	What is the error?	Why is it an error?
		costs of a core network. The ACCC has failed to provide details sufficient to enable Telstra to understand how Analysys arrived at its figure and Telstra presses its request.
Mathematical errors		
Error 10	Accepts that a particular pit size is required but then fails to use that size	The Analysys Model correctly identifies that pit size is determined by the number of ducts coming into and out of the pit chamber. But then the coding in the model averages the number of ducts with the number of links using the pit (which may be less because not all the ducts are being used, or fully used). The result is to select smaller pits than can accommodate the ducts feeding into them.
Error 11	Excludes the costs of some technologies from calculation of unit costs, yet includes the lines served by those technologies.	The Analysys Model does not properly determine the unit cost of CAN services because it contains a mismatch between annual costs and SIOs used in the calculation. It builds a network comprised of copper, fibre, wireless and satellite components, then removes investment in some components (fibre, wireless and satellite in the case of ULLS) without removing SIOs served. Nigel Attenborough says in his expert statement that "this is equivalent to calculating the unit cost of production of a motor car by taking the total cost of cars and dividing by the total number of cars and trucks produced... This is patently nonsensical"[12]
Error 12	Wrongly allocates between 33% to 50% of costs to the deployment of fibre from which there is no known revenue source	The Analysys Model assumes two fibres throughout the IEN with no specified services allocated to them (other than a vague description of dark fibre services). The practical effect is to subtract 33% -50% of trenching costs from the model. The installation of capacity for which there is no known revenue source over a reasonable planning horizon is inconsistent with best engineering practice. Nigel Attenborough says in is expert statement that "[t]his is not an appropriate allocation practice because it does not allow full recovery of costs. If a company is unable to recover its costs, it will make a loss and this is not a sustainable situation."[13]
Error 13	The ACCC's calculations and assumptions regarding the number of internet dial up users and the length of internet dial up calls is inconsistent with evidence of actual historical rates	The Analysys Model assumes a rate of decline in dial-up customers that is around half of the actual observed rate of decline.

[12] **Submisison Supporting Documents, volume 1, Document 1.2** [para 4.3]
[13] **Submisison Supporting Documents, volume 1, Document 1.2** [para 45.9]

Error in Attachment A	What is the error?	Why is it an error?
Engineering errors		
Error 14	Assumes that cables that are greater than 100 pair in size can be ploughed	Cables of 100 pair are too thick to directly plough into the ground.
Error 15	Too few customer locations because it relies on an inaccurate data base	Analysys recognises that the G-NAF database has a large number of invalid addresses, and Analysys arbitrarily reduced the number of addresses from 9.8 million to 8 million. The TEA Model which uses actual addresses has 10.123 million addresses.
Error 16	Provisions some customers with wireless without any consideration of topological barriers to wireless signals	Analysys assumes that wireless technology is capable of reaching end-users within 25km of a fixed point. In reality, when the impacts of the environment, topography and multiple users are considered, the capability is more like 15 km. This is discussed in the statement of Craig Lordan (**Lordan no. 2 Report**) (**Submission Supporting Documents, Volume 1, Document 1.11**).

9 Table 2 compares the original Analysys Model outputs for 2009/10 with the outputs when some errors in the Analysys Model are adjusted, but otherwise using the ACCC inputs. The adjusted Analysys Model outputs shown here simply reflect the correction of some of the errors in the model and does not address other errors and / or areas of concern that Telstra has identified with the Analysys Model to date – for example, the use of a tilted annuity and incorrect assumptions and / or inputs. These errors are addressed elsewhere in this submission.[14]

Table 2: Impact of adjusting for certain specified errors in the Analysys Model (2009-10)

Service		**Original Analysys Model output**	**Adjusted Analysys Model without tilt adjustment**
ULLS	Zone A	$22.01	$28.99
	Zone B	$60.40	$96.03
WLR	Zone A	$22.73	$28.35
	Zone B	$67.22	$97.80
LCS		7.33 cents	9.05 cents
PSTN OA and TA		0.74 cents	0.90 cents

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the ACCC's model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the ACCC's model

[14] See Attachment E describing adjustments process to Analysys Model.

B.2 TEA cost model

10 As Table 3 shows, the TEA Model, by contrast to the Analysys Model, is built upon realistic assumptions.

Table 3: Analysys Model and the TEA Model: Summary of the real world factors reflected in the model

Real world factor	Analysys Model	TEA Model
Number of CAN lines	×	✓
Uses actual customer premises locations	×	✓
Uses actual demand at customer level	×	✓
Recognises topographical obstacles, such as rivers, railway lines	×	✓
Locates trenches in accordance with regulatory requirements (e.g. Telecommunications Code, ACIF Code C524:2004 and street opening codes)	×	✓
Complies with accepted engineering principles (i.e. network could physically be built as designed)	×	✓

11 Accordingly, the TEA Model forms a more reliable and appropriate basis on which to assess access prices for ULLS and WLR. TEA Model version 1.5 provides the following cost outputs:

Table 4: TEA Model outputs

ULLS		WLR
Band 1	$12.65	$12.64
Band 2	$44.90	$45.73
Band 3	$83.21	$84.21
Zone A	$46.67	$47.47
Zone B	>$99.52	>$101.00
Averaged	>$51.51	>$52.34

Note: as the TEA Model does not include Band 4, the averaged price is across bands 1, 2 and 3 and the Zone B prices represent the Band 3 areas allocated to Zone B. Both prices would be higher if Band 4 was costed and included in the TEA Model.

B.3 Actual market conditions not reflected in tilted annuity approach

12 The effect of the ACCC's use of a positive tilted annuity approach – in the Analysys Model and in its adjustments to the TEA Model – is to defer depreciation into the future, which means that:

(a) cost recovery is delayed to a time when there will be fewer customers from which to recover those costs, since demand for CAN lines is decreasing by more than 1.7% per annum. PSTN, OA and TA traffic volumes have

decreased by [**TC1 c-i-c commences**] [CIC]% [**TC1 c-i-c ends**] in the last three years;

(b) the risk of failing to recover costs is substantially higher, as Telstra faces competitive bypass from various alternatives including the Optus HFC network and wireless broadband networks. This risk is considerably increased by the Government's planned NBN deployment;

(c) the future price increases necessary for cost recovery will only accelerate the decline in demand for CAN lines as customers move to mobile and other facilities-based competitors.

13 As Nigel Attenborough states in his expert report, use of a tilted annuity in an environment of declining traffic means that there is a significant risk that the costs of the Fixed Line Services will not be recovered[15]:

> "The inability of a standard tilted annuity to take account of either changes in output or operating expenses means that it is not appropriate to use it for deriving annual capital charges in an environment where output is declining and operating expenses are increasing. In such circumstances, its use leads, in the early years of an asset's life,[16] to a substantial underestimate of the true annual capital charge that would result from the use of economic depreciation."

14 The following table compares:

(a) the ACCC's proposed indicative prices: with

(b) the outputs of the unadjusted Analysys Model with a positive tilt which takes into account declining traffic volumes using the ACCC's own demand forecasts ('Unadjusted Analysys with demand adjusted tilt'); and

(c) the same adjusted tilt applied to the Analysys Model which is also adjusted for the other errors ('Adjusted Analysys with demand adjusted tilt')[17].

[15] Expert report of N Attenborough, 8 October 2009, p 27 (**Submission Supporting Documents, Volume 1, Document 1.2**)
[16] This is the relevant period in the context of setting ULLS prices for the next few years.
[17] See Attachment E for explanation of how Telstra calculated the adjusted tilt.

Table 5: Tilt impact (2009-10)

Service		Original Analysys output	Unadjusted Analysys with demand adjusted tilt	Adjusted Analysys with demand adjusted tilt
ULLS	Zone A	$22.01	$30.46	$35.95
	Zone B	$60.40	$95.32	$121.34
WLR	Zone A	$22.73	$31.47	$35.25
	Zone B	$67.22	$102.93	$123.24
PSTN OA and TA		0.74 cents	1.05 cents	1.06 cents
LCS		7.33 cents	10.40 cents	10.55 cents

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the ACCC's model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the ACCC's model

B.4 International benchmarking fails to reflect actual differences between compared countries

15 Telstra submits that the benchmarking studies undertaken by Analysys Mason and Ovum fail to meet the standards for use of benchmarking made clear by legal precedents.[18] Accordingly, these benchmarking studies are deficient and should not be relied upon by the ACCC.

16 A review by LECG of the Analysys Mason Report (**Submission Supporting Documents, Volume 1, Document 1.3**) identifies a range of factors that have been inadequately considered or adjusted for in making the benchmarking comparisons:[19]

> "The Analysys report makes only limited adjustments to the prices it compares, despite acknowledging that further adjustments may be important. In my opinion, the failure to make these further adjustments introduces a bias that renders the Analysys benchmark comparisons unreliable."

17 The deficiencies in the Analysys Mason Report noted by LECG, include: sample selection (e.g. excluding comparator countries that are a closer match to Australia in respect of population density and other cost-related factors), inappropriate product selection for the purpose of comparison, and the fact that Analysys used regulated *prices* to benchmark *costs*, incorrectly assuming that prices derived by applying a different range of methodologies in different jurisdictions would be closely aligned with underlying costs.[20] Analysys also failed to make any adjustment for differences in approaches by regulators to the cost of capital. Moreover, in benchmarking LCS, Analysys took no account of the

[18] *Re Optus Mobile Pty Limited & Optus Networks Pty Limited* (2007) ATPR 42-137, [297].
[19] LECG, *Assessment of Analysys Mason Benchmarking: Prepared for Telstra*, 6 October 2009, [10] (footnotes from original omitted) (**Submission Supporting Documents, Volume 1, Document 1.3**).
[20] LECG, *Assessment of Analysys Mason Benchmarking: Prepared for Telstra*, 6 October 2009 – see [17] – [33] (product selection); [34] – [53] (unaccounted for national differences); [55] – [64] (sample selection); [65] – [80] (price-cost relationships); [81] – [92] (treatment of common costs) (**Submission Supporting Documents, Volume 1, Document 1.3**).

fact that in Australia such calls are un-timed (unlike in comparator countries), rendering national comparisons "*meaningless*".[21]

18 In addition to the LECG report, Telstra also commissioned Synergies to prepare a PSTN OA and TA benchmarking study (**Submission Supporting Documents, Volume 1, Document 1.4**). As discussed in section F.2, Synergies found that, when properly adjusted for significant cost factor differences, current PSTN OA and TA charges are already amongst the world's lowest – and the ACCC's proposed rate would be the lowest price of any benchmarked country, by a significant margin. Reports prepared by Ingenious Consulting Network (**Submission Supporting Documents, Volume 1, Documents 1.6 and 1.7**) in relation to the ULLS have similarly concluded that the Ovum report benchmarking ULLS prices on which the ACCC relies also fails to meet the required standards for benchmarking exercises.[22]

C Structure of prices must reflect actual market conditions

C.1 Cost based wholesale pricing in markets with retail price controls

19 A TSLRIC+ modelling exercise generates an estimate of the cost associated with the provision of a particular service. That cost must then be translated into a price for that service. If the indicative prices are to serve their purpose, it is imperative they be set in the context of the actual competitive and broader regulatory environment in which access providers and wholesale customers negotiate carrier arrangements.

20 In the draft IPP Determination the ACCC proposes to alter the approach to averaging/de-averaging for some of the Fixed Line Services which has applied almost from the beginning of competition 20 years ago. This significant structural shift will have unintended negative consequences:

Service	Previous approaches	ACCC's proposed approach
ULLS	4 bands	2 zones
LSS	nationally averaged	nationally averaged
WLR	nationally averaged	2 zones
LCS	nationally averaged	nationally averaged
OA/TA	4 charging zones	nationally averaged

21 For the reasons set out below and in the service-specific part of this submission, Telstra submits that there should be:

(a) nationally averaged prices for: WLR, LCS, LSS and ULLS; and

[21] LECG, *Assessment of Analysys Mason Benchmarking: Prepared for Telstra*, 6 October 2009, [6], [20] (**Submission Supporting Documents, Volume 1, Document 1.3**).
[22] Ingenious Consulting Network: *The Use of International Benchmarking in Setting Interconnection Rates – A Report from the Ingenious Consulting Network*, December 2008; and *Response to Ovum's Report "Telstra ULLS Undertaking – ULLS International Benchmarking" – A Note from the Ingenious Consulting Network*, March 2009 (**Submission Supporting Documents, Volume 1, Documents 1.6 and 1.7**).

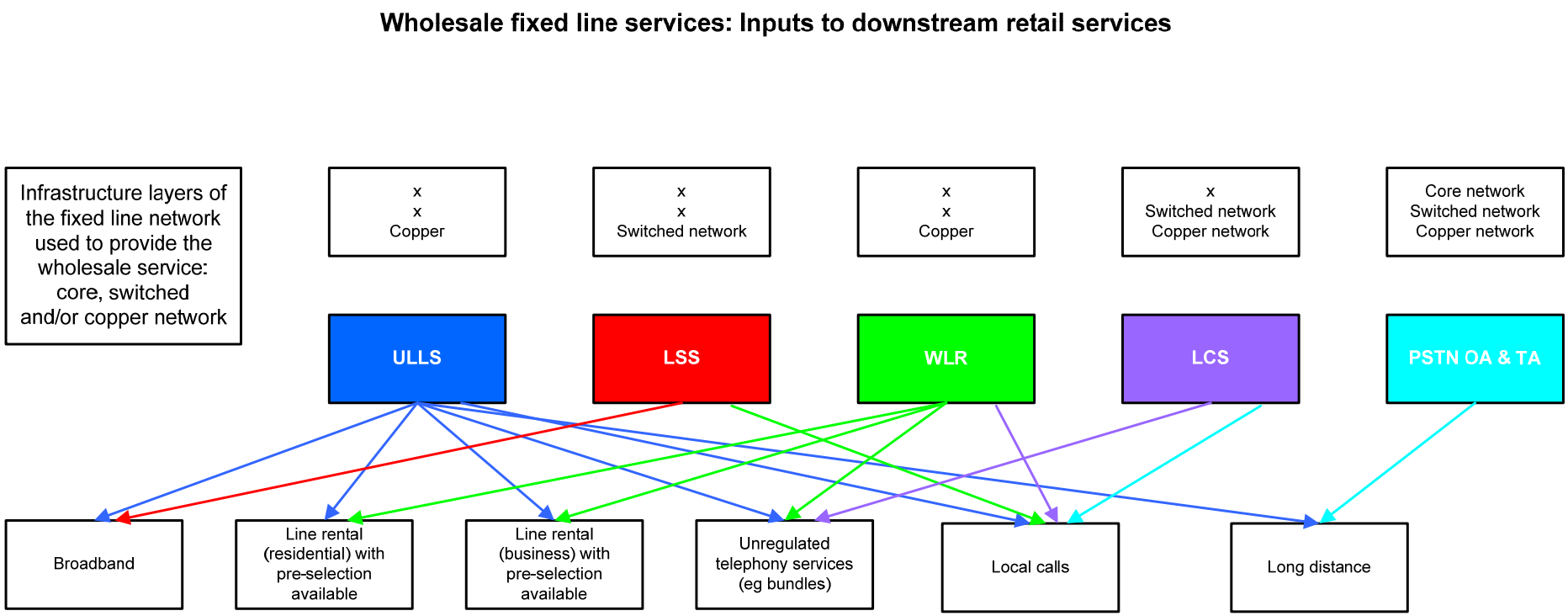
(b) retention of existing geographic based prices for PSTN OA and TA.

22 Of key importance to the structure of prices at the wholesale level is how services are offered at the retail level. The OECD has emphasised "the importance, from the competition perspective, of ensuring that any price discrimination in access prices is reflected in final prices **and vice versa**"[23]. A number of important features will dictate and shape retail pricing, including the retail price controls that apply to Telstra and, in turn, how other service providers structure their retail offerings in response to Telstra's retail services, as well as how, as a practical matter wholesale customers purchase wholesale services.

23 Figure 1 shows that the Fixed Line Services represent a set of substitutes or partial substitutes which consume many common upstream network elements. For example, WLR is used as an input to downstream retail services including the provision of line rental and local call services (bundled or otherwise). ULLS can also be used to provide basic access and local call services (bundled or otherwise), as well as broadband and long distance services.

[23] OECD, *Access Pricing in Telecommunications*, 2004, p 64 (emphasis added).

Figure 1: Wholesale Fixed Line Services as inputs to downstream retail services



C.2 Appropriate price structures for Fixed Line Services

24 One of the primary goals of economic regulation is to replicate the discipline of competitive markets. This should mean that access prices are set in a manner which allows efficient downstream price discrimination, for example, to reflect cost differences between different geographic regions.

25 However, as recognised by the OECD, this optimal approach will often clash with government policy that, for welfare or social equity-based reasons inhibits the scope for efficient downstream price discrimination:

> "... setting undifferentiated access charges may have undesired consequences: if the discriminatory structure of end user charges is the achievement of effective political constituencies (e.g., geographic price averaging), the beneficiaries of the legacy rate structure may try to limit competition."[24]

26 In the Australian context, Telstra has long maintained a policy of providing retail services to all Australian consumers, wherever they live or work, with access services priced at nationally uniform levels. Nationally uniform prices are consistent with our customers' expectations and are also aligned with the Australian Government's long held policy of ensuring pricing parity for basic telecommunications services for Australians living in rural and metropolitan areas.

27 The Australian Government's policy is reflected in Telstra's retail pricing parity obligations[25] and several specific policies enacted by the Government to overcome perceived price and service disparities facing rural users - including the Australian Broadband Guarantee (the ABG), which is an Australian Government policy in which approved providers can receive individual payments to ensure eligible customers have access to a metro-comparable broadband service at comparable prices. Most recently, this policy of pricing parity has been reflected in the Minister's comments on the appropriate price structure for services provided over the proposed NBN:

> Senator Conroy said while there was criticism from some in metropolitan areas, the Government remained committed to levelling the communications playing field.
>
> "This is unashamedly and explicitly a cross-subsidy to deliver equivalent services to all Australians," he said.
>
> "My ambition is that there will be the same wholesale price for every household for the same speed across satellite, wireless and fibre-to-the-node. This is about bringing every Australian up to speed, so to speak, after years of Australian telecommunications being far slower and more expensive than most of the rest of the world."[26]

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[24] OECD, *Access Pricing in Telecommunications*, 2004, p 9.
[25] Telstra is subject to regulatory constraints in relation to its retail charges (including for local calls and for certain basic access services) Telstra Carrier Charges – Price Control Arrangements, Notification and Disallowance Determination (No 1 of 2005, made under the *Telecommunications (Consumer Protection and Services Standards) Act 1999*).
[26] The Northern Daily Leader, "Fast Internet Promised", 22 September 2009 (see: http://www.northerndailyleader.com.au/news/local/news/general/fast-internet-promised/1629599.aspx) (accessed 9 October 2009).

28 The Government's long held policy for geographically uniform retail pricing is manifested through the retail price controls. Although, the retail price constraints do not apply to all of Telstra's retail product offerings, they effectively act to anchor retail pricing of line rental and local call services. The Tribunal has accepted that, if Telstra sought to raise the prices of its non-regulated retail services too high, end users would revert to the regulated retail products.[27]

29 In setting access prices, the ACCC must take into account the Government's clear policies and regulatory instruments that require geographically uniform retail pricing. The presence of this constraint unavoidably introduces inefficiencies in the market. The ACCC's task in these circumstances is ensuring that it sets access prices that do not compound these existing inefficiencies. In this context, the question is then, in light of this distortion, what policy will best minimise any further departure from the relevant objectives sought to be achieved under the relevant provisions in the *Trade Practices Act 1974* (**TPA**)

30 In shifting to a two zone approach for ULLS, the ACCC has taken a step forward although it still falls short of national averaging. However, the ACCC takes a step backwards in proposing a two zone approach for WLR which moves away from national averaging. The cumulative effect is to further encourage wholesale customers to only compete in metropolitan areas, substantially increasing the risks Telstra will not be able to recover its efficient costs across the entire network.

31 While in theory it may be open to Telstra to reduce its retail prices to attempt to meet lower-priced offerings of wholesale customers based on the deaveraged ULLS prices, the operation of the Telstra retail price controls would, directly or indirectly, mean that Telstra would be forced to decrease its prices in Zone B. In any case, Telstra would certainly not have the flexibility, in the long-run, to *increase* prices in Zone B to make up for any shortfall in revenue from the provision of services in Zone A – leaving Telstra unable to recover its efficient costs overall, including because of the risk of by-pass.

32 The Tribunal has recognised the limited flexibility Telstra has to respond to cream-skimming by wholesale customers lowering prices in metropolitan areas (in response to deaveraged charges for the ULLS) to ensure overall cost recovery.

> "We have found that, in principle, de-averaged charges for the ULLS could establish an arbitrage opportunity for potential access seekers in urban areas which could have the effect of reducing the price of retail line rental services towards their costs of production in urban areas. While Telstra could respond to any move by access seekers who sought to reduce the price of retail line rental services towards cost in urban areas by lowering its own prices of retail line rental services not subject to the RPPO [retail price parity obligation] in these areas, doing so would deprive it of (at least some) above-cost revenues it gains from its pricing of retail line rental services in these areas. As a consequence, it may be limited in the extent to which it can cross-subsidise below-cost pricing of retail line rental services in rural areas if access seekers use de-averaged charges for the ULLS to enter urban areas for the provision of fixed-line telecommunications services."[28]

33 The Tribunal also has found that where ULLS charges are averaged wholesale customers will be able to compete provided they are "at least as efficient as Telstra at the non-ULLS stages of production of fixed-line retail services"[29].

34 In other contexts, the ACCC has recognised the need for averaged access prices where retail price controls are imposed for social equity reasons. In its arbitration of an access dispute between Sydney Water and Services Sydney, the ACCC considered the relevance to access pricing of "postage stamp pricing", which requires end users within the Sydney Water service area to be charged the same for water and sewerage services. The ACCC noted that the NSW regulator and Government considered there were significant social equity justifications for postage stamp pricing remaining in place and that if the ACCC required deaveraged prices, postage stamp pricing would have to be unwound:

> "…it appears likely that there would be scope for access prices that did not include a contribution to postage stamp pricing to enable Services Sydney (and, potentially, other access seekers) to cherry-pick Sydney Water's customers in the downstream sewage treatment market, at least in the short-term. Therefore, the exclusion of a contribution to postage stamp pricing in access prices would be contrary to Sydney Water's legitimate business interests."[30]

35 In contrast to ULLS, LSS, WLR and LCS, Telstra submits that PSTN OA and TA indicative prices should continue to be geographically deaveraged, for reasons including for the following reasons:

(a) it is possible to achieve cost-reflective pricing at a retail and wholesale level because there are no relevant retail price controls that interfere with the goal of the "first best outcome" of regulated prices reflecting costs; and

(b) the evidence does not support the ACCC's view that PSTN OA and TA costs are similar between rural and urban areas. The downstream long distance, fixed-to-mobile and B party pays services to which PSTN OA and TA inputs are not required to be charged on the same flat rate basis between urban and rural areas.[31] As downstream price discrimination is feasible (and efficient) for these downstream retail services, PSTN OA and TA prices should not be set on an undifferentiated basis.

D Access pricing in the future

36 The ACCC signals in the draft IPP Determination that it is considering shifting to other pricing methodologies in the future, for the following reasons:

(a) replacement costs for the largest components of fixed networks (e.g. cables, ducts and trenching) have generally been increasing, rather than decreasing, as was assumed when the regime began[32]; and

(b) Telstra's copper CAN has more of the character of an "enduring bottleneck" rather than a network subject to bypass through

[29] *Telstra Corporation Ltd (No 3)* (2007) ATPR 42-160, [111].
[30] ACCC, Arbitration Report, Sydney Water access dispute, 19 July 2007, p 44.
[31] While TA is an input to local calls that are price regulated, there is a long standing practice in the industry to cap local calls interconnection charges at a maximum rate. Telstra would expect these capping arrangements to continue to apply including to deaveraged costs.
[32] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 21 August 2009, p 16.

technological and market developments[33]. Hence, one of the main rationales for continual re-valuation of the asset base - sending efficient build or buy signals - may no longer be appropriate.[34]

Factual misconceptions about the CAN

37 The CAN is not an enduring bottleneck, particularly in significant parts of Zone A. The Fixed Line Services are inputs to retail services that are supplied over a range of alternative competing infrastructure platforms, including fibre to the premises (**FTTP**), HFC, fixed wireless and mobile networks.

(a) The Telstra CAN in Band 1 has been substantially overbuilt by FTTP networks. In each of the four largest CBD areas there are at least 9-12 competitors with fibre networks and over [TC1 cic commences]CIC [**TC1 c-i-c ends**]buildings connected by competing fibre networks.

(b) The Optus cable network passes 2.2 million homes in the Sydney, Melbourne and Brisbane metropolitan areas, mostly in Band 2 areas. As at June 2009, Optus reported 37% HFC penetration[35] with 429,000 broadband customers and 521,000 telephony customers, with 86% taking bundles.

(c) Telstra also faces competition from other fixed and wireless networks, including TransACT's fibre network in the ACT; Optus, Hutchison and Vodafone's 3G networks, and fixed wireless providers such as Unwired, which currently offers services in Sydney and Melbourne with plans to expand coverage to all major metropolitan regions by 2012.[36]

(d) There is significant deployment of new access infrastructure in greenfields estates in both urban and regional areas, often put out to competitive tender by developers.

38 In the face of these competitive forces, the Telstra CAN is losing customers at an accelerating rate. Since 2003, the number of Telstra fixed lines (retail and wholesale telephony and ULLS) has been falling, now running at an annualised rate of 1.7% .[37] The overseas evidence and ACMA's customer survey of fixed-mobile substitution suggests that the rate of "shrinkage" of the CAN could continue to accelerate.[38]

39 The NBN project further demonstrates that the copper CAN cannot be viewed as an "enduring bottleneck". The ACCC itself comments that the Government's decision to proceed with the NBN might result in bypass of Telstra's copper CAN.[39]

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[33] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 21 August 2009, p 16.
[34] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 21 August 2009, p 17.
[35] SingTel, *Management Discussion and Analysis of Financial Condition, Results of Operations and Cash Flows for the First Quarter ended 30 June 2009*, p45.
[36] Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Draft Decision*, 23 December 2008 (confidential version), Attachment 4 commencing p 123. See: www.unwired,com.au (accessed 7 October 2009) and report in CommsDay , 29 September 2009 (http://www.commsday.com/node/555) (accessed 7 October 2009).
[37] See: *Telstra Corporation Limited and Controlled Entities, Results and Operations Review, Year Ended 30 June 2009*, p 40. See also: Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Materiality Testing*, 23 March 2009, p 21. Note that to calculate the annual compound growth rates, Telstra used the CAGR formula, that is (FV / PV)1/n – 1. The calculation was based on the quarterly ACCC snapshot data As Telstra incorrectly used 1.25 years, the annual compound growth rates reported in that document should have been: -1.7 % in Band 2 and -1.5% overall.
[38] ACMA, *Fixed Mobile Convergence and Fixed Mobile Substitution in Australia*, July 2008.
[39] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 21 August 2009, p 17.

40 The ACCC also incorrectly assumes that the costs of the CAN are sunk and were sunk some time ago. However, as set out in the statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**](**Submission Supporting Documents, Volume 1, Document 1.8**), Telstra has invested around [**TC2 c-i-c commences**] CIC [redacted] [**TC2 c-i-c commences**] over the last three years in the CAN, and would need to continue to invest in order to meet regulated service standards. [**TC2 c-i-c commences**] CIC [redacted] Table 6 CIC [redacted] [**TC2 c-i-c ends**]

Table 6: Investment in the Customer Access Network 2007 – 2009

[**TC2 c-i-c commences**]

Financial Year	Cable, ducts and pipes in the CAN	IEN equipment	Switching & Exchange Equipment
CIC [redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[**TC2 c-i-c ends**]

Forward-looking cost models are applied by the ACCC to bottleneck assets in other utility industries

41 The ACCC's assumption appears to be that the purpose of TSLRIC+ is to send "build or buy" decisions; and that it therefore follows that TSLRIC+ is not relevant where the asset is not economic to replicate in the first place i.e. it is an 'enduring bottleneck'.

