

IN THE MATTER OF AN UNDERTAKING  
DATED 3 MARCH 2008 LODGED BY  
TELSTRA CORPORATION LIMITED WITH  
THE AUSTRALIAN COMPETITION AND  
CONSUMER COMMISSION IN RESPECT OF  
UNCONDITIONED LOCAL LOOP SERVICE

SUMMARY OF TELSTRA'S SUBMISSIONS TO THE ACCC

PUBLIC VERSION

**A. Introduction**

- 1 Telstra's Band 2 ULLS Undertaking ("**Undertaking**") is based on the pricing principles that the ACCC and the Australian Competition Tribunal ("**ACT**") have endorsed for many years.<sup>1</sup> Under that approach, access prices are set to recover the forward-looking economically efficient incremental costs of providing the service in question over the long run.<sup>2</sup> In addition, access prices are set to recover a reasonable contribution toward common costs shared by the service.<sup>3</sup> The ACCC refers to this approach as total service long run incremental cost "plus", or TSLRIC+.
- 2 The European Commission similarly imposes a long run average incremental cost standard for ULLS pricing,<sup>4</sup> as does the Federal Communications Commission in the US (there called total element long run incremental cost or "TELRIC").<sup>5</sup>
- 3 Telstra has consistently adopted TSLRIC+ pricing for ULLS, including in this Undertaking. The present Undertaking differs from Telstra's past undertakings in Telstra's use of the TEA model, which provides a much more accurate means for estimating the economic cost of building a customer access network ("**CAN**") than past models. In particular, the TEA model takes into account real world legal, natural and man-made obstacles to deploying the CAN<sup>6</sup>. These factors increase costs, but are largely or entirely, ignored in other models.

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<sup>1</sup> Telstra, Response to the ACCC's Draft Decision, 23 December 2008, Section C.

<sup>2</sup> The long run is the period for which all assets are subject to renewal, ie all inputs are assumed to be variable.

<sup>3</sup> Shared costs cannot be said to be incurred because the service is supplied and hence are not part of the service's incremental cost.

<sup>4</sup> European Commission, *Commission Communication on interconnection pricing in a liberalised telecommunications market*, (98/C 84/03).

<sup>5</sup> Federal Communications Commission, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, *First report and order* (CC Docket No. 96-98; CC Docket No. 95-185), 1 August 1996, paragraphs 29 and 377-396. The FCC's use of the TELRIC methodology has been approved by the US Supreme Court in *Verizon Communications Inc. v. FCC* 535 U.S. 467, 9 (2002). It is also enshrined in the US Code of Federal Regulations (47 C.F.R. 51.505)

<sup>6</sup> Telstra, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, at Attachment 1; Telstra, *Telstra Efficient Access (TEA) Model Overview*, 21 December 2007 (filed 3 March 2008) at paragraphs 18 to 21 on page 4 and following

- 4 This contrasts with the radical departures proposed by interested parties. For example, Optus has proposed the following pricing approaches, which are untested, have not been subjected to widespread industry consultation, and the consequences of which remain unmeasured:
- In August 2008, prices based on the written down value of the historical cost of Telstra's assets<sup>7</sup>; and,
  - In March 2009, prices based on the cost of maintaining and repairing the existing assets in a serviceable state for a limited time for main cable assets, and on an asset renewal basis (as in the UK water and sewerage industry) for other assets<sup>8</sup>.
- 5 Ultimately, in assessing whether Telstra's Undertaking is reasonable, the ACCC must consider the impacts that its decision would have for efficient investment incentives, the legitimate business interests of those who have already made investments in providing the service, and ultimately, the long-term interests of end-users. Further, the relevant timeframe for this analysis is lengthy, as many of the assets that the regulated access prices effectively value are very long-lived.
- 6 What will occur over the next twenty to forty years is not readily predictable (as a look back over the last twenty years confirms<sup>9</sup>). In this light, a prediction that future entry is not possible, in whatever form it may take, seems particularly presumptuous. For example, technological change, notably in the form of providing multiple services over one network, has made full-network facility entry considerably more viable.<sup>10</sup> The result is that in Australia, over the last fifteen years, many entrants have built their own facilities.<sup>11</sup> In addition, experience overseas suggests that overbuild may be viable against established networks that provide telephony, high-speed broadband and subscription television services (the so called "triple-play"). For example, Verizon in the US is deploying a fibre to the premises ("FTTP") network, almost without exception, in locations where a cable company offers a competing triple-play service, typically with broadband download speeds that are currently of up to 20 Mb/s and are capable of substantial further upgrade.<sup>12</sup> In one case, Verizon is deploying against an

<sup>7</sup> Optus, *Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper*, August 2008, 2.4 to 2.26

<sup>8</sup> Europe Economics, *Pricing Principles for the Unconditioned Local Loop Service (ULLS) in Australia: The Conceptual Framework*, 26 March 2009; and Optus, *Supplementary Submission in response to the ACCC's Draft Decision on Telstra's 2008 ULLS Undertaking*, March 2009

<sup>9</sup> Unpredicted developments include the development of broadband and the explosion of mobile/wireless usage and services.

<sup>10</sup> For example, see FCC, *In the matter of review of the section 251 unbundling obligations of incumbent local exchange carriers [...]*, FCC 04-248, 18 October 2004, especially paragraph 13.

<sup>11</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, Attachment 4; and see also generally Telstra, *Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing*, 20 March 2009

<sup>12</sup> Concept Economics, *Response to Optus supplementary submission on investment incentives, Draft Decision on Telstra's Access Undertaking for ULLS*, 20 March 2009, section 5; C Weinschenk, Verizon's Clever Corridor Play, IT Business Edge, 20 March 2006 (available at [www.itbusinessedge.com/item/?ci=13778&nr=1](http://www.itbusinessedge.com/item/?ci=13778&nr=1)); see also Jacquelin Emigh *FiOS could give more 'economic stimulus' to Verizon than others*, Betanews, 30 January 2009, (available at <http://www.betanews.com/article/FiOS-could-give-more-economic-stimulus-to-Verizon-than-others/1233353966>)

incumbent cable company and an incumbent telco (AT&T) that has rolled out an FTTN network.<sup>13</sup>

- 7 Consequently, if the ACCC is to promote the long-term interests of end-users, its policy must stimulate the real possibility that competitive entry will be ongoing, or at least that it will occur sometime in the period in which Telstra's current assets remain in use. The objectives of Part XIC require that the ACCC ensure the settings are correct to incent the outcomes that would best promote the long term interests of end users – potential network facilities based competition. TSLRIC+ pricing of all assets in Telstra's CAN, the approach adopted by the ACCC and the ACT over the past decade, provides the best assurance that future competition will not be precluded. In the ACCC's words, "An access price based on TSLRIC+ is consistent with the price that would prevail if the access provider faced effective competition, and usually best promotes the long-term interests of end-users".<sup>14</sup>
- 8 The long-term interests of end-users would not be served if entry was prevented merely because ULLS prices were set below the level necessary to recover efficient forward-looking costs solely to maximise the amount of ULLS acquired. It would be contrary to the objectives of Part XIC if such prices were set by relying on the tenuous forecast that entry would not and could not occur.
- 9 Furthermore, accepting Telstra's Undertaking price of \$30 will not result in negative margins to access seekers' business cases for ULLS. To the contrary, ULLS access seekers will earn EBITDA margins of 51-57% and EBIT margins of 41-48% if ULLS prices are \$30.<sup>15</sup> Assuming capital outlays for Optus of \$150m<sup>16</sup>, this implies a healthy return on investment with a payback period of between 1.4 and 0.8 years for Optus.<sup>17</sup>

**B. Previous regulatory pricing determinations for the ULLS are not meeting the objectives of Part XIC**

- 10 The current ULLS prices determined by the ACCC are not achieving the objectives of Part XIC. In particular the current prices are not consistent with the criteria set out in sections 152AH and 152AB TPA. This is because:
- current ULLS prices are below the long-run incremental costs of providing the service;

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<sup>13</sup> Matt Stump, *Verizon (FiOS) begins overbuilding AT&T (U-verse) in Texas*, OneTrak, Real Time Communications Intelligence, 9 June 2008, <http://www.onetrak.com/ShowArticle.aspx?ID=3487>; Saul Hansell, *Verizon's FiOS: A Smart Bet or a Big Mistake?*, New York Times, 19 August 2008, <http://www.nytimes.com/2008/08/19/technology/19fios.html>; Carol Wilson, *More disturbing numbers for telcos*, 13 May 2008, TelephonyOnline, <http://telephonyonline.com/broadband/news/disturbing-numbers-telcos-0513/>.

