

Neil Perl
Solicitor
Mallesons Stephen Jaques
Level 50, 600 Bourke Street
Melbourne VIC 3000

Dear Neil,

Update of expert opinion on the cost of DSLAM Infrastructure

1 Background

In October 2007, I provided a report titled "Technical Feasibility of using ADSL Networks to Supply Voice Services that Replicate PSTN Services". The report set out my opinions in regard to questions contained in a brief received from Mallesons Stephen Jaques. Included in the October 2007 report were my opinions on the cost of equipment and installation of DSLAM/MSAN infrastructure.

In a further instruction from Mallesons Stephen Jaques dated 2 May 2011, I have been requested to provide my opinion on the fixed costs of DSLAM/MSAN infrastructure as at today's date and in particular, any change to the relevant costs as outlined in the October 2007 report.

In relation to the fixed costs of DSLAM/MSAN infrastructure, I have extracted some statements from the October 2007 report which relate to the DSLAM/MSAN infrastructure costs.

My opinion on the DSLAM/MSAN equipment cost was presented in paragraph 4.20.

"Paragraph 4.20 - In my opinion, a suitable benchmark rate for the supply of voice and DSL capable equipment is \$35 per port, excluding the cost of installation and support infrastructure."

My opinion on the installation costs for DSLAM/MSAN infrastructure was presented in paragraph 4.36 with clarifications included in paragraph 4.39.

"Paragraph 4.36 - Based on my knowledge of current market rates for telecommunication construction activities, in my opinion the installation of up to a 300 port sub-rack is likely to cost approximately \$2,500. For a larger installation of 1200 ports, in my opinion, the cost to complete the installation is likely to be in the order of \$9,000. Both estimates exclude the cost of equipment."

"Paragraph 4.39 - The estimated costs quoted in paragraph 4.36 only provide for the installation of the DSLAM equipment and do not include the cost of network management, power supply, backhaul transmission infrastructure, carrier management and service activation required for services to be delivered."

The charges which may apply for the preparation and leasing of floor space within a third party premise for the installation of equipment were not considered in the October 2007 report.

The total fixed cost of DSLAM/MSAN installation within the previous report is the sum of the equipment and installation costs.

Equipment Cost	300 * \$35	\$10,500
Install Cost		\$ 2,500
Total Cost		\$13,000

Based on the information presented in the October 2007 report, a 300 port DSLAM/MSAN installed cost was \$13,000.

2 Update to Fixed Costs for installation of DSLAM/MSAN

Equipment

I have contacted several Australian suppliers to confirm that the indicative value of \$35 per port is still a valid figure for the cost of equipment. Feedback provided indicates that in some cases the typical equipment pricing now approaches \$30 per port.

In my opinion, considering the restrictions and assumptions identified in my October 2007 report, the cost to supply DSLAM/MSAN equipment of \$30 to \$35 per port is still valid. It should be noted that the current DSLAM equipment is for ADSL2+ services which offer faster line speed than the ADSL services delivered by the DSLAM equipment in 2007. ADSL2+ is now the standard service delivered by current DSLAM equipment and represents the normal evolution of equipment in this time period.

Installation

In my opinion, the activities required to install a DSLAM have not changed since the issuing of my previous report. There has however been a general increase in the cost of labour since the report was produced. In my opinion, it is appropriate to apply an increase in the installation cost component to compensate for the increase in labour and general material costs.

To calculate a 2011 cost based on the October 2007 figures I have assumed an increase based on the change in the Private Information, Media and Telecommunications Labour Price Index between June 2007 and June 2010. The change over the three year period is an increase of 8.2%. Applying the 8.2% increase to the previous report escalates the install cost from \$2,500 to \$2,705 per 300 port sub-rack.

The calculated figure is an estimate of the actual cost of installation which may vary substantially depending on the accessibility of the equipment location, geographic location and the selected installer. The provided estimate includes the supply and installation of a DSLAM (300 ports) including sub rack, rack alarm, power distribution units and cabling within the rack.

The provided estimate excludes any third party site costs, cost of network management, power cabling to rack, backhaul transmission infrastructure, carrier management and service activation.

Fixed Costs for DSLAM/MSAN Installation

In my opinion an approximate value for the supply and installation of a typical 300 ports DSLAM/MSAN sub-rack is the sum of indicative equipment costs between \$11,705 and \$13,705 based on a benchmark per port cost of \$30 to \$35 and infrastructure installation cost of \$2,705.

Regards



Craig Lordan
Senior Consultant
Gravelroad Consulting
30 May 2011

Attachments:

1. Craig Lordan Curriculum Vitae
2. Instruction 2 May 2011 Mallesons Stephen Jaques

Craig Lordan

Qualifications: B.E. (Electrical), Central Queensland University
Graduate Certificate Management, Southern Cross University

Present Position: Senior Consultant, Gravelroad Consulting

Career Summary:

Craig Lordan is an Electrical Engineer who graduated from Central Queensland University in 1988, and now has 19 years of experience in the telecommunications industry. Prior to consulting roles, Craig was engaged in a number of roles within Telstra from 1989 through to 2001.