42 The ACCC identifies Depreciated Optimised Replacement Cost (**DORC**) as one of the alternative methods which could be more appropriate than TSLRIC+ to value sunk infrastructure.[40] DORC is used to value sunk assets in electricity and gas, some of which have bottleneck characteristics, such as electricity and gas distribution networks. While there are many different variants or ways of implementing both TSLRIC+ and DORC methodologies, at a principles level, TSLRIC+ and DORC are the same.[41] The two essential elements of TSLRIC+ which give it a forward-looking character are:

(a) "best-in-use" technology assumptions[42];

(b) other efficiency assumptions where elements or costs associated with an actual network are used as an input to the exercise.

43 DORC is similarly forward-looking in its derivation of the "RC" (replacement cost) element. This is found in the "optimisation" element of the methodology. Both the technology and the network architecture may be optimised, which involves an alternative way of configuring the network with "modern equivalent assets"

[40] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 21 August 2009, p 17.
[41] The only inherent distinguishing feature of TSLRIC+ is the "TS" or "TEL" component. That is, the TSLRIC+ methodology includes a sub-methodology for identifying the particular assets the costs of which are to be taken into account in pricing a particular service. This is a distinguishing requirement for telecommunications as opposed to energy networks because of the inherent multi-service nature of the telecommunications network technology. In contrast energy networks supply a single homogeneous service - transmission of electricity or gas.
[42] ACCC, *Access Pricing Principles – Telecommunications: A Guide*, July 1997, p 30.

in order to provide the required services.[43] Moreover, DORC is also based on the concept of valuation at current and expected (rather than historic) values.[44]

44 In Australia, there is also a distinction between the manner in which DORC and TSLRIC+ have been implemented. DORC valuations of the asset base for energy networks have been undertaken once and then "locked in" – with the original valuation being indexed by an appropriate inflation index and being updated in line with approved net investment (i.e. additions to the asset base minus depreciation). This difference is entirely one of implementation and not of core methodology. Indeed, if depreciation is calculated on an economic basis, the results should be equivalent.

Continued relevance of forward-looking costs approaches though costs are increasing

45 The ACCC also considers that the appreciating nature of the largest components of fixed line telecommunications networks (for example, copper cables, ducts and pipes, and trenching) may be a reason for departing from a TSLRIC+ pricing methodology.[45]

46 However, the rationale for TSLRIC+ / DORC methodologies exists independently of whether they result in costs that are higher or lower than historic costs.[46] This view is supported by international precedent.

(a) In the US, the Federal Commerce Commission (**FCC**) in the context of considering the appropriate pricing methodology for unbundled network elements observed:

> "If historical costs are higher than the forward-looking costs an entrant would face, setting rates on the basis of historical cost could result in UNE prices that deter entry generally, or cause entrants to build their own facilities even when it is inefficient to do so. Conversely, if historical costs are lower than forward-looking costs, UNE rates on historical costs might cause entrants to lease facilities when it was more efficient either to build their own or not to enter a particular market." [47]

(b) Exactly the same point was made by the United States Supreme Court in Verizon Communications v FCC in which it stated: "in theory embedded cost could be lower than efficient cost…in which case the goal of efficient competition would be set back for the different reason of too much market entry" [48].

E The option of rollover

47 If the ACCC is not minded to adopt Telstra's proposed indicative prices (as supported by the adjusted Analysys Model), the most practical way forward might be for the ACCC to simply roll over all of the existing indicative prices as a

[43] OECD, *Access Pricing in Telecommunications*, 2004, p 179.
[44] This feature is even more pronounced in DORC approaches, which are generally based on a capital maintenance assumption.
[45] ACCC, *Draft Pricing Principles and Indicative Prices for LCS, WLR, PSTN OTA, ULLS, LSS*, 21 August 2009, p 16.
[46] See: Federal Communications Commission, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, Docket numbers 96-98 and 95-185, FCC 96-325, [705].
[47] FCC, In the matter of Review of the Commission's Rules regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, WC Docket No 03-173, FCC03-224, [32].
[48] *Verizon Communications Inc v FCC*, 535 US 467 (2002), p 501.

package for another 12 months. This would have several benefits including that it would:

(a) enable efforts and resources to be focussed on issues that are likely to be relevant in the future - rather than on legislative processes and instruments that may well be shortly overtaken. For example, making decisions on glidepaths for indicative pricing has an air of unreality when the indicative prices are unlikely to endure beyond the first year of the glidepath;

(b) limit the disruption to pricing in the industry by avoiding a potential two-stage adjustment in the event that the draft legislation is enacted. Wholesale customers have expressed concern about the impacts of the proposed indicative prices with the shift in relativities between unbundled and resale services. As set out in this submission, Telstra also has concerns about the impacts of the proposed pricing on long standing commercial wholesale practices, such as the shift from a nationally averaged WLR price to geographically deaveraged prices;

(c) allow the level and structure of NBN prices and of legacy services to be addressed together, which will ensure a clearer, more effective migration pathway to the NBN. The ACCC's shift to deaverage WLR and to maintain a deaveraged approach to ULLS seems at odds with the Government's vision for nationally uniform retail and wholesale pricing in the NBN tender. If the NBN Co remains true to this vision and offers nationally averaged prices for its wholesale services, the ACCC's expanded use of deaveraging will mean that wholesale customers and retail end users in urban and provincial areas will suffer "rate shock" in moving to the NBN, which is likely to be a hurdle to mass, early migration of end users. Low access prices for legacy products will also provide an incentive for wholesale customers to squat on the copper network. In particular, the proposed $1 LSS price – which will be by far the lowest in the world – would allow wholesale customers to offer relatively high speed services (up to 20Mbits) at low retail prices which the NBN is likely to have difficulty matching with its bitstream service on a newly built, high cost, high risk fibre network; and

(d) enable time to be spent constructively resolving the Analysys and TEA cost models. Far from being the last turn of costing approach which is about to be abandoned, the debate over the Analysys and TEA models will remain relevant under the new regime because, for the reasons discussed above, forward looking cost approaches will have a role in setting a regulated asset base. Telstra has identified serious errors in the Analysys Model which a 12 month rollover would provide an opportunity to address. The Tribunal's decision on Telstra's Band 2 ULLS Undertaking appeal is also pending and may resolve important issues about how to approach forward looking cost modelling in a telecommunications environment.

F The individual Fixed Line Services

48 **Table 7** presents Telstra's proposed indicative prices, compared with the ACCC's draft indicative prices, the adjusted Analysys Model cost estimates (with demand adjusted tilt, and the TEA Model.

Table 7: Comparison of ACCC and Telstra proposed prices against cost models

Services	ACCC's draft indicative prices	Telstra's proposed indicative prices		Adjusted Analysys model with demand adjusted tilt	TEA Model
ULLS	Zone A $16.90 to $23.60 Zone B $61.50 to $62.70	If not nationally averaged: Zone A $30 Zone B $100		Zone A $35.95 Zone B $121.34	Zone A $46.67 Zone B ≥$99.52
WLR	Zone A $23.30 to $23.80 Zone B not set	$27.60 residential national average	$31.77 business national average	Zone A $35.25 Zone B $123.24	Zone A $47.47 Zone B ≥$101.00 National average ≥$52.34
LCS	13.30 cents to 7.9 cents	9.28 cents		10.55 cents	N/A
PSTN OA and TA	$0.90 to $0.80	1 cent headline (current flagfall / geographic structure)		1.06 cents	N/A
LSS	$1.00	$2.50		N/A	N/A

F.1 WLR and LCS

Key Points

- As the LCS and WLR services and their retail equivalents are acquired as a bundle, access prices for these services need to be assessed together
- WLR and LCS should be nationally averaged in recognition of the retail pricing constraints, to reflect the realities of how WLR is purchased and resupplied by wholesale customers and to promote competition in rural areas where resale is the primary means of entry
- Telstra's proposed indicative prices are pragmatic; the prices for the bundle would be consistent with the level of indicative prices most recently determined by the ACCC for 2008-09, whilst being consistent with the structure of prices preferred in the market. Telstra's proposed prices are also lower than the costs produced by the Analysys cost model and the TEA Model

WLR and LCS are a bundle and need to be assessed together

49 Since the declaration of the LCS in 1997, Telstra and its customers have negotiated terms of access to the LCS and the WLR as a bundle. The bundled relationship between the LCS and WLR service has long been acknowledged by the ACCC itself, including in its final WLR and LCS exemption decision:

"...historically, the LCS and WLR have typically been purchased from Telstra by wholesale customers as a bundle together with PSTN OA and public switched telephone network terminating access (PSTN TA)."[49]

50 Two consequences follow for setting indicative prices for the WLR and LCS:

(a) the same charge structure should be adopted for both: e.g. averaging vs de-averaging; and

(b) the prices should be set having regard to the overall PSTN package.

The ACCC must set indicative prices that apply to Zone B WLR SIOs

51 The market reality of the WLR and LCS dictates that the ACCC must set a price which covers resale activity in Zone B:

(a) there are currently more than [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**] WLR services in operation (**SIOs**) in Zone B. This constitutes more than [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**] of WLR lines;

(b) the distribution of WLR SIOs between Zone A and Zone B and through geotypes broadly follows the distribution of Total PSTN SIOs in each of those zones suggesting that wholesale customers undertake resale activities across the board as illustrated in the following table:

Table 8: Distribution of Total PSTN SIOs and WLR SIOs in Zone A and Zone B

[TC1 c-i-c commences]

	Total PSTN SIOs	Total WLR SIOs
Zone A	CIC	
Zone B	CIC	
% of SIOs in Zone B	CIC	

[TC1 c-i-c ends]

(c) resale is becoming more important in regional areas than in urban areas as ULLS demand expands in urban areas. [**TC2 c-i-c commences**] CIC [**TC2 c-i-c ends**] The extension of ULLS averaging across Zone A may accelerate this trend.

WLR and LCS are acquired nationally and their prices should be nationally averaged

52 WLR and LCS should be nationally averaged as this reflects the commercial basis on which these services are acquired and used:

(a) the LCS and WLR services are acquired across the national market by all wholesale customers that compete on a national basis;

(b) wholesale customers have always negotiated nationally averaged prices as they wish to compete on a national basis for all PSTN SIOs; and

[49] ACCC, Telstra's local carriage service and wholesale line rental exemption applications – Final Decision and Class Exemption, August 2008 , at page 13.

(c) wholesale customers resupply WLR and LCS at nationally uniform prices. While regulated retail pricing constraints apply only to Telstra, they shape retail prices for these services across the market.

53 As set out in Table 9, the top 20 WLR acquirers – accounting for more than 97% of total WLR SIOs - acquire services in both Zone A and Zone B at nationally averaged prices.

Table 9: Distribution of the top 20 WLR acquirers of WLR SIOs by zone, July 2009

[TC2 c-i-c commences]

Wholesale customer	% of WLR SIOs in Zone A	% of WLR SIOs in Zone B	Wholesale customer	% of WLR SIOs in Zone A	% of WLR SIOs in Zone B
A	CIC	[redacted]	K	CIC	[redacted]
B	CIC	[redacted]	L	CIC	[redacted]
C	CIC	[redacted]	M	CIC	[redacted]
D	CIC	[redacted]	N	CIC	[redacted]
E	CIC	[redacted]	O	CIC	[redacted]
F	CIC	[redacted]	P	CIC	[redacted]
G	CIC	[redacted]	Q	CIC	[redacted]
H	CIC	[redacted]	R	CIC	[redacted]
I	CIC	[redacted]	S	CIC	[redacted]
J	CIC	[redacted]	T	CIC	[redacted]

[TC2 c-i-c ends]

54 Setting geographically deaveraged WLR prices will produce a worse competitive outcome than that achieved under the current averaged pricing structure. The higher deaveraged prices in rural and regional areas will reduce resale-based competition – in effect abandoning competitive choice for these customers because resale is the only viable form of competition in those areas.

55 Conversely, the lower price for WLR in urban areas is unlikely to materially promote competition because competition in Zone A is driven by quasi-infrastructure based competition through the ULLS and LSS and infrastructure-based competition through competing fixed and wireless networks. Seventy nine per cent of end users in Zone A are contestable by ULLS-based competitors. This has been acknowledged by the ACCC itself and the Tribunal in granting exemptions in relation to WLR and LCS:

> "In considering whether the granting of exemptions will promote competition, a key issue for the ACCC's assessment is the extent to which access seekers can compete in the downstream market for fixed voice services via use of the ULLS in the absence of regulated access to the LCS and WLR. Increased ULLS-based provision of voice services will be in the LTIE as it will enable competitors to compete in the downstream market on greater dimensions of supply and allow them to dynamically innovate their services, leading to more sustainable competition compared with pure re-sale models

in the longer-term. Increased ULLS-based competition will also stimulate the provision of LCS and WLR from ULLS-based competitors seeking to exploit unused capacity, or to exploit potential economies of scale, on their ULLS-based networks. This will provide increased competitive tension at the wholesale level and constrain Telstra's ability to price its LCS and WLR services at supra-competitive levels in ESAs in respect of which exemption is granted."[50]

56 Deaveraged prices are also unlikely to allow Telstra to recover its costs because of the cumulative impact of government policy and regulatory constraints requiring Telstra to offer pricing parity between rural and urban areas:

(a) there is a substantial gap between Telstra's retail charges for the Homeline Part services (e.g. $31.32 for Homeline Part residential) and the costs in Zone B produced from the Analysys Model ($67.72). Any wholesale price above the nationally uniform retail price will deter take-up in Zone B, and lead to cost under-recovery; and

(b) in Telstra No.3, the Tribunal accepted that the USO did not recover Telstra's costs in rural areas.[51] The total amounts to be contributed to the USF have been determined by the Minister for Broadband, Communications and the Digital Economy as $145,076,237 for 2008/09. The net cost of the USO includes the CAN and some local switching and transmission costs. For the relevant calculations it is necessary to identify the percentage of the USO which should be attributed to the copper CAN. The last detailed estimate for the net cost of the USO that allows these individual elements to be identified was undertaken by the Australian Communications Authority (now the Australian Communications and Media Authority (ACA/ACMA) NUSC Assessment for 1997/98 (ACMA Report)). The ACMA Report identifies that 73% of the total USO cost was related to CAN. The technology mix in the NUSC model is an appropriate basis on which to base USO calculations because it is the only available USO estimate that breaks down the individual costs elements of the USO. Using this percentage as an assumption, Telstra has used $105,905,653 of the USO for the CAN. Dividing this amount by the number of lines in Zone B (ie C-I-C) leads to a subsidy of C-I-C per line per month.

57 Even if the ACCC determines that ULLS should remain deaveraged, the WLR and LCS should remain nationally averaged. The distorting effects of deaveraged WLR prices are likely to be even greater than for deaveraged ULLS pricing (as was considered in Telstra No. 3). ULLS is one of many inputs (including DSLAM hardware, transmission capacity, switching equipment and management systems) that are required by an access seeker to enable the delivery of end to end calling and broadband services to their end users. By contrast, the bundle of WLR and LCS is an unbranded version of the price controlled retail products. Wholesale customers acquiring the WLR/LCS bundle require minimal investment compared to those acquiring ULLS. The differing characteristics of WLR/LCS and ULLS are illustrated in the table below.

[50] ACCC, Telstra's local carriage service and wholesale line rental exemption applications – Final Decision and Class Exemption, August 2008, p 121.
[51] Telstra Corporation Ltd (No 3) (2007) ATPR 42 – 160, [239].

Table 10: Access seeker infrastructure investment requirements – resale versus ULLS based supply[52]

In addition to the access service, access seekers must supply…	WLR and LCS	ULLS
Marketing; Advertising; and Billing systems	✓	✓
Responsibility for management of end to end service delivery	×	✓
Own DSLAM/MSAN	×	✓
TEBA access (including sub-rack and rack space)	×	✓
Tie cable, signal cabling to the racks	×	✓
Alarm and power distribution units	×	✓
Voice Card	×	✓
Transmission (Backhaul)	×	✓
Switching	×	✓
Local Number allocation and facilitation of Local Number Portability	×	✓
Management system; management communication network hardware	×	✓

58 The costs that the wholesale customer faces in providing downstream services are also the same whether the WLR/LCS bundle is acquired in the most remote rural exchange, or the densest CBD exchange. A resale based entrant has only to acquire the WLR and LCS averaged bundle, connect to Telstra Wholesale's billing system and provide their own end user billing system, in order to supply services to their end users in any ESA in Australia. This is an enduring and fundamental difference between WLR and LCS, and the ULLS.

59 As Table 10 shows, WLR cannot simply be characterised as ULLS with added voice conditioning. WLR is much more than a voice conditioned ULLS line (which was what the former Conditioned Local Loop Service (CLLS) provided). The huge disparity in take-up between the former CLLS and the WLR clearly illustrates that viewing the WLR as simply a conditioned ULLS line fundamentally misrepresents the two services' relative offerings. A wholesale customer competing using resale services such as WLR and LCS has a very different business profile – and makes very different investments – than a wholesale customer using ULLS (or the withdrawn CLLS).

Telstra's proposed indicative prices

60 Telstra proposes nationally averaged indicative prices for WLR and LCS together (see Table 10). Telstra's proposed prices are derived from the ACCC's current RMRC based indicative prices but have been rebalanced to reflect wholesale

[52] Table 10 illustrates the access seeker inputs required to deliver end to end PSTN equivalent voice calling and access services based on whether WLR/LCS is acquired or ULLS. If the access seeker was also providing some form of broadband service over the ULLS (which is more typical) then there would be additional inputs required on top of those necessary to delivery voice services. These would include broadband card; broadband access server; DNS access; etc.

customers' preferred (and more efficient) pricing structure of relatively higher WLR prices and relatively lower LCS prices.[53]

61 Telstra's proposed prices:

(a) across the bundle, are consistent with the ACCC's most recent indicative prices;

(b) reflect wholesale customer's preferred structure for WLR and LCS prices, in which usage is incentivised through a relatively low per call charge and a higher access charge;

(c) are consistent with the structure of the TSLRIC+-based estimates of relative WLR and LCS costs (that is, a relatively high WLR price and low LCS price), unlike the ACCC's 2008-09 RMRC-based indicative prices; and

(d) as a bundle, provide lower prices than those supported by even the unadjusted Analysys Model, as well as the adjusted Analysys Model and the TEA Model.

Table 11: Comparison of indicative prices with model outputs

	2008-09 indicative prices	Telstra proposed indicative prices	Unadjusted Analysys Model	Adjusted Analysys cost model prices with demand adjusted tilt	TEA Model prices (with LCS cost from adjusted Analysys Model)
Effective WLR and LCS bundle price [54]	$33.45	$33.33	$33.80	$55.92	$56.77
WLR price	*Residential*: $25.67 *Business*: $26.93	*Residential*: $27.60 *Business*: $31.77	$30.72	$51.49	$52.34
LCS price	17.36 cents	9.28 cents	7.33 cents	10.55 cents	10.55 cents

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the ACCC's model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the ACCC's model

62 WLR indicative prices should be net of taxes, including ACT Utilities Tax (see Attachment D).

Adjustment path

63 If the ACCC adopts Telstra's proposed indicative prices for the WLR and LCS, no adjustment path will be necessary as the effective bundle price is consistent with current price levels.

[53] The primary difference between Telstra's proposed indicative prices and the ACCC's current RMRC-based indicative prices is that, in Telstra's preferred RMRC Methodology, Telstra deducts average basic access retail costs from the local call starting price, rather than deducting these costs from the retail basic access price. In 2006, this approach generated the price points set out in Telstra's proposed indicative prices for the WLR and LCS. These prices have been utilized as reference points for commercial negotiations since 2006.

54 [TC1 c-i-c commences [CIC [redacted] [TC1 c-i-c ends]

F.2 PSTN OA and PSTN TA

Key Points

- Two-part (flagfall and per minute) and geographically deaveraged pricing should be retained as this structure best reflects the underlying cost structure and downstream retail pricing.
- A headline price for PSTN OA and TA should be maintained at 1cpm as this is consistent with revised Analysys Model outputs, current commercial pricing, international benchmarking undertaken for Telstra by Synergies, and the ACCC's own benchmarking and this price is realistic given the significant declines in PSTN volumes

A two part price should be maintained

64 The use of a flagfall component for PSTN OA and TA charges has been a feature of the Australian regulatory and commercial landscape since 1991 when competition was first introduced. Retaining the flagfall has proper regard to commercial reality and economic efficiency; enables the recovery of fixed costs by fixed charges and aligns retail and wholesale prices.

65 PSTN OA and TA costs are largely fixed or traffic insensitive in three respects:

(a) in Australia, the costs of supplying PSTN OA and TA are predominantly fixed inter exchange network (IEN) costs such as the trenching, conduits, buildings, cables etc;

(b) of the variable call costs, a proportion are incurred regardless of whether the call is successful or the duration of the call such as call set up and call ring out time; and

(c) of the variable costs of successful calls, a proportion are fixed and insensitive to call duration such as call tear down.

66 By recovering fixed costs through a fixed charging component, wholesale customers are encouraged to efficiently utilise the network. In an environment of declining PSTN traffic values, it is more efficient to incentivise users of the service to grow traffic minutes through low variable charges. A two part tariff approach is generally recognised as international best practice[55] and is supported by the OECD.[56]

PSTN OA and TA should continue to be charged on a geographically deaveraged basis

67 Downstream services (other than local calls discussed below under capped local calls) are not the subject of nationally averaged regulated price constraints, unlike retail services supplied using WLR, LCS and the ULLS. Therefore, PSTN OA

[55] At the very least, is widely spread. See paragraph 111 and Table 18 of Synergies Report, **Submission Supporting Documents, Volume 1, Document 1.4** to this submission.

[56] See OECD, Working Party on Telecommunication and Information Service Policies., Interconnection and Local Competition 7 February 2001 at page 22 and see also OPTA, *Consultation document, Tariff regulation for interconnection and special access services, The introduction of a new regulatory concept*, 21 December 2000, at pages 28 – 29. An alternative approach to a two part tariff, adopted in New Zealand to achieve a similar effect, is a minimum chargeable call duration, which clearly promotes the recovering of fixed costs. NZCC, Determination on TelstraClear Application for Determination for Designated Access Service, Decision 477, 5 November 2002, p 21-22.

and TA prices should be efficiently aligned to reflect costs between different geographic areas.

Costs of supplying PSTN OA and TA is higher in rural areas than it is in urban areas

68 The ACCC's only justification for averaged prices for PSTN OA and TA is that the "transit costs for the call throughout the network are largely the same regardless of the geographic location of the end-user". This is incorrect. The costs of supplying PSTN OA and TA vary considerably by location.

69 Costs differ between urban and regional/rural areas for the following reasons:

(a) *switching stages* – switching costs increase with the number of exchanges included in a route and the costs of switching equipment.[57] The best proxy for switching costs is the number of network elements required to provide the PSTN OA and TA service to and from the interconnection points. The CCAs structure cannot be relied on to average out PSTN OA and TA costs. Set out in **Submission Supporting Documents**, **Volume 1, Document 1.13** is a table which describes the geographic make up of each of the 66 CCAs in Australia. It is clear from that table that a majority of the CCAs are made up of rural and remote exchanges only whereas just 3 CCAs have exchanges in all four bands. The CCAs structure cannot be relied on to average out PSTN OA and TA costs. PSTN OA and TA calls originating or terminating in those CCAs with regional only exchanges will be required to pass through a greater number of switching stages to reach the point of interconnection – with the consequent increase in costs;

(b) *line lengths* – the second key costs driver is transmission costs which is made up of trenching costs and transmission equipment costs.[58] Distance between customers and exchanges (line lengths) is the most significant factor influencing transmission costs. There are large differences in population and density across Australia. There are almost 42,000 times more SIOs per square kilometre in Band 1 than there and in Band 4 and more than 3000 times more SIOs per square kilometre in band 2 than there are in Band 4.[59] As a result, line lengths are longer in rural areas than urban areas so rural costs are higher;

(c) *less traffic demand* – there is less traffic in rural areas and traffic volume has a significant effect on costs (traffic demand is in effect, the cost denominator). The table below demonstrates that the CBD and metropolitan charging zones have a significantly higher volume of traffic per SIO than do the provincial and rural charging zones; and

Table 12: Traffic minutes per SIO in each band

	CBD	Metro	Provincial	Rural
Average traffic per SIO relative to metropolitan charging zone	175%	100%	60%	57%

[57] See Synergies Report, **Submission Supporting Documents, Volume 1, Document 1.4**, section 3.1.2.
[58] See Synergies Report , **Submission Supporting Documents, Volume `, Document 1.4**, section 3.1.1.
[59] Telstra's SIOs per square kilometre in each band is set out in **Submission Supporting Documents, Volume 1, Document 1.13**.

(d) *network topology* - costs will further vary due to differences in the efficient network topography between regions. For example, due to the greater distances calls must transit between the end user and a Point of Interconnect (**PoI**) in rural/regional areas, different network designs (such as the use of SDH transmission rings) are used to ensure network integrity. As a result, impact of distance on cost is higher in rural areas than urban areas where rings are shorter.

70 As Table 13 based on TSLRIC+ costs analysis undertaken for the PIE II model shows, remote and rural areas account for more than [**TC1 c-i-c commences**][CIC [**TC1 c-i-c ends**] of costs but these areas account for only just over [**TC1 c-i-c commences**][CIC [**TC1 c-i-c ends**] of total PSTN OA and TA minutes.

Table 13: Traffic and cost distribution

[**TC1 c-i-c commences**]

Charging bands	PSTN OA and TA traffic distribution (actual for 2008 / 09)	Estimate of the cost distribution from PIE II
CBD	[redacted]	[redacted]
Metro	[redacted]	[redacted]
Provincial	[redacted]	[redacted]
Rural	[redacted]	[redacted]

[**TC1 c-i-c ends**]

71 Synergies undertook a benchmarking study (see **Submission Supporting Documents Volume 1, Document 1.4**) of PSTN OA and TA prices. Synergies identified a number of important factors which required adjustments to any comparison of the 'raw' PSTN OA and TA prices, of which the most significant were identified as population density and dispersal and WACC (which they derived from an Ovum WACC benchmark undertaken for the ACCC).

72 Synergies' benchmarking had already found that the current Australian PSTN OA and TA price (1.04) was already significantly below the international average. As set out in Table 14, the adjustments for population density/dispersal and WACC saw the PSTN OA and TA prices for all countries rise relative to Australia. Based on global declines in PSTN traffic volumes and recent examples of cost-based increases in regulated prices, Synergies concluded that price declines in overseas interconnection prices are unlikely to continue, or will be at a much slower rate. This means that the ACCC's proposed indicative PSTN OA and TA prices would continue to be very low relative to all other benchmarked prices throughout the period of the prices (to 2011-2012).

Table 14: Adjusted benchmark prices

Benchmark	Starting point blended price (cents)	Traffic density (cents) [a]	Line length (cents) [a]	WACC adjustment (cents) [a]	Adjusted prices (cents)	Distance above ACCC price (%)
Australia - ACCC cost model price	0.80	-	-	-	0.80	-
United Kingdom	0.50	0.06	0.27	0.00	0.84	5
Ireland	0.74	0.08	0.13	0.04	0.99	23
Denmark	0.66	0.11	0.19	0.04	1.00	25
Current Australian OTA indicative price	1.04	-	-	-	1.04	30
Sweden	0.90	0.05	0.09	0.08	1.12	41
Switzerland	0.68	0.16	0.29	0.03	1.17	47
United States	1.10	0.10	0.09	n/a	1.30	62
Italy	0.85	0.17	0.30	0.08	1.40	75
Norway	1.28	0.03	0.05	0.07	1.43	79
France	1.14	0.05	0.27	0.07	1.54	92
Germany	0.85	0.24	0.43	0.04	1.57	96
Portugal	1.18	0.14	0.25	0.06	1.62	103
Spain	1.29	0.16	0.27	0.06	1.78	123
Austria	1.29	0.16	0.28	0.11	1.83	129
Poland	1.63	0.21	0.37	0.08	2.29	187
Mexico	2.11	0.09	0.14	n/a	2.34	192
Netherlands	1.23	0.32	0.95	0.06	2.55	219
Belgium	1.12	0.50	0.89	0.04	2.56	220
Chile	2.84	0.04	0.04	n/a	2.92	264
Brazil	4.30	0.07	0.09	n/a	4.47	459
Peru	5.00	0.05	0.04	n/a	5.09	536
Finland	4.74	0.11	0.16	0.15	5.17	546

73 The New Zealand Commerce Commission has acknowledged that interconnection charges in overseas markets have been structured to reflect distance gradients.[60] This can be done either through geographic deaveraging, as it has traditionally been done in Australia, or through linking PSTN OA and TA prices to switching stages (local, single tandem or double tandem). In the Australian environment, where transmission costs and network topology vary considerably between dense urban areas and spare rural and remote areas, the better way to reflect distance cost gradients is to geographically deaverage the PSTN OA and TA charges.