<sup>14</sup> ACCC, *Access Pricing Principles – Telecommunications: A Guide*, July 1997, page 29

<sup>15</sup> Telstra (2008), *Response to the ACCC's Draft Decision*, 23 December 2008, Attachment 1; and Telstra, *Response to Access Seeker Submissions on the ACCC's Draft Decision*, 1 April 2009, at section D on pp 66 to 70

<sup>16</sup> Fletcher, Paul (2006), *SingTel Optus – Regulatory Update*, 29 June 2006, slide 11

<sup>17</sup> \$150m divided by annual EBITDA margins for Optus, calculated in Telstra (2008), *Response to the ACCC's Draft Decision*, 23 December 2008, Attachment 1.

- as a result, access seekers are faced with no incentive for competitive bypass of the ULLS;
- the adverse impact on competitive bypass is apparent from Optus' behaviour in relation to its hybrid fibre co-axial cable ("HFC") network and the matters set out in the submission of Unwired in the Undertaking<sup>18</sup>; and
- these outcomes are evidence that the long-term interests of end users are not being met.

*Current ULLS prices are below the long run incremental costs of providing the service*

- 11 In June 2008 the ACCC released Pricing Principles and indicative prices for the ULLS for the period to 31 July 2009<sup>19</sup>. The indicative monthly price for ULLS in Band 2 was \$14.30 per month for 2007/08 and \$16.00 per month for 2008/09. The ACCC has made determinations in access arbitrations which are in line with the indicative prices for 2007/08.<sup>20</sup>
- 12 The TEA Model shows that the network cost component of the TSLRIC+ of providing the ULLS is approximately \$46.54 per month.<sup>21</sup>

*As a result no competitive bypass is viable*

- 13 When prices for ULLS were higher than current levels, many facilities based competitors entered the market.<sup>22</sup> Competitive bypass is a common feature in international markets, where investors face more correct incentives to invest.<sup>23</sup>
- 14 However, the cost of ULLS to access seekers is now dramatically below the long-run incremental costs of providing the service. Consequently, the pricing signals, which determine whether competitors purchase ULLS or invest in their own networks, are distorted in such a way that it makes no commercial sense for them to invest in alternative infrastructure.<sup>24</sup>

*The lack of competitive bypass is apparent from Optus' behaviour in relation to its HFC network*

- 15 Optus built an extensive HFC network across the urban areas of Australia in the late 1990s<sup>25</sup>, but now faces incentives to disinvest in that network.<sup>26</sup> Moreover, in a vast

<sup>18</sup> Unwired Australia Pty Limited, *Submission in response to Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge undertaking - Draft Decision November 2008*, at section 3.1

<sup>19</sup> ACCC, *Unconditioned Local Loop Service Pricing Principles and Indicative Prices*, June 2008

<sup>20</sup> See for example *Access Dispute Between Chime Communications Pty Limited and Telstra Corporation Limited, Final Determination under section 152CP of the Trade Practices Act 1974*, 21 April 2008; and *Access Dispute Between Optus Networks Pty Limited and Telstra Corporation Limited, Final Determination under section 152CP of the Trade Practices Act 1974*, 21 April 2008

<sup>21</sup> Version 1.3 of the TEA Model

<sup>22</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, Attachment 4

<sup>23</sup> Telstra, *Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing*, 20 March 2009, at sections I.D and I.E

<sup>24</sup> Telstra has provided more detailed submissions on this issue at Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D paragraphs 88 to 104 on pp 24 to 30

<sup>25</sup> Telstra, *Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing*, 20 March 2009, at section B.1

number of cases it prefers to service customers within the HFC footprint by means of ULLS rather than to use its own HFC network in which it has invested significant amounts.<sup>27</sup>

*These outcomes are evidence that the long-term interests of end-users are not being met*

16 Over the long term, network infrastructure competition is the form of competition that best promotes the long term interests of end users.<sup>28</sup> Pricing ULLS below the long run incremental cost of supplying the service will preclude such entry from occurring, to the detriment of end users.<sup>29</sup>

### **C. Telstra's Undertaking achieves the objectives of Part XIC**

17 Telstra's Undertaking achieves the objectives of Part XIC and the criteria set out in sections 152AH and 152AB, because:

- as acknowledged by the ACCC and ACT, TSLRIC+ based prices deliver market outcomes that best achieve all the objectives of, and appropriately balance the criteria in, Part XIC;
- the Undertaking provides the first step on a path towards full TSLRIC+ based pricing for ULLS;
- the TEA model has been shown to be a sophisticated and reliable TSLRIC+ model;
- on any set of reasonable and mutually consistent inputs the TEA Model estimates the TSLRIC+ of the ULLS at more than \$30 per month.

*The ACCC and ACT acknowledge that TSLRIC+ based prices best achieve the objectives of Part XIC*

18 For a decade, the ACCC and the ACT have been of the view that appropriate pricing for the ULLS should be based on the TSLRIC+ of providing the service<sup>30</sup>. TSLRIC+ was most recently reaffirmed by the ACCC as the appropriate basis for setting prices for the ULLS after Telstra lodged its Undertaking.<sup>31</sup>

19 The ACT has said that TSLRIC+ is a forward-looking cost concept which is designed to determine how an access provider would build a network to provide the service

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<sup>26</sup> Telstra, *Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing*, 20 March 2009, at sections I.C and II.B

<sup>27</sup> See Telstra, *Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing*, 20 March 2009, at section I.C.2

<sup>28</sup> Telstra, *Competing infrastructure in Band 2 areas: the implications of SingTel Optus' HFC network for ULLS pricing*, 20 March 2009, at section I.A

<sup>29</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.1 paragraphs 105 to 113 on pp 30 to 32

<sup>30</sup> See ACC, *Access Pricing Principles - Telecommunications: a guide*, 31 July 1997; ACCC, *Pricing of unconditioned local loop services: Final report*, March 2002; ACCC, *Unconditioned Local Loop Service (ULLS): Final pricing principles*, November 2007; Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section C

<sup>31</sup> ACCC, *Unconditioned Local Loop Service Pricing Principles and Indicative Prices*, June 2008

- today using the most efficient technology available.<sup>32</sup> In respect of ULLS, this must be the most efficient technology for a copper based CAN, because the service declaration explicitly states that the ULLS requires the use of a copper based wire.<sup>33</sup>
- 20 Regulated prices based on TSLRIC+ mimic the outcomes that will prevail in competitive markets, because in competitive markets prices will trend towards the long run efficient cost of providing the service.
- 21 When a competitor in the market sets its prices above the long run cost of providing the service, then firms will be induced to enter the market or expand their market share on the basis of efficient investments. Competition from these firms will cut prices to the point where the price of the service reflects the long run incremental cost of providing the service. Similarly, prices that are below the long run efficient costs of providing the service are unsustainable in the long run and therefore competitors that offer prices at below that level will not survive in the long run.<sup>34</sup>
- 22 Because TSLRIC+ represents the long run efficient cost of providing the service, TSLRIC+ based prices provide appropriate build-buy signals for competitors in the retail telecommunications market by which facilities based competition can ultimately be achieved in Australia.<sup>35</sup> For the reasons explained in the report of Concept Economics, the desire of access seekers for low ULLS prices should not be allowed to undermine the provision to access providers of a reasonable return on investment and hence the provision of adequate investment incentives to potential competitive entrants.<sup>36</sup>
- 23 In summary, TSLRIC+ based prices deliver outcomes which achieve the objectives of Part XIC and the criteria in sections 152AB and 152 AH because:
- (a) TSLRIC+ based prices reflect the cost of a new entrant providing the declared service, and for this reason promote efficient market entry and investment by competitors leading to facilities based competition<sup>37</sup>;
  - (b) they lead to the efficient use of infrastructure as access seekers will not use the network infrastructure unless its value to them exceeds the efficient cost of supply<sup>38</sup>;
  - (c) over the longer term, a move towards a price which more closely approximates TSLRIC+ provides appropriate investment signals to competitors and Telstra