During the period with Telstra, he specialised in urban and rural Customer Access Network infrastructure, including the planning, design and construction of copper, fibre and radio networks. His experience extends from hands on responsibility for individual construction projects through to long term strategic planning and budgeting.

Craig also completed international roles with Telstra, including the planning and development of networks within Vietnam. Later roles with Telstra included national responsibility for the development and application of network design and construction practices.

During the past seven years as a consultant, he has provided advice, expert opinion and support to many organisations in relation to the development and implementation of telecommunication networks. Organisations that have received and implemented advice include existing telecommunication carriers, electricity utilities and government organisations. Craig has contributed to the Queensland electricity industries' successful implementation of commercial telecommunication service supply, delivered expert reports in relation to specific matters and the completion of technical feasibility reports for the implementation of very high speed access networks on behalf of State and Local Governments.

Craig has extensive experience in the design, operation and maintenance of fibre optic transmission networks.

Overview of Consulting Experience:

Specialist consulting assignments in the Telecommunications and Infrastructure fields including assessment of commercial issues, procurement, bidding strategies and strategic advice.

Highlights:

- Managed the design of the Townsville NBN First Release Site optic fibre cable network.
- Development of Business Case for Ergon Energy introduction of state wide telecommunication network for monitoring and control of electricity network.
- Feasibility Analysis for the construction of a capital city wide very high speed open access fibre optic telecommunications system;
- Published expert statements in relation to DSLAM installation and fibre cable installation;
- Procurement of telecommunication capacity for major corporate users;
- Establishment of telecommunications network and commercial operation for Queensland Government Owned Corporations;
- Technology application strategy advice and customer engagement policy formulation for major local government body;
- Cause Analysis of failed mobile network rollout for legal proceedings;
- Activity pricing analysis for prominent telecommunications constructor during contract negotiation;
- Facilitation of Post Implementation Review for a major Intelligent Traffic System installation project; and
- Strategic advice to a Queensland Government GOC Utility regarding the commercial opportunity to enter the telecommunications industry.

MALLESONS STEPHEN JAQUES

Confidential and Privileged

Craig Lordan
Senior Consultant
Gravelroad Consulting
201 Wickham Terrace
Spring Hill QLD 4004

2 May 2011

By email

Dear Craig

Update of expert opinion on the cost of DSLAM infrastructure

We act for Telstra Corporation Limited ("Telstra").

1 Background

Pursuant to Part XIC of the *Competition and Consumer Act 2010*, the Australian Competition and Consumer Commission ("**the Commission**") is consulting on Final Access Determinations ("**FADs**") in relation to the supply of declared fixed line services. Submissions on the Commission's *Discussion Paper: Public Inquiry to make Final Access Determinations for the Declared Fixed Line Services dated April 2011* ("**Discussion Paper**") are due on 3 June 2011.

As part of this process, Telstra will be making submissions that the Commission should retain certain statutory exemptions relevant to the provision of the Local Carriage Service ("**LCS**"), Wholesale Line Rental ("**WLR**") and PSTN Originating Access services ("**PSTN OA**").

You may recall that Telstra retained you on a similar matter, to which you provided Telstra with an expert report titled *Technical Feasibility of Using ADSL Networks to Supply Voice Services that Replicate PSTN Services* dated 30 October 2007 ("**your first report**"). In that report, amongst other things, you addressed the costs of installing a DSLAM. Your first report is attached.

We note that in considering sunk costs of DSLAM/MSAN deployment, the Commission notes at page 234 of the Discussion Paper that:

"The most recent information before the ACCC (obtained by the ACCC for the purpose of the 2008 exemption applications) suggests that the fixed costs of the DSLAM/MSAN infrastructure are in the order of \$12,000 - \$14,000 per DSLAM. This includes the DSLAM/MSAN sub-rack and racks, the DSLAM itself, alarm and power distribution units, power cabling to the racks, and signal and cabling to the racks."

2 Instructions

Please provide your expert view on the fixed costs of DSLAM/MSAN infrastructure as at today's date and in particular, any change in the relevant costs as outlined in your first report. Telstra is happy for this to be provided by way of letter.

Your expert report should address this matter only to the extent that it is within the scope of your technical expertise.

4 Purpose

Telstra may provide a copy of your expert report to the ACCC. Please assume that your report (or certain aspects of it) will be accessible to the public.

5 Expert witness guidelines

As you may know, the Federal Court requires any person providing an expert report, or giving expert evidence, to comply with its Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia ("**Guidelines**"). We enclose a copy of the Guidelines.