Adverse impacts of deaveraging

74 Averaged PSTN interconnection prices will send incorrect signals about cost of PSTN OA and TA, especially in non-metro areas as calls that transit longer than

[60] Determination of the TelstraClear application for a Determination for Designated Access Service, Decision 477, November 2002, [98].

the average distances (typically rural) are subsidised by calls over shorter transit links than the average (typically metro).

75 Further, wholesale customers will obtain a windfall gain in respect of calls terminating in rural areas which will be exacerbated by adopting deaveraged prices for ULLS. This is because wholesale customers can bypass Telstra's network by cherry picking cheap ULLS costs in urban areas whilst acquiring PSTN TA in rural areas (to provide long distance rural services to metro end-customers) at averaged prices that are lower than the true costs of providing those services, in essence achieving a double benefit. Further, Telstra will be impacted at the retail level because as rural origination prices fall, corresponding long distance retail prices will fall and Telstra will be required to lower its retail costs further, eroding its ability to recover costs.

76 Adopting a deaveraged construct is also likely to be circumvented by commercial arbitrage. Telstra has agreements in place with certain wholesale customers to maintain deaveraged prices. If the ACCC were to move to averaged prices, wholesale customers not on deaveraged commercial agreements could still obtain the benefit of those deaveraged commercial rates in CBD and metropolitan areas by transiting traffic via those wholesale customers with deaveraged agreements in place. For example, if Carrier A had in place a deaveraged commercial rate and Carrier B did not, Carrier B could benefit from averaged rates with Telstra in rural areas. It could then send its traffic to Carrier A to terminate on Telstra's network in urban areas to take advantage of Carrier A's lower deaveraged rate. A move to a deaveraged structure (whilst existing de-averaged contracts are on foot) clearly provides an opportunity for arbitrage which would have seriously detrimental effects on Telstra's ability to recover costs – and will, in effect, ensure a lower headline rate than that considered appropriate by the ACCC.

The impact of capped wholesale local call charges should be considered

77 Capped wholesale local interconnection charges have been a feature of wholesale agreements for over 15 years in Australia. Every agreement Telstra has with wholesale customers who have their own local access network covers local interconnection **[TC1 c-i-c commences]**CIC [redacted] **[TC1 c-i-c ends]**. The ACCC has referred to commercially agreed charges for these services as capped local calls (**CLCs**).[61] The ACCC should take into account the operation of the CLCs in setting the headline rate per unit in its proposed indicative pricing. To do otherwise would fail to take into account central and longstanding commercial arrangements in the market. This will impact on Telstra's ability to recover its costs and/or is likely to necessitate a renegotiation of every interconnection agreement across the Australian industry.

78 The costs of the call minutes in excess of the cap for each CLC would not be recovered across the variable charges for other PSTN OA and TA services to deal with recovery of Telstra's direct costs. In December 2004, in determining that Telstra's PSTN OA and TA undertaking was reasonable, the ACCC adopted this approach: "(T)he Commission has determined that it is appropriate to include CLCs in the traffic profile for the purpose of assessing these undertakings". Telstra estimates that on current CLC volumes, these calls account for **[TC1 c-i-c commences]**CIC [redacted] **[TC1 c-i-c ends]** of total PSTN OA and TA minutes, and the **[TC1 c-i-**

[61] *Assessment of Telstra's undertakings for PSTN, ULLS and LCS, Draft decision*, October 2004, 33.

c commences] typical CIC [**TC1 c-i-c ends**] cap results in [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**] of CLC minutes not being charged for. These excess CLC minutes need to be taken into account (as previously acknowledged by the ACCC) in setting PSTN OA and TA charges that enable cost recovery across all minutes.

The ACCC should adopt a 1cpm headline rate for the PSTN OA and TA services

79 The ACCC should adopt a 1cpm headline rate (and the current pricing structure) for the following reasons:

(a) it would be consistent with current pricing and the long held structure of prices in the market.

(b) it would be consistent with the outputs of the corrected Analysys costs model.

ACCC proposed indicative prices	Telstra proposed indicative prices	Adjusted Analysys Model with demand adjusted tilt
0.90 → 0.80 cents	• 1 cpm headline • current geographic bands • current flagfall structure	1.06 cents

(c) it would be within the range of the Analysys Mason benchmarks, in particular when differences in services offerings and cost differences are properly considered. Further, as outlined in the Synergies' report and in Table 14[62]:

(i) only two of the countries (Ireland and the UK) used in the Analysys Mason study have lower PSTN OA and TA prices than 1cpm; and

(ii) the ACCC's proposed indicative price of 0.80 would be the lowest amongst the benchmarked countries,

after making a limited number of adjustments objectively justified by differences between the benchmarked countries, such as population densities and WACC adjustments derived from Ovum's report to the ACCC.

(d) it would appropriately recognise the sharp decline in traffic volumes [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**] since 2006) which has an upward pressure on prices.

(e) the ACCC's approach to both the level of PSTN OA and TA prices needs to be considered in the context of MTAS. The relationship between the two services has been noted in a variety of contexts. For example, the European Commission has noted:

> "Significant divergences in the regulatory treatment of fixed and mobile termination rates create fundamental competitive distortions."[63]

[62] Submission Supporting Documents, Volume 1, Document 1.4.
[63] European Commission, Recommendations on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU, 7 May 2009, at para 3.

While the ACCC has maintained higher MTAS prices and kept them constant for three years, it is proposing to widen the gap between MTAS and OTA by proposing very low PSTN OA and TA prices descending for three years.

The ACCC's proposed adjustment path for PSTN OA and TA

80 If the ACCC proceeds with the indicative prices proposed in its draft report, its proposed adjustment path should be modified as it would fail to mitigate the adverse effects of rate shock.

81 The ACCC's proposed adjustment path of 0.9 cpm in 2009-10, 0.85 cpm in 2010-11 and 0.80 cpm in 2011-12, would lead to significant market disruption and price shock because it fails to recognise the 'rate shock' which results from abandoning at the beginning of the proposed glidepath both geographic deaveraging and the use of flagfall and end-minute-of-use pricing elements. For example, a standard three minute call in a rural area would today attract a PSTN OA or TA charge of 13.04c on 2006/07 indicative prices[64] as compared to 2.7c on the proposed indicative prices for 2009/10. This five-fold decline in price for a standard rural call would have significant effects on Telstra's ability to recover its costs and would result in a very significant rate shock with variable impacts on access seekers.

82 If the ACCC remains minded to transition from the current 1cpm headline rate to a 0.8cpm headline rate, the geographic and flagfall structural elements of the pricing should be retained.

83 Table 15 details a transition path for the PSTN OA and TA prices that would minimise disruption and price shock caused by moving to a 0.8 cpm headline rate for PSTN OA and TA, by maintaining the well-established price component structures.

Table 15: Telstra's Proposed Adjustment Path if ACCC indicative headline prices adopted

2009-10	**Flagfall**	**EMOU charge**	**Headline rate**
CBD	0.27	0.26	0.37
Metro	0.34	0.32	0.46
Provincial	0.7	0.67	0.96
Rural	3.62	3.49	4.98
Average Headline			*0.93*
2010-11	**Flagfall**	**EMOU charge**	**Headline rate**
CBD	0.25	0.24	0.34
Metro	0.31	0.3	0.43
Provincial	0.64	0.62	0.89
Rural	3.34	3.22	4.61
Average Headline			*0.86*

[64] Applying a flagfall of 2.06c and EMOU of 3.66c.

2011-12	Flagfall	EMOU charge	Headline rate
CBD	0.23	0.22	0.32
Metro	0.29	0.28	0.40
Provincial	0.60	0.58	0.82
Rural	3.11	3.00	4.28
Average Headline			*0.80*

84 If the ACCC is not minded to agree with Telstra's position that the current geographically deaveraged and/or two-part price structures be maintained in transition to the new headline rate; then the single, averaged price construct should not be introduced before a year into the glidepath. **[TC1 c-i-c commences** [CIC [redacted] **TC1 c-i-c ends]** Implementing an averaged indicative price for some customers whilst other customers have a deaveraged commercial price on foot would lead to significant arbitrage opportunities.

F.3 ULLS

Key points

- Only a nationally averaged ULLS price will allow Telstra to fully recover its costs of providing ULLS given the regulatory constraints on downstream retail prices
- A nationally averaged ULLS price will promote competition by facilitating ULLS uptake in Zone B regional centres while still allowing ULLS competition in Zone A
- If the ACCC adheres to its two zone approach, Telstra's proposed indicative prices of $30 for Zone A and $100 for Zone B are below the costs produced by the TEA Model and the corrected Analysys Model.

ULLS prices should be set on a nationally averaged basis

85 As with its approach to Zone B WLR pricing, the ACCC has mistakenly assumed that Zone A represented the outer boundary of feasible ULLS competition. While the proportion of ULLS lines outside the main metropolitan areas has been low in the past, competition is developing incrementally, spreading out from urban to regional areas. A nationally averaged ULLS price is more likely to promote competition in downstream markets than the ACCC's deaveraged price because:

(a) the evidence Telstra provided in the ULLS Undertaking shows that wholesale customers can compete in the former Band 1 and Band 2 areas at an averaged price of $30;

(b) there are already a material number of ULLS lines in Band 3 – currently approximately 9,000[65] with an increase of over 60% since June 2008. As

[65] ACCC, Snapshot of Telstra's customer access network as at 30 June 2009.

Table 16 shows, the Band 3 growth rates have been accelerating and are faster than in any other band[66]. As ULLS prices in Band 3 are currently over $31, it follows that ULLS prices at $30 will continue to mean ULLS is economically feasible in regional centres within Zone A; and

(c) Zone B includes sizeable towns such as Grafton, Mount Gambier, Broome and Dalby (as a result of Band 3 allocations to Zone B). As Table 16 also shows, the growth rates in these "bands 3 and 4 in Zone B" areas have been accelerating. The ACCC's deaveraged pricing will nearly double the price of ULLS, which is likely to render ULLS economically unfeasible in Zone B.

Table 16: Percentage growth since September 2007

[TC2 c-i-c commences]

	Sep 07	Dec 07	Mar 08	Jun 08	Sep 08	Dec 08	Mar 09	Jun 09
Zone A								
Band 1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Band 2	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Band 3	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Band 4	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Zone B								
Band 3	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Band 4	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[TC2 c-i-c ends]

Telstra's proposed indicative prices[67]

86 The shift from 4 bands to 2 zones is a step in the right direction, but does not go far enough. Quarantining the high cost SIOs in Zone B still exposes Telstra to risks of cream skimming in Zone A, even though the Zone A price now averages across to old bands 1, 2 and 3. As discussed above, the step forward towards more ULLS averaging is offset by the step backwards from national averaging to a Zone A/B structure.

87 The draft IPP Determination relies upon international benchmarking undertaken by Ovum in setting the indicative monthly access charge for the ULLS. The Ovum report fails to meet the required standards for the reasons explored in the recent ULLS Band 2 Undertaking appeal and in the reports prepared by Ingenious Consulting Network (**Ingenious**).[68] The Ingenious reports are included in the **Submission Supporting Documents , Volume 1 (Documents 1.6 and 1.7)**.

[66] Between September 2007 and June 2009, ULLS grew in Band 1 by C-I-C, in Band 2 by C-I-C%, in "Band 3 in Zone A" by C-I-C, in "Band 3 in Zone B" by C-I-C and in "Band 4 in Zone B" by C-I-C

[67] Connection charges are addressed in Attachment D.

[68] Ingenious Consulting Network, *The Use of International Benchmarking in Setting Interconnection Rates*, December 2008 (Submission Supporting Documents, Volume 1, Document 1.6), and Response to Ovum's report "Telstra ULLS Undertaking – ULLS International Benchmarking", March 2009 (Submission Supporting Documents, Volume 1, Document 1.7).

88 The report prepared by Ingenious shows that there are 12 issues pertinent to the question of whether international benchmarking can be relied upon in determining ULLS pricing. Of the 12, Ovum partially addressed only four. On its own concession, Ovum noted at the conclusion of its report that the Ingenious report raises a number of factors that are relevant to benchmarking ULLS charges internationally and that comparing "like-for-like data for all these factors would require a more thorough review and analysis of the matters raised than has been possible in this report" [69].

89 The network costs estimated by the TEA Model are:[70]

Table 17: TEA Model Costs for Bands 1 – 3 and nationally averaged

Pricing structure	TEA Model costs
Band 1	$12.65
Band 2	$44.90
Band 3	$83.21
nationally averaged	>$51.51

Note: As the TEA Model does not include Band 4, the averaged price is across bands 1, 2 and 3. If Band 4 had been costed in the TEA Model, the national average would be higher.

90 The costs produced by the TEA Model for the ACCC's Zones A and B are as follows:

Table 18: TEA Model Costs for Zone A and Zone B

Zone	TEA Model costs
Zone A	$46.67
Zone B	>$99.52

NB: As the TEA Model does not include Band 4, the Zone B calculation is based on the costs in the band 3 areas allocated to Zone B. The costs of Zone B would likely be higher if Band 4 had been included in the TEA Model.

91 Table 19 compares costs from the adjusted Analysys Model with the ACCC's tilt, the adjusted Analysys Model with the tilt adjusted for the ACCC's declining traffic volumes, the TEA Model, and the TEA Model adjusted for some ACCC inputs.

"[69] Ingenious Consulting Network, Response to Ovum's report "Telstra ULLS Undertaking – ULLS International Benchmarking", March 2009 (Submission Supporting Documents, Volume 1, Document 1.7), p 5.

[70] The cost of ULLS in Band 4 are at least the cost of providing the service in Band 3. Conservatively, Telstra has used the Band 3 costs to estimate the Band 4 ULLS costs.

Table 19: Nationally averaged costs from the adjusted Analysys Model and TEA Model

ACCC proposed indicative price	Telstra proposed indicative price	Adjusted Analysys Model with ACCC inputs	Adjusted Analysys with demand adjusted tilt	TEA Model
		$41.17 (Nationally averaged)	$51.49 (Nationally averaged)	$51.51 (Nationally averaged)
Zone A: $16.90 → $23.60	$30	$28.99	$35.95	$46.67
Zone B: $61.50 → $62.70	$100	$96.03	$121.34	>$99.52

92 The Analysys Model outputs also do not include ULLS specific costs. The ACCC has estimated these at $1, although as discussed in Attachment D, Telstra considers that the ACCC's specific costs model understates these costs.

93 If the ACCC is not minded to adopt a nationally averaged price, Telstra proposes that the Zone A price should be $30 and the Zone B price $100 for the following reasons:

(a) these prices fall at the lower end of the range represented by the adjusted Analysys Model and the TEA Model;

(b) the $30 Zone A price will be familiar to the industry as it corresponds with the ULLS Band 2 Undertaking price sought by Telstra. As Table 20 shows, the overwhelming proportion of ULLS lines is in Band 2.

Table 20: Breakdown of ULLS lines by Zones

[**TC1 c-i-c commences**]

	June 09	
Band 1	29,873	CIC
Band 2	652,974	CIC
Band 3	CIC	
Band 4	CIC	
	CIC	

[**TC1 c-i-c ends**]

Transition price path

94 For the reasons set out in Section C above, Telstra considers that the ULLS price should be nationally averaged. However, if the ACCC is minded to move to it two

zone structure then Telstra considers that the $30 price for Zone A and a $100 price for Zone B proposed by Telstra takes account of the ACCC's concerns as to price variation by choosing a price point between the current prices and the TSLRIC+ cost of ULLS. Further to this, the industry has been on notice that Telstra does not consider that the access seekers are likely to suffer any price shock if the Zone A price is set at $30, or if the Zone B price is set at $100.

95 In the alternative, if the ACCC does not accept Telstra's above submission then, Telstra considers that the ACCC's proposed transition price path is inappropriate, particularly because there already has been a dramatic variation in the price between the 2008-09 price across each band and the 2009-10 and 2010-11 prices across Zone A. Telstra proposes a transitions price path that better smooths the transition over the relevant years, takes into account available provisioning and billing functionality, and more equitably balances the interests of access seekers and Telstra. Accordingly, Telstra submits that the ACCC should adopt the following transition price path:

Table 21: Telstra proposed transition prices

Transitional Band	2008-09	2009-10	2010-11	2011-12	ACCC Zone
A1	$ 6.60	$ 10.10	$ 15.50	$ 23.60	A
A2	$ 16.00	$ 18.30	$ 20.80		
A3	$ 33.30[a]	$ 29.70	$ 26.50		
B	$ 42.70[b]	$ 48.60	$ 55.20	$ 62.70	B

Note: a. Zone A3 price for 2008-09 calculated as weighted average of Telstra Band 3 ($31.30) and Telstra Band 4 ([redacted]) prices – weights are 99.1% and 0.9% respectively.
b. Zone B price for 2008-09 calculated as for Zone A3, but with weights of 95.0% and 5.0% respectively for Telstra Band 3 and Telstra Band 4.
c. All prices are rounded up to the nearest ten cents as the final calculation step.

Where the transitional bands are as follows:

(a) Zone A1 comprises the ESAs in Telstra Band 1;

(b) Zone A2 comprises the ESAs in Telstra Band 2;

(c) Zone A3 comprises the Telstra Band 3 and Band 4 ESAs that are to be included in Zone A; and

(d) Zone B comprises the Telstra Band 3 and Band 4 ESAs that are to be included in Zone B.

96 By adopting the above transition price path, the ACCC will evenly spread the price shock effects for access seekers of the ACCC's indicative prices over the three years of the transition.

Table 22: Telstra's proposed transition prices: price effects

Transitional Band	2008-09	2009-10	2010-11	2011-12	ACCC Zone
A1	n.a	53.0%	53.5%	52.3%	A
A2	n.a	14.4%	13.7%	13.5%	
A3	n.a	-10.8%	-10.8%	-10.9%	
B	n.a	13.8%	13.6%	13.6%	B

Recovery of ACT utilities tax

97 Telstra's view is that the ACT's Utilities Tax should be recovered by way of a surcharge for those services supplied in the ACT and in Jervis Bay, rather than adding those costs to the general pool of costs to be recovered Australia wide.

98 If, however, the ACCC decides to include an amount and/or methodology in the draft IPP Determination, Telstra has set out a proposed approach at Attachment D.

99 The draft IPP Determination should expressly state that the annual charges are exclusive of GST and other taxes.

F.4 LSS

Key Points

- In principle, the LSS monthly charge should include a contribution to line costs. If the ACCC is not minded to accept this position, the LSS price should be at least $2.50 per LSS per month
- Benchmarking LSS prices in similar jurisdictions demonstrates that the ACCC's proposed LSS price is not in line with prices in other jurisdictions
- If the ACCC decides to set LSS prices at $1.00, a glidepath would be consistent with the approach taken to price adjustments for other Fixed Line Services and with balancing wholesale customer interests and Telstra's legitimate business interests

Specific Cost Model

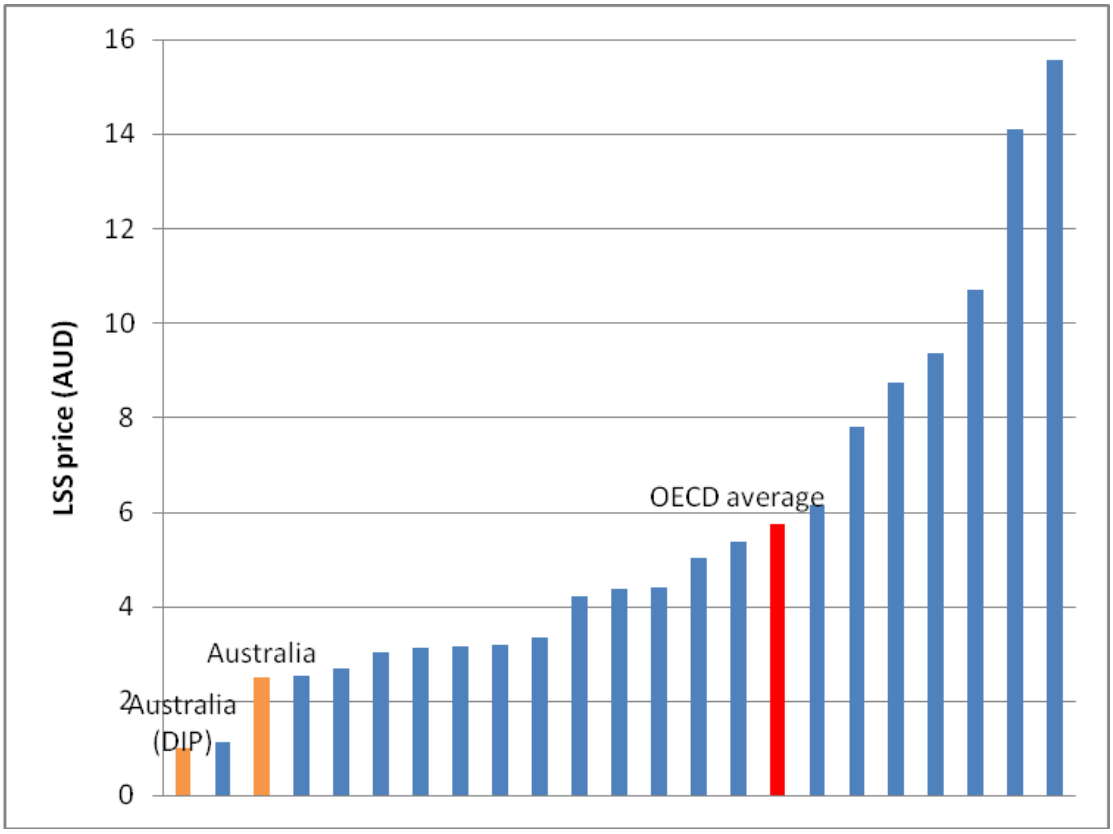
100 Telstra considers the ACCC's specific cost model underestimates LSS costs: see Attachment D.

Monthly Charges[71]

101 If the ACCC decides, despite Telstra's submissions in relation to the appropriateness of international benchmarking in section B.4, to have regard to international benchmarks, it should also have regard to the recently released OECD Communications Outlook 2009[72] (OECD Report). Australia's current regulated LSS price of $2.50 per month is already one of the lowest in the OECD (see Figure 2 below). The proposed LSS monthly price is 83% lower than the OECD average and 61% lower than the price in the UK, which is a traditional comparator to Australia given the similarities in the regulatory regimes.

[71] Connection charges are addressed in Attachment E
[72] See: www.oecd.org/sti/telecom/outlook.

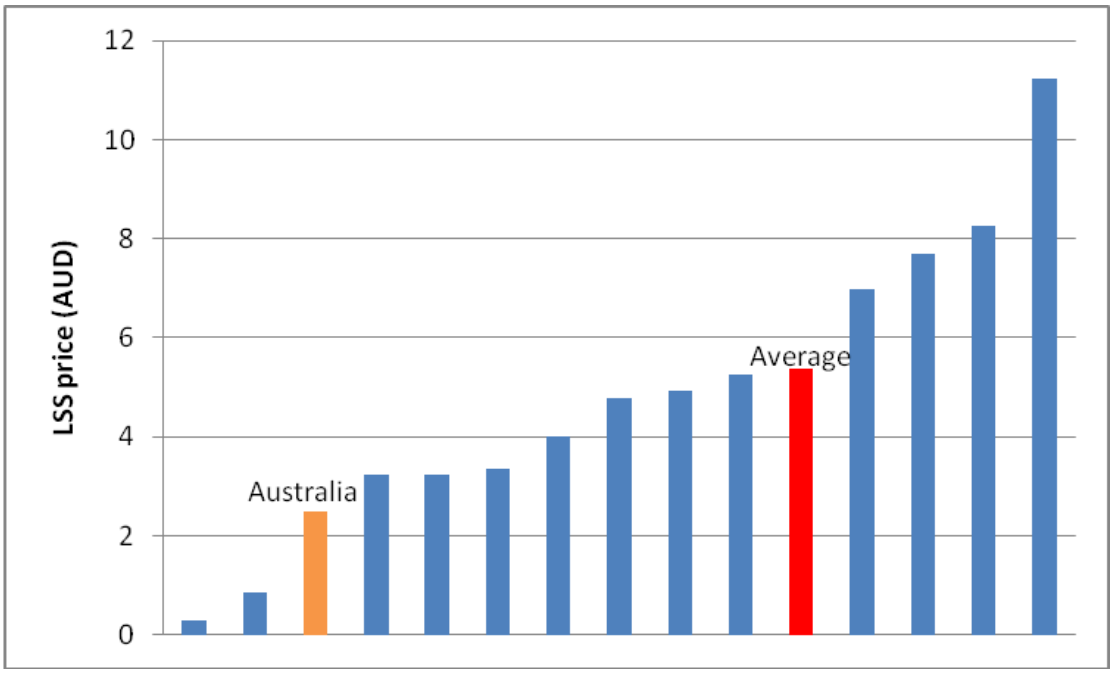
Figure 2: Comparison of OECD LSS monthly charges



Note: Australia (DIP) is the ACCC draft indicative price

102 Even the Analysys Mason benchmarking report, which fails to account for many of the fundamental cost differences between Australia and the comparator jurisdictions (likely overstating Australia's relative price), shows that Australia's current LSS monthly charges are amongst the lowest in the jurisdictions compared:

Figure 3: Analysys Mason comparison of international LSS monthly charges



103 The ACCC has argued that LSS prices need to be considered in combination with the price for the WLR service, in order to provide a more accurate comparison:

> "When WLR charges are included, the simple average access revenue for LSS lines:
>
> - across all observed countries with available data is AUD$26.23 per month;
> - across comparable countries is AUD$22.54 per month,
>
> which can be contrasted with the ACCC proposed indicative charges for WLR and LSS, which total to $24.30 per month."[73]

104 There are two flaws with the ACCC's analysis. First, the ACCC ignores the fact that the WLR service is sold as part of a fixed voice bundle with the LCS, as well as with other fixed voice inputs (both regulated and unregulated) such as the PSTN OA and TA services. Thus, it is at best only a partial measure of the cost of supplying a bundle of fixed voice and wholesale services.

105 Second, wholesale customers do not have to acquire the WLR/LCS bundle of wholesale basic access services in order to provide a LSS-based service to their end users. Only a small minority ([**TC2 c-i-c commences**]CIC [**TC2 c-i-c ends**]) of LSS lines are acquired by a wholesale customer that also acquires a WLR service for that same line. As Table 23 below shows, in the vast majority of cases, the underlying PSTN service on which the LSS-based service relies is supplied by Telstra Retail.

[73] Annual Charges Consultation Paper, p 10.