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<sup>32</sup> *Re Telstra Corporation Limited (No. 3) [2007] ACompT 3 (17 May 2007)*

<sup>33</sup> See further, statement of [REDACTED] dated 8 April 2009 at paragraph 4 and following and annexure [REDACTED]

<sup>34</sup> See further Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section C.2 on pp 16 to 20

<sup>35</sup> See Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.2 on pp 34 and following

<sup>36</sup> Concept Economics, *Response to Optus supplementary submission on investment incentives, Draft Decision on Telstra's Access Undertaking for ULLS*, 20 March 2009

<sup>37</sup> See further Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, section D paragraphs 88 to 141 on pp 24 to 37

<sup>38</sup> See further Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.3 on pp 37 and following

to promote efficient investment in the infrastructure required to provide the service<sup>39</sup>;

- (d) Telstra itself will have a more appropriate incentive to undertake efficient (and only efficient) investment in infrastructure to provide the ULLS than it has under the current rates set by the ACCC, which is of increased importance in light of the Commonwealth government's decision to build a competing national FTTP<sup>40</sup>;
- (e) moving towards prices for the ULLS which more closely approximate TSLRIC+ promotes Telstra's legitimate business interests in recovering a reasonable return on its investment in providing the service<sup>41</sup>;
- (f) they protect the interests of access seekers because access seekers are required to pay no more than the long-run cost of providing the service<sup>42</sup>; and
- (g) they allow Telstra to recover the direct long-run costs of providing the service and not consequential or foregone profits in relation to related services.<sup>43</sup>

*A monthly charge for ULLS of \$30 is the first step on a path to full TSLRIC+ based pricing*

- 24 While a monthly charge of \$30.00 for the ULLS does not reflect the full TSLRIC+ of providing the service, the price proposed in the Undertaking provides an appropriate first step towards correcting the current distortions resulting from the artificially depressed prices for ULLS.

*The TEA Model is a sophisticated and reliable TSLRIC+ Model*

- 25 The TEA Model complies with internationally accepted practices for estimating TSLRIC+<sup>44</sup>. It includes only the network costs associated with the provision of the copper loops which are used for ULLS (including operation and maintenance and indirect costs). The TSLRIC+ estimated by the TEA Model does not include specific costs related to the provision of ULLS to access seekers, such as ordering and provisioning systems and processes.

*On any set of reasonable and mutually consistent inputs the TEA Model estimates the TSLRIC+ of ULLS at more than \$30 per month*

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<sup>39</sup> See further Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.2 on pp 34 and following; and Concept Economics, *Response to Optus supplementary submission on investment incentives, Draft Decision on Telstra's Access Undertaking for ULLS*, 20 March 2009

<sup>40</sup> See M Cave, *The Treatment of Ducting and Trenching Costs in Telecommunications Access Pricing: Why the UK Water Experience is not Relevant*, 7 April 2009, at paragraphs 5(d) on p 2 and 25 on p 6; and Concept Economics, *Response to Optus supplementary submission on investment incentives, Draft Decision on Telstra's Access Undertaking for ULLS*, 20 March 2009, at sections 4.1 on p 7 and 5 on p 9

<sup>41</sup> See further Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.4 on pp 39 and following

<sup>42</sup> See further Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.5 on pp 40 to 41

<sup>43</sup> See further Telstra, *Telstra's ULLS Undertaking is Reasonable*, 4 April 2008, at section C.2; and Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section D.6 on pp 41 to 43

<sup>44</sup> See N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009; and R Harris and W Fitzsimmons, *An Assessment of Telstra's TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services*, 4 November 2008

26 On any reasonable set of mutually consistent inputs, the TEA Model produces an estimate of the TSLRIC+ of providing ULLS in Band 2 which exceeds \$30.00 per month<sup>45</sup>. In the circumstances there can be no concern that the price is higher than the cost of providing the service as calculated using TSLRIC+ principles.

**D. Other pricing approaches might inform particular aspects of the TSLRIC+ estimation, but are inadequate as the primary means of cost estimation**

*Historic costs*

27 Optus has suggested that in setting ULLS prices it may be appropriate to have reference to Telstra's historic costs<sup>46</sup>. As explained above, it is the forward looking nature of TSLRIC+ which means that it delivers outcomes that would mimic a competitive market. The ACT has stated in relation to the pricing of declared services:

*“The starting point in assessing the submissions on this issue is, as throughout this proceeding, the principle that prices should be based on the forward looking costs of an efficient operator. The basic objective is to set prices that promote economic efficiency, which is the outcome that would be expected in a competitive market.”<sup>47</sup>*

28 A pricing approach which reflects historic costs will not achieve the outcome of a competitive market. As explained above, in a competitive market, prices will trend towards the long run cost of providing the service (TSLRIC+). If the long-run cost is lower than the provider's cost, then that provider will be liable to displacement by competitors. Conversely, if the long-run cost is higher than the service provider's cost (which is unlikely), then the service provider will receive an additional margin which rewards their cost competitiveness.

29 A historic cost approach to price setting will not replicate prices which would be set in an effectively competitive market, do not reflect economic cost and will not promote efficient economic behaviour by either the access supplier or the access seeker. Such an approach would signal an admission of defeat that facilities based competition will never occur in relation to the CAN.<sup>48</sup> Further explanation of why such an approach is inappropriate for use in the telecommunications industry in Australia and would lead to ongoing industry reliance solely on Telstra's PSTN is provided in the report of Professor Martin Cave.<sup>49</sup>

*Benchmarking*

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<sup>45</sup> Telstra, *Materiality Testing*, 23 March 2009

<sup>46</sup> Optus, *Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Discussion Paper*, August 2008, 2.4 to 2.26

<sup>47</sup> *Re Vodafone Network Pty Limited & Vodafone Australia Limited* [2007] ACompT 1 (11 January 2007), at 68 and 69

<sup>48</sup> See further Telstra, *Response to Access Seeker Submissions*, 18 November 2008, at section B on pp 2 and following; and Telstra, *Response to Access Seeker Submissions on the ACCC's Draft Decision*, 1 April 2009, at section A on pp 5 and following

<sup>49</sup> M Cave, *The Treatment of Ducting and Trenching Costs in Telecommunications Access Pricing: Why the UK Water Experience is not Relevant*, 7 April 2009



- 30 In the Draft Decision the ACCC has signalled a potential departure from assessing TSLRIC+ estimated using a bottom-up cost model to an approach which draws upon international benchmarking of ULLS pricing in other countries<sup>50</sup>. As discussed by the ACCC and the ACT, international benchmarking requires a multitude of adjustments to take account of variations in material factors between countries.<sup>51</sup> The number of such adjustments required to obtain anything like an adequate set of comparators is itself complex and fraught with its own estimation errors such that it should not be resorted to where a sophisticated country specific cost model, such as the TEA Model, is available to the ACCC.<sup>52</sup>
- 31 Mr Kip Meek, a former regulator with extensive experience of regulatory price setting in the UK and elsewhere, has provided two reports together with Mr Rob Kenny, in which he expresses his unequivocal opinion that, due to the substantial physical economic and network differences that exist between countries, the use of international benchmarking in setting regulated prices for the ULLS in the manner proposed by the ACCC and Optus is not appropriate or reliable in the face of a detailed and rigorous country specific cost model, such as the TEA Model.<sup>53</sup>

#### *The ACCC's Cost Model*

- 32 In December 2008, the ACCC commenced consultation on a TSLRIC+ model commissioned by the ACCC. The initial estimate of the network component of TSLRIC+ for the ULLS in Band 2 is \$14.78 for 2009. However, the inputs into the ACCC's Cost Model for which that price is derived are "dummy" values. That is made clear by the ACCC in the model's documentation. Thus, it would be inappropriate to rely on the values produced by it. In fact, Telstra has already identified several errors in the model which are yet to be rectified<sup>54</sup>, confirming that the model should not, whilst still in such a preliminary state, be relied upon in assessing whether or not Telstra's undertaking is reasonable.

