Telstra

Public Policy and Communications

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15 July 2008

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Dear Michael

Telstra's ULLS Undertaking

I was shocked and disappointed to learn that the ACCC has published what are, in Telstra's view, ill-considered and grossly-inflated criticisms of the TEA model. The ACCC claims, in its letter dated 8 July 2008 (**8 July Letter**), that it found "*significant calculation and data errors*" and implies that the TEA model is not "*relevant and accurate*". These claims could not be further from the truth.

In relation to the so-called "*significant calculation and data errors*", they have an insignificant impact (less than 2%) on the overall cost, as explained in detail in Attachment 1. It is concerning that the ACCC was apparently aware the data issue is insignificant, affecting less than 2% of records. As stated in its 8 July Letter, the ACCC understands that "*there are 80 instances (out of 5,958 records) where there are bi-directional entries...there are 31 instances (out of 5,958 records) where a structure point has two different next structure points*".

Of much greater concern is that such insignificant issues have led the ACCC to question whether the TEA model is "*relevant and accurate*" and whether the TEA model can be "*properly relied upon in support of [Telstra's] Undertaking*". I make the following points in relation to this.

First, as the ACCC knows, Telstra has adopted a revolutionary, best-in-world approach to calculating the costs of providing ULLS. This approach is based on real data, the actual environment in which the company operates and, as everyone with a phone knows, a real network. The TEA model is driven by a data base extracted from Telstra's extensive engineering systems. The data base, over 700 megabytes in size, describes a customer access network covering 584 exchanges, 7,532,793 lines, and 7,489,427 network structure points.

Anyone who has ever worked with systems and databases – of the size and complexity needed to run a telephone network – will testify that data bases need ongoing improvement and refinement as more information becomes available. Real companies, in the real world, running real networks, design projects with the best information available and, when situations differ from what their data predicted, make necessary adjustments along the way.

The TEA model incorporates this same philosophy. It is based upon the best data available, data extracted from a world class engineering system. It measures distances between real geographic points with extraordinary accuracy. The data is

refined to design a telephone network with near perfect efficiency, provisioning capacity finely calibrated to match existing demand and incorporating best-in-use equipment, and best engineering practices and construction techniques. When imperfections in the design are discovered, they are fixed; adjustments are made; the model is improved.

Second, the TEA model is undergoing more scrutiny than any other model I am aware of in Australia. Telstra has undertaken a thorough examination of it and it is subject to review by local and international experts. Further, I understand that the ACCC has audited it. After eight months of investigation, there have only been minor bugs found. As set out in Attachment 1, all these minor bugs have no real consequence for the result produced by the TEA model. These refinements and revisions to the model demonstrate its relevance and accuracy, not the lack of it.

Third, the TEA model is immensely more relevant and accurate than the basis upon which the ACCC currently sets ULLS prices. I remind you that the ACCC is currently setting ULLS prices:

- Using hypothetical costs from a model it has never believed to be worthwhile and successfully argued for its rejection in the Australian Competition Tribunal;
- Plotting 2 or 3 years worth of results from that process on a graph; and
- Drawing a straight line into the unknown to derive a figure.

The ACCC's method of calculating costs contains more fundamental errors than those claimed by the ACCC in relation to the TEA model – errors that include assuming cables and conduit run through back yards, across football ovals and through rivers. No model is free of errors, but the TEA model is the only model in Australia, if not the world, that is based on real data about the real network and the real world constraints in which that network must operate.

Fourth, it is notable that the ACCC has seemingly abandoned the development of its own cost model. In a meeting on 19 September 2007, the ACCC indicated that it would begin industry consultation on its model in January 2008 and would complete the model in April 2008. With nearly 10 months gone since that meeting and no word on progress, it seems that the ACCC favours Telstra's TEA model to that proposed by its own cost modellers or the ACCC has adopted a completely closed and non-transparent process to complete its model devoid of industry consultation.

Fifth, instead of questioning the relevance and accuracy of the TEA model based on issues that have, at best, a 2% impact on costs, the ACCC should be questioning its current practice of setting ULLS prices at levels where Telstra's costs are 300% higher than those prices.