Table 23: LSS lines by underlying PSTN service provider

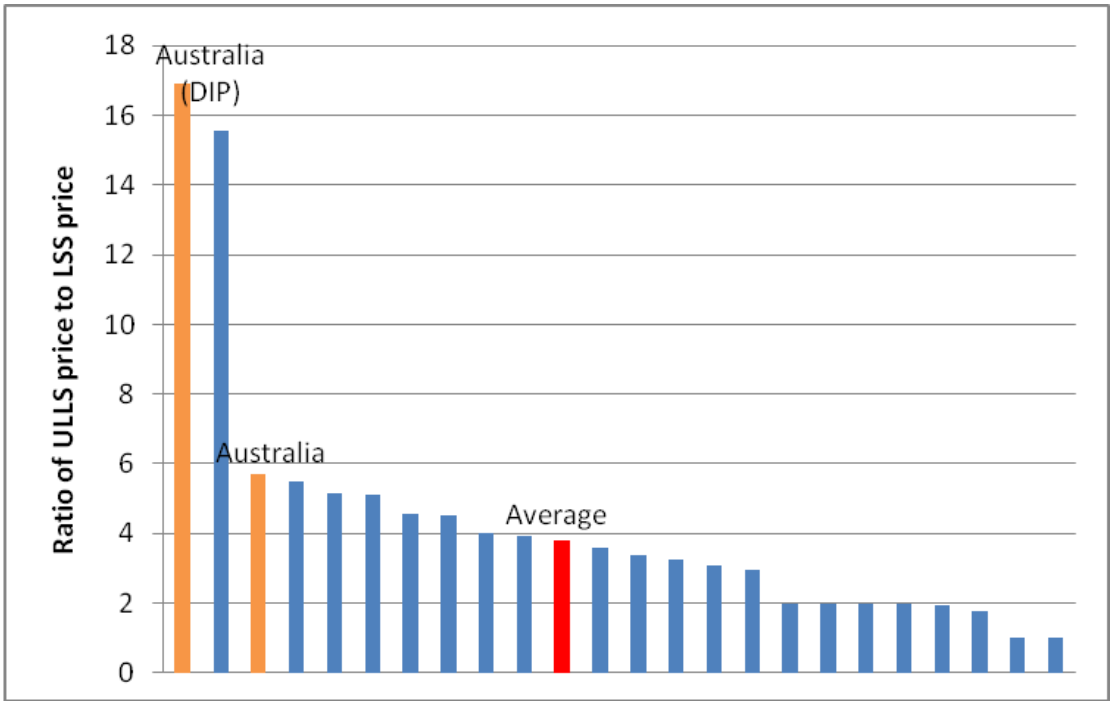
[TC2 c-i-c commences]

	PSTN Service supplied by LSS acquirer (through WLR)	PSTN Service supplied by other WLR acquirer	PSTN Service supplied by Telstra retail
LSS lines	CIC		
% of total LSS lines	CIC		

[TC2 c-i-c ends]

106 Rather than WLR pricing, a more useful wholesale service with which to assess LSS pricing relativities is the ULLS, which is a close substitute service. Examining the ratio of ULLS to LSS monthly charges provides a further indication of how excessively low Australia's LSS monthly charges are compared to other jurisdictions.

Figure 4: Ratio of ULLS to LSS monthly charges, OECD



Transition price path

107 If the ACCC adopts a LSS price of $1.00, Telstra submits that the following transition price path should be applied:

Table 24: Telstra proposed LSS transition price path

	2008/09	2009/10	2010/11	2011/12
LSS transition price path	$2.50	$1.85	$1.35	$1.00
% change	n.a	-26%	-27%	-26%

108 The proposed LSS price drop is, in relative terms, the largest single proposed price change from current prices – representing a 60% decrease in LSS prices from 2008-09 to 2009-10. The ACCC had not previously signalled to industry participants that the price of LSS would reduce so suddenly. As the ACCC's proposed prices are substantially below international benchmarks, overseas trends would not have provided any inkling of the relative size of the decrease.

109 Therefore, the ACCC's failure to apply an adjustment path is inconsistent and unreasonable.

Attachment A Summary of specific errors in the Analysys Model

While some of the errors in the Analysys Model used by the ACCC (**Analysys Model**) are fundamental to its design, Telstra believes that at a minimum, those errors which can be corrected must be corrected so that the Analysys Model can be used side by side with the TEA Model to identify a range within which indicative access prices could be set consistently with section 152CR of the TPA.

The corrected Analysys Model produces the following costs:

Table 25: Impact of adjustments for correctable errors in Analysys Model with ACCC inputs (i.e. no tilt adjustment) – ULLS (2008/09)

ULLS (Zone A)		ULLS (Zone B)	
Original	**Adjusted**	**Original**	**Adjusted**
$21.62	$28.48	$59.39	$94.39

Table 26: Impact of adjustments for correctable errors in Analysys Model with ACCC inputs (i.e. no tilt adjustment) – WLR (2008/09)

Zone A		Zone B	
Original	**Adjusted**	**Original**	**Adjusted**
$22.35	$27.85	$66.17	$96.24

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the Analysys model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the Analysys model (applies to all tables in this attachment)

Table 27: Impact of adjustment for correctable errors in Analysys Model with Analysys inputs (i.e. no adjustment of tilt) – PSTN and TA (2008/09)

PSTN OA and TA	
Original	**Adjusted**
0.69c	0.83c

Table 28: Impact of adjustments for correctable errors in Analysys Model with Analysys inputs (i.e. no tilt adjustment) – LCS (2008/09)

LCS (All areas)	
Original	**Adjusted**
6.79c	8.30c

1 The errors in the Analysys Model can be categorised as follows:

(a) errors that involve the failure to take account of plant and equipment (**Plant and Equipment Errors**);

(b) mathematical errors which involve incorrect calculations or a failure to apply the Analysys Model's own assumptions (**Mathematical Errors**);

(c) errors regarding the allocation of costs (**Allocation of Cost Errors**);

(d) engineering errors which involve a failure to take into account the realities of engineering requirements (**Engineering Errors**); and

(e) errors involving the failure to use the appropriate data (**Data Errors**).

2 There are also concerns that arise in relation to the cost factors used in the Analysys Model, as identified in the expert report of Nigel Attenborough (**Submission Supporting Documents, Volume 1, Document 1.2**).

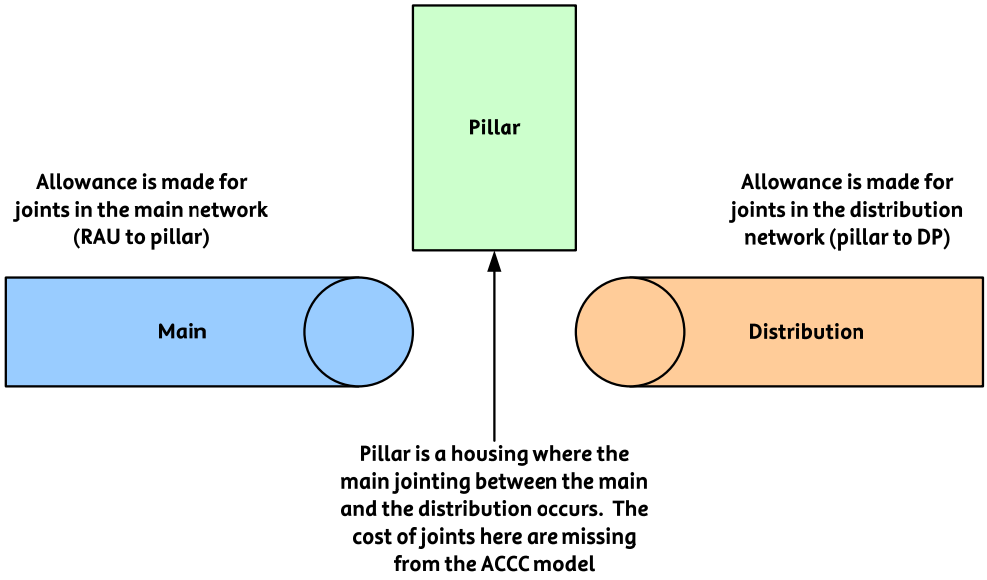
3 The following summarises some of the main plant and equipment errors, mathematical errors, and engineering errors. A description of the fuller set of errors can be found at **Submission Supporting Documents, Volume 1, Document 1.1.**

A.1 Plant and Equipment Errors

Error 1: The Analysys Model does not include the joints that would be required to connect the distribution copper cables or main copper cables to pillars[74]

What is the error?

4 The Analysys Model fails to include "joints" for connecting copper main cables and copper distribution cables to a pillar or large pair gain system (**LPGS**).[75] Below is a diagram illustrating how copper main cable and a copper distribution cable connect to a pillar using joints.



5 By contrast, the ACCC has accepted in its model that joints are required to connect the other end of the main cable to the remote access unit (**RAU**) and the other end of the distribution cable to the distribution point (**DP**).

6 The report of Craig Lordan[76] provides an explanation of why the joints are necessary and why their exclusion from the Analysys Model is not reasonable.

How can the Analysys Model be adjusted to address the error?

7 The Analysys Model can be adjusted by including the vendor costs of joints for each main cable and distribution cable at each pillar or LPGS in the model. The effect on the access prices is set out below:

[74] Error 1 in Telstra's letter dated 31 July 2009 to the ACCC (**31 July Letter**).
[75] A joint is the equipment used to connect a cable to a pillar. A full explanation of joints and pillars is provided in the statement of [**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**] dated 12 August 2008 provided with this submission ([**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**] **No. 1 Statement**) (*see* **Submission Supporting Documents (Document 2.5)**).
[76] Customer Access Network Architecture Discussion, report prepared for Mallesons Stephen Jaques, September 2009 (**Lordan No. 1 Report**) (**see Submission Supporting Documents (Document 1.10)**).

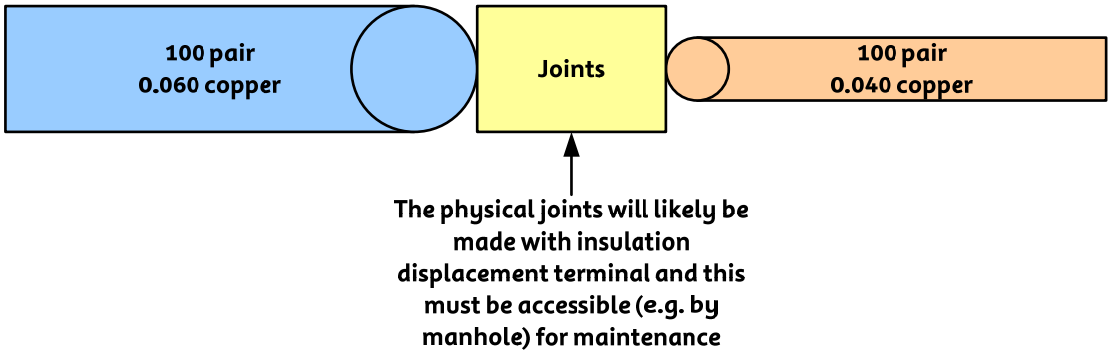
Table 29: Results of adjusting Analysys Model by including costs for joints (2008/09)

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month[77]				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	$8.46	$20.26	$33.83	$56.79	$0.69
Adjustment	$21.67	$59.44	$8.49	$20.30	$33.89	$56.85	no material effect
Difference	**$0.05**	**$0.05**	**$0.03**	**$0.05**	**$0.06**	**$0.06**	**$0.00**

Error 2: The Analysys Model does not take into account the fact that joints and pits/manholes are required to connect one gauge of cable to a different gauge of cable[78]

What is the error?

8 The Analysys Model acknowledges that different gauges (or thickness) of cable will need to be connected together. In order to connect cables of different gauges, a pit or manhole is required to access the cables which are to be connected and a joint is required to connect the cables. Below is a diagram illustrating the connection of two cables of two different gauges.[79]



9 The Analysys Model does not take account of the need for a joint and a manhole or pit to enable the two cables to be connected.

[77] The bands in this and the subsequent tables relating to errors in the Analysys Model refer to the groupings of geotypes as used in the Model, and not to a geographic charging structure. Telstra uses these bands to quantify each error's impact because that is how the Analysys Model is structured. The use of the bands should not be taken as an endorsement by Telstra of deaveraging of WLR changes because Telstra strongly opposes such a move.

[78] Error 10 in the 31 July Letter.

[79] The various gauges of cable and the dimensions of pits/manholes are explained in the [TC1 c-i-c commences] CIC] [TC1 c-i-c ends] No. 1 Statement (**Submission Supporting Documents (Document 2.5)**).

How can the error be fixed?

10 The error can be fixed by including as inputs into the Analysys Model the costs of the joints and the pit or manhole. The impact of including these additional joint and pit costs is discussed under the next error.

Error 3: The Analysys Model has not correctly included the cost of jointing 400 copper pairs[80]

What is the error?

11 The Analysys Model uses 400 pair copper cables in constructing the main copper cable network but only takes into account the cost of jointing 100 pair copper cables. All 400 pairs need to be jointed.

12 If the Analysys Model is accepted, then 300 of the 400 (or 75%) of customers would have no service.

How can the Analysys Model be adjusted to address the error?

13 The error can be fixed by including the additional vendor costs of each of the extra joints required for the 400 pairs. The effect of correcting this error on the access prices is set out below:

Table 30: Results of adjusting Analysys Model by including costs of extra joints for 400 pairs (2008/09)

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	$8.46	$20.26	$33.83	$56.79	$0.69
Adjustment	$21.68	$59.42	$8.48	$20.31	$33.90	$56.84	no material effect
Difference	**$0.06**	**$0.03**	**$0.02**	**$0.05**	**$0.07**	**$0.05**	**$0.00**

Error 4: The Analysys Model does not include the cost of joints needed to join fibre cables[81]

What is the error?

14 In response to Telstra's 31 July letter in which this error was pointed out, Analysys said that the cost of joints should be included in the cost of fibre. The Analysys Model however, does not do this because it costs all joints separately from cable costs, but the joints it costs do not include the fibre joints.

How can the Analysys Model be adjusted to address the error?

15 Fixing this error is potentially complex as it involves rewriting part of the Analysys model programming, which requires an understanding of the existing

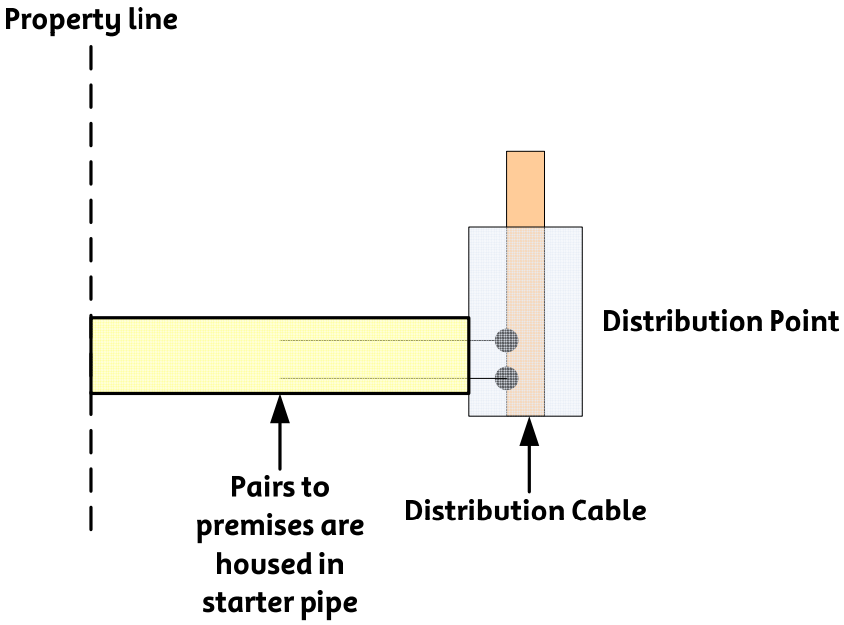
[80] Error 2 in the 31 July Letter.
[81] Error 9 in the 31 July Letter

model that Telstra does not have. Nonetheless, Telstra submits that this error is likely to have a material impact since the cost of fibre jointing represents a significant element of the cost of fibre deployment.

Error 5: The Analysys Model excludes the cost of distribution cable, trenching and conduit required from a customer's boundary to the distribution pit[82]

What is the error?

16 Below is a diagram of the connection from a distribution pit to a customer's property boundary. The connection requires trenching, conduit and cable to run from the DP to the customer boundary.



17 While the customer is responsible for the trenching and other costs on his or her side of the property boundary, the trenching and conduit between the DP and the property boundary form part of the distribution network – they are dug at the same time as the distribution cable trenches and not on a customer by customer basis at the time of connection.

18 In his expert report, Nigel Attenborough (**Attenborough Report**, which is at **Submission Supporting Documents, Volume 1, Document 1.2**) notes that exclusion of lead-ins is not standard practice and is likely to lead to a significant understatement of costs. He states that a more appropriate methodology would involve: including lead-in costs; subtracting new service and reconnection fees; annualising the resulting capital costs; adding operating expenses; and dividing by 12 to get monthly costs. He concludes (at paragraph 4.17) that by not following this procedure:

> "...the Analysys Model has understated the costs that need to be recovered in the ULLS monthly charge. The cost understatement is likely to be substantial given the large number of customer lines involved. I am unaware of any other regulator who has used an access network cost model which excludes

[82] Error 19 in the 31 July Letter

the cost of lead-ins. In my view it is not a reasonable approach for a regulator to take."

How can the Analysys Model be adjusted to address the error?

19 The error can be fixed by including the costs of the equipment (e.g., cable and conduit) required for the lead in up to the property boundary. We have corrected the Analysys Model by adding in these costs less the difference between the fee for new connection and the reconnection charge (see explanation in Attachment A).

Table 31: Results of adjusting Analysys Model by including costs for equipment required for lead in up to property boundary (2008/09)

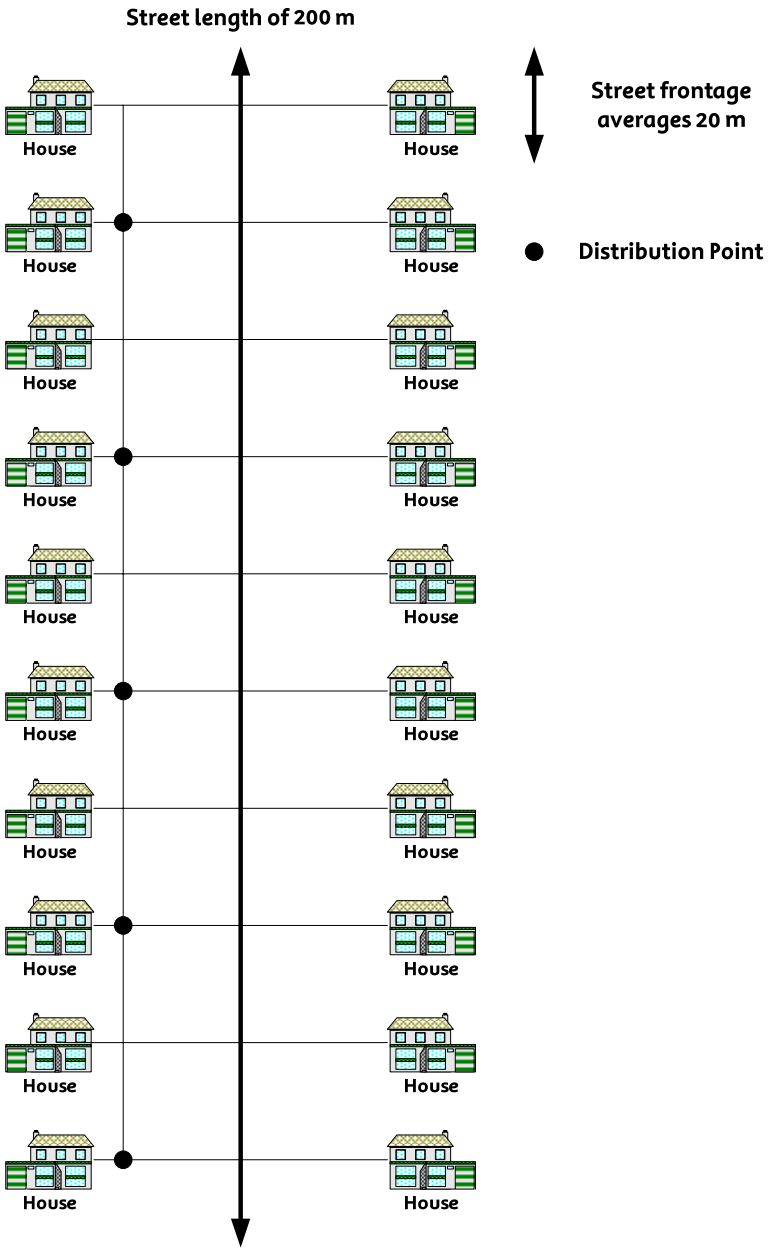
	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	$8.46	$20.26	$33.83	$56.79	$0.69
Adjustment	$22.62	$59.82	$8.65	$21.19	$34.97	$57.64	no material effect
Difference	**$1.00**	**$0.42**	**$0.19**	**$0.93**	**$1.15**	**$0.84**	**$0.00**

Error 6: The Analysys Model provides for road crossings to serve homes on the opposite side of the street from the distribution pit but does not provision sufficient cable inside the road crossing conduit to enable the cable to reach the opposite side[83]

What is the error?

20 Below is a diagram of the distribution pit architecture used in the Analysys Model. The network is built on one side of the road with each distribution pit serving from one to four houses. The model provides for trenching and conduit for the cable from the distribution pit to the other side of the road but does not provision sufficient length of cable sheath to serve the homes on the opposite side.

[83] Error 5 in the 31 July Letter.



How can the Analysys Model be adjusted to address the error?

21 The Analysys Model can be fixed by correcting the serving pit architecture and then adding in the extra costs of the cable sheath required for the road crossings. The effect on access prices of fixing this error is set out below:

Table 32: Results of adjusting Analysys Model by correcting pit architecture and providing for costs of cable sheath (2008/09)

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Restored duct / cable baseline	$22.62	$59.82	$8.65	$21.19	$34.97	$57.64	$0.69
Adjustment	$22.68	$59.82	$8.66	$21.24	$35.02	$57.67	no material effect
Difference	**$0.06**	**$0.00**	**$0.01**	**$0.06**	**$0.05**	**$0.04**	**$0.00**

Note: the comparison above is not from the Analysys Model but from a corrected baseline that includes the correct ducts/cables necessary for the correct serving pit architecture.

Error 7: The serving pit architecture is inconsistent with the distribution network architecture used in the geoanalysis and access network module

What is the error?

22 The Analysys Model uses a design of access network and then adopts the calculations for the network assets required to serve all locations within Australia set out in a separate workbook called the 'geoanalysis and access network' module. This module, in turn, contains a detailed calculation of the network assets required to serve a sample of over 800 000 locations within Australia. The asset volumes required for this sample are then scaled up in order to determine the asset volumes required for a full nationwide deployment.

23 However, the Analysys Model utilises an access network design that is inconsistent with the network design used in the geoanalysis and access network module. The physical locations of key network structure points in the access network used in the Analysys Model are different from the locations of those same points in the geoanalysis and access network module. Despite this, the Analysys Model then relies on the costs calculated in the geoanalysis and access network module without regard to the difference in the access network design. The result is that the Analysys Model incorrectly calculates and underestimates the average distance from a property boundary to a serving pit used so that the cost of Serving Pit Architecture is wrong and the costs are underestimated.

How can the Analysys Model be adjusted to address the error?

24 The error can be fixed by using a network design in the Analysys Model that is consistent with the geoanalysis and access network module. The effect on the access prices of correcting this error is set out below:

Table 33: Results of adjusting Analysys Model by using network design consistent with geoanalysis and access network module (2008/09)

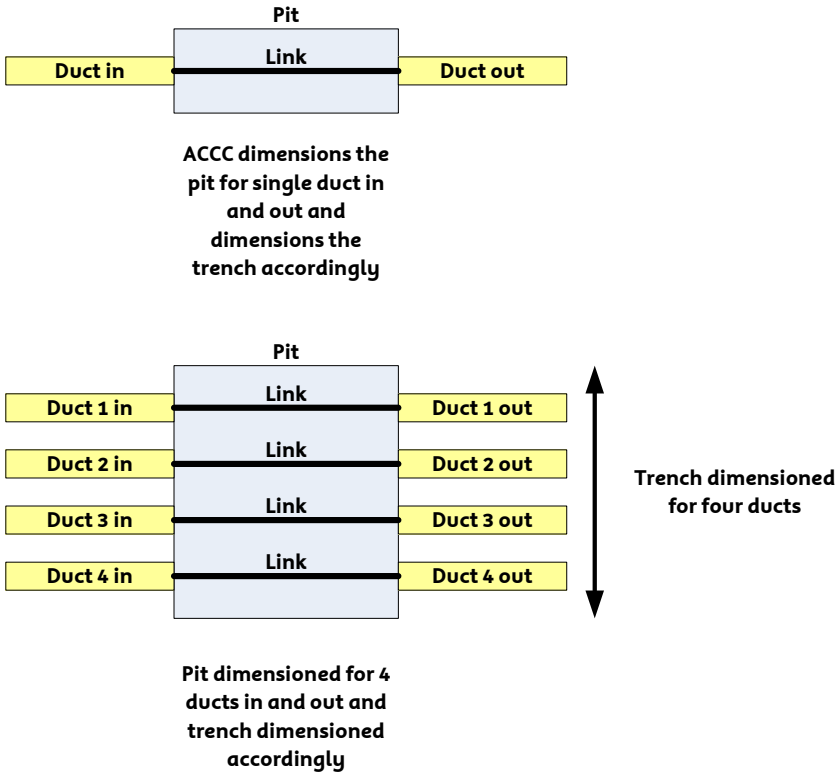
	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Restored duct / cable baseline	$22.62	$59.82	$8.65	$21.19	$34.97	$57.64	$0.69
Adjustment	$23.87	$59.76	$8.83	$22.35	$36.26	$58.33	no material effect
Difference	**$1.25**	**($0.06)**	**$0.19**	**$1.16**	**$1.28**	**$0.69**	**0.00**

Error 8: The Analysys Model assumes that IEN and CAN cables share the same trench but it fails to dimension the trench and pits to a size that would fit both networks and the model overestimates the cost of CAN trench, conduit and pits attributable to the core network[84]

What is the error?

25 The Analysys Model assumes that IEN and CAN cables can both be placed in the same trench. The model, however, uses a trench size that only allows enough space for CAN cables. It therefore fails to account for the additional trench costs required to dig a trench large enough to fit both IEN and CAN cables. Below is an illustration of the pit size used by the ACCC and the equipment deployed by the Analysys Model that is expected to be included inside the pit, which shows that the CAN and IEN cables simply cannot fit.

[84] Error 7 in the 31 July Letter.



How can the Analysys Model be adjusted to address the error?

26 The Analysys Model can be fixed by adjusting the trench, duct and pit capacity to house both the IEN and CAN cables. This involves five steps:

(a) determine the percentage of CAN trench, duct and pits that are shared with the IEN;

(b) identify the length of each size of CAN conduit configuration that must be resized to accommodate the additional IEN ducts;

(c) identify the quantity of each size of pit or manhole that must be resized to accommodate the additional IEN ducts;

(d) adjust the allocation ratio for CAN trench and conduit to recognise the inclusion of IEN duct costs in the design of the combined CAN/IEN facilities; and

(e) remove the cost of the IEN ducts that were incorporated into the Core model to avoid double counting these costs.

27 The exclusion of the additional costs required to fit both IEN and CAN cables has the effect of excluding costs of the following amounts for ULLS, WLR and PSTN OA and TA:

Table 34: Results of adjusting Analysys Model by including costs for fitting both IEN and CAN cables (2008/09)

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	$8.46	$20.26	$33.83	$56.79	$0.69
Adjustment	$23.36	$64.57	$8.90	$21.78	$37.04	$61.38	$0.64
Difference	**$1.74**	**$5.17**	**$0.45**	**$1.52**	**$3.21**	**$4.59**	**$(0.05)**

Error 9: The ACCC has grossly underestimated the costs of building IEN

28 The Analysys Model creates a transmission network with a cost of $145 million but the model and accompanying documentation provides scant detail on the design and equipment and other cost elements for that modelled core network. Essentially, the Analysys Model provides an aggregated cost figure and it is impossible for Telstra to break the figure down to consider and verify how it was derived. The lack of detail and transparency in the core network component of the Analysys Model contrasts with the greater detail in other parts of the model The core network represents a significant component of the Analysys Model costs. The lack of detail is a material omission and a matter in relation to which Telstra is entitled to an opportunity and sufficient information to enable it to make informed submissions in the draft IPP Determination process. This is especially so in light of the ACCC's expectations of Telstra detailed below.

29 Telstra wrote to the ACCC on 22 September 2009 requesting itemisation of the transmission equipment used in the Analysys Model for this purpose.