### **E. Contentious issues in implementation of TSLRIC+ modelling**

#### *Internal consistency*

- 33 Just as TSLRIC+ requires the network design and technology of the modelled network to reflect the current most efficient option, when considering other inputs, the task is always to identify a reasonable forward looking estimate of the input. As Drs Harris and Fitzsimmons have said:

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<sup>50</sup> See generally ACCC, *Draft Decision*, November 2008 at 6.3 on pp 33 and following, and at p 42 and following

<sup>51</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008 at section C, pp 14 and following

<sup>52</sup> See further submissions in relation to the inadequacy of international benchmarking at Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section C on pp 14 to 24; and Telstra, *Response to Access Seeker Submissions on the ACCC's Draft Decision*, 1 April 2009, at section C on pp 62 and following and Attachment 1

<sup>53</sup> See ACCC, *Draft Decision*, November 2008; Ingenious Consulting Network, *Commentary on: the use of international benchmarking in setting interconnection rates*, December 2008; and Ingenious Consulting Network, *Response to Ovum's report "Telstra ULLS Undertaking - ULLS International Benchmarking"*, March 2009

<sup>54</sup> Telstra, *Initial Response to the ACCC's Cost Model*, 1 April 2009; Harris, Dr. Robert, *An Expert Evaluation of the ACCC Cost Model and its Use in the Pricing of ULLS*, March 2009; NERA, *Review of ACCC's Fixed LRIC Cost Model*, 31 March 2009; communication between the ACCC and Telstra available at <http://www.accc.gov.au/content/index.phtml/itemId/858091>

*“The TEA model, therefore, is only as good as the inputs used in running the model. In other words, “GIGO” applies: “garbage in: garbage out”. In somewhat less colloquial terms, “unreasonable input assumptions in, unreasonable cost estimates out”. It is especially important that users choose input values that are logically consistent with the proper interpretation of TSLRIC+, with each other, and with the best available information consistent with the TSLRIC+ construct. All inputs need to work together to simulate the same world ie, reflect the same assumptions.”<sup>55</sup>*

- 34 In some cases historical experience (such as in the case of operation and maintenance (“O & M”) costs and conduit leasing revenues) may be an appropriate and useful basis on which to estimate what is the likely cost of a hypothetical network constructor on a forward-looking basis, where information on forward-looking costs is not practically available. In such cases, using historical data is a pragmatic approach to estimating forward-looking costs. However, the reasonableness of each input must be assessed on a forward-looking basis in order for the estimate produced to be a valid estimate of TSLRIC+.<sup>56</sup>
- 35 The selection of some input values on a historic cost basis and others on a forward looking basis (not out of practical necessity but where the approach is selected so as to deliver the lowest “cost” estimate from the model) renders the assessment of “reasonableness” meaningless. Using such inconsistent inputs produces a number with no economic meaning. It does not reflect either the historic cost of providing the service or the forward looking cost of doing so. As such, the use of such an approach in setting prices will not achieve outcomes that mimic those of a competitive market and cannot be expected to result in reasonable cost recovery by the service provider (of either historic or forward-looking costs).<sup>57</sup>

#### *Deferred depreciation*

- 36 The TEA model depreciates assets using a straight-line depreciation schedule, which is the common approach adopted by telecommunications companies in their statutory accounts.<sup>58</sup> The annualised costs are then levelised over the assets’ lives, using a flat annuity, to produce a cost that is constant over time.<sup>59</sup>
- 37 The approach adopted in the TEA model is consistent with TSLRIC+ principles, and is therefore reasonable because:

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<sup>55</sup> R Harris and W Fitzsimmons, *An Assessment of Telstra’s TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services*, 4 November 2008 at 2.5.3 on pp 20 and following

<sup>56</sup> R Harris and W Fitzsimmons, *An Assessment of Telstra’s TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services*, 4 November 2008 at 2.2.2 on p 11

<sup>57</sup> See further Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, at B.3 on pp 9 and following and R Harris and W Fitzsimmons, *An Assessment of Telstra’s TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services*, 4 November 2008 at 2.4.7 to 2.5.9 on pp 18 and following

<sup>58</sup> Telstra, *Response to Access Seeker Submission on the ACCC’s Draft Decision*, 1 April 2009, para. 233-234

<sup>59</sup> Telstra, *Model Documentation*, 3 March 2009, sections D.3 and D.4

- (a) The depreciation schedule in the TEA model closely aligns with and understates economic depreciation costs,<sup>60</sup> which is the change in the economic value of an asset from one period to the next<sup>61</sup>;
- (b) Recovery of economic depreciation costs is standard practice in TSLRIC+ models<sup>62</sup>, and common amongst regulators in Europe and in the US<sup>63</sup>;
- (c) The depreciation schedule in the TEA model provides for financial capital maintenance<sup>64</sup>;
- (d) Financial capital maintenance is a bedrock condition that must be met by any regulatory structure that aims to ensure service provision on a durable basis<sup>65</sup> and is consistent with the objectives in s152AB(2) and s152AH(1) of the TPA<sup>66</sup>;
- (e) Straight line depreciation is used by the ACCC for other regulated utilities.<sup>67</sup>

38 An alternative approach to depreciation posited by the ACCC and other interested parties, and used in the past, is the tilted annuity approach.<sup>68</sup> There are a number of problems with the tilted annuity approach:

- (a) A positive tilt, such as that proposed by the ACCC<sup>69</sup> and applied by the ACCC in the past for CAN assets<sup>70</sup>, would defer the recovery of the cost of assets (depreciation) into the future, in this case significantly so. For example, if a tilted annuity with a +4% price trend is applied to an asset with a 30 year life, then by year 23, just 0.02% of the original cost of the asset would be recovered, by year 25 less than 20% of the asset would be recovered. Only by year 28 would more than half the asset's cost be recovered.<sup>71</sup>
- (b) The deferral of depreciation means that, while low prices are achieved in the present, prices charged to access seekers and ultimately end users must increase significantly toward the end of the assets' lives.<sup>72</sup> On the ACCC's assumptions, extending the pricing determined by the ACCC in arbitrations, which was based on a tilted annuity, would mean that the network cost component of the ULLS monthly charge would increase from \$9.81 in 2005/06 to approximately \$68 toward the end of the longest lived assets used

<sup>60</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, sections 4.5.2-4.5.3 and 5.4.2

<sup>61</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, page 13

<sup>62</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, section 4.5.1

<sup>63</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, section 3.5

<sup>64</sup> Ergas, H., *Depreciation*, 11 August 2008, section 4.3.1

<sup>65</sup> Ergas, H., *Depreciation*, 11 August 2008, section 2.1

<sup>66</sup> Ergas, H., *Depreciation*, 11 August 2008, section 4.1

<sup>67</sup> Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, page 38 and Attachment 2

<sup>68</sup> ACCC, *Draft Decision*, November 2008, page 123

<sup>69</sup> See ACCC, *Draft Decision*, November 2008, page 123

<sup>70</sup> Telstra, *Materiality Testing*, 23 March 2009, para. 38

<sup>71</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, section B.6.2

<sup>72</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para.s 458-462

to supply ULLS.<sup>73</sup> Adopting a tilted annuity in the TEA model and using the ACCC's price trends, would result in the monthly cost equalling \$33.64 in year 1 and increasing to \$186.30 in year 40.<sup>74</sup>

- (c) The titled annuity's deferral of depreciation into the future means that:
  - (i) Cost recovery is delayed to a time when there will be fewer customers from which to recover those costs<sup>75</sup>, since demand for CAN lines is decreasing by more than ■■■ per annum.<sup>76</sup>
  - (ii) The risk of failing to recover costs is substantially higher, as technology developments make bypass more likely.
  - (iii) The necessary increases in prices for cost recovery will only accelerate the decline in demand for CAN lines as customers move to mobile and other facilities based competitors (including the Commonwealth government's proposed FTTP).
- (d) The deferral of depreciation exposes Telstra to significant risk<sup>77</sup> (which will be increased by the Commonwealth governments' construction of a competing national FTTP network) with no matching compensation in the allowed rate of return to match that risk.
- (e) The tilted annuity does not reflect economic depreciation.<sup>78</sup>
- (f) The tilted annuity is not observed in and does not mimic the outcomes of competitive markets.<sup>79</sup>