I am further dismayed by the apparent breakdown of the process that Telstra and the ACCC had established to deal with issues like those raised in the ACCC's 8 July Letter. Throughout this process Telstra has sought to engage in a consultative, open and transparent process with the ACCC and the industry and has made it clear the TEA model would be improved and upgraded as it was refined, both by Telstra and in response to ACCC/access seeker feedback.

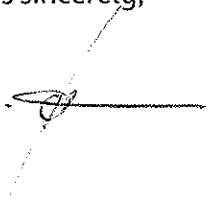
To this end, it has been Telstra's practice to accumulate a list of issues with the TEA model which arise between model versions and deal with all issues on the list in the next version. As detailed in Attachment 1, the issues Telstra has identified are likely to increase costs by less than 2%. Telstra did not consider that the issues it discovered were sufficiently material to warrant the release of a new version of the TEA model. However, Telstra will produce the next version of the TEA model shortly, once all changes discussed in Attachment 1 have been implemented.

Despite Telstra's consultative, open and transparent approach, the ACCC has published what are, in Telstra's view, ill-considered and grossly-inflated criticisms of the TEA model by placing the 8 July Letter on its Internet site before giving Telstra the opportunity to address or assess the materiality of the issues raised. The ACCC has created a public spectacle that inflates minor issues and deflects from the fact that the ACCC has no better cost model to use and has significantly underpriced ULLS for many years now. If the ACCC had first allowed Telstra to consider and respond to the ACCC's claims, it would have avoided unfairly undermining the credibility of the TEA model and what is supposed to be a fair and even-handed consideration of Telstra's undertaking.

I question whether you would like Telstra to continue its open and transparent engagement with the ACCC and industry or whether Telstra should assume that any information provided to the ACCC will be used in a public relations exercise aimed at undermining and jeopardising Telstra's undertaking with inflated accusations and inappropriate threats.

I would appreciate a response by close of business Friday, 18 July 2008.

Yours sincerely,



Tony Warren
Executive Director Regulatory Affairs
Public Policy and Communications

Attachment 1

Issues Identified by the ACCC

In relation to the SUMIF function and main cable routing the ACCC is correct in its belief that the errors have occurred. However, in relation to the distribution cable routing the ACCC is incorrect. Detailed explanations of the how the errors have occurred, how they affect the results and how Telstra has intends to address them are set out below.

SUMIF Function

The ACCC correctly identifies an error regarding use of the SUMIF function in the Engineering-Main Module of Version 1.0 of the TEA model. As stated in the ACCC's letter: "The effect of the error is that in testing which records to sum on a route identified by 16 digits, only the first 15 digits are tested in the Excel SumIf formula."

This error in the Engineering-Main Module has been fixed in a new Module, which is provided to the ACCC as **Confidential** Attachment 2 to this letter, by using the SUMPRODUCT function rather than the SUMIF function. The formulas in the following four columns in the Main-Collapsed worksheet (highlighted yellow in the attached module) have been changed:

- Cumulative .40 Gauge Cable Demand Segment
- Cumulative .64 Gauge Cable Demand Segment
- Cumulative Fibre Cable Demand Segment
- Number of Fibre Strands

When Blackburn data is run through the revised Engineering-Main Module of TEA with default inputs, the resulting ULLS monthly costs are $.32 less than the costs produced by TEA without the correction. This is a 0.59% reduction. Even after this change is implemented, the cost of ULLS remains over 300% higher than current ACCC prices.

Main Cable Routing

The ACCC's analysis of TEA's Main Cable provisioning has uncovered a methodological problem, which, when corrected, results in a slight reduction in overall costs for the Main Cable Network. The problem and correction are outlined below.