30 The ACCC responded on 30 September 2009 declining to provide the requested details because "..in the ACCC's view Telstra does not require the specific engineering details requested ..in order to make an assessment about the types and quantities of assets that would be required to meet the demand estimated in the modelled network". The ACCC went onto to state that:

> "The ACCC understands that traffic generated by the model must be provisioned by sufficient transmission equipment to accommodate the capacity requirements of the core network model and considers this is sufficiently enabled within the design parameters of the model. The ACCC acknowledges that the Analysys cost model, like all models, necessarily simplifies real world systems to provide useful numerical estimates. The purpose of the current consultation is to expose the model assumptions to scrutiny. Telstra would be expected to submit not only what it considers to be in error in the model – but also to submit what preferred values it would like to see in the model for asset prices and quantities. For this task it is sufficient that the Analysys cost model identify a generic class of asset with starting price assumptions and the model calculate the units of that asset class to deploy."

31 Telstra disagrees with the ACCC. Telstra is currently deploying an IP core network and based on our own investment, the $145 million in the Analysys Model is a substantial underestimate of costs. However, in the absence of the details requested by Telstra but which the ACCC refused to provide, Telstra is not

in a position to make a meaningful comparison with the approach in the Analysys model. Moreover, without the requested detail Telstra does not have the necessary knowledge of the core network architecture within the Analysys Model to be able to identify the source(s) of the underestimate e.g. whether this is because the rings have not been correctly dimensioned, or because of the technology used, or because of defects in the engineering design, or because of a computational or modelling error.

32 The ACCC will, of course, be in a position to compare the details of the core network in the Analysys Model with any information which Telstra provides, but the ACCC will be doing that in a "black box" without the opportunity for and the benefit of Telstra putting its view. On an issue of such materiality, the ACCC's approach is not consistent with the minimum standards required of a decision maker in the ACCC's position.

33 In the absence of the requested details from the ACCC, Telstra has been unable to include meaningful submissions on this issue by the due date of the submission. The continued absence of the requested data also may impair Telstra's ability to develop and propose a comprehensive "fix" for the error. While Telstra is continuing to investigate how to resolve this error and intends to provide further details as soon as practicable after 9 October 2009, it repeats its request for the ACCC to provide the information sought in Telstra's letter dated 22 September 2009 as a priority.

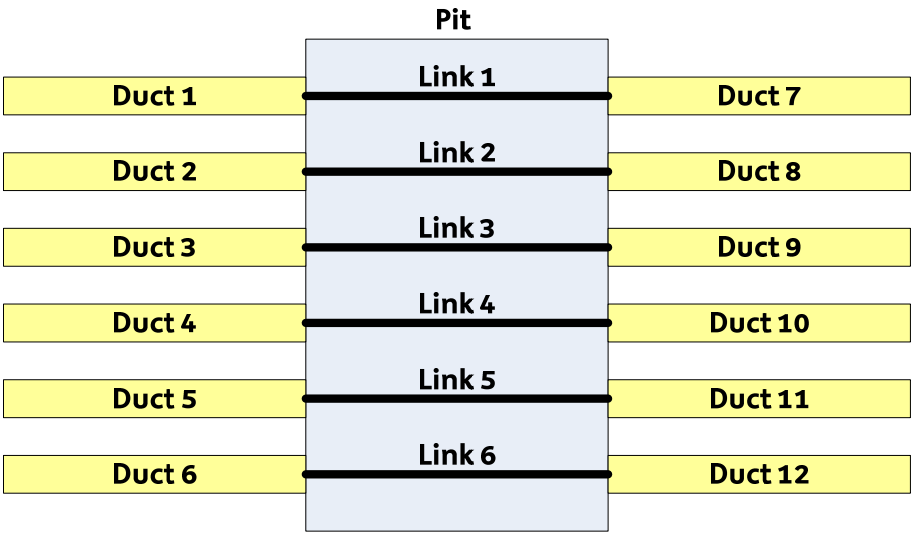
A.2 Mathematical Errors

Error 10: The Analysys Model accepts that a particular pit size is required but then fails to use that size[85]

34 A pit is an underground piece of equipment used to access joints and cables. The size of a pit is determined by the number of ducts in the pit and the number of links coming into the pit. Each pit must be large enough to accommodate both the number of ducts and the number of links into the pit. If a pit has six ducts and two links, it will need to be big enough to accommodate six ducts.[86] Below is a diagram of a pit showing the number of ducts and links into the pit.

[85] Error 3 in the 31 July Letter

[86] An explanation of pits and ducts is set out in the [**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**] No. 1 Statement at **Submission Supporting Documents, Volume 2, Document 2.5.** .



ACCC dimensions the pit as the average of ducts and links (rounded down) so the pit size shown would be a 9 duct pit. However, the pit must be big enough to house all of the ducts.

35 The Analysys Model does not size pits appropriately. In many cases, the chosen pit size is smaller than the Analysys Model states is required for the number of ducts or links coming into the pit. The Analysys Model has wrongly assumed the pit size can be based on an average when, in fact, pit size is determined by the total number of ducts or links.

How can the Analysys Model be adjusted to address the error?

36 This error can be fixed by changing the Analysys Model so that it uses a pit size based on the larger of either the number of ducts or the number of links. The effect of fixing this error on access prices is set out below:

Table 35: Results of adjusting Analysys Model for pit size (2008/09)

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	$8.46	$20.26	$33.83	$56.79	$0.69
Adjustment	$21.89	$69.98	$8.51	$20.32	$37.77	$64.33	$0.70
Difference	**$0.27**	**$10.59**	**$0.06**	**$0.06**	**$3.94**	**$7.54**	**$0.01**

Error 11: The model errs by excluding the costs of some technologies from the calculation of the unit costs of CAN services, yet including the lines served by those technologies in the calculation[87]

What is the error?

37 The Analysys Model does not properly determine the unit cost of CAN services because it contains a mismatch between the annual cost and the services in operation used in the calculation. The model builds a network comprised of copper, fibre, wireless, and satellite components, then removes the investment in those components (fibre, wireless, and satellite in the case of ULLS), but does not remove from the unit cost calculation those SIOs served by the excluded network components.

38 The unit cost of ULLS is the annual capital costs and expenses associated with provisioning the CAN in those areas where ULLS is available divided by the total SIOs of CAN services in those same areas. If the ACCC is correct in using an approach in which the price of ULLS should be based upon the cost of provisioning the CAN irrespective of the technology deployed, the unit cost of ULLS and WLR is annual capital costs and expenses associated with provisioning the CAN in all areas divided by the total SIOs of CAN services in all areas – that is, there should be no excluded cost.

39 Whichever approach one takes in the calculation of the cost of ULLS, the Analysys Model is wrong. The Analysys Model does not include all costs associated with provisioning the CAN; it excludes the cost of all fibre, wireless and satellite plant and equipment. Further, the Analysys Model divides the annual cost of the subset of CAN plant and equipment, which it leaves in the calculation of unit cost, by the SIOs of all CAN services, even those served exclusively by the excluded equipment. (Some CAN services are served partially by the excluded equipment and partially by copper; and many are served end to end by the excluded equipment.) This error results in an understatement of unit cost, because it either understates the annual cost of the CAN (the numerator in the unit cost calculation), or overstates the demand for CAN services (the denominator in the unit cost calculation) depending upon whether one intends to include all types of technology in the cost calculation, or one intends to cost an all copper network

40 The ACCC has responded to this error by stating:[88]

> *"Telstra's concern is related to the situation where an access seeker has use of the copper loop from the exchange to a customer in a DA where Telstra serves other customers in that DA direct from the remote equipment."*

41 However, this error is not related to that situation specifically, so it appears the ACCC has misunderstood the error. The error occurs for all copper-fed DAs. The Analysys Model only allocates a proportion of that copper main cable to those customers where it should allocate the entire cost of that cable

[87] Error 4 in the 31 July Letter.

[88] ACCC letter to Telstra dated 2 April 2009, page 3.

How can the Analysys Model be adjusted to address the error?

42 The error in the calculation of the unit costs of CAN services per SIO in the Analysys Model is caused by a mismatch between the cost pools and the levels of demand used in the calculation. The mismatch between the cost pools for services and the demands used to calculate the unit costs of services must be corrected by adjusting the unit costs of network elements calculated by the model. The unit costs of network elements calculated by the model must be adjusted so they reflect the correct relationship between cost pools and in service demands for each CAN service, before they are input into the derivation of unit costs for individual services.

43 The effect on access prices of fixing this error is set out below:

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OTA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	8.46	20.26	33.83	56.79	0.69
Fix	$24.41	$70.78	8.46	21.05	35.84	62.56	0.69
Difference	**2.78**	**11.39**	**0.00**	**0.79**	**2.02**	**5.76**	**0.00**

Error 12: The Analysys Model wrongly allocates between 33% to 50% of costs to the deployment of fibre from which there is no known revenue source[89]

What is the error?

44 The Analysys Model allocates core network costs between fibres used for "identified services" and those used for "other services". In the original version of the Analysys Model, the "other services" category was described as "dark fibres", but in the final version the title was changed with no explanation of the services which fall within this category and which would use the dark fibres.

45 Telstra has reviewed the list of identified services defined in section 3.1 of the Analysys documentation and confirms that the list includes all services of which Telstra is currently aware. Telstra has also reviewed the list of "other services" and cannot identify any "other services" from which it would derive revenue and therefore for which it would build network. The result is to allocate 33% or 50% of the trench costs (depending on the layer of the network modelled) to fibres for which there is no known revenue : in effect, these significant costs are allocated "into the ether".

46 The allocation of costs to unknown services is contrary to both economic and network deployment principles. It is unreasonable to allocate the costs of dark fibres to unknown future services. The network deployment standards used by Telstra are explained in the Statement of [**TC1 c-i-c commences**] [CIC [redacted]] [**TC1 c-i-c ends**] at **Submission Supporting Documents, Volume 1, Document 1.12**.

47 In his expert report, Nigel Attenborough states that both sound cost modelling principles and the practice in other jurisdictions is not to allocate costs to

[89] Error 8 in the 31 July Letter

unknown services. He states (at paragraph 5.10) that such a practice leads to under-recovery of costs[90]:

> "Since these services do not actually exist and therefore no revenue is received from them, these costs are not recovered. This is not an appropriate allocation practice because it does not allow full recovery of costs. If a company is unable to recover its costs, it will make a loss and this is not a sustainable situation".

How can the Analysys Model be adjusted to address the error?

48 To assure full recovery of legitimate costs, the ACCC's Model needs to be corrected so that all efficiently incurred costs are assigned to services in operation. The error can be corrected by ensuring there is no allocation of costs to dark fibre or "other services" unless those other services are in fact identified.

Error 13: The ACCC's calculations and assumptions regarding the number of internet dial up users and the length of internet dial up calls is inconsistent with evidence of actual historical rates

49 The Analysys Model calculates a forecast decline rate for the number of dial up internet users (**SIOs**) that is inconsistent with actual historical decline rates. The rate adopted by the ACCC is not therefore based on any actual evidence of historical decline rates.

50 While the ABS and the Telstra data show a drop in the number of dial up SIOs of around 30% between June 2008 and June 2009, the ACCC's forecast decline at a rate of between 12.4 to 17.8 or at approximately half the rate of the ABS or Telstra SIO decline rate. The rates adopted by the ACCC are not therefore reasonable as they are not based on actual historical rates.

51 Further, the forecast decline in the total number of internet dial up minutes in the Analysys Model is also inconsistent with both historical trends and Telstra's actual figures of total internet dial up minutes for 2008/09. The assumptions used in the Analysys Model in relation to dial up internet are therefore unreasonable.

52 The effect of these unreasonably high dial-up traffic assumptions is to decrease the costs of OTA and LCS by between 3 and 10% for the 2007/08 to 2011/2012 years.

How can the Analysys Model be adjusted to address the error?

53 The errors can be fixed by changing the assumptions in relation to dial up internet traffic to reflect Telstra's forecasts, which are based on actual historical data. The impact on LCS and PSTN OTA prices of fixing the Analysys Model in this way is as follows:

[90] (**Submission Supporting Documents, Volume 1, Document 1.2**)

Table 36: Impact of dial-up internet traffic error (2008/09)

Service changed to Telstra forecast	Impact on PSTN OTA and LCS
2007/08	+3%
2008/09	+9%
2009/10	+11%
2010/11	+10%
2011/12	+10%

54 There is no impact on ULLS and WLR from the above changes.

A.3 Engineering Errors

Error 14: The Analysys Model assumes that cables that are greater than 100 pair in size can be ploughed when they cannot[91]

What is the error?

55 The Analysys Model assumes that cables that are greater than 100 pair in size can be ploughed. They cannot. The reasons for this are set out at in the statement of Craig Lordan (**Lordan No. 1 Report**), which is at **Submission Supporting Documents, Volume 1, Document 1.10**.

56 Because cables greater than 100 pair cannot be ploughed, they need to be put in trenches. The Analysys Model therefore needs to be adjusted so that it no longer assumes ploughing for cables greater than 100 pair in size.

How can the Analysys Model be adjusted to address the error?

57 To fix this error, the instances where 100% ploughing are hard coded into the model (i.e. they are not an input) should be set to 0%. Additional costs for trenching should be included.

58 The effect of fixing this error on access prices is set out below:

Table 37: Results of adjusting Analysys Model for pit size (2008/09)

	ULLS (Access cost per line per month)		Wholesale line rental (WLR) Access cost per line per month				PSTN OA and TA
	Zone A	Zone B	Band 1	Band 2	Band 3/4 (clustered)	Band 3/4 (spread)	All areas
Analysys Model	$21.62	$59.39	$8.46	$20.26	$33.83	$56.79	$0.69
Adjustment	$21.64	$62.68	$8.45	$20.25	$34.16	$59.07	$0.69
Difference	**$0.01**	**$3.29**	**$0.00**	**$0.00**	**$0.33**	**$2.28**	**$0.00**

[91] Error 11 in the 31 July Letter.

Error 15: The ACCC's Model has too few customer locations because it relies on an inaccurate data base[92]

What is the error?

59 The Analysys Model identifies customer locations by reference to the G-NAF database. Analysys itself has acknowledged that the G-NAF database has addresses that are invalid. Analysys has then sought to remove erroneous locations and has determined that there are 9.8 million valid locations. The Analysys Model however, only uses 8 million of those locations.

60 Telstra submits that there are two problems with the Analysys Model as follows:

(a) the ACCC should used data of actual locations. These actual locations are identified in Telstra's TEA Model; and

(b) if the ACCC does not want to use actual locations, it should, at least, use the 9.8 million locations identified by Analysys.

61 The reasons why use of actual locations would be better than reliance on the GNAF database are explained in the report of Dr Harris (see **Submission Supporting Documents, Volume 1, Document 2.19**).

How can the Analysys Model be adjusted to address the error?

62 This error can be fixed by increasing the number of connected locations to reflect the value Analysys suggests is appropriate. This will not however fix other errors with the GNAF database.

Error 16: The Analysys Model provisions some customers with wireless without any consideration of topological barriers to wireless signals[93]:

What is the error?

63 The Analysys Model wrongly assumes that customers can be served by wireless without taking into account the topological barriers to wireless connection. If those topological barriers are taken into account less customers could be serviced by wireless than assumed by the Analysys Model. These issues are considered and explained in the report of Craig Lordan (**Lordan no. 2 Report**) (**Supplementary Supporting Documents, Volume 1, Document 1.11**)

64 Analysys assumes that wireless technology is capable of reaching end-users within 25km of a fixed point. In reality however, and when the impacts of the environment, topography and multiple users are considered, the capability is more like 15km.

A.4 Concerns relating to cost factors in the Analysys Model

65 In his expert report, Nigel Attenborough considers whether the cost factors used in the Analysys Model are reasonable having regard to European and US benchmarks. Attenborough considers three cost factors: the O&M cost factors, the indirect expense factors and the indirect asset factors.

[92] Error 13 in the 31 July Letter.
[93] Error 16 in the 31 July Letter.

66 In relation to the O&M cost factors in the Analysys Model, Attenborough notes that they are all lower than the European benchmarks but are higher than the US benchmarks except in the case of duct / conduit. He notes that this is potentially a significant underestimate because of the importance of duct / conduit in total costs. Attenborough considers that the Analysys Model is also likely to have understated O&M costs in the CAN because it uses an overall cost factor for cable (rather than separate factors for each of copper and fibre cable). Attenborough notes that the O&M cost factor for copper cable (ie, that which is relevant to the CAN) can be expected to be higher than that for fibre, and higher than the overall cable cost factor, because copper cable is substantially more expensive to maintain.[94]

67 The benchmark O&M comparison is set out below:[95]

Table 5: O&M Cost Factors (Analysys Model)

Analysys Model		**European Benchmark (NERA Studies)**		**US LECs (FCC database)**		*TEA Model*
Asset description:						*Weights:*
Duct	0.21%	Access, copper duct	1.27%	Conduit	0.39%	C-I-C
Duct	0.21%	Access, copper duct	1.27%	Conduit	0.39%	C-I-C
Cable	2.93%	Access, copper cable	5.26%	All Cable	2.88%	C-I-C
Cable	2.93%	Access, copper cable	5.26%	All Cable	2.88%	C-I-C
Transmission	3.24%	Multiplex stations	5.97%	Transmission equipment	1.79%	C-I-C
Switching equipment	6.49%	Switch hardware	7.98%	Digital Switching	3.04%	C-I-C
Cable	2.93%	Transmission, fibre cable	4.23%	All Cable	2.88%	C-I-C
Weighted Average	**0.93%**		**2.31%**		**1.02%**	C-I-C

68 In relation to the total indirect expenses cost factor in the Analysys Model (calculated by dividing indirect expenses by total O&M costs), Attenborough notes that this figure (59.77%) is higher than the European benchmark (30.93%) and the US benchmark (30.76%).[96]

69 Because the higher indirect expense cost factor in the Analysys Model could reflect a different categorisation of costs between O&M expenses and indirect expenses,[97] Attenborough calculated a combined cost factor for O&M costs and indirect expenses in the Analysys Model. Attenborough's analysis shows that the Analysys Model's combined O&M and indirect expense cost factor is within the range of the US and European benchmarks (1.49%, compared with 3.02% and 1.34% respectively).[98] However, although the combined O&M and indirect expense cost factor for the Analysys Model lies within the range, this does not necessarily demonstrate the reasonableness of the factor, particularly given that the correct US benchmark is likely to be higher than 1.34%.[99] Attenborough explains that this is because the US figure is likely to understate the true position for the CAN, as the base data from which it was compiled draws no distinction between copper and fibre cables, even though copper cable requires more

[94] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.1] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[95] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.1] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[96] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.3]; Table 6 (**Submission Supporting Documents, Volume 1, Document 1.2**).
[97] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.7] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[98] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.5]; Table 7 (**Submission Supporting Documents, Volume 1, Document 1.2**).
[99] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.5] (**Submission Supporting Documents, Volume 1, Document 1.2**).

maintenance than fibre cable (such that the cost factor relevant to copper is likely to be higher than the overall cost factor for all cable).[100]

70 The final cost factor in the Analysys Model is the indirect assets cost factor, being a combined cost factor incorporating network support and indirect assets. Attenborough remarked that the value of this cost factor (1.97%) was very low compared with European and US benchmarks (being 5.98% and 5.36% respectively), and that the difference was so great so as to cast doubt on the reasonableness of the Analysys Model's indirect assets cost factor. Attenborough states that the indirect assets cost factor in the Analysys Model is "a long way below the benchmark range, suggesting that its value is too low".[101]

[100] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.20] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[101] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.7] (**Submission Supporting Documents, Volume 1, Document 1.2**).

Attachment B Telstra's TEA Model

A Version 1.5

1 Version 1.3 of the TEA Model lodged in support of the Band 2 ULLS Undertaking has been updated to version 1.5 and covers ULLS Bands 1, 2 and 3.

2 The draft IPP Determination states that the ACCC will place "less weight" on the TEA Model costings for bands 1 and 3 because "[t]he Band 1 and 3 TEA Model was not lodged through any regulatory process and has not been subject to detailed scrutiny by either the ACCC or other interested parties."[102]

3 Telstra submits the ACCC's approach is unreasonable:

(a) version 1.5 was provided to the ACCC and wholesale customers in the ULLS and LSS joint arbitration proceedings on 15 September 2009 and there will have been ample opportunity for wholesale customers to review the model in preparing their submissions and for the ACCC to consider the model before making its final IPP Determination;

(b) version 1.5 of the TEA Model is designed around the same modelling principles as version 1.3 (and, in fact, previous versions of the TEA Model) and uses many of the same inputs, such as vendor costs. To the extent those common principles have been reviewed and debated in the Band 2 ULLS Undertaking proceedings, they should be regarded as having been stress tested for the purposes of the ACCC making its final IPP Determination in these proceedings;

(c) as the ACCC undertook a detailed review of the version 1.3 (and previous versions of the TEA Model) in the course of the Band 2 ULLS Undertaking proceedings before the ACCC and in the recently completed five day appeal hearing before the Tribunal, it must be taken to have an intimate knowledge of the methodology of the TEA Model and experience in how to run and reprogram the model. This should expedite the ACCC's review of version 1.5.

4 We address below the main features of the TEA Model and respond to the adjustments which the ACCC has made in the draft IPP Determination. Attachment D supporting doc 1.19 summarises Telstra's responses to the main contentions raised by the ACCC during the Band 2 ULLS Undertaking proceedings, and sets out the evidence relied upon to support Telstra's submissions.

5 The relevant period within which the ACCC needs to test "best in use" technology is the three year period covered by the indicative prices. Any changes in the best in use technology beyond that 3 year period can be addressed when the indicative prices are reassessed and the CAN costs remodelled for that purpose at that time. This should be particularly the case where the extent and nature of future changes remains speculative given the uncertainties surrounding the NBN.

[102] Draft IPP Determination, p 8.

6 This approach is consistent with Ofcom's approach in the UK. Ofcom takes a forward looking approach to access charges using BT's current costs. However, when Ofcom came to recently reset network charges for the next 5 years (out to 2013), Ofcom decided to not to use BT's current network because it already included some of BT's 21CN (FTTN) deployment. Ofcom noted that as BT had actually started building 21CN, this would require some adjustments to the BT cost data to derive the costs of the hypothetical network[103]:

> "Recent cost information provided by BT (for example its financial statements for 2007/ 08) are not representative of an ongoing network. This is because they show the costs of some 21CN assets not yet in use, and also show the operating and capital cost profiles for PSTN assets which are at the end of their economic lives. Therefore in order to obtain relevant starting values for a hypothetical ongoing network using the cost information from BT's financial statements for 2007/08, it would be necessary to make adjustments to remove those elements which are not representative of an ongoing network and, in some cases, replace them with data which would reflect the costs of an ongoing network."

7 Ofcom decided not to include future fibre-based CAN infrastructure in its hypothetical model for the following reasons:

(a) there was considerable uncertainty over 21CN costs, replacement services, and migration pathways;[104]

(b) explicitly modelling two different networks might distort incentives with the efficient migration of services from one network to the next;[105]

8 Rather than attempt to "unscramble the copper/fibre eggs", Ofcom decided to use the network model used in the previous network charge determination as the base to calculate its hypothetical network. This previous model, being pre-next generation networks, was more clearly an all copper network.

9 Hence, although Ofcom was setting charges out over a longer period than the ACCC is currently in this draft IPP Determination process (2013 compared to 2011-12) and although the deployment of NGN is more advanced in the UK and alternative networks are more widespread (HFC has nearly 50% penetration), Ofcom decided to use an "all copper" network cost model.

10 The Analysys Model also uses a primarily copper-based network in Zone A.

A.1 The TEA Model optimises the network using actual physical data

11 The TEA Model is designed to estimate the efficient cost of replacing the CAN by a new entrant in a hypothetically fully competitive market, using forward looking best practices, engineering standards and placement procedures and best-in-use equipment. It is superior to the Analysys Model because it uses accurate and actual data. In contrast the Analysys Model relies on assumptions to construct a fictitious network. The starting data from which the Analysys

[103] Ofcom, *Review of BT network charge controls, Consultation on proposed change controls in wholesale narrowband markets* (March 2009), paragraph 4.57 [Document 234].
[104] Ofcom, *Review of BT network charge controls, Consultation on proposed change controls in wholesale narrowband markets* (March 2009), paragraph 4.46 [Document 234].
[105] Ofcom, *Review of BT network charge controls, Consultation on proposed change controls in wholesale narrowband markets* (March 2009), paragraph 4.46 [Document 234].

Model network is constructed contains substantial errors even after Analysys attempted to "clean" it.

12 The TEA Model uses real data to estimate forward-looking costs. Therefore it takes into account the topography and other physical characteristics of the actual environment. All customer locations used in the TEA Model are actual, precise, geographic locations. All structure points used in the TEA Model (being route markers, defined by the actual location of pits, manholes and pillars) are also actual, precise geographic locations, which are either on a customer's premises or along a right of way close to the customer's premises.[106]

13 The universe of actual routes in Telstra's network reflects the accumulated knowledge of the sites of actual demand and the topography and physical layout of the streets down which the CAN needs to be laid. Most importantly, in optimising the network, the TEA Model uses a subset of Telstra's actual routes and in doing so reflects constraints which a hypothetical network builder would actually face. As a practical matter, the possible routes for telecommunication cabling along which existing Telstra cables are laid are limited by, amongst other restrictions, the ACIF Code C524:2004[107] and the standards, laws and regulations to which it refers[108] which established agreed locations in footways for utility services and designate a corridor adjacent to roadways and under roadways for telecommunications facilities.[109] Accordingly, there is virtually no scope for further optimisation of Telstra's route network beyond the manner explained by Mr Hatzenbuehler.[110]

14 The TEA Model approach contrasts with that of the Analysys Model, which adopts artificial, hypothetical routes through the use of algorithms, thereby generating routes which may purport to pass through physical barriers (such as lakes, rivers, railway lines) as well as private property. The following sections (on trench costs and sharing, break out and reinstatement, cost factors and WACC) focus on addressing specific concerns about the TEA Model that have been raised in other proceedings. Telstra explains how we have addressed the concerns or why the issues need not be of concern.

Trenching costs and sharing

15 The costs involved in digging trenches in which to place cables (**trenching costs**) are a material component of total costs.

16 As discussed in Attachment A, the Analysys Model has designed the network upside down: apparently in an effort to reduce trenching costs, the model starts with the distribution network and then lays main cable and IEN cable in the distribution network trenches rather than assuming separate trenches. The result is a series of assumptions about trench capacity, cabling routing, cable

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[106] Telstra, Telstra's Efficient Access (TEA) Model Overview, December 2007, paragraph 18 (**Submission Supporting Documents, Volume 2, Document 2.1**).

[107] See Annexure DJP-5 to [**TC1 c-i-c commences**][CIC redacted] [**TC1 c-i-c ends**] statement of August 2008 (ACIF Code C524:2004, Industry Code – External Telecommunications Cable Networks).

[108] [**TC1 c-i-c commences**][CIC redacted] [**TC1 c-i-c ends**] No. 2, Submission Supporting documents, Volume 1, Document 1.9.

[109] See for example NSW Streets Opening Conference, Guide to Codes and Practices for Streets Opening, September 2002, p 15, 17-18 (Annexure RIB2 to Statement of [**TC1 c-i-c commences**][CIC redacted] [**TC1 c-i-c ends**], March 2009) (**Submission Supporting Documents, Volume 2, Document 2.2**); also see Streets Opening Conference, Guide to Codes and Practices 2007, Annexure "GLH-3" to Statement of [**TC1 c-i-c commences**][CIC redacted] [**TC1 c-i-c ends**], August 2008 (**Submission Supporting Documents, Volume 2, Document 2.3**).

[110] Statement of Frank Hatzenbuehler, November 2008 (**Submission Supporting Documents, Volume 2, Document 2.2**).

lengths and conduct sharing which defy good engineering practice and actual conditions.

17 The TEA Model provides for a level of sharing of cables between different network layers which is realistically efficient. The route optimisation process produced a number of routes which permitted the sharing of cable in different distribution areas (such as on the borders between two distribution areas or between the main network and a distribution area) where a main network line ran along the same course or route as a line in a distribution area which it abutted. In those circumstances, provision was made for trench-sharing between the main network and the distribution network in the TEA Model.