39 The ACCC has argued that a tilted annuity is required to prevent over-recovery of costs, in the event that the asset base is re-valued upward in the future.<sup>80</sup> However, it is at the ACCC's discretion to re-value assets upward in future regulatory proceedings. It is within the ACCC's power (both in the undertaking and arbitration processes) to not re-value assets in the future in the way that would, in the ACCC's view, require the use of a tilted annuity.<sup>81</sup> The ACCC can have regard to past decisions and the application of the tilted annuity requires a large commitment by the

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<sup>73</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para. 94

<sup>74</sup> Telstra, *Materiality Testing*, 23 March 2009, para.s 42-43 specifically and section B.12 generally

<sup>75</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, para. 243

<sup>76</sup> Telstra, *Materiality Testing*, 23 March 2009, appendix B; Telstra, *Response to the ACCC's Discussion Paper*, 12 August 2008, pages 8-9

<sup>77</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, sections B.6.3 and B.6.4; Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para.s 470-474;

<sup>78</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, Appendix A; NERA, *Review of ACCC's Fixed LRIC Cost Model*, 31 March 2009, section 4

<sup>79</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, para. 233-234; Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para.s 463-469; Telstra, *Response to Access Seeker Submissions*, 18 November 2008, section F.7; Ergas, H., *Depreciation*, 11 August 2008, section 4.3.3.2

<sup>80</sup> ACCC, *Draft Decision*, November 2008, page 123

<sup>81</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, section B.6.5; Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para. 478

ACCC to increase prices in the future to ensure cost recovery in any event.<sup>82</sup> Telstra's legitimate business interests are not met by the imposition of a solution that may prevent it recovering costs where an alternative approach that would assure cost recovery is available.

- 40 Even if the asset base is expected to be re-valued in the future, while the tilted annuity takes into account changes in asset prices, it fails to account for changes in O & M costs, changes in the volume of output from the assets, and any other systematic elements in the factors affecting the re-valuation of the asset base (for example, if there is a systematic pattern to the gap between provisioned capacity and capacity determined by the regulator to be efficiently required).<sup>83</sup> The failure of the tilted annuity to take these things into account means that there is a systematic bias resulting in the under-statement or overstatement of cost.
- 41 In any case, observing more recent asset price trends, if a tilted annuity were applied it would be appropriate to use a negative price trend for copper and trenching assets,<sup>84</sup> which would reverse the tilt of the annuity proposed by the ACCC and mean that the approach in the TEA model understates cost in the early years of the assets' lives.

#### *Trenching costs, new estates, breakout and reinstatement*

- 42 The cost of constructing a replacement network will necessarily be influenced by the real world in which that network must exist. To ignore such real world constraints makes the cost estimation exercise devoid of meaning. As such, the assumptions in relation to trench sharing and breakout and reinstatement which are used in the TEA Model must reflect the real world constraints that may reasonably be expected to be faced by the constructor of a replacement CAN.<sup>85</sup>
- 43 The TEA Model, in accordance with TSLRIC+ principle, reflects cost savings for trenching and installation of conduit that would be available to a CAN constructor today, and also allocates the cost of trenches and conduits between the services that use them so that only costs referable to the ULLS are included in the cost estimate for that service.<sup>86</sup>

#### **Sharing with other utilities**

- 44 It would not be possible for the constructor of a replacement CAN to share trenches to any significant extent with other utility providers. The reasons for this are explained

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<sup>82</sup> Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para.s 480-482

<sup>83</sup> N Attenborough, *Review of ACCC's Fixed LRIC Cost Model*, 31 March 2009, section 4.1.2; Ergas, H., "Time Consistency in Regulatory Price Setting: An Australian Case Study", forthcoming in *The Review of Network Economics*, Summer 2009, footnote 3

<sup>84</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, section B.6.1 and para. 166; Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, para.s 476-477; a comparison of Telstra vendor prices in v 1.3 of the TEA model and the average prices paid to vendors since 2000 also indicates prices have fallen – Telstra, *Response to the December 125BT Request for Further Information*, 13 March 2009, Table 2

<sup>85</sup> See R Harris and W Fitzsimmons, *An Assessment of Telstra's TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services*, 4 November 2008 at 2.5 and 2.6 on pp 19 and following

<sup>86</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, at section 4.4.2 on p22

in the statement of [REDACTED]<sup>87</sup>. In summary the practical realities that prevent trench sharing on a large scale are:

- (a) it is extremely difficult to co-ordinate installation activities so that two or more utilities can install their plant in the trench while it is open. The costs of such co-ordination (if possible) would be significant;
- (b) the layout of the CAN differs from networks of other utilities;
- (c) there are significant dangers presented by the collocation of telephone cables with electrical supply cables, gas or water pipes;
- (d) there are stringent separation requirements for utilities which are likely to mean that a shared trench will need to be larger and hence more expensive; and
- (e) further, for the purposes of estimating forward-looking costs, there is no reason to expect that outside of new estates, other utilities would rebuild or significantly expand their networks at the same time as the hypothetical replacement CAN is constructed.

45 [REDACTED] is a network planner with ten years of practical experience in deploying Telstra's network. There is no reason to expect that the difficulties faced by the hypothetical constructor of a replacement CAN would be substantially different from those which face Telstra as explained by [REDACTED].

46 On that basis, it is reasonable to assume that the only opportunity to share trenches for the installation of the CAN with other utilities occurs in new housing estates.

### **New Estates**

47 Currently, the number of new services in operation ("SIOs") provisioned in new estates annually represents approximately [REDACTED] of Telstra's national CAN SIOs.<sup>88</sup> Only approximately [REDACTED] of new SIOs in new estates each year are located in Band 2, and of those only [REDACTED] can be expected to be provisioned with an all copper loop (as opposed to wholly or partially optical fibre) capable of supporting ULLS. Thus, annually, [REDACTED] of SIOs are added in new estates in Band 2 areas and [REDACTED] are added in Band 2 areas which are capable of supporting ULLS. To ensure that the calculation of TSLRIC+ reflects the cost incurred by a new entrant replicating Telstra's CAN on a forward-looking basis, it is reasonable to assume that no more than 1% of trenching is shared with other utilities. Since the mid-1990s, in the majority of new estates, a common trench (specifically excavated to meet the mandatory separation requirements between networks) is provided for all utilities at the cost of the developer of the estate. Use of that trench can be co-ordinated from the initial planning stages of the development. The TEA Model deducts 1% of total trenching cost from the total network cost in order to reflect this cost saving.<sup>89</sup> The

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<sup>87</sup> Statement of [REDACTED] dated 11 August 2008, provided to the ACCC on 12 August 2008

<sup>88</sup> Statement of [REDACTED] dated 11 August 2008 at paragraphs 56 and 57

<sup>89</sup> As to the reasonableness of this approach see N Attenborough, *Review of ACCC's Fixed LRIC Cost Model*, 31 March 2009, at 4.4.2 on p 23; and Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, at pp 28 and following

ACCC's independent consultant, Ovum, agrees that 1% is a satisfactory estimate for this purpose.<sup>90</sup>

- 48 In its draft decision, the ACCC has suggested that it considers it reasonable to assume that the replacement CAN would be built over a period of approximately 13 years and therefore the deduction for new estates trenching should be 13 to 17% rather than 1%. Such an approach is inconsistent with accepted TSLRIC+ principles<sup>91</sup>. It is appropriate and accepted practice (followed by the ACCC) when calculating TSLRIC+ to ignore the costs of capital and depreciation over the period of the construction of the network. An assumption that the network is constructed over a number of years is inconsistent with that assumption. Adopting these two inconsistent assumptions results in an under estimation of TSLRIC+. The cost of capital and depreciation for over a period of 13 years can be expected to exceed the saving from increased trench sharing.<sup>92</sup>
- 49 Telstra has provided two witness statements by network planners with extensive experience of deployment of the CAN in new estates, which explain that prior to the mid 1990s the use of shared trenches in new estates was (for a variety of reasons) the exception rather than the rule<sup>93</sup>. If a historical approach to trench sharing is adopted by the ACCC a new estates trench sharing figure of greater than 13% would overstate Telstra's actual opportunity to share trenches.<sup>94</sup>