Please review the Guidelines to ensure that your report conforms to them and in particular we request that you maintain separate records of:

- (a) all instructions;
- (b) the facts, matters or assumptions upon which your report proceeds;
- (c) the documents and materials you have been instructed to consider; and
- (d) the documents and materials upon which you rely in support of your reasoning in the report.

The Guidelines do not address exhaustively all aspects of an expert's duties when providing a report or giving evidence in Federal Court proceedings. If you have any questions about the Guidelines, or queries about other matters relating to your duties, please bring these to our attention.

6 Confidentiality

This brief and any information or documents that Telstra provides to you in relation to this matter is confidential information belonging to Telstra. By accepting this retainer you agree:

- (a) to use Telstra's confidential information only for the purpose of this retainer;
- (b) not to disclose Telstra's confidential information to anyone without Telstra's written consent; and
- (c) if requested by Telstra, to destroy or return to Telstra all records containing Telstra's confidential information.

MALLESONS STEPHEN JAQUES

7 Your fees

We will pay your fees. Please send your accounts to us.

8 Correspondence

Please direct all correspondence in this matter to Agata Jarbin or Neil Perl. Their details are set out below.

If you wish to speak with a representative of Telstra or any other person acting for Telstra regarding this matter, please let us know and we will make arrangements for this to take place.

10 Presentation of your report

Please include the following with your letter:

- (a) a copy of your curriculum vitae including qualifications, experience in the field and any publications;
- (b) our instructions to you;
- (c) any other facts, matters, documents or assumptions upon which you rely in preparing your report;
- (d) any plans, calculations, analyses, measurements or other material that you refer to in your report; and
- (e) any enquiries you make that are necessary to respond to the questions we ask you to consider and also the results of any such inquiries.

Please address your report to Mallesons Stephen Jaques.

11 Timing

We would be grateful if you could provide your report to us by 16 May 2011.

Please contact us if you require any further instructions or material to prepare your expert report.

Thank you for agreeing to assist us.

Yours sincerely



Neil Perl
Solicitor
Direct line +61 3 9643 4376
Direct fax +61 3 9643 5999
Email neil.perl@mallesons.com

MALLESONS STEPHEN JAQUES

Agata Jarbin
Partner

Annexure 1: Expert Witnesses in proceedings in the Federal Court of Australia - Guidelines

1 General Duty to the Court¹

- 1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.
- 1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.²
- 1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

2 The Form of the Expert Evidence³

- 2.1 An expert's written report must give details of the expert's qualifications, and of the literature or other material used in making the report.
- 2.2 All assumptions of fact made by the expert should be clearly and fully stated.
- 2.3 The report should identify, and state the qualifications, of each person who carried out any tests or experiments upon which the expert relied in compiling the report.
- 2.4 Where several opinions are provided in the report, the expert should summarise them.
- 2.5 The expert should give the reasons for each opinion.
- 2.6 At the end of the report the expert should declare that "[the expert] *has made all the inquiries that [the expert] believes are desirable and appropriate and that no matters of significance that [the expert] regards as relevant have, to [the expert's] knowledge, been withheld from the Court.*"
- 2.7 There should be included in or attached to the report:
 - (i) a statement of the questions or issues that the expert was asked to address;

¹ See rule 35.3 Civil Procedure Rules (UK); see also Lord Woolf "*Medics, Lawyers and the Courts*" [1997] 16 CJK 302 at 313.

² See *Sampi v State of Western Australia* [2005] FCA 777 at [792]-[793], and *ACCC v Liquorland and Woolworths* [2006] FCA 826 at [836]-[842].

³ See rule 35.10 Civil Procedure Rules (UK) and Practice Direction 35 - Experts and Assessors (UK); *HG v the Queen* (1999) 197 CLR 414 per Gleeson CJ at [39]-[43]; *Ocean Marine Mutual Insurance Association (Europe) OV v Jetopay Pty Limited* [2000] FCA 1463 (FC) at [17]-[23]

- (ii) the factual premises upon which the report proceeds; and
- (iii) the documents and other materials which the expert has been instructed to consider.

2.8 If, after exchange of reports or at any other stage, an expert witness changes a material opinion, having read another expert's report or for any other reason, the change should be communicated in a timely manner (through legal representatives) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court.⁴

2.9 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.⁵

2.10 The expert should make it clear when a particular question or issue falls outside the relevant field of expertise.

2.11 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports.⁶

3 Experts' Conference

3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

ME J BLACK
Chief Justice
25 September 2009

⁴ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565.

⁵ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565.

⁶ The *"Ikarian Reefer"* [1993] 20 FSR 563 at 565-566. See also Ormrod *"Scientific Evidence in Court"* [1968] Crim LR 240.