18 The statement of [**TC1 c-i-c commences**] [CIC [redacted]] [**TC1 c-i-c ends**] explains that, in practice, trench sharing with other utilities occurs rarely, and that in his experience it has generally only occurred in two circumstances: street beautification and new (greenfields) estates.[111] Version 1.5 of the TEA Model has been updated to provide for the actual levels of sharing of trenches in new estates in bands 1, 2 and 3.

19 The sum of the percentage of trench sharing in new estates and the percentage of trench sharing between the main and distribution network is applied as a deduction to the cost of trenching in the distribution network in the TEA Model. Therefore, the overall deduction to the cost of trenching in the distribution network is 18.95%.

Breakout and reinstatement

How does the TEA Model account for breakout and reinstatement?

20 It is appropriate to assume the construction of underground network rather than one deployed via aerial cabling because aerial cabling is practically impossible under current regulatory conditions.[112] In the Final Decision (April 2009) in relation to the Band 2 ULLS Undertaking, the ACCC stated that "the use of underground cabling would be necessary due to restrictions from local councils". Furthermore, the suggestion that there will be a relaxation of laws relating to aerial cabling for the NBN is yet to progress beyond a statement in a Discussion Paper.[113]

21 Since the CAN traverses a disparate array of urban, suburban, provincial and rural environments, the excavation and reinstatement of trenches vary with local conditions. Some cable routes in the optimised route plan will be through quite densely populated areas characterised by concrete pavements and driveways (of varying thicknesses and forms of concrete) while other areas will have asphalt, brick, turf or a mixture.

22 After dealing with the surface conditions, subsurface conditions must then be addressed (for example, whether trenching is to occur through turf, rock, or a mixture of both). The cost of reinstatement of the area must also be accounted

[111] Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], August 2008, paragraph 42 (**Submission Supporting Documents, Volume 2, Document 2.3**)).

[112] Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], August 2008 (**Submission Supporting Documents, Volume 2, Document 2.5**); Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], April 2009 (**Submission Supporting Documents, Volume 1, Document 1.9**).

[113] DBCDE, National Broadband Network: Regulatory Reform for 21st Century Broadband, Discussion Paper, April 2009, p 9-10 (**Submission Supporting Documents , Volume 2, Document 2.6**).

for. By way of example, in respect of Band 2 areas, the determination of appropriate placement methods in rebuilding a CAN over the optimised routes is explained in the annexure to [**TC1 c-i-c commences**][CIC] [**TC1 c-i-c ends**] statement.[114]

A.2 The ACCC's 'all turf world'

23 The draft IPP Determination states that the ACCC has adjusted the TEA Model to exclude "costs not faced by Telstra in building its access network, eg costs of breaking and reinstating concrete"[115]. The ACCC's approach is unreasonable for three reasons.

24 First, as is commonly the case with TSLRIC modelling, the TEA Model assumes an immediate build, which entails only one trench sharing opportunity in respect of the CAN at the point of time under inquiry. The alternative involves the construction of the existing CAN over a period of time (such that trench sharing opportunities could be obtained from that period), which would require many more costs than is the case in an instantaneous construction assumption. In effect, if what is being modelled is not the CAN as it is, then temporal assumptions and appropriate adjustments need to be made. This is no longer TSLRIC modelling.[116]

25 Second, the ACCC has assumed an "all turf" world in the adjustments it makes to the TEA Model to reflect the historical costs it says Telstra faced. There are no hard surfaces, including no sealed roads, in the ACCC's assumptions about trenching, which is a completely unrealistic world. As a matter of fact, Telstra has historically incurred costs in relation to breakout and reinstatement.[117] Even assuming the original CAN was installed before the ground was concreted over, Telstra had to deploy, expand and replace significant parts of the CAN in response to the continuing changes in the pattern and density of urban areas. Hugo has described the growth in older established areas of Australia's metropolitan cities as follows:[118]

> "**a significant and growing movement of people into inner and middle areas of Australian cities.** ...
>
> **urban consolidation activities of state, local and city governments, which have seen land in established suburbs, formerly occupied by factories, schools and other extensive uses, developed for medium-density housing**... the ageing of the massive cohort that moved into new housing in the 1950s and 1960s. [are leaving them to] younger people to move in as individual or groups of house blocks are redeveloped... **there are signs that many Baby Boomers are trading down to smaller, more centrally located houses**."[119]

26 As set out in the statement of , [**TC1 c-i-c commences**][CIC] [**TC1 c-i-c ends**] at paragraph 9, Telstra has spent over,[TC2 c-i-c commences][CIC]

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[114] Annexure TCL1 to Statement of [**TC1 c-i-c commences**][CIC] e [**TC1 c-i-c ends**], 19 March 2009, p 3-9 (**Submission Supporting Document, Volume 2, Document 2.10**)).

[115] ACCC, Draft pricing principles and indicative prices for LCS, WLR, PSTN OTA, ULLS, LSS (August 2009), p 19.

[116] Harris and Fitzsimmons, An Assessment of Telstra's TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS), November 2008, paragraph 2.2.2 (**Submission Supporting Documents, Volume 2, Document 2.8**).

[117] Telstra, Response to ACCC's request for further information on Telstra's Band 2 ULLS undertaking made pursuant to s152BT of Trade Practices Act dated 16 December 2008, March 2009, p1 - 5 (**Submission Supporting Documents, Volume 2, Document 2.9**).

[118] Hugo, G., (2002), Changing patterns of population and distribution in Australia, Joint special issue: Journal of Population and Research and NZ Population Review, September, pp 12.

[119] Hugo, G., (2002), Changing patterns of population and distribution in Australia, Joint special issue: Journal of Population and Research and NZ Population Review, September, pp 12.

CIC [TC2 c-i-c ends] on cable, ducts and pipes in the CAN over the last three years.

27 Third, the TEA Model takes a reasonable approach to breakout and reinstatement costs by using boring wherever practicable. Boring is the use of equipment to bore through the ground to deliver cable and conduit in order to avoid trenching costs, [**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**] gave evidence that the ratios for the placement of conduit underground using boring compared with the use of open trenching were developed to minimise costs while adhering to best practice engineering principles.[120] The TEA Model uses boring,[121] except in rocky terrain (since boring cannot be used in rocky terrain)[122] and where the conduit size consists of two or more conduits (boring is only feasible where up to two 100 mm conduits are to be deployed).[123]

Cost Factors

General comments about derivation of cost factors

28 The TEA Model undertakes a "bottom-up" cost analysis of direct network capital costs. A "top-down" methodology is used to derive an estimate of operations and maintenance (**O&M**) costs, and of indirect capital and expense costs.

29 In the Final Decision relating to the Band 2 Undertaking in April 2009, the ACCC criticised the use of Telstra's actual costs to derive cost factors as being inconsistent with a forward looking cost model. However, as Nigel Attenborough sets out in his expert statement (**Submission Supporting Documents, Volume 1, Document 1.2**), use of a top-down approach to cost factors is consistent with international best practice for forward looking cost models and is reasonable:

> ""it is standard practice in TSLRIC models to use a top-down approach, based on accounting data, to estimate O&M costs, indirect expenses and indirect assets. The use of such an approach by Telstra, including the use of the audited RAF data, to calculate the different cost factors in its model is therefore in line with international practice and in my opinion is reasonable".[124]

30 Indeed, the Analysys Model itself uses a top-down approach by benchmarking cost factors against the actual costs of overseas carriers but, as noted by Attenborough, it is not stated whose accounts have been used.[125]

31 The Analysys Model itself uses a top-down approach by benchmarking cost factors against the actual costs of overseas carriers.

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[120] Statements of [**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**], 11 March 2009 (**Submission Supporting Documents, Volume 2, Document 2.10**) and 19 March 2009 (**Submission Supporting Documents, Volume 2, Document 2.7**), including Annexure TCL1.

[121] Statement of [**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**], 19 March 2009 (**Submission Supporting Documents, Volume 2, Document 2.7**, including Annexure TCL1).

[122] Annexure TCL1 to Statement of[**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**], 19 March 2009, p 6 (**Submission Supporting Documents, Volume 2, Document 2.7**).

[123] Annexure TCL1 to Statement of [**TC1 c-i-c commences**]CIC [**TC1 c-i-c ends**], 19 March 2009, p 6 (**Submission Supporting Documents, Volume 2, Document 2.7**).

[124] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.8] (**Submission Supporting Documents, Volume 1, Document 1.2**).

[125] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.5] (**Submission Supporting Documents, Volume 1, Document 1.2**).

32 As explained by the Federal Communications Commission (**FCC**) in relation to the position in the US (which has adopted a modelling approach under TELRIC that is analogous to TSLRIC):

> "One area of controversy in state pricing proceedings has been the calculation of monthly operating expenses. In theory, the monthly operating cost should be calculated by estimating the total forward-looking operating expense associated with a particular network element… and then dividing the total operating expense by the appropriate number of units, such as lines, to obtain the expected average operating expense. **Such an approach is difficult to implement in practice, however, so regulators often estimate projected operating expenses by multiplying the projected investment in the network by an annual cost factor (ACF)**. An ACF typically is a ratio of current expenses to current investment for a particular account. The ratio is multiplied by the projected investment to obtain the projected expenses. An alternative method of calculating monthly operating costs is to look at current operating expenses and make any adjustments to reflect anticipated experience in the period for which the projection is made, such as adjustments for productivity and inflation." [126]

Overall reasonableness of Telstra's cost factors

33 During the Band 2 ULLS Undertaking process, the ACCC's expert, Ovum Consulting, reviewed Telstra's cost factors and issued two reports. The first report stated that all the cost factors in Telstra's TEA Model, except for the indirect expense factors, seemed acceptable and were within the range calculated in three other publicly available models (or were even lower).[127] The range derived by Ovum for indirect expenses from the PTS and ITST model was 7.5% to 18%, whereas the TEA Model was [**TC1 c-i-c commences**] [CIC] [**TC1 c-i-c ends**].

34 Telstra responded and explained that this discrepancy was due to the fact that indirect expenses in the ITST and PTS models had been calculated by multiplying the indirect expense factor by the total cost, including capital costs. In contrast, in the TEA Model, indirect expenses were calculated by multiplying the indirect expense factor by the total amount of direct expense. Using the most recent release of ITST's model, the ratio of overhead allocated to the access network (DKK 595 million) to operating expenses (DKK 564 million) was 105%. This ratio was more comparable to the indirect expense factor used in the TEA Model, and in fact larger than the TEA Model's [**TC1 c-i-c commences**] [CIC] [**TC1 c-i-c ends**].[128]

35 After reviewing Telstra's response, Ovum indicated in its second report that the only outstanding comment in relation to the TEA Model's factors was that Telstra had not submitted sufficient evidence to include intangible and retail costs within the cost calculation.[129] However, Telstra had in fact excluded intangibles and retail costs from the indirect factor calculations (it appeared that

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[126] FCC, In the matter of Review of the Commission's Rules regarding the pricing of unbundled network elements and the resale of service by incumbent local exchange carriers, WC Docket No 03-173, FCC03-224 (September 2003), paragraph 109 (emphasis added).

[127] Ovum Consulting, Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model (August 2008) , figure 3.16.

[128] Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Ovum's Submissions, December 2008, p 27.

[129] Ovum Consulting, *Telstra Efficient Access cost model - Economic issues*, February 2009, p 11-12 (**Submission Supporting Documents, Volume 2, Document 2.11**).

Ovum had simply not been provided with the updated factor calculation sheet that had been provided to the ACCC).[130]

36 Ovum's analysis, and the fact that its only outstanding comment in relation to the cost factors in the TEA Model was in relation to a matter that Telstra had already resolved, suggests that Ovum considered that Telstra's cost factors were acceptable.

O&M factors

37 The O&M expenses associated with each category of network plant and equipment are calculated by applying a percentage mark-up ("an O&M factor") to the level of investment modelled for each category of plant and equipment in the TEA Model[131] It is standard procedure in TSLRIC+ models to use direct operating expense to investment cost ratios[132] – that is, to work out a factor for ascertaining the O&M expenses by deriving a factor from the real life experience of the entity under investigation.

38 As Nigel Attenborough states in his report:

> "it is standard practice in Europe and elsewhere to use a top-down approach to calculate operating expenses and that the cost factors employed are normally based on rules of thumb reflecting the experience of telecommunications operations in planning, constructing and operating networks or derived from accounting data".[133]

39 Although the O&M factors are calculated based on the actual costs incurred by Telstra (as recorded in Telstra's accounts prepared under the Regulatory Accounting Framework (**RAF**)), the resulting O & M expenses are substantially lower than Telstra's actual costs since the factors are applied to the efficient level of investment costs estimated in the TEA Model.

40 The O&M factor for each category of plant and equipment is calculated by dividing the operating expense for each category by the investment cost for each category[134]. The numerator of each O&M factor (i.e. the operating expense) is calculated by taking the two maintenance expense items corresponding to the relevant plant and equipment category from the capital adjusted profit statements of the RAF, being "maintenance" and "other expenses". The total value across all RAF products is taken for both the internal and external wholesale business as defined in the RAF.[135]

41 Four adjustments are then made to the operating expenses (cable costs are reclassified and installation costs are eliminated):

(a) optical fibre cable costs are reclassified (this only applies to the "Inter-Exchange Cables" and the "Other Cables-CAN" categories, with the effect of reclassifying "Other Cables CAN" as "Inter-Exchange Cables". This is done because there are no investment costs in the RAF which correspond

[130] Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Ovum Advisory Notes, April 2009, p 1-2 (**Submission Supporting Documents , Volume 2, Document 2.12**).
[131] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, paragraph 3.
[132] NERA, Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?, January 2009, [3.7] (**Submission Supporting Documents, Volume 2, Document 2.14**).
[133] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.3] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[134] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2008, paragraph 8 (**Submission Supporting Documents, Volume 2, Document 2.13**).
[135] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [16].

to the "Other Cables-CAN" category and hence it is impossible to calculate an O & M factor for this category on its own);

(b) installation costs are eliminated;

(c) a provision for future inflation is included; and

(d) a provision for future productivity is included.

The reclassified cable costs adjustment only applies to the inter-exchange cables and the other cables CAN categories, and reclassifies other cables CAN as inter-exchange cables. This is done because there are no investment costs in the RAF which corresponds to the other cables CAN and hence it is impossible to calculate an O&M factor for this category on its own.

42 The denominator of each O&M factor (i.e. the investment cost) is taken from the fixed asset statements of the RAF. The full value of plant and equipment, the total asset value prior to appreciation across all RAF products is taken for both internal and external wholesale businesses as defined in the RAF. The full value of plant and equipment is the appropriate basis for calculating the O&M factors as the factors are applied to the full TEA Model investment costs.

43 Several adjustments are then made to the denominator:

(a) a forward-looking adjustment, which is made to two plant and equipment categories: ducts and pipes, and copper cables. For these two categories Telstra has adopted the full investment cost from the TEA Model. It is important to note that 96% of O&M expenses are associated with these two categories of plant and equipment. Therefore, while other categories used the RAF investment cost, the majority of O&M expenses in the TEA Model are based on O&M factors that use model investment cost as a denominator.

(b) identification and deduction of investment cost associated with network support assets (to ensure consistency between the development and application of the O&M factors); and

(c) removal of retail expenses.

44 In his expert report, Nigel Attenborough benchmarked the TEA Model O&M factors against the costs in TSLRIC models for four European countries and 17 US carriers, which were the top 25% carriers (i.e. most efficient) in an FCC cost comparison. The results of this comparison are presented below:[136]

[**TC2 c-i-c commences**]

[136] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.19] (**Submission Supporting Documents, Volume 1, Document 1.2**). In each case, the O&M cost factor is equal to the ratio of O&M expenses to the cost of the asset.

Table 1: O&M Cost Factors (TEA Model)

TEA Model		European Benchmark (NERA Studies)		US LECs (FCC database)		*TEA Model Weights:*
Asset description:						
Ducts and pipes main	C-I-C	Access, copper duct	1.27%	Conduit	0.40%	C-I-C
Ducts and pipes distribution	CIC	Access, copper duct	1.27%	Conduit	0.40%	CIC
Copper cables main	CIC	Access, copper cable	5.26%	All Cable	2.95%	CIC
Copper cables distribition	CIC	Access, copper cable	5.26%	All Cable	2.95%	CIC
Multiplexing Systems	CIC	Multiplex stations	5.97%	Transmission equipment	2.34%	CIC
Local switching	CIC	Switch hardware	7.98%	Digital Switching	3.24%	CIC
Inter-Exchange Cables	CIC	Transmission, fibre cable	4.23%	All Cable	2.95%	CIC
Weighted Average	CIC		**2.31%**		**1.05%**	CIC

[**TC2 c-i-c ends**]

From the table above, it can be seen that the weighted average O&M cost factor for the TEA Model is [**TC1 c-i-c commences**] [CIC] [**TC1 c-i-c ends**].

45 By way of comparison, the O&M factor in the Analysys Model is 0.93%.

46 Attenborough concludes that the O&M cost factors in the TEA Model are "in line" with those of efficient operators in other countries". [137] In contrast, Attenborough considered that the Analysys Model is "likely to have understated O&M costs in the CAN". [138]

Network support asset factors

47 In order to operate a ULLS business, an enterprise requires certain assets, which are used directly to supply that service, and are also used in the supply of other services. This requires some form of allocation of assets which are directly distributable to the ULLS (as distinct from what might be called general capital investments such as headquarters and the like which cannot be allocated specifically to a particular service or activity).

(a) In the TEA Model, network support asset factors are calculated for network land, network buildings, network building improvements, network power systems and network management systems.

(b) Network support asset factors for each category are calculated by dividing the value of CAN network support assets for that category by the total value of the CAN investment cost. By way of example, the network support asset factor for network buildings measures the required investment in buildings as a percentage of total direct CAN investment. [139]

48 NERA considered that it is standard procedure in TSLRIC modelling "to use indirect or direct asset ratios to capture the capital costs of types of equipment that have not been directly modelled" (Review Book, B4-23) such as network buildings, vehicles, computing and office equipment. In its review of the network support asset factors used to derive an allocation of network support assets, NERA concluded that this was consistent with the approach used in other

[137] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.2.2] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[138] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.2] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[139] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.2.7] (**Submission Supporting Documents, Volume 1, Document 1.2**).

TSLRIC+ models, and that the resulting costs were correctly added to the annual cost.[140]

Indirect asset factors

49 Indirect asset factors are calculated for the categories of land, building improvements, information technology, other indirect (fleet etc) and software. These factors are calculated by dividing the indirect asset cost from the RAF (which is first adjusted to remove accumulated depreciation, retail investment costs, retail depreciation, non-communications assets, software related investment costs already included in ULLS specific costs, and other investment and receivables)[141] by total direct assets. [142]

50 Indirect asset costs are calculated in the TEA Model by applying the indirect asset factors to the relevant category of modelled investment costs.[143]

51 Attenborough benchmarked the combined network support asset and indirect asset factors that were used in the TEA Model and the Analysys Model. He concluded, based on the analysis shown in the table below, that the TEA Model's network support asset factors and indirect asset factors lay within the range defined by European and US benchmarks, and could therefore be regarded as reasonable,[144] but that the Analysys Model factors were so low as to cast doubt on the reasonableness of this factor in the Analysys Model:

[TC2 c-i-c commences]

Table 4: Network Support Asset and Indirect Asset Factors

TEA Model		**European Benchmark (NERA Studies)**		**US LECs (FCC database)**	
Network Support Assets:		Buildings	2.28%	Land & Buildings	3.17%
Network Land	CIC	Vehicles	0.86%	Vehicles	1.50%
Network Buildings	CIC	General purpose computers	1.60%	General purpose computers	0.64%
Network Building Improvements	CIC	Other equipment	1.25%	Other equipment	0.05%
Indirect Assets:					
Land	CIC				
Building Improvements	CIC				
Information Technology	CIC				
Other Indirect (Fleet, etc.)	CIC				
Software	CIC				
Total	CIC	**5.98%**		**5.36%**	

Note: In each case the indirect asset investment cost is expressed as a % of total direct assets

[**TC2 c-i-c ends**]

52 In contrast, Attenborough considered that Analysys Model's indirect assets (a combined cost factor that covered network support and indirect assets) was very

[140] NERA, Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?, January 2009, paragraphs 33 to 34 (**Submission Supporting Documents, Volume 2, Document 2.14**).
[141] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [45] – [46] (**Submission Supporting Documents, Volume 2, Document 2.13**).
[142] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [45] and [48] (**Submission Supporting Documents, Volume 2, Document 2.13**).
[143] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [21] (**Submission Supporting Documents, Volume 2, Document 2.13**).
[144] Expert Report of Nigel Attenborough, 8 October 2009,paragraph [3.28] (**Submission Supporting Documents, Volume 1, Document 1.2**).

low compared with international benchmarks, and that the difference was so great that it cast doubt on the reasonableness of the Analysys Model's indirect asset factor.[145]

Indirect expense factors

53 Indirect expenses in the TEA Model are calculated by applying the indirect expense factors to the calculated O&M expenses in the TEA Model.[146] Indirect expense factors are calculated for the expense categories of "product and customer", "general administration", "information technology", "accommodation and property", "other non communications asset costs" and "other organisational costs".[147] They are derived by dividing the indirect expense (obtained by calculating the total expense for the combined retail, internal and external wholesale businesses as defined in the RAF, and then adjusting this total expense to eliminate retail expenses, depreciation, ULLS specific costs, installation costs, the ACT utility tax and operator services) by the total direct expense (being the total value of O&M expenses).[148]

54 Attenborough benchmarked the TEA Model's indirect O&M costs against European and US benchmarks. He noted that although the TEA Model indirect expenses looked high on their own, delineating the cost boundaries between O&M and indirect expenses was difficult[149] and a more reliable comparator was to combine the O&M and indirect expense factors. This comparison is set out in the table below:[150]

[TC2 c-i-c commences]

Table 3: Combined O&M and Indirect Expense Cost Factors (TEA Model)

	TEA Model	European Benchmark	US LECs (FCC database)
O&M and Indirect Expense	CIC	3.02%	1.36%

[TC2 c-i-c ends]

55 Attenborough concluded that:[151]

> "when the O&M and indirect expense factors are combined, thereby removing any problems of non-comparability in the classification of costs as O&M or indirect expenses, the overall cost factor in the TEA Model lies between the European and US benchmarks."

56 He also concluded that the combined Analysys figure of 1.49%, while at the low end of the benchmark range, lay within the range defined by the US and European benchmarks. This analysis is shown in the table below.[152]

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[145] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.6].
[146] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [21] (**Submission Supporting Documents, Volume 2, Document 2.13**).
[147] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [22] (**Submission Supporting Documents, Volume 1, Document 1.5**).
[148] Telstra, Operations and Maintenance and Indirect Cost Factor Study, October 2009, [22] – [29] (**Submission Supporting Documents, Volume 1, Document 1.5**).
[149] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.24] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[150] Expert Report of Nigel Attenborough, 8 October 2009, parpagraph [3.25] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[151] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.26] (**Submission Supporting Documents, Volume 1, Document 1.2**).
[152] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [4.4] (**Submission Supporting Documents, Volume 1, Document 1.2**).

Table 7: Combined O&M and Indirect Expense Cost Factors (Analysys Model)

	Analysys Model	European Benchmark	US LECs (FCC database)
O&M and Indirect Expense	1.49%	3.02%	1.34%

Capitalised overhead loading

57 Certain overhead expenses are joint and common costs incurred from multiple network elements or services. The classic example is the cost of the planning function or the costs associated with letting contracts, or certain management functions conducted by the owner, builder or manager of the CAN.

58 These overhead costs are expressed as a percentage mark up on the direct capital costs of constructing the CAN. NERA concludes as follows:[153]

> "This is consistent with the approach taken in many TSLRIC+ models. Indeed it is the approach used by NERA in its TSLRIC+ models including the fixed network model built for the ACCC in 1999."

59 Telstra has applied a conservative estimate of capitalised indirect overhead in the TEA Model That is, the overhead loading factor, which was calculated in August 2008[154] and then subsequently updated in December 2008[155] is in fact greater than the capitalised indirect overhead loading factor used in the TEA Model.

60 Ovum considered the overhead loading factor and concluded that the figure included in the TEA Model "can be considered as acceptable."[156] In addition, Attenborough's report observes that, although it is not within his remit to carry out an audit of Telstra's identification of relevant overheads and their allocation to different capital programs, the process described in the statements by Telstra personnel appears to be a "reasonable process for deriving the capitalised overhead factor" and that confidence in the process was enhanced by the fact that the derivation of the overhead factor "draws on data that is used in the preparation of the RAF accounts, which are audited, published and used by the ACCC".[157]

61 In its Final Decision in respect of the Band 2 ULLS Undertaking, the ACCC asserted that Telstra's evidence on the treatment of these overheads was inconsistent and may involve double counting between expended and capitalised items. However, the process was clearly explained in the witness statements filed by Telstra: costs are firstly recorded as expenses (because they are paid in the same way as other expended costs, such as labour costs incurred in the day to day operations of the business) but a subsequent verification process (with an auditable trail) is conducted to identify those expenses which are appropriately capitalised and they are then removed from the expense items and shifted to the relevant capital items. Hence, there is no double counting and the ACCC did not

[153] NERA, Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?, January 2009, p 23 (**Submission Supporting Documents, Volume 2, Document 2.14**).

[154] Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], August 2008, [28] (**Submission Supporting Documents , Volume 2, Document 2.17**).

[155] Supplementary Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], December 2008, [8] (**Submission Supporting Documents, Volume 2, Document 2.17**).

[156] Ovum Consulting, Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model, August 2008, p 50 (**Submission Supporting Documents , Volume 2, Document 2.15**).

[157] Expert Report of Nigel Attenborough, 8 October 2009, paragraph [3.15] (**Submission Supporting Documents, Volume 1, Document 1.2**).

seek to press this point during the Band 2 ULLS Undertaking hearing before the Tribunal.

Weighted Average Cost of Capital

62 The ACCC has applied a WACC of 9.87% in the draft IPP Determination.[158] This figure is based on the ACCC's analysis and consideration of Telstra's Band 2 Undertaking . However the ACCC has updated its estimates for the risk free rate and debt risk premium.

63 Telstra also reiterates and relies upon the evidence presented in the course of the ULLS Undertaking on WACC. Telstra has updated this analysis and considers that a vanilla WACC of 12.14 % should be applied. In support Telstra has attached a detailed report which is **Submission Supporting Document, Volume 1, Document 1.15**.

64 Telstra's views on the appropriate parameters are:

(a) **Risk free rate**: Telstra agrees with the ACCC in that the risk free rate should be based upon the 10 year Commonwealth government bond rate. Telstra considers that as the indicative prices are to apply from 1 July each year the bond rate should be observed and updated on 1 July each year. Telstra accepts the use of averaging in the period up to 1 July each year and considers that the previous 10 days trading data is an appropriate averaging period. Telstra also emphasises that it is imperative that WACC parameters be observed consistently and across comparable date ranges consistent with the GasNet principle.

(b) **Market risk premium (MRP)**: As the indicative prices will apply until 2012, and, as such, the return on capital allowed should reflect the opportunity costs of raising capital in the prevailing period. The market risk premium for this period is likely to be higher that the value of 6.5% proposed by the ACCC. Telstra considers that not only do historical measures support a long term MRP of 7%, but forward looking estimates of the MRP over the period which the indicative prices are to apply are substantially higher. Taking a conservative approach Telstra considers that a MRP of 7.5% is appropriate.

(c) **Debt ratio**: The ACCC has applied a value of 40% gearing on the assumption that it is reflective of the target gearing of a fixed network provider and consistent with Telstra's historic gearing levels. This analysis is flawed as the target gearing of a fixed network provider is more likely to be in line with that of Telstra's target gearing of 30%. It is not forward looking or relevant to rely upon gearing levels at the time of Telstra's initial privatisation some 15 years ago to inform the view as to the appropriate level of gearing a new entrant would apply today.