#### **Sharing between CAN and Inter-exchange Network ("IEN")**

- 50 The TEA Model accounts for sharing of trenches between the CAN and the IEN (which is not properly included as part of the ULLS increment). Telstra estimates that 5% of the trenches for the main network will also contain IEN cables and conduit. The cost of this trenching is therefore allocated 50% to the CAN and 50% to the IEN. Thus, 2.5% of main network trenching cost is deducted in the TEA Model for the purposes of costing ULLS.<sup>95</sup>

#### **Sharing in the distribution network**

- 51 The TEA Model also recognises that there will be some sharing of trenches between main and distribution routes and between separate routes within the distribution network of the CAN. The cumulative length of all cable segments used on multiple routes in the optimised TEA network was calculated and then divided by the total length of all distribution routes in the Model. This resulted in a route sharing factor of 6.1%. Therefore 6.1% of the trenching and reinstatement costs for the distribution network have been deducted from the total cost in the TEA Model.<sup>96</sup>

#### **Sharing between ULLS and non-ULLS Distribution Areas ("DAs")**

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<sup>90</sup> Ovum Consulting, *Telstra Efficient Access cost model – engineering issues: An advisory Note to the ACCC*, 2 February 2009 at 3.5

<sup>91</sup> ACCC, *Draft Decision*, November 2008 at p 87

<sup>92</sup> Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, at pp 24 and following

<sup>93</sup> Statements of [REDACTED], 26 March 2009 and [REDACTED] dated 26 March 2009

<sup>94</sup> See further submission in relation to shared trenching in Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section E.5 on pp 78 to 81

<sup>95</sup> See further Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, at p 26

<sup>96</sup> See further Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, at p 30

- 52 The main network contains both copper cables that serve DAs with copper distribution cables (capable of providing ULLS) and fibre cables that feed other (non-ULLS) DAs within the same ESA. The DAs that are not currently fed entirely with copper are excluded from the TEA Model calculations as they are not capable of supporting ULLS.<sup>97</sup>
- 53 The TEA Model calculates the cost of the entire main network for each Exchange Service Area (“ESA”) and then allocates this across both the copper DAs and the fibre fed DAs so that every SIO bears an equal share of the main network costs.

### **Conduit sharing**

- 54 It is reasonable to expect that the constructor of a CAN may lease to external entities space in its conduits. As such, the TEA Model deducts from the annualised network cost for ULLS an amount of [REDACTED] dollars each year which represents the annual revenue received by Telstra for leasing of ducts in its CAN in the 2006/07 year.<sup>98</sup>

### **Breakout and reinstatement**

- 55 The TEA Model incorporates ratios for breakout and reinstatement of surface cover in order to dig trenches according to five density bands. Each ESA is allocated to a density band which has associated with it a profile for the amount of breakout and reinstatement of different kinds of surfaces required for the construction of the CAN in that ESA.<sup>99</sup>
- 56 The breakout and reinstatement profiles are the result of careful consideration and detailed calculations by a team of expert engineers.<sup>100</sup> It has been suggested by access seekers that it would be possible to avoid a significant amount of breakout and reinstatement cost by the use of shared trenches. As explained above, the availability of shared trenches is practically restricted to new estates developments<sup>101</sup>. Telstra has provided two statements by network engineers with decades of experience in deployment of the CAN who give detailed evidence of the amount of breakout and reinstatement that Telstra has had to carry out in the construction of the CAN<sup>102</sup>.
- 57 Telstra has provided detailed data on the amount and cost of breakout and reinstatement it has undertaken since October 2000. While not appropriate for a forward looking cost estimation, using the historical proportions of different breakout and reinstatement activities from that data would increase the TEA Model estimate of TSLRIC+.<sup>103</sup>

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<sup>97</sup> See further Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, at p 27

<sup>98</sup> For details of Telstra's conduit leasing arrangements and revenues see the statement of [REDACTED] dated 11 August 2008, provided to the ACCC on 11 August 2008

<sup>99</sup> Further details of the approach are set out at Telstra, *TEA Model Documentation*, 1 March 2008 at section D.1.1.2 on pp 47 to 48; and Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008, at pp 21 to 22

<sup>100</sup> Statement of [REDACTED] dated 19 March 2009 and exhibit TCL1, both provided to the ACCC on 24 March 2009

<sup>101</sup> Statement of [REDACTED] dated 11 August 2008 at paragraph 42

<sup>102</sup> Statement of [REDACTED] dated 11 March 2009; and statement of [REDACTED] dated 11 March 2009

<sup>103</sup> See Telstra, *Response to the December 152BT Request for Information*, at tables 5 and 6



### *Optimisation of base data*

- 58 The TEA Model designs an efficient access network for every ESA in Band 2 in two stages.<sup>104</sup>
- (a) First, it designs a distribution network that efficiently connects every address in every DA to the pillar serving that DA. The model:
    - (i) maps every address in a DA to the network structure point residing in the legal right of way, which serves that address;
    - (ii) identifies the end points of each distribution route (i.e. the address furthest from the pillar) and constructs an efficient route from that point back to the pillar, aggregating demand along the way;
    - (iii) designs efficient routes by searching all route segments in the existing distribution network, which are known rights of way, and choosing the least distance path from point A to point B at each and every network structure point along the route; and,
    - (iv) identifies every point along the route where demand enters the network, identifies the amount of demand entering the network at that point and aggregates total demand on the route for every route segment all the way to the pillar.
  - (b) Second, it designs a main network that efficiently connects every pillar in an ESA to the exchange building. The model:
    - (i) designs efficient routes by searching all route segments in the existing main network, which are known rights of way, and choosing the least distance path from point A to point B at each and every network structure point along the route; and
    - (ii) identifies every point along the route where demand enters the network, identifies the amount of demand entering the network at that point and aggregates total demand on the route for every route segment all the way to the exchange building.
- 59 The only step in this process, which is not readily visible in the TEA Model's Microsoft Excel spreadsheets, is the selection of least distance route segments from point A to point B from all the route segments in the existing distribution and main networks ("**pre-processing**"). The source databases are too large and the processing is too sophisticated for the selection to be done in Excel. Every other step in the process can be tracked in the model's spreadsheets.<sup>105</sup>

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<sup>104</sup> Statement of Frank Hatzenbuehler, 18 November 2008, Annexure A; Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, section B.1.2

<sup>105</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, para. 119

60 To examine the pre-processing would necessarily require examination of the whole set of actual route segments in Telstra's existing network, from Telstra's NPAMS and CPR2 databases.<sup>106</sup> This data cannot be disclosed for national security reasons:

- (a) As the Government has previously acknowledged, Telstra's network information data contained in Telstra's databases is subject to some very significant national security considerations. Entirely apart from the potential it may have to harm the commercial interests of Telstra, the disclosure of data about the locations and functionality of telecommunications lines and other facilities poses a real threat to national security.<sup>107</sup>
- (b) The national security risks associated with the raw data contained in Telstra's NPAMS and CPR2 databases place that data in a different category of sensitivity to the optimised base data contained in the TEA model. Given those risks, disclosure of the data for the purposes of the assessment of Telstra's proposed Band 2 ULLS pricing cannot be justified.<sup>108</sup>

61 While these concerns mean that the process of selecting the optimised set of routes from the existing routes in Telstra's network is not visible, the efficiency of the results is readily verifiable by several other means:

- (a) The statement of Frank Hatzenbuehler attaches a description of the process used to select only the efficient conduit routes in Telstra's CAN in band 2 areas;<sup>109</sup>
- (b) Telstra's *Measure of TEA Model Efficiency: ULLS Band 2* submission shows that the routes in the TEA model are 34.5% shorter than the actual routes in Telstra's network;<sup>110</sup>
- (c) The ACCC's Australian Fixed Network cost model, which uses the hypothetical algorithms to determine the location of cable routes in Band 2 areas, has 8.6% longer trench lengths than the TEA model;<sup>111</sup>
- (d) Network Strategies estimates that an efficient network route distance within an ESA is twice the road distances in the corresponding areas.<sup>112</sup> The route distance in the TEA model is shorter than the route distance derived using Network Strategies' approach – Network Strategies measure of network route distance in Band 2 ESAs is 26.53 metres per line and the TEA model's measure of network route distance in the same ESAs is 16.34 metres per line.<sup>113</sup>

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<sup>106</sup> Statement of Frank Hatzenbuehler, 18 November 2008, Annexure A

<sup>107</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, para.s 124-131

<sup>108</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, para.s 132-134

<sup>109</sup> Statement of Frank Hatzenbuehler, 18 November 2008, Annexure A

<sup>110</sup> Telstra, *Measure of TEA Model Efficiency: ULLS Band 2 – Version 2*, March 2009, section 4

<sup>111</sup> Telstra, *Measure of TEA Model Efficiency: ULLS Band 2 – Version 2*, March 2009, section 5.