In the past, Telstra's Main Cable Network was constructed with Cabinets, an intermediate cross connect point between Pillars and the Exchange building. These Cabinets serve as points of aggregation between Pillars and the Exchange. In a typical configuration, cables feeding 3 or 4 Pillars are routed to a Cabinet where the cables are aggregated into larger Main Cables on the way back to the Exchange building. At the time this network design was in use, this configuration comprised the most efficient Main Cable Network architecture. As communities grew larger and demand for telephony became more ubiquitous, this intermediate point of aggregation became superfluous. Current and forward-looking network architecture does not make use of intermediate Cabinets in the Main Cable Network.

Telstra's current Main Cable Network includes both Cabinets and Pillars. TEA, on the other hand, provisions a forward-looking network architecture, which does not make use of Cabinets. The TEA model examines Telstra's entire current Main Cable Network and identifies and provisions a shortest path Main Cable network using this extensive inventory of Main Cable routes. Cabinets are eliminated from the network design during this provisioning process.

The ACCC's analysis of TEA's routing, has uncovered inefficiency in the TEA methodology used to eliminate Cabinets. Put simply, for Pillars and building terminals which are currently fed by Cabinets, TEA's current methodology selects the shortest routes from Pillars and building terminals to the Cabinet, which is removed; and combines these routes with the shortest path from the location of the former Cabinet to the Exchange building.

An unintended consequence of this method of incorporating the savings from eliminating these cabinets is that in a few instances the modelled main cable routes serving distribution areas previously served by cabinets runs away from the Exchange building for a short distance until it passes through the location where the cabinet is currently located in the network. This phenomenon is the cause of the reverse direction routing discovered by the ACCC. In these instances, it is possible to design a more efficient route from a formerly Cabinet-fed Pillar or building terminal directly to the Exchange building bypassing a portion of the path to the former cabinet.

Telstra has implemented the more efficient routing methodology for formerly Cabinet-fed Pillars and building terminals. The Engineering-Main Module, which is provided to the ACCC as **Confidential** Attachment 2 to this letter, must also be changed to allow the different routing structure. The old formulas worked on the assumption that the Current Structure Number at the end of a route was unique in the list of Current Structure Numbers. The formulas in the following four columns in the Main-Detail worksheet (highlighted yellow in the attached module) have been changed:

- Additional .40 Gauge Cable Demand
- .40 Gauge Cable Segment Demand
- .64 Gauge Cable Segment Demand
- Number of Fibres

When Blackburn data with the more efficient routing methodology is run through the revised Engineering-Main Module with the default inputs (including the SUMIF correction), the resulting ULLS monthly cost is $0.71 less than the costs produced by TEA without the correction. This is a 1.4% net reduction. Note that the $0.71 is the total impact of both the SUMIF and Main Cable routing corrections.

Telstra has not been given sufficient time by the ACCC to implement the different routing methodology for the remaining 583 exchanges in band 2. Key Telstra personnel have been on paternity leave, returning the day before the ACCC required Telstra's response. Telstra proposes to undertake this work for the next release of the TEA model (v1.1). The ACCC can assess the materiality of the issue it raised with respect to the Blackburn ESA, which is representative of an average band 2 ESA.

Distribution Cable Routing

The ACCC's assertion that a current structure point feeding two next structure points indicates the model has not produced routes which minimize distances is erroneous. The ACCC writes: "In the BLBN Distribution Area data, there are 158 instances (out of 16,123 records) where a structure point has two different next structure points. This shows the data is not shortest-path data only." As explained below, one cannot conclude that "the data is not shortest-path data only" from the fact that a current next structure point feeds 2 next structure points.

All of the 158 instances in the Blackburn Exchange, where a structure point feeds two different next structure points, involve two distinct shortest-path distribution cable routes, are shared by different Distribution Areas. In those instances, a structure point that provides the shortest path between points A and B on one cable route; also lies on the shortest path between points C and D of another cable route. TEA

appropriately selects that structure point as part of the shortest path for both cable routes.

It is not surprising that two different cable routes, serving separate and distinct sets of customers, do not follow the same path. They are different cable routes, which terminate at different pillars and serve different customers. Each of them follows the shortest path route to arrive at their respective destinations.