(d) **Asset beta**: Telstra reiterates its view that the asset beta should be 0.725, with a corresponding equity beta of 1.028. The ACCC has proposed a value of 0.5 for the asset beta and equity beta of 0.83. As explained at length in the course of the Band 2 ULLS Undertaking and in argument before the Tribunal in the ULLS Appeal, the ACCC's view is not forward looking in that it does not appropriately factor take into account the increasing and

[158] ACCC, draft IPP Determination, p71.

significant risks facing a fixed network operator which including declining demand, increasing substitution and risks of competitive bypass.

(e) **Debt risk premium (DRP)**: The ACCC has not established why an A rated bond is a better comparator than the Telstra DRP. Telstra considers that the Telstra wide DRP should be used as it is the best available proxy of that facing a fixed network operator. Telstra also notes that serious concerns were raised as to the underlying reliability of fair yield estimates on benchmark bond data in the course of the AER's review of WACC parameters. These problems do not arise when using, as Telstra proposes, a Telstra wide DRP.

(f) **Issuance costs**: Telstra considers that it is appropriate for debt and equity issuance costs to be recovered in the WACC. Each are legitimate costs associated with operating a fixed network that a hypothetical new entrant would incur. The ACCC has provided no basis to exclude equity issuance costs other than to state they have not been incurred by Telstra. This position is inconsistent with the TSLRIC valuation framework. As to the value of these parameters Telstra relies upon its detailed submission contained at **Submission Supporting Document, Volume 1, Document 1.15**.

(g) **Imputation credits**: Telstra acknowledges that the theoretical range is from 0 to 1. However this does not mean that it is appropriate to simply adopt the mid-point from the theoretical range. Whilst this may have been the practice of regulators in the past there a substantial body of evidence now exists in support of the view that the value of imputation credits is 0 given that foreign investors determine the price of capital.

(h) **Tax-rate**: Telstra considers that the current taxation regime is such that a new entrant would not be able to create timing differences to create an effective taxation rate which is lower than the statutory rate. Telstra also notes that the statutory rate is used in other aspects of calculating the WACC such as de and re-levering of equity beta estimates and that consistency requires the application of the same value of the tax rate across the WACC.

Attachment C TEA Model-related issues arising from the Telstra ULLS hearing [159]

This document summarises Telstra's position in relation to TEA Model-related issues raised during the Telstra ULLS appeal before the Australian Competition Tribunal (24 – 28 August 2009). There are two main sections:

- TEA Model design (dealing with modelling an all copper network and network design); and
- TEA Model inputs (dealing with trench sharing, breakout and reinstatement, cost factors, depreciation, asset lives and WACC).

	Telstra position	Evidence relied upon by Telstra	ACCC position
A. TEA Model design			
1.	**<u>Modelling an all copper network</u>** ***(i) Support for all copper*** • Until the Draft Decision, all modelling had been copper (this was accepted as being appropriate). *(T279:29-39)* • Telstra has only modelled copper. If the network required to be modelled was meant to be something else, Telstra has not done this. *(T280:6 to T281:16)* • The ACCC's objections to copper seem to relate to its implications in relation to breakout and	• Second Statement of[**TC1 c-i-c commences**] [CIC [redacted]][**TC1 c-i-c ends**], 8 April 2009160	***(i) "Service potential" of the network*** • The pricing principles do not mandate that the technology needs to be the same technology as the one in use (ie the declared service). An efficient network is not confined to unconditioned copper lines, but rather, the provision of a network that has the same service potential. *(T220:27 to T222:22)* • "Forward-looking networks should be considered in estimating a forward-looking cost and network technologies other than copper should be considered. The services delivered on these alternative platforms compete with the services

[159] NB: "T" = Transcript reference (page and line); "SIC" = Telstra Submission in Chief reference (page and paragraph); "SIR" = Telstra Submission in Reply reference (page and paragraph); "S" = ACCC written submission reference.
[160] **Submission Supporting Document**s, Document 1.9

	Telstra position	Evidence relied upon by Telstra	ACCC position
	reinstatement based on the assumption that a non-copper CAN would not utilise trenching to the same degree. However there is no evidence of this. *(T279:41 to T280:6)* ***(ii) Functionality*** • The ULLS is not defined by reference to functions (ie services that may be supplied over the ULLS) but instead by reference to a physical asset. The relevant service is the use of the local loop. *(T75:22-28)* • The critical attribute of the unconditioned loop is that an access seeker gets actual control over the pair and can use whatever equipment it chooses, to supply such services it chooses, in the manner it chooses to supply. The ULLS affords the access seeker control over the functionality of the unconditioned wires. *(T75:46 to T76:8)* ***(iii) Use of alternative technologies*** • Fibre and wireless are non-copper based, "conditioned" communications. They are not technologies which satisfy the ULLS service description or are capable of delivering the declared service. (*SIC 16:70-71; T78:7-11; T283:42 to T285:33)* • The TEA Model can be run with fibre instead of copper. However providing the necessary dark fibre to connect directly to the home is more		delivered on the copper network. The downstream services provided to the end user have the same serve potential as those supplied over the copper network." *(T226:1-6)* ***(ii) Use of alternative technologies*** • "An access provider that is operating efficiently in the long run would not choose to build a copper network but would be highly likely to use alternate technologies where the cost involved in breaking and reinstating concrete is not incurred and that could be something like fixed wireless, or where performance might be more efficient for example, using fibre instead of copper". *(T224:35-39)* • Although the ACCC accepts that a reasonable estimate of efficient ULLS network costs should have regard to the fact that the ULLS is a copper-based service, that does not mean that copper would be the only technology deployed in a forward-looking, efficient network in circumstances where there are other more economic means of service delivery available (eg radio, wireless, satellite or fibre). *(S18:106)* • To optimise its network, Telstra itself has chosen to deploy technologies other than copper, replacing its existing copper lines with optical fibre cable to the point where 10.2% of the SIOs in Telstra's CAN do not terminate at the exchange, but rather are fed by fibre from the exchange to a

	Telstra position	Evidence relied upon by Telstra	ACCC position
	expensive and will not produce a service analogous to ULLS. *(SIC16:76)* ***(iii) Appropriate build / buy signals*** • The LTIE are promoted by providing ULLS at a cost which gives the appropriate signal to potential competitors whether to build a new network or buy ULLS from Telstra. If a new network that is superior to ULLS is economically efficient to construct, then the LTIE are promoted by pricing ULLS so that there is an incentive for that new network to be constructed and used. *(SIC 16:73)*		larger pair gain system or RIM. *(S19:113)* ***(iii) Consistency with statutory objectives*** • The assumption of an all-copper network is inconsistent with the objective of estimating costs that are consistent with the prices that would result in a competitive market. *(S18:108)* • The ACCC rejects Telstra's contention that the use of non-copper based technology would be inconsistent with the statutory objective of encouraging the economically efficient use of, and investment in, infrastructure. *(S18:110)* • Constructing a new network would only be efficient (and thus promote the LTIE) where bypass using forward-looking technology is efficient in terms of the social benefits and costs. An assessment of whether bypass of the incumbent's network is efficient must take account of the fact that the CAN has natural monopoly and bottleneck characteristics. Duplicating a facility with natural monopoly characteristics (eg Telstra's CAN) is inefficient and socially undesirable. Socially optimal bypass will be encouraged under these circumstances only where the access price is set at the efficient, forward-looking network cost and not the efficient *copper based* network cost. *(S19:111)*

	Telstra position	Evidence relied upon by Telstra	ACCC position
2.	**<u>Network optimisation</u>** ***(i) Appropriateness of "scorched node" approach*** • The scorched node approach that Telstra has adopted is appropriate (*see T81:22 to T84:29)* because the movement of pillars from their existing locations would, have a marginal effect. *(T82:12-13)* The utilisation of existing routes provides the benefits of reality and feasibility. *(T82:17-18*) • The ACCC and Optus accept that it is reasonable for ULLS pricing to be based on a scorched node approach.[161] The criticism of the ACCC relates to an immaterial issue (the retention of existing pillars by the TEA Model) and the two-fold criticisms of Optus are based on: a) an incorrect assessment that Telstra's TEA methodology is not based on a conventional scorched node approach;[162] and	• Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 11 March 2009[163] • Harris R.G., Fitzsimmons W., *An Assessment of Telstra's TEA Cost Model for use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS),* 4 November 2008[164] • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 12 August 2008[165] • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 19 March 2009[166] • Frank Hatzenbuehler, *TEA Model Route Optimisation Process* (attachment to Frank Hatzenbuehler's statement)[167] • Telstra, *Measure of TEA Model Efficiency:*	***(i) Appropriateness of "scorched node" approach*** • The ACCC agrees that a "scorched node" approach to modelling TSLRIC+ is appropriate. It allows some actualities of the incumbent's network to be taken into account in estimating forward-looking, efficient network costs so that unrealistic deployment outcomes are not assumed. *(S16:94)* ***(ii) Criticisms re efficiency / optimisation*** • As the number and location of Telstra's existing pillars are retained in the TEA Model, it is unlikely that the Model is sufficiently forward-looking, efficient and thus capable of generating reasonable estimates of network cost. *(S17:99)* • The figures cited by Telstra in relation to the reduction in manholes, pits, trench kilometres and copper cable sheath kilometres compare the number of network components using the TEA Model to the number of network components in

[161] ACCC submissions at [94]
[162] See ACCC, Final Decision at p 53.
[163] **Submission Supporting Documents, Volume 2, Document 2.2**
[164] **Submission Supporting Documents, Volume 2, Document 2.8**
[165] **Submission Supporting Documents, Volume 2, Document2.5**
[166] **Submission Supporting Documents, Volume 2, Document2.10**
[167] **Submission Supporting Documents, Volume 2, Document 2.4**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	b) that the TEA Model only achieves "minimal optimisation", despite evidence to the contrary on both counts. *(SIR2-3:7-12)* ***(ii) Limitations on cable placement*** • In the real world, the cables in the CAN pass down one or both sides of the street along "rights of way" (the consequence of a legislative regime which dictates where cables are to be placed). *(T19:12-17)* • The impact of the Street Opening Codes are such that the range of possible routes of telecommunication cabling is practically limited .*(T82:38 to T83:27)* The Street Opening Conference material relates to all states of Australia, not just NSW. (*T286 to T287*) ***(iii) Benefits of using a subset of existing routes*** • The universe of existing routes reflects the accumulated knowledge of the sites of actual demand, the actual rights of way available for use and the topography and physical layout of the streets down which the actual CAN is laid. *(T21:7-11)*	*ULLS Band 2 – version 2*, 9 March 2009[168]	Telstra's copper network (not the level of efficiency as against a more efficient model). *(S17:102)* • The route optimisation followed by the TEA Model does not in and of itself minimise costs, it simply minimises the length of the network. While the precise impact of the level of optimisation is unknown in the TEA Model, it may have a significant impact on the TEA Model's estimate. *(S17:103-4)*

[168] **Submission Supporting Documents, Volume 2, Document 2.20**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	• The use of existing routes enables the use of existing distances between connection points (pillars, pits, manholes) in the distribution network, which "brings with it a precise knowledge of the distances between those points on existing routes" including the actual topography which the CAN experiences. *(T23:1-4)* • That the TEA Model builds in all aspects of topography is one of the great merits of the TEA Model. *(T23:6-8; T25:23-30)* • Ovum stated that the location of pillars was satisfactory for a top-down model and consistent with a scorched node approach. *(T285:33 to T286:11)* ***(iv) Cabling down both sides of the street*** • There is no evidence to support Optus' submission that laying cabling down both sides of the street is more efficient than Telstra's approach. *(SIR6:38)* Optus' reliance on Network Strategies' report for the proposition that cabling in existing developed Band 2 areas should be laid down both sides of the street is misplaced, since the report is to the opposite effect. *(T89:19-38)*		

	Telstra position	Evidence relied upon by Telstra	ACCC position
B. TEA Model inputs			
3.	**Trench sharing** ***(i) Types of trench sharing accounted for in the TEA Model*** • The TEA Model accounts for several forms of trench and conduit sharing, including: sharing trench costs between the CAN and the IEN; sharing main cable trench costs between ULLS (copper-fed) and non-ULLS (fibre-fed) services; sharing trench costs between Telstra and parties who lease conduit space in Telstra's network; sharing trench costs with developers of new estates and trench sharing in the distribution network. *(SIC24:111)* • There was no real opportunity to share new trenches with utilities (in light of the mature nature of utility networks in Band 2 areas) and no cost savings involved in reopening existing trenches used by other utilities. *(SIC24:113)* • Although in the hypothetical construction of a replacement network only a small percentage (a fraction of 1%) of the network would be able to	• Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 11 August 2008[169] • Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Draft Decision,* 23 December 2008 • Harris R.G., Fitzsimmons W., *An Assessment of Telstra's TEA Cost Model for use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS),* 4 November 2008[170] • Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper dated June 2008*, 12 August 2008	• It is the costs of breaking and reinstatement activities and the additional costs of boring under roadways and footpaths, and not the understatement of trench sharing, that results in the overstatement of trenching costs that would be incurred in deploying an efficient, forward-looking network. *(S19:114)*

[169] **Submission Supporting Documents, Volume 2, Document 2.3**
[170] **Submission Supporting Documents, Volume 2, Document 2.8**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	be placed in an open trench in a new estate shared with other utilities, Telstra took the conservative approach (against its interest) of using a figure for the percentage of new estates that would be completed in a typical year. While this was still below 1%, Telstra rounded this up and assumed 1% of all trenches across Band 2 would be placed in developer provided trenches (that is, that 1% of trenching work in the distribution area would be "free" of cost to Telstra). *(SIC24:114 and T85:20-21)* ***(ii) The "instantaneous build" assumption is appropriate*** • The instantaneous build assumption entails only one trench sharing opportunity in respect of the CAN at the point of time under inquiry. The alternative hypothesis must involve the construction of the existing CAN over a period of time, which requires many more costs than is the case in an instantaneous construction assumption. *(T84:36 to T85:10)* • If one assumes that trenches were built over a long period of time (and that trench sharing opportunities were obtained from that period), the resulting additional costs of capital, depreciation and technology changes would also have to be examined. If what is being modelled is not the CAN as it is, then temporal assumptions and appropriate adjustments need to be made		

	Telstra position	Evidence relied upon by Telstra	ACCC position
	(this is no longer TSLRIC modelling). *(T286:12-32)* • Assumptions in one part of the modelling process cannot be made that are entirely inconsistent with assumptions made in another. *(SIR4:18)*		
4.	**<u>Breakout and reinstatement</u>** ***(i) Sufficient use of alternative methods of trenching*** • The TEA Model adopts the use of lateral boring instead of trenching, breakout and restoration costs whenever feasible. Lateral boring cannot be used in rocky terrain and where the conduit size consists of two or more conduits. *(T86:40 to T87:3)* • Telstra agrees that much of a suburb's concrete surface breakout and restoration could be avoided and has accounted for this in the TEA Model's default inputs. *(SIR6:32)* The analysis based on version 1.3 of the TEA Model (handed up during the ULLS proceedings at *T87:10-11*) indicates that 53% of the overall CAN was dealt with by digging through turf, 37% by boring and	• Telstra, *Response to Ovum's Submissions,* 5 December 2008[171] • Statement of [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**], 12 August 2008[172] • Statement of [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**], 11 August 2008[173] • Statement of [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**], 11 March 2009[174] • Statement of [**TC1 c-i-c commences**] CIC [**TC1 c-i-c ends**], 19 March 2009[175]	***(i) General comments*** • The TEA Model realises all of the inefficiencies of deploying Telstra's legacy network today but none of the efficiencies of deploying a network with the functionality of Telstra's CAN today. Each of the choices of assumptions, methodologies and input parameter values inherent in estimating ULLS network costs have been resolved by Telstra in its favour. *(S16:90)* • It is the costs of breaking and reinstatement activities and the additional costs of boring under roadways and footpaths, and not the understatement of trench sharing, that results in the overstatement of trenching costs that would be incurred in deploying an efficient, forward-looking network. *(S19:114)*

[171] **Submission Supporting Documents, Volume 2, Document 2.21**
[172] **Submission Supporting Documents, Volume 2, Document 2.5**
[173] **Submission Supporting Documents, Volume 2, Document 2.3**
[174] **Submission Supporting Documents, Volume 2, Document 2.10**
[175] **Submission Supporting Documents, Volume 2, Document 2.10**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	10% by breakout and reinstatement. *(T87:21-30)* • There is no evidence to suggest the estimate of 10% in relation to rocky terrain assumed in the TEA Model is unreasonable. The evidence indicates the assumption was conservative and reasonable. *(SIR7:40-42)* ***(ii) Aerial cabling*** • Aerial (rather than underground) cabling should not be used to avoid trenching costs because this fails to take account of the legal and practical restraints on aerial cabling as well engineering feasibility. Ovum, the ACCC's expert, has agreed that underground cabling is the only feasible alternative in Australia. *(SIR4-5:19-29)* • Aerial cabling is practically impossible. *(T30:40 to T31:25; T86:1-30)* This is because no further aerial network can be built due to the restrictions now placed on local councils; this has been agreed by the ACCC. *(SIC17:77)* Thus, the installation of network cables underground is an appropriate assumption for the TEA Model. *(SIC19:85)*		***(ii) Aerial cabling*** • The ACCC submits that "there is evidence before the Tribunal that the position concerning aerial lines is undergoing change". *(T225:36-45)* • The TEA Model assumes that an 'efficient new entrant' would deploy an all-copper, all-underground network (constructed along the routes of the legacy network) regardless of the surface barriers in place. Where a significant proportion of surfaces are concrete or asphalt, breaking and reinstatement costs are examples of costs that an efficient network operator would take into account in considering an all-underground network. Telstra not only assumes the replication of its legacy network, but also the deployment of that network by a new entrant *today*. It would be more efficient for a new entrant deploying a network with the functionality of Telstra's copper CAN today to deploy fixed wireless technology or use aerial cabling such that trenching costs would be avoided. *(S20:117)* ***(iii) Historic costs vs current costs***

[177] ULLS Decision at [381]-[382].

	Telstra position	Evidence relied upon by Telstra	ACCC position
	(iii) Consistency with "forward looking" TSLRIC • Historic costs have no role to play in a TSLRIC+ analysis and would not achieve the objectives of regulated access. *(S22:103)* A price set by reference to a historical surface condition which no longer exists does not give the access provider an appropriate incentive to maintain or invest in its network. *(S23:105)* Historic costs and conditions are therefore irrelevant, unhelpful and misleading. *(SIC23:107)* • Optus' "backward looking approach" should be rejected because it is inconsistent with the forward looking approach of TSLRIC. *(T85:37-47)* • The ACCC assumes 100% turf – that is, no roads. This factual assumption is incorrect even in respect of the TEA Model. *(T287:23 to T289:10)*		• Although historical costs are irrelevant where that analysis is adopted to estimate efficient, forward-looking costs, they are not irrelevant to an assessment of the reasonableness of a proposed charge (S13:74) since they are relevant re Telstra's "legitimate business interests" (s152AH(1)(b)) and "direct costs" (s152AH(1)(d)). (S7:38). The effects of competition should not be included in a carrier's "legitimate business interests" and "direct costs" of providing access to the declared service.[176] (S14:79) • Telstra's current costs, in contrast to its historic costs, are of no assistance in assessing Telstra's proposed ULLS charge against the reasonableness criteria and the LTIE[177] because current costs reflect neither the actual network costs incurred by Telstra in supplying the ULLS nor the efficient, forward-looking network costs of supplying the ULLS. *(S14:82)*
5.	**<u>Cost factors</u>** **(a) General comments about factors** • These factors are "modelling shortcuts" and are used because any other approach is impractical.	• Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Ovum's Submissions*, 5 December 2008 • Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local*	• The factors are not transparent (there is an excel spreadsheet for each factor in which the factors are calculated and then fed into the annual cost sheet). *(T244:27 to T245:15)* • The factors and the other data which are set out in the factor study relate to version 1.2 of the TEA

	Telstra position	Evidence relied upon by Telstra	ACCC position
	(T89:30-36) • Telstra's factors are efficient because the use of factors is standard practice in TSLRIC modelling worldwide. The factors derived are applied to direct costs which reflect all the efficiencies arising from the route optimisation process (and thus the efficient deployment of equipment in the CAN). Ovum also concluded that all the factors were within the range of factors calculated in the three other publicly available models except for the indirect expense factor, and that the disparity in respect of this last factor could be explained by applying like-for-like calculations. *(T295:34 to T297:43)* • In response to the ACCC's allegations as to the potential for "compounding" errors, a model that has a building block approach will naturally mean that an error that is used as a basis for determining something else will have an ongoing effect through the model. *(T300:15-22)*	*Loop Service: Response to Ovum Advisory Notes*, 8 April 2009[178]	Model (not version 1.3). The document does not "explain the mechanics of the annual cost sheet". Also, the calculation of the factors is more complicated and opaque than the factor study suggests (eg it involves adjustments to RAF data). *(T245:17 to T248:11)* • There has been "inconsistent treatment of assets and expenses" and there is some doubt as to the reliability of the methodology used in relation to factors. *(T249:4-35)* • The issue of "compounding" arises *(T249:35 to T250:20; S25:151)*
	(b) O&M factors	• Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local*	• There is no basis for assuming that all operating costs associated with a service would be linked to

[178] **Submission Supporting Documents, Volume 2, Document 2.12**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	(i) *Consistency of O&M factors with TSLRIC+ methodology (no adjustment to Telstra's historical costs is required)* • When factors are used to calculate O&M, it is the *factor* which provides the basis for calculating an O&M expense related to the cost of the assets supplying the service. *(SIR17:114)* • It is standard practice to model O&M costs using ratios for direct operating expenses to investment costs and indirect costs using ratios for indirect expenses to direct expenses, as is done in the TEA Model. *(SIC26:120)* • Calculating O&M expenses using factors is consistent with TSLRIC+ methodology because the factors are intended to apply to the entire lives of the assets used in the model. Since Telstra's capital has been depreciated by approximately 50%, its assets are halfway through their lives. Therefore Telstra's expense factors have been applied to a network of average age. *(T89:36 to T91:11)*	*Loop Service: Response to the ACCC's Draft Decision*, 23 December 2008[179] • Harris R.G., Fitzsimmons W., *An Assessment of Telstra's TEA Cost Model for use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS),* 4 November 2008[180] • NERA, *Does Telstra's TEA Model provide a Reasonable Estimate of the TSLRIC + OF Supplying ULLS?*, 16 January 2009[181] • FCC, *In the matter of Review of the Commission's Rules regarding the pricing of unbundled network elements and the resale of service by incumbent local exchange carriers, WC Docket No. 03-173, FCC03-224*, 15 September 2003 • Telstra, *Operations and Maintenance and Indirect Cost Factor Study*, 7 April 2008[182] • Telstra, *Telstra's Efficient Access Model,*	the valuation of the assets used in the supply of the service. *(S24:146)* That is, the O&M factors assume that all operating costs associated with the ULLS will increase in constant proportion with the value of equipment, but there is no basis for such an assumption to be made. *(T248:13-17)* • The use of historical cost data to estimate operating costs is inherently unreasonable. Telstra has made no adjustment to the historical costs it has used to calculate the factors to account for the fact that those costs were incurred in relation to an aged network, so the cost factors are likely to be inflated. *(S24:147)*

[179] **Submission Supporting Documents, Volume 2, Document 2.16**
[180] **Submission Supporting Documents, Volume 2, Document 2.18**
[181] **Submission Supporting Documents, Volume 2, Document 2.14**
[182] **Submission Supporting Documents, Volume 2, Document 2.22**
[183] **Submission Supporting Documents, Volume 2, Document 2.5**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	• The O&M factors use a value for network capital costs (plant and equipment) based on the total value prior to depreciation (ie depreciation is "written back" into the capital assets). *(T91:12-21)* • The application of a constant factor to investments that vary by band necessarily means that the cost per line per band will differ (ie there is no implication that the unit cost per line across the entire CAN is the same as the unit cost per line in Band 2). *(T91:21-41)* ***(ii) Appropriateness of the O&M factor calculation*** • The O&M expenses included in the calculation of the O&M factors are ongoing O&M expenses only, as these are the expenses relevant to the ongoing ULLS monthly charge. Once-off costs such as installation costs are removed from the analysis as these are reflected in the charges for ULLS connections. *(SIC26:121)*	*Model Documentation: Addendum*, 6 August 2008 • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 12 August 2008[183]	
	(c) Other cost factors (network support asset factors, indirect asset factors and **indirect expense factors)** ***(i) Alleged incorrect allocation / overlap of assets and***	• Harris R.G., Fitzsimmons W., *An Assessment of Telstra's TEA Cost Model for use in the Costing and Pricing of Unconditioned Local Loop Services*	• Incorrect allocation / overlap of assets and expenses: some items of plant and equipment are listed in the annual cost sheet which have no role to play in the provision of ULLS (eg optical fibre cables, multiplexing systems, local switching and

	Telstra position	Evidence relied upon by Telstra	ACCC position
	expenses • In the main network, the TEA Model accounts for the cost of some fibre and related equipment to account for the sharing of trench and duct costs by fibre and copper lines. The contribution of the fibre and related equipment to O&M was minor (at least 96% of the O&M expenses related to ducts and pipes and copper cables). NERA considered the inclusion of fibre in this manner was appropriate since it accounted for trench sharing between copper and fibre. *(T91:43 to T92:24)* • There is no "overlap" between asset categories in the network support asset factors and the indirect asset factors. The asset categories that appear as network support assets are the support asset categories that Telstra "reversed out" of its direct assets *(T92:40-41),* whereas the asset categories that appear as indirect assets are taken from the fixed asset statements of the RAF. *(T92:43-44)* • The "Network Power Systems" category is appropriately included. Since the RAF requires Telstra to allocate this (along with the other support assets associated with buildings and power) to communications plant and equipment	*(ULLS),* 4 November 2008[185] • NERA, *Does Telstra's TEA Model provide a Reasonable Estimate of the TSLRIC + OF Supplying ULLS?*, 16 January 2009[186] • Telstra, *Operations and Maintenance and Indirect Cost Factor Study*, 7 April 2008[187] • Telstra, *Telstra's Efficient Access Model, Model Documentation: Addendum,* 6 August 2008	network power systems). *(S25: 148)* • Opacity of calculations and "shoe horning" of cost categories: some asset and expense categories appear in more than one place. In addition, the "adjustments" made to Telstra's historical costs before using them to calculate cost factors have not been clearly explained. *(S25:149-150)*

	Telstra position	Evidence relied upon by Telstra	ACCC position
	categories, it is appropriate to account for this asset category in calculating the cost of providing the ULLS.[184] Further, the operation of the CAN, including ULLS, requires power for the cable pressurisation systems. *(SIR18:118)* ***(ii) Opacity and alleged "shoe horning" of RAF cost categories*** • The classification (and subsequent adjustment) of RAF cost categories into the categories in the annual cost summary sheet were necessary to ensure accuracy. The adjustments substantially reduced the indirect expense factors and indirect asset factors. *(T93:9-20 and SIR18:20)*		
	(d) Capitalised overhead loading • Telstra incurs direct capital expenditure on the CAN (the costs of labour, materials and incidentals directly used in the construction of	• Harris R.G., Fitzsimmons W., *An Assessment of Telstra's TEA Cost Model for use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS),* 4 November 2008[188]	• The Tribunal should not be satisfied that the figure for overhead loading is reasonable because *(see T250:22 to T253-40 and S25:152 to S26:157)*:

[184] Telstra, Operations and Maintenance and Indirect Cost Factor Study, April 2008, para 23
[185] **Submission Supporting Documents, Volume 2, Document 2.8**
[186] **Submission Supporting Documents, Volume 2, Document 2.14**
[187] **Submission Supporting Documents, Volume 2, Document 2.23**
[188] **Submission Supporting Documents, Volume 2, Document 2.8**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	the CAN). In addition to this, Telstra incurs internal costs (on account of the planning, management and supervision of, and logistical support for, the programs relating to the construction of the CAN) and support capital and indirect capital costs (relating to investment in its assets other than those directly estimated in the main and distribution portion of the model). *(SIC27:123, 126))* • In relation to the ACCC's submission that the value of the direct assets used in the TEA Model are "inflated" to include overhead loading to account for indirect overheads, and that internal labour costs not directly attributable to direct assets should not be capitalised *(see T93:33 to T100:9 and SIR18:122 to SIR20:133)*: - Telstra's evidence indicates that it is appropriate and reasonable for overhead costs to be capitalised by applying an overhead loading factor to direct asset amounts since these overhead costs are associated with the construction of the CAN;	• NERA, *Does Telstra's TEA Model provide a Reasonable Estimate of the TSLRIC + OF Supplying ULLS?*, 16 January 2009[189] • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], August 2008 • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 12 August 2008[190] • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 12 December 2008[191] • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 17 December 2008[192] • Statement of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**], 19 December 2008[193]	- the methodology for calculating capitalised overhead lacks transparency; - Telstra's own internal overhead loading may not be a reasonable proxy for the overhead loading that would be applicable to an efficient forward-looking network provider; - Telstra's approach to capitalising overhead expenses by marking up the value of its capital assets by reference to the overhead loading may not be reasonable; - of the "compounding" issue; and - the statements of [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**] and [**TC1 c-i-c commences**] CIC [redacted] [**TC1 c-i-c ends**] are "open to varying interpretations and could be regarded as being conflicting" (but given Telstra's characterisation of those statements, this was no longer pressed at the end of the hearing.)