<sup>112</sup> Network Strategies, *Broadband Strategies for New Zealand: Analysis of Possible Infrastructure Models*, 10 December 2008, pages 94-95

<sup>113</sup> Telstra, *Response to Access Seeker Submission on the ACCC's Draft Decision*, 1 April 2009, para.s 141-143

- (e) Efficiency studies demonstrate that Telstra's costs are lower than those expected to be incurred by carriers in the US serving a market with the same characteristics as the market Telstra serves in Australia.<sup>114</sup>

62 Thus, while the selection of shortest routes is not readily visible in the TEA Model's Excel spreadsheets, the efficiency of the routes can be verified by comparing the results of the TEA Model with several measures of efficiency.

#### WACC

63 The CAPM has previously been adopted by the ACCC as the appropriate method for estimating the WACC and Telstra submits that the use of the CAPM is appropriate for current purposes.

64 Professor Bowman has reviewed Telstra's primary submission on the WACC<sup>115</sup> and considered each of the inputs to the CAPM which are advocated by Telstra. His view is that those inputs are reasonable and that the estimates of WACC produced by the CAPM using those inputs are reasonable. He also concludes that Telstra's point estimate of the WACC of 12.28% is reasonable.<sup>116</sup>

65 Ovum Consulting, which was retained by the ACCC as an independent consultant, prepared two papers in relation to benchmarking the WACC against European countries<sup>117</sup>. In the first of those papers Ovum failed to make appropriate adjustments for differences between the capital market for operators in Europe and those in Australia. In their second report, Ovum adjusted its analysis to account for the country-specific difference. The second report illustrates that Telstra's estimate of WACC is similar to the WACC in other countries when specific differences are accounted for, and Ovum's WACC estimate is substantially below even the lowest value of the countries benchmarked.<sup>118</sup>

#### Engineering rules

66 Ovum Consulting, who were retained by the ACCC to review the TEA Model, concluded that "The dimensioning of cables, ducts, pits, manholes, cable joints, cable gauges and pillars are all appropriate for a "scorched node" model of a copper access network for an efficient operator. These calculations include efficiency gains over the existing network."<sup>119</sup> Ovum has also concluded that in a number of key respects the

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<sup>114</sup> Telstra, *Submissions in the PowerTel-Telstra ULLS Access Dispute*, 16 August 2007, at Annexure 9 titled 'Telstra's Cost Efficiency', Figure 4

<sup>115</sup> dated 4 April 2008

<sup>116</sup> R Bowman, *Report on the Appropriate Weighted Average Cost of Capital for the Services Provided Over the CAN*, May 2007, at paragraph 140 on page 21

<sup>117</sup> Ovum Consulting, *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model: A report to the ACCC*, 6 August 2009, at 3.3; and Ovum Consulting, *Telstra ULLS Undertaking, ULLS international Benchmarking: An advisory note to the ACCC*, 26 February 2009, at 3.3

<sup>118</sup> Telstra, *Response to Ovum Advisory Notes*, 8 April 2009, at section C

<sup>119</sup> Ovum Consulting, *Telstra Efficient Access cost model – engineering issues: An advisory Note to the ACCC*, 2 February 2009 at 2.1

engineering assumptions used in the TEA Model are conservative so as to understate network costs.<sup>120</sup>

67 Subsequently, Ovum suggested that it may be possible to reduce the construction cost for the CAN by using overhead cable in some areas<sup>121</sup>. In [REDACTED] statements<sup>122</sup> he has explained why large scale use of overhead copper cabling is not practical in Australia today. This is a view reinforced by Optus. [REDACTED] detailed evidence is based on over 20 years experience as a network engineer, much of that in a senior role.

68 Optus and Network Strategies have suggested that micro-trenching or direct buried cabling might be employed to avoid trenching and breakout and reinstatement costs<sup>123</sup>. Network Strategies acknowledge that micro-trenching has significant limitations<sup>124</sup> and [REDACTED] has explained<sup>125</sup> that while micro-trenching may be appropriate for installation of optical fibre cables in some circumstances, it is not a practical option for the installation of copper cables due to their significantly larger size. [REDACTED] has also explained why direct buried cabling is not practical in Band 2 areas.<sup>126</sup>

69 The use of direct buried or ploughed cable in Band 2 areas is not feasible because:

- (a) Band 2 areas are far more densely populated than the rural areas where direct ploughed cable is used. It can be expected that, over time, a wide variety of structures including driveways, houses and commercial premises may be constructed over the top of the cable routes which would obstruct access to the cables for maintenance or replacement purposes;
- (b) where a direct ploughed cable experiences a fault and needs to be replaced the whole cable must be located and dug up. Where cables are installed in conduit, they are able to be accessed far more easily for maintenance purposes, reducing ongoing O & M costs and improving customer service levels.

70 Finally, [REDACTED] has explained why a copper network is required to provide ULLS and why the incorporation of more optical fibre cable in the network design used in the cost model would lead to an unjustified underestimation of the cost of providing ULLS.<sup>127</sup>

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<sup>120</sup> See, for example in relation to maximum permissible transmission loss, maximum cable length, at Ovum Consulting, *Review of network design and engineering rules of the Telstra Efficient Access cost model: A report to the ACCC*, dated 6 August 2008 at 2.3 and 2.4; and in relation to use of non-tapered distribution network, see Ovum Consulting, *Telstra Efficient Access cost model – engineering issues: An advisory Note to the ACCC*, 2 February 2009 at 3.2.3

<sup>121</sup> Ovum Consulting, *Telstra Efficient Access cost model – engineering issues: An advisory Note to the ACCC*, 2 February 2009 at 3.5.3

<sup>122</sup> Statement dated 12 August 2008 at paragraphs 40 to 55 and 65; and statement dated 8 April 2009 at paragraph 11

<sup>123</sup> Optus, *Submission to ACCC on Telstra's Access Undertaking for the Unconditioned Local Loop Service: Response to Draft Decision (Public Version)*, December 2008, at 3.5 on p 14

<sup>124</sup> See annexure [REDACTED]-9 to the statement of [REDACTED] dated 8 April 2009

<sup>125</sup> Statement of [REDACTED] dated 8 April 2009 at paragraphs 13 and following

<sup>126</sup> Statement of [REDACTED] dated 8 April 2009 at paragraph 12

<sup>127</sup> Statement of [REDACTED] dated 8 April 2009 at paragraphs 7 to 10; Telstra's further submissions in relation to network design issues can be found at Telstra, *Response to Access Seeker Submissions*, at section

### *DA design*

- 71 The DA Design Study demonstrates, by use of statistical regression, that the size of DAs and the location of the pillars within the DA have no material impact on the per line cost of construction of the CAN. The Harris and Fitzsimmons report confirms that placing pillars in alternative positions will have little, if any, impact on the cost of building the network.

### *Vendor pricing*

- 72 The prices used to estimate various equipment prices and installation labour are (in the vast majority of cases) the average prices payable by Telstra for such equipment and services under its current procurement contracts (“the A & AS Contracts”). [REDACTED] [REDACTED] has provided a statement describing the tender process for the A & AS Contracts.<sup>128</sup> That tender process was an open, competitive and commercial one. As such, the prices provided in those contracts represent current market rates, which apply into the future until September 2009, for the relevant equipment and services.
- 73 [REDACTED]<sup>129</sup> has provided a statement in which he describes how he calculated average prices across the three A & AS Contracts for each particular item of supply and installation. [REDACTED]<sup>130</sup> has provided a statement in which he describes how he prepared the “Network Modelling Costing Information”<sup>131</sup> document (“**Costing Information**”) which sets out the prices included in the TEA Model.<sup>132</sup> [REDACTED] explains how, using his engineering and cost modelling knowledge and experience, he identified the relevant prices from the averaged rates prepared by [REDACTED] for each of the items of work required by the Design Rules, and included those in the Costing Information. Where a price was not available from those averaged rates, [REDACTED] has explained in his statement how he has arrived at a price for the item and why that price is a reasonable estimate of the current market price of the relevant equipment and/or service.
- 74 Telstra has provided further detailed information in relation to its network plant and equipment costs in its response to the ACCC’s January 152BT Request<sup>133</sup>. In undertaking any comparison of the costs included in the TEA Model it is necessary to take into account that those prices (as made clear by the statements referred to above) include (except where expressly included separately) the installed cost of the equipment. The prices include the cost of manufacture, inventory management, delivery to site and installation works<sup>134</sup>.