The ACCC categorically states that the same network structure point should not support routes serving two different Distribution Areas. "This should not occur in an efficient, shortest-path network." In a hypothetical model, one can unequivocally postulate a network design based upon dictum. In the real world, efficient routes take the path of least resistance (i.e. least cost); bypassing natural and man-made obstacles. There is no engineering dictum, which prevents a network structure point from supporting routes serving two Distribution Areas. From an engineering perspective it is perfectly acceptable for a network structure point to serve two distinct routes.

It is worth noting that, even if the ACCC's conclusion was correct, which it is not, the TEA Distribution data would still be over 99% accurate (158/16,123 = 0.98%).

Version 1.1 of the TEA Model

Over the course of the last several months, is has been Telstra's practice to accumulate a list of issues with the TEA model which arise between model versions and deal with all issues on the list in the next version. Telstra did not consider that these issues were sufficiently material to warrant the release of a new version. However, given the ACCC's letter, Telstra will issue the new version when it has made the necessary adjustments detailed above to all 584 exchanges.

Telstra is aware of a small problem in v1.0 of the Engineering-Main Module which overstates conduit by a small amount (i.e. $0.01/month impact) in addition to the issues raised by the ACCC in its 8 July 2008 letter. There are no known problems in Version 1.0 of the Engineering- Distribution Module. There are no known problems in Version 1.0 of the User Interface. Telstra is aware of 8 problems in Version 1.0 of the Calculation Module. These issues are described in detail below.

The net impact of correcting the 8 known problems in the Calculation Module and the minor problem in the Engineering-Main Module is a net increase in total monthly cost for Band 2 ULLS of approximately $0.65.[1] This does not include the impact of fixing the problems identified by the ACCC. The impact of those changes is discussed above.

Cost Calculator Main

- One half of the cost of the ironwork for the MDF blocks should be assigned to CAN. Currently, 100% is assigned to CAN.

Cost Calculator Distribution

- The calculation of the cost of joints at serving pits (Line 29 Col G) adds together "# Cables Jointed at Each Pit" (Line 21 Columns C) and joint "Enclosure Cost Per

[1] At this time, Telstra does not have a precise estimate of the impact of one of the items on the list (i.e. Lightning Protection). Consequently, our estimate of the total impact of all changes is based upon a rough, conservative estimate of the impact of adding Lightning Protection. Inclusion of Lightning Protection in the Calculation Module will necessitate a minor addition to the Engineering-Distribution Module.

Pair" (Line 29 Column F). It should add the "Jointing Rate" per pair (Line 29 Column D)and the joint "Enclosure Cost Per Pair" (Line 29 Column F).

- In calculating the fully loaded cost of placing distribution pits in normal terrain, the input for Base cost of the number five pit(Line 38 Column D), mistakenly uses the cost of placing a pit in rocky terrain from the Inputs Cost and Rules worksheet (Line 117, Col D). It should use the cost of placing pits in normal terrain (Line 117, Col C).
- The hauling rate for a two pair lead-in (Line 489, Col D) has a hard coded estimate of $2.00. It should reference the input of $1.47 in the Inputs Cost and Rules worksheet (Line 257, Col D).

Investment Summary Worksheet

- The formula for calculating the total cost for "Pair Gain Systems" (Line 22) should include the cost of the "Fibre Terminating Frame" on line 21. The original calculation omitted this amount.
- The formula for calculating the total cost for "Copper Cables-Distribution" (Line 35) should include the cost of the "Air Compressor" on line 34. The original calculation omitted this amount.

Costs mistakenly omitted from the original model

- The cost of voltage protection cassettes should be added to the cost of the Siemens MDF Block on the Cost Calculator Main worksheet.
- The cost of the Customer Lightning Protection (CLP) and the associated guard wire need to be incorporated into the costs developed in the Cost Calculator-Distribution" worksheet.

Confirmation of Reasonable Inquiry and Knowledge of Other Errors

Telstra confirms that reasonable inquiry has been undertaken in relation to v1.0 of the TEA model and no other known errors, other than those mentioned above, exist.

Attachment 2 - CONFIDENTIAL

[Copy of revised Main Engineering Module]

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*** TX REPORT ***
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