[189] **Submission Supporting Documents, Volume 2, Document 2.14**
[190] **Submission Supporting Documents, Volume 2, Document 2.17**
[191] **Submission Supporting Documents, Volume 2, Document 2.18**
[192] **Submission Supporting Documents, Volume 2, Document 2.24**
[193] **Submission Supporting Documents, Volume 2, Document 2.25**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	- Telstra in fact applied a conservative estimate of the overhead loading factor in the TEA Model; - Ovum considered that the overhead loading factor was acceptable; and - there is no double counting in relation to the calculation of the applicable overhead loading.		
6.	**Depreciation** ***(i) Why is straight line depreciation preferred?*** • Straight line depreciation is preferable to a tilted annuity because it evenly spreads investment costs over the life of the asset. It is difficult to come to satisfactory conclusions as to future matters which affect the tilt. Additionally, there are a number of indicators in the ULLS which point against a positive tilt in the circumstances which exist at the time of the inquiry. *(T57:28 to T60:36; SIC28:131-132)*	• Harris R.G., Fitzsimmons W., *An Assessment of Telstra's TEA Cost Model for use in the Costing and Pricing of Unconditioned Local Loop Services (ULLS),* 4 November 2008[196] • NERA, *Does Telstra's TEA Model provide a Reasonable Estimate of the TSLRIC + OF Supplying ULLS?*, 16 January 2009[197] • Concept Economics, *Depreciation – Prepared for Mallesons Stephen Jacques*, August 2008[198]	• The TEA Model uses a flat annuity to spread the capital costs used to provide the ULLS over the assumed economic life of those assets. Another approach is to calculate a monthly charge by the use of a 'tilted' annuity formula; a monthly charge which assumes that the access price will change by a fixed percentage per fixed period (the 'tilt') over the economic life of the capital assets used to provide the ULLS. In circumstances where the efficient forward-looking costs of providing the ULLS is expected to increase over time, the use of a flat annuity formula will result in an overcompensation to the access provider. *(S22:130-4 and T253:42 to*

[194] ACCC submissions at [133], [137(a)].
[195] ACCC submissions at [137(b)].
[196] **Submission Supporting Documents, Volume 2, Document 2.8**
[197] **Submission Supporting Documents, Volume 2, Document 2.14**
[198] **Submission Supporting Documents, Volume 2, Document 2.26**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	• There is no dispute between the parties that some form of economic depreciation should be adopted. The straight-line method used in the TEA Model is reasonable since it closely aligns with, and understates, economic depreciation costs. Telstra's approach results in no over or under recovery of costs since the depreciation recovered in the TEA Model equals the present value of annualised capital costs, being equal to the initial investment cost. *(SIR7-8:46-53)* • Straight line depreciation has a significant benefit in that it does not rely upon forecasts and predictions. It results in the recovery of an "average" amount of depreciation over the term of the Undertaking. This method is simply understood and widely used in the regulatory context. *(SIR9-10:55-62)* ***(ii) Why is the use of a tilted annuity problematic?*** • The tilted annuity's deferral of depreciation into the future means that cost recovery is delayed to a time when there will be fewer customers from which to recover those costs; the risk of failing to recover costs is substantially higher; the necessary increases in prices for cost recovery	• Telstra, Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Materiality Testing (Draft Version), 23 March 2009, Appendix B • Telstra, Telstra's Response to the ACCC's Discussion Paper dated June 2008, 12 August 2008[199] • Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Draft Decision*, 23 December 2008[200] • Telstra, *Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to Access Seeker Submissions,* 1 April 2009[201]	*T260:27)*

[199] **Submission Supporting Documents, Volume 2, Document 2.26**
[200] **Submission Supporting Documents, Volume 2, Document 2.27**
[201] **Submission Supporting Documents, Volume 2, Document 2.28**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	will only accelerate the decline in demand for CAN lines; and the depreciation profile resulting from a tilted annuity would likely ensure that a substantial portion of the costs of the ULLS could never be recovered. *(SIC29:133)* • The deferral of depreciation exposes Telstra to significant risk with no matching compensation. The tilted annuity does not reflect economic depreciation as effectively as straight-line depreciation. It is not observed in, and does not mimic, the outcomes of competitive markets. *(SIC29:133)* ***(iii) Straight line depreciation is appropriate since the future is uncertain*** • An upward tilted annuity assumes a degree of certainty of future price rise that is unwarranted in the circumstances. *(T290:12-45)* • The Undertaking will only be in effect for a limited duration, not for the life of the assets.[194] If in subsequent regulatory periods the access charge is insufficient Telstra can advance evidence in support of a higher access charge[195] and the ACCC can take that into account in setting prices in the next period. (*SIR11:63)*		
7.	**<u>Asset lives</u>** • The only asset life in dispute is the asset life of		• The only asset life in dispute is the asset life of copper main cable.

	Telstra position	Evidence relied upon by Telstra	ACCC position
	copper main cable which Telstra assumed to have a life of 10 years. Optus contends it should be 15 years (but the materials relied upon by it do not distinguish between main and distribution cable). *(T61:2-20 and SIR14:101)*		
8.	**<u>Cost of capital (WACC)</u>** **(a) General comments in relation to WACC** • The CAPM has previously been adopted by the ACCC as the appropriate method for estimating the WACC and is considered reasonable by Telstra. The inputs to the CAPM advocated by Telstra have been considered reasonable and the estimates of WACC produced by the CAPM have been noted by Professor Bowman as reasonable. *(SIC30:136-137)* • Telstra's oral submissions in reply responded to the ACCC's submissions in relation to the value of imputation credits. (*T295:18-34)*	• R Bowman, *Telstra's Weighted Average Cost of Capital for the CAN-related Assets for the provision of ULLS: Comments on Reports of Optus and Ovum and the ACCC draft decision, Prepared for Telstra,* 17 March 2009[202]	• In addition to its submissions about the risk free rate and the Blume adjustment, the ACCC makes submissions in relation to the debt risk premium *(T238:3-6)*, the market risk premium *(T238:6-12 to T242:13)* and the value of imputation credits *(T243:44 to T244:4)* • The input parameters required in calculating a firm's WACC require an element of judgment and estimation ensuring it is, to an extent, imprecise. Telstra appears to have estimated generous values for almost all of its WACC input parameters. This is a significant issue given that the monthly charge generated by the TEA Model is highly sensitive to the assumed WACC. *(S20:120-4)*
	(b) The risk free rate • The risk free rate accounts for 1.82% of the overall 3.5% difference in the Vanilla WACC	• Handley J, *Further comments on the Historical Equity Risk Premium – Final*, 14 April 2009[203]	• "The TEA Model is highly sensitive to the WACC that is used. The effect of adopting the ACCC's conservative WACC estimate at 9.64% would reduce the TEA Model's estimated charge by

[202] **Submission Supporting Documents, Volume 2, Document 2.29**
[203] **Submission Supporting Documents, Volume 2, Document 2.31**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	(which amounts to 53% of the disparity in the Vanilla WACC of the ACCC and Telstra, with the consequent impact on the adjusted WACC). *(T61:37-44)* • The risk free rate chosen by the ACCC (in April 2009, during the GFC) is absurdly low and is inappropriate since no appropriate adjustments to the market risk premium and other integers have been made. *(T61:44 to T64:14)* • See *T291:27 to T294:17* for Telstra's oral submissions responding to the ACCC's contentions, and *SIR11-12:69-75* for Telstra's submissions responding to the contentions of the ACCC and Optus.	• Bishop Officer, *Market Risk Premium – Further Comments*, January 2009[204] • Bowman R.G., *Telstra's Weighted Average Cost of Capital for the CAN-related Assets for the provision of ULLS: Comments on Reports for Optus and Ovum and the ACCC draft decision, prepared for Telstra,* 17 March 2009[205]	about 25% and bring it very close to the $30 mark in and of itself". *(T235:18-22)* • The difference between the point estimates in relation to the risk free rate (Telstra's 6.33% and the ACCC's 4.51%) has a marked effect on the price generated by the TEA Model. *(T235:2-5)* • "The use of historical data from December 2007 about the risk free rate is inconsistent with the process of seeking to estimate the forward, efficient looking costs of providing the ULLS. In that context, the relevant question is not whether the proposed monthly charge reflected the efficient, forward-looking costs of providing the ULLS in December 2007. It's whether they reflect those costs now." *(T236:35-39)*
	(c) The Bloom adjustment • Although the ACCC appears to accept that such an adjustment is appropriate in other circumstances it argues that the CAN will not be subject to any increase in systematic risk as it will have even greater market power than it does now in the future. *(T64:15-23)*		The ACCC discusses the equity and asset betas at *T242:23* and makes the following submissions: • It is "very likely that the CAN is least riskiest part of Telstra's business in the sense that it is a regulated asset, it has monopoly characteristics; it certainly has risk no asset does not have risk". *(T243:17-19)* • Telstra adopted a "high" beta of 1.028 (compared

[204] **Submission Supporting Documents, Volume 2, Document 2.30**
[205] **Submission Supporting Documents, Volume 2, Document 2.29**

	Telstra position	Evidence relied upon by Telstra	ACCC position
	• Telstra contends that it is difficult to ignore the decreasing appeal of the CAN (reflected in the reduced number of SIOs which is likely to continue into the future) and that Telstra is becoming less, rather than more, powerful. *(T64:25-40)* • See *T294:17 to T295:16* for Telstra's submissions responding to the ACCC's contentions in relation to the equity beta and the Blume adjustment, and *SIR12-13:76-95* for Telstra's submissions responding to the contentions of the ACCC and Optus.		with the ACCC's 0.83) because it did not have regard to the latest Bloomberg data, it made no allowance for the fact that its own beta would be higher than that of a standalone CAN and because of the Blume adjustment. *(T243:24-44)*

Attachment D ULLS and LSS Issues

1. Specific Costs Model

[TC1 c-i-c commences]

[206] See Statement of [TC1 c-i-c commences] [TC1 c-i-c ends], dated 28 July 2006.

Cl

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[TC1 c-i-c ends]

2. ULLS and LSS specific charges

A Contractor rates

1 Telstra supports the ACCC's use of the jumpering rates actually charged by contractors for ULLS and LSS connections, disconnections and MNMs as the basis for determining Telstra's efficient jumpering costs.

2 **[TC1 c-i-c commences]**[CIC [redacted] **][TC1 c-i-c ends]**

B Single connection and disconnection charges

B.1 Averaging

4 The ACCC should adopt averaged indicative prices for ULLS and LSS connection and disconnection charges for all of the reasons set out in section F.3 of Telstra's submission in relation to monthly ULLS charges.

B.2 Disconnection charges

5 In Telstra's view, subject to the above qualifications regarding timing, the ACCC should specify indicative prices for LSS and ULLS disconnections and those prices should be expressed to apply to all disconnections that take place outside of an existing churn process.

6 The draft IPP determination does not specify a price for ULLS disconnections and only specifies a LSS disconnection price payable from the time that appropriate end-user churn arrangements are in place. The rationale for this approach is expressed to be to encourage the implementation of appropriate churn processes.

7 The approach adopted gives rise to substantial uncertainty about the preconditions to Telstra charging for LSS and ULLS disconnections. Specifically, the ACCC has not sought to identify the particular churn arrangements it requires to be in place before disconnection charges would be payable. Nor has it provided any guidance on what is contemplated by Telstra increasing its "level of support" for those arrangements. With respect to ULLS, the ACCC has not even specified a disconnection charge. Telstra seeks additional guidance from the ACCC so that it is appropriately informed in making decisions to invest in the development of these processes.

8 Telstra does not accept that there should be any link with the implementation of a churn process and the ability to charge for stand-alone disconnections, such as a Handback ULLS. Nor does it accept that, in circumstances where Telstra has implemented appropriate churn processes, such as the DSL/LSS churn process, it should be prevented from levying disconnection charges for services that are disconnected

outside those churn processes. The price for disconnections outside an existing churn process should be as follows:

LSS

9 [redacted] for FY2009/10 (rounded up to the nearest 10 cents). This charge has been arrived at as follows:

- Jumpering - [**TC1 c-i-c commences**][CIC [redacted] [**TC1 c-i-c ends**] for FY2009/10. This is as per Telstra's proposal for the LSS single connection charge set out above;
- Indirect costs - 10% mark-up on contractor costs - adopting the ACCC's approach in previous arbitrations;[207] and
- IDS - [redacted] in FY2009/10 - adopting the ACCC's approach to calculating IDS costs,[208] but with an appropriately indexed labour rate.

ULLS

10 [redacted] in FY2009/10 (rounded up to the nearest 10 cents). This charge has been arrived at as follows:

- Jumpering - [**TC1 c-i-c commences**][CIC [redacted]][**TC1 c-i-c ends**] in FY2009/10 - using Telstra internal labour; and
- IDS - [redacted] in FY2009/10 adopting the ACCC's approach to calculating IDS costs,[209] but with an appropriately indexed labour rate.

C Managed network migrations

C.1 The description of LSS and ULLS MNMs is too broad

11 The proposed definitions of ULLS and LSS MNMs should be clarified to ensure that the indicative prices do not have unintended application. As it stands they could arguably apply to:

- project managed transfers of services from one access seeker to another (Transfer MNMs); and
- MNMs conducted outside of business hours.

12 In relation to the first issue, Transfer MNMs are not provided for under Telstra's standard access agreements and are not supported by Telstra's existing MNM systems and processes. The changes required to enable Telstra to offer Transfer MNMs would include modifications to a number of Telstra's IT systems and would involve significant implementation costs. Those costs would not be recovered via the ACCC's proposed ULLS and LSS indicative prices.

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[207] See for example ACCC, Access Dispute between Telstra and Adam regarding the LSS, published Statement of Reasons for Final Determination, December 2007.
[208] See for example ACCC, Access Dispute between Telstra and Adam regarding the LSS, published Statement of Reasons for Final Determination, December 2007.
[209] See for example ACCC, Access Dispute between Telstra and Chime regarding the ULLS, published Statement of Reasons for Final Determination, March 2008.

13 As to the second issue, the ACCC's indicative prices for ULLS and LSS MNMs should be expressed to apply only to MNMs that take place during standard business hours for the reason that Telstra incurs significant additional costs associated with performing MNMs after hours. These costs are primarily associated with certain systems changes that would be required to enable LSS after hours MNMs and the additional expenses of engaging third party contractors to undertake jumpering tasks outside their standard hours of work for both LSS and ULLS MNMs. Those costs would clearly not be recovered via the ACCC proposed ULLS and LSS indicative prices.

14 Telstra considers that the ACCC should expressly exclude Transfer and after hours MNMs from the application of its indicative prices for two principal reasons: the proposed MNM indicative prices are substantially below the efficient costs of provisioning Transfer MNMs and after hours MNMs, due to the implementation and ongoing costs described above; and there has been a substantial decline in demand for MNMs in recent years. The object of Part XIC, namely the promotion of the long-term interests of end-users, encompasses considerations of both the incentives for investment in infrastructure (s 152AB(6)(c)), and the legitimate commercial interests of the supplier of a service (s 152AB(6)(b)). In Telstra's view, these objectives will not be promoted by determining indicative prices for particular services that are substantially lower than the cost of providing them. Moreover, it is unlikely that competition would be promoted (s 152AB(2)(c)), given the continuing decline in demand for MNMs generally.

C.2 Cancellation charges for LSS MNMs are not specified

15 The draft IPP determination specifies indicative cancellation charges for ULLS MNMs but not for LSS MNMs. No explanation for the difference has been provided. Telstra considers that the same principles should apply to both ULLS and LSS MNMs. If the ACCC takes a different view, Telstra would request an opportunity to be heard on this matter after an explanation for the difference is provided.

D Drafting of LSS instrument

16 There appear to be some words missing from the fourth dot point in schedule 1 of the LSS Draft Instrument which reads "connection and disconnection charges should be set with reference to the amounts, and".

3. Recovery of ACT Utilities Tax

A Introduction

[TC1 c-i-c commences]

[210] Taxation Administration (Amounts payable - Utilities (Network Facilities Tax)) Determination 2008 (No 2), 13 August 2008.

CIC

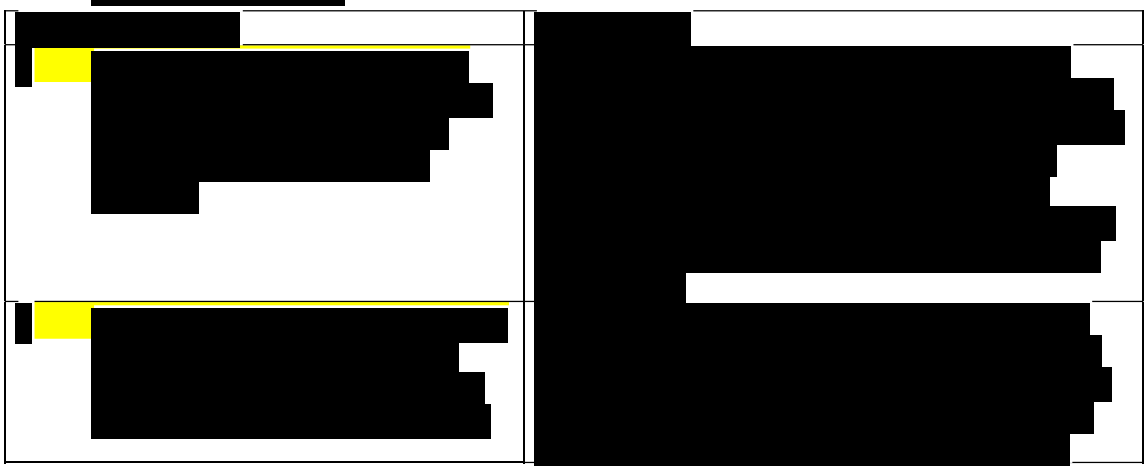
[211] However, as discussed in the following section, Telstra does not seek to recover the Utilities Tax from LSS as it is an overlay to a wholesale or retail line rental service.

CIC [redacted]

[redacted]

CIC

[redacted]




CIC

CIC [redacted]	[redacted]

[redacted]

[redacted]

	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

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- [redacted]
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[redacted]

[212] Utilities Network Facilities Tax (UNFT) FAQs http://www.transact.com.au/knowledge/UNFTFaqs.aspx

[**TC1 c-i-c ends**]

Attachment E Adjustments made to the Analysys Model

1 This attachment describes the adjustments made to the Analysys Model. The adjustments made reflect both the correction of model errors that have been highlighted throughout this submission, and an adjustment of the annuity tilt to reflect the reality of declining demand for PSTN services. We find that the results of the Analysys Model are highly sensitive to both the model errors and the tilt. Making either of these adjustments increases the results substantially, to levels well above the ACCC's indicative prices.

2 Two critical adjustments are made to the Analysys Model, resulting in substantially higher results for each of the relevant Fixed Network Services. Firstly, each of the errors highlighted in Attachment A are corrected, leading to a significant upward revision of the results. Secondly, the annuity tilt is adjusted to reflect the downward trend in demand for PSTN services. This leads to further increases in the Analysys Model results. The combined impact of these two adjustments is to raise the Zone A ULLS result from $22.01 to $35.95 and the Band 2 WLR result from $20.61 to $31.04 (for 2009/10).

A Adjustments to the model for errors

3 As noted in Attachment A, there are substantial errors in the Analysys Model which have the effect of artificially deflating the ACCC's indicative prices. These include plant and equipment errors such as the exclusion of certain joint costs, mathematical errors such as incorrect pit sizing, and engineering errors.

4 The method for correcting these errors is outlined in Attachment A and described in a detailed report (**Submission Supporting Documents, Volume 1, Document 1.1**).

5 Correction of all these errors leads to a substantial upward revision of the model results (Table). The impact of these errors is most pronounced in the results the ULLS and WLR for Zone B. For ULLS in Zone A, the result increases by a third to nearly $29.

Table 38: Impact of correcting the Analysys model errors (2009/10)

Service		Original Analysys Model	Adjusted Analysys model, with ACCC tilt	Adjustment
ULLS	Zone A	$22.01	$28.99	32%
	Zone B	$60.40	$96.03	59%
WLR	Zone A	$22.73	$28.35	25%
	Zone B	$67.22	$97.80	45%
PSTN OTA		0.74c	0.90c	22%
LCS		7.33c	9.05c	23%

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the ACCC's model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the ACCC's model

B Adjusting the tilt

6 The second adjustment made to the Analysys model is to the annuity tilt. The tilt is reduced to reflect the downward trend in demand for PSTN services (and hence expectations of lower future revenue).

7 Telstra fundamentally disagrees with the ACCC's tilted annuity approach, for the reasons discussed in the main submission (see also the report of Nigel Attenborough, **Submission Supporting Documents, Volume 1, Document 1.2**). However, Telstra has undertaken sensitivity testing of the tilt approach as set out below.

8 In its original form the Analysys Model incorporates a positive tilt, which has the effect of pushing cost recovery into the future. The ACCC argues that the positive tilt is justified since asset prices are increasing over time. The positively tilt annuity allows for a smooth increase in returns over time in line with this movement in asset prices. Telstra disputes this assumption, but for the purposes of this analysis, we have focused on the major element in the tilt, expected revenue.

9 Expected revenue is linked to trends in demand. If demand is increasing and revenues are expected to grow, then a positively tilted annuity may be justified since more capital costs will be able to be recovered into the future. On the other hand if demand for the relevant services is declining, then the tilt should allow for greater recovery of costs in earlier years, and less recovery later on when demand is weak.

10 Although the Analysys Model attempts to account for cost trends by applying a positive tilt in line with its view of asset prices, it does not properly account for trends in revenue. As has been argued elsewhere in this submission, demand for PSTN services is clearly trending downwards, and this should be reflected in the annuity applied by Analysys.

11 Adjusting the tilt for changes in demand involves three steps:

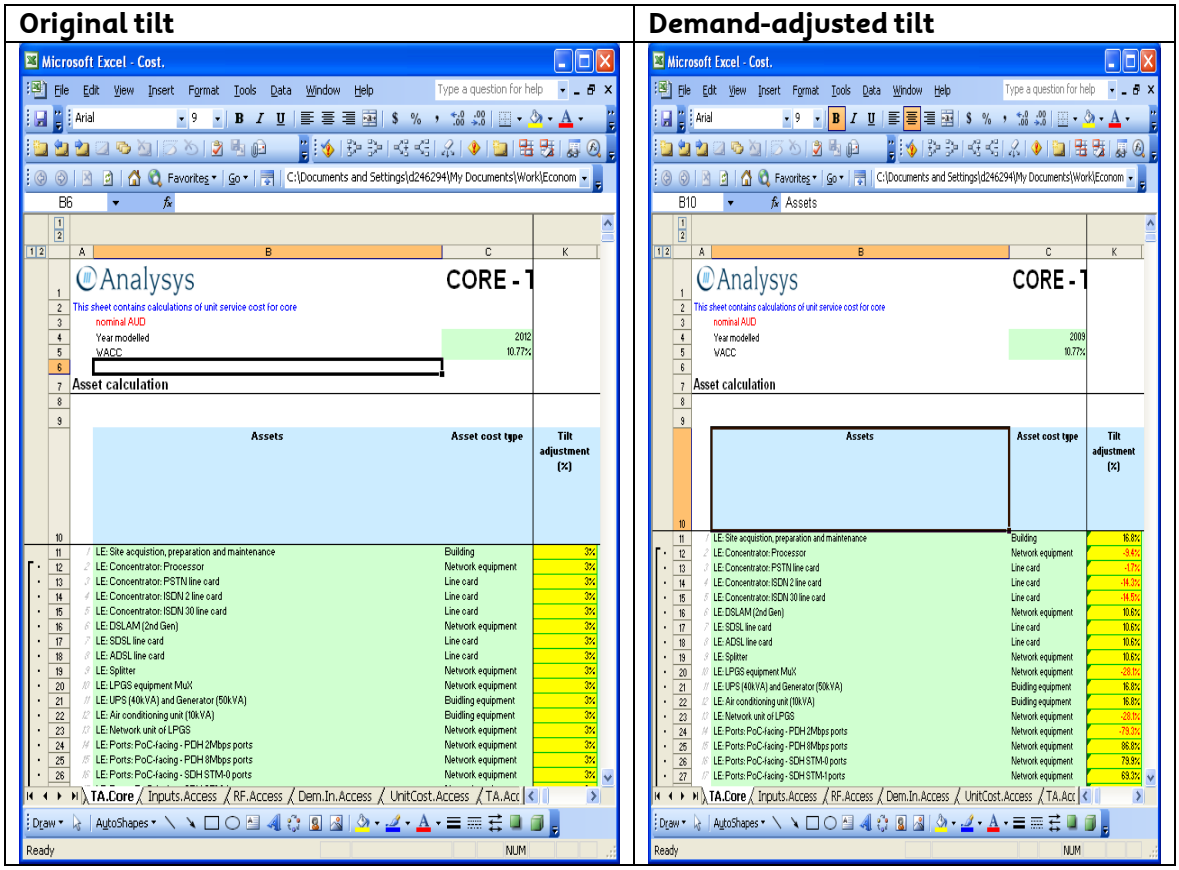
(a) Project the demand for each service over the life of the model (out to 2012);

(b) Use the model's routing factors to convert this service demand into demand for each asset over the life of the model; and

(c) Take the weighted average annual decline in usage for each asset and apply this as the asset-specific tilt.

12 As an example, the adjustment in the core model (sheet TA.Core) is shown in Figure 5 below.

Figure 5: Adjusting the tilt in the Analysys model



13 When the tilt is adjusted for trends in demand in this way the model results are again altered significantly. The output for ULLS in Zone A rises to $30 and the output for WLR in Zone A rises above $30 (Table 39).

Table 39: Impact of adjusting the Analysys model tilt (2009/10)

Service		Original Analysys Model	Adjusted Analysys tilt	Adjustment
ULLS	Zone A	$22.01	$30.46	38%
	Zone B	$60.40	$95.32	58%
WLR	Zone A	$22.73	$31.47	38%
	Zone B	$67.22	$102.93	53%
PSTN OTA		0.74c	1.05c	42%
LCS		7.33c	10.40c	42%

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the ACCC's model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the ACCC's model

Combination of errors and tilt

14 When both the Analysys errors and tilt are adjusted, the results are in most cases more than 50% higher than the original outputs. For the ULLS in Zone A, the adjusted Analysys model generates a result of around $36, around 60% higher than the ACCC's indicative price for that service. The increase in Zone B is substantially higher, since the Analysys Model errors have a larger impact.

Table 40: Impact of correcting errors and adjusting the Analysys model tilt

Service		Original Analysys Model	Adjusted Analysys tilt	Adjustment
ULLS	Zone A	$22.01	$35.95	63%
	Zone B	$60.40	$121.34	101%
WLR	Zone A	$22.73	$35.25	55%
	Zone B	$67.22	$123.24	83%
PSTN OTA		0.74c	1.06c	43%
LCS		7.33c	10.55c	44%

Note: The results for WLR do not include the 53c mark-up for the cost of line card, estimated by the ACCC's model. At least 53c needs to be added to each WLR cost presented below to represent the total cost calculated from the ACCC's model