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F.1 on pp 38 and following; Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, at section E.2 on pp 53 to 64; and Telstra, *Response to Access Seeker Submissions on the ACCC’s Draft Decision*, 1 April 2009, at section B.1 on pp 19 and following

<sup>128</sup> Statement of [REDACTED] dated 11 August 2008

<sup>129</sup> Statement of [REDACTED] dated 8 August 2008

<sup>130</sup> Statement of [REDACTED] dated 12 August 2008

<sup>131</sup> The unredacted version of this document is confidential and has been provided for the use of the ACCC only and is not to be provided to any other parties.

<sup>132</sup> The relevant statement is contained in the CD of statement and reports delivered to the ACCC on 12 August 2008

<sup>133</sup> Response delivered to ACCC on 13 March 2009

<sup>134</sup> Telstra has provided further detailed submissions in response to access seekers submission on the topic at Telstra, *Response to the ACCC’s Draft Decision*, 23 December 2008, at section E.3.1 at pp 64; and Telstra,

### *Indirect overhead*

- 75 The TEA Model applies an indirect overhead (sometimes referred to as the capitalised overhead) of █% to the capital construction cost calculated using the averaged A & AS Contract price. The indirect overhead represents the planning, management and coordination costs incurred by Telstra in the construction of the CAN. Those costs would be incurred by the efficient builder of a replacement CAN. These costs are not included in the A & AS contract rates.
- 76 █<sup>135</sup>, █, █ and █<sup>136</sup> have provided statements in which they explain how Telstra has calculated the rate of capitalised indirect overhead incurred for copper wire CAN capital construction activities in the financial years 2006/2007 and 2007/2008 as a proportion of the direct cost of such construction. Those statements also explain in detail the nature of the costs that comprise the indirect overhead.
- 77 Indirect overhead costs are not accounted for in the mark-ups of operation and maintenance costs.
- 78 The ACCC has stated that “the capital indirect mark-up in the TEA model appears acceptable”.<sup>137</sup>

### *O & M and Indirect Factors*

- 79 The TEA Model, in line with other TSLRIC+ models, calculates O & M costs and indirect costs on the basis of factors applied to the network asset base. Such an approach is considered reasonable by Mr Attenborough and Drs Harris and Fitzsimmons.<sup>138</sup>
- 80 The O & M and indirect costs factors in the TEA Model are derived from Telstra’s regulatory accounting framework (“**RAF**”) reports for the financial year ended 30 June 2007 as provided to the ACCC. The RAF reports are based on national costs and take into account all services that Telstra supplies and therefore reflect economies of scale and scope. The O & M costs would be higher were they calculated on a standalone CAN basis.
- 81 The derivation of the factors is explained in the Operations and Maintenance and Indirect Costs Factors Study<sup>139</sup>. The reasons establishing the reasonableness of those factors are set out at section B.8 on page 31 of Telstra’s response to the ACCC’s discussion paper. In summary the TEA Model calculates O & M expenses associated

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*Response to Access Seeker Submissions on the ACCC’s Draft Decision*, 1 April 2009, at section B.2 on pp 37 and following

<sup>135</sup> Statements of █ dated 31 August 2008 and 12 December 2008

<sup>136</sup> Statement of █ dated 17 December 2008; statement of █ dated 19 December 2008; and statement of █ dated 12 August 2008

<sup>137</sup> ACCC, *Draft Decision*, November 2008, at p 41

<sup>138</sup> R Harris and W Fitzsimmons, *An Assessment of Telstra’s TEA Cost Model for Use in the Costing and Pricing of Unconditioned Local Loop Services*, 4 November 2008, at paragraphs 3.2.4 to 3.3.3 on 00 30 and following, and sections 4.11 to 4.12 on pp 48 and following; N Attenborough, *Does Telstra’s TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009 at section 4.6 on p 26

<sup>139</sup> Dated 7 April 2008, an updated version of the calculations spreadsheet based on the 2006/07 RAF report was provided to the ACCC on 18 February 2009

with each category of network plant and equipment by multiplying the level of investment modelled for each category of equipment by the relevant O & M factor derived from the RAF.<sup>140</sup> This is a pragmatic approach which is widely adopted in TSLRIC+ models worldwide.<sup>141</sup>

- 82 In response to concerns raised by access seekers and the ACCC in the ACCC's Draft Decision<sup>142</sup>, Telstra made adjustments to its O & M factor calculations to address all of the issues raised, as explained in the Response to the Draft Decision<sup>143</sup>. Those adjustments resulted in a \$2.51 decrease in the monthly per loop cost.
- 83 The factors calculated in this way are then applied to the modelled asset base for each category of asset. Telstra is not seeking to recover its actual operation and maintenance costs or indirect costs, but simply uses the operation and maintenance and indirect factors as a proxy for the costs that would be incurred in operating the modelled efficient network.
- 84 Mr Attenborough concludes that the approach adopted in the TEA Model to measure operating expenses and indirect assets is consistent with standard TSLRIC+ models.<sup>144</sup>
- 85 There is no double recovery in relation to indirect overheads in the costs of O & M.

#### *Asset lives*

- 86 The asset lives used in the TEA model are those previously accepted by the ACCC, or in respect of those asset lives not previously considered by the ACCC, are determined by taking into account those criteria which are generally accepted as determining economic lives of assets.
- 87 The only asset life contested by interested parties was for main cable. The material presented by Optus supports an average life of main and distribution cable of 15 years, which is consistent with the average 14.5 year asset lives of main and distribution cable in the TEA model.<sup>145</sup>

#### *Non-price terms and conditions*

- 88 For the reasons set out at section B.1 of Telstra's Response to the Discussion Paper<sup>146</sup>, the absence of non-price terms and conditions in the Undertaking does not prevent the ACCC from accepting it. As the Undertaking itself makes clear, Telstra will continue to be subject to the standard access obligations in respect of the ULLS in the event that the ACCC accepts the Undertaking. To the extent that any access seeker has

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<sup>140</sup> Further detail of the calculation is provided in of Telstra, *TEA Model Documentation*, 3 March 2008, at pp 53 and following

<sup>141</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, at sections 3.7 on p 16 and 4.6.3 on p 26.

<sup>142</sup> ACCC, *Draft Decision*, November 2008, at pp 92 and following

<sup>143</sup> See Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section E.6.1 on pp 82 and following; see also generally in relation to the O & M factors, Telstra, *Response to Access Seeker Submissions*, 18 November 2008, at section F.5 on pp 62 and following; and Telstra, *Response to the ACCC's Draft Decision*, 23 December 2008, at section E.6 on pp 81 to 94

<sup>144</sup> N Attenborough, *Does Telstra's TEA Model Provide a Reasonable Estimate of the TSLRIC+ of Supplying ULLS?*, 16 January 2009, at section 4.6 on p 26

<sup>145</sup> Telstra, *Response to Access Seeker Submissions*, 18 November 2008, at p 75

<sup>146</sup> See Telstra, *Response to ACCC's Discussion Paper*, 12 August 2008

concerns in relation to Telstra's compliance with the standard access obligations it can raise those with Telstra and, in the absence of a commercially agreed outcome, notify an access dispute to the ACCC in accordance with Part XIC of the TPA.<sup>147</sup>

- 89 In Telstra's experience, the monthly price has typically been the most contentious point in access disputes and the Undertaking serves to resolve that issue in the interests of commercial certainty in the market.

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<sup>147</sup> See also further material in Telstra, *Response to Access Seeker Submissions*, 18 November 2008 at section D on pp 14 to 21