



INTERNATIONAL

FINAL REPORT - PUBLIC

Prepared For:

Mallesons Stephen Jaques

Level 50, Bourke Place

600 Bourke Street

Melbourne VIC 3000

Expert Report by
Dr Paul Paterson of CRA
International for Mallesons
Stephen Jaques on the
ACCC Discussion Paper
'Telstra's local carriage
service and wholesale line
rental exemption
applications' August 2007

Prepared By:

Paul Paterson

CRA International

Level 7, 107 Pitt Street

Sydney NSW 2000, Australia

Date: 7 November 2007

CRA Project No. D11288-04

DISCLAIMER

CRA International and its authors make no representation or warranty as to the accuracy or completeness of the material contained in this document and shall have, and accept, no liability for any statements, opinions, information or matters (expressed or implied) arising out of, contained in or derived from this document or any omissions from this document, or any other written or oral communication transmitted or made available to any other party in relation to the subject matter of this document. The views expressed in this report are those of the authors and do not necessarily reflect the views of other CRA staff

Mallesons Stephen Jaques
Level 50, Bourke Place
600 Bourke Street
Melbourne VIC 3000

**RE: EXPERT REPORT BY DR PAUL PATERSON OF CRA
INTERNATIONAL FOR MALLESONS STEPHEN JAQUES ON THE ACCC
DISCUSSION PAPER 'TELSTRA'S LOCAL CARRIAGE SERVICE AND
WHOLESALE LINE RENTAL EXEMPTION APPLICATIONS' AUGUST 2007**

Please find enclosed the final Expert Report on the ACCC Discussion Paper as outlined above.

Yours sincerely
CRA INTERNATIONAL PTY LTD

A handwritten signature in black ink, appearing to read "Paul Paterson", with a long horizontal flourish extending to the right.

Paul Paterson
Vice President

TABLE OF CONTENTS

1. BACKGROUND	1
2. MARKET DEFINITION ISSUES.....	2
2.1. PRODUCT DIMENSION OF THE WHOLESALE MARKET	2
2.2. FUNCTIONAL MARKET DEFINITION CONSIDERATIONS	3
2.3. THE INTERPLAY BETWEEN MARKET DIMENSIONS: METHODOLOGICAL APPROACH.....	4
3. MARKET COMPETITIVENESS	5
3.1. THE NEED FOR AN ACTIVE RESALE MARKET	5
3.1.1. The impact of LCS on competition in supply of retail bundles	9
3.1.2. A further point on the nature of competition	10
3.1.3. Transition issues	11
3.2. OTHER INDICATORS OF COMPETITION	12
3.3. VERTICAL INTEGRATION	13
3.4. COMPETITION FROM OPTUS' HFC.....	15
4. OTHER ISSUES RELATING TO THE LTIE.....	17
4.1. DISTORTIONS FROM REGULATION.....	17
4.2. TELSTRA'S LEGITIMATE COMMERCIAL INTERESTS	17
5. CONTESTIBILITY OF VOICE-ONLY CUSTOMERS.....	19
6. EXEMPTION AREA DECISION RULE	20
APPENDIX A : CURRICULUM VITAE	21
APPENDIX B : LETTER OF INSTRUCTION FROM MSJ	26
APPENDIX C : CONTESTIBILITY OF VOICE-ONLY CUSTOMERS – REVISED MODELLING	27

1. BACKGROUND

- 1 My name is Paul Paterson. I am a Vice President with CRA International. My curriculum vitae, including qualifications, experience and publications, is included in Appendix A.
- 2 In August 2007, the Australian Competition and Consumer Commission ('the Commission') released a discussion paper ('Discussion Paper') on Telstra's local carriage service and wholesale line rental ('LCS and WLR') exemption applications.¹ I have been asked by Telstra, through the offices of Mallesons Stephens Jaques ('MSJ'), to provide an expert report on specific issues raised by the Commission in the Discussion Paper. My instructions from MSJ are reproduced in Appendix B.
- 3 This report has been prepared with regard to the Federal Court's 'Guidelines for Expert Witnesses and Proceedings in the Federal Court of Australia', which are included in my instructions from MSJ.
- 4 The remainder of this report is structured as follows:
 - In Section 2 I address market definition issues;
 - In Section 3 I address market competitiveness matters;
 - In Section 4 I focus on other issues relating to the long term interest of end users ('LTIE');
 - In section 5 I present revised estimates relating to the contestability of voice-only customers for entrants using ULLS; and
 - In Section 6 address matter to do with the Exemption Area decision rule I propose in my first report on LCS/WLR exemption ('First Report').²

1 ACCC, "Telstra's Local Carriage Service and Wholesale Line Rental Exemption Applications", Discussion Paper, August 2007 ('Discussion Paper').

2 Telstra, "Statement by Dr Paul Paterson of CRA International for Mallesons Stephen Jaques on the Economic Considerations for LCS and WLR Exemptions", Annexure A to "Telstra's Local Carriage Service and Wholesale Line Rental Exemption Applications – Supporting Submission", July 2007.

2. MARKET DEFINITION ISSUES

5 In this section I address the product and functional dimensions of market definition and the interplay between market definition dimensions.

2.1. PRODUCT DIMENSION OF THE WHOLESALE MARKET

6 In its Discussion Paper the Commission asks for interested parties' view on the product delineations of both the wholesale and retail markets:

The ACCC concluded in its Local services review that there were separate wholesale markets for the provision of wholesale line rental and the provision of wholesale local calls. It also concluded that retail markets at their narrowest could be defined as separate retail markets for line rental and local calls or more widely as a market for retail fixed voice services which necessarily includes both retail line rental and local calls services. Are the ACCC's conclusions still correct?³

Retail market

7 In my First Report I examined the relevant retail market for the purpose of assessing the impact on the LTIE of granting Exemption Orders for LCS and WLR.⁴ I found this market to include the full bundle of fixed voice services, these being basic access, local calls, national and international long distance calls and fixed to mobile calls. I drew this conclusion on the basis that:

- These services are likely to form a cluster market;
- The commercial reality of supply is that there are incentives to sell the services jointly (and a large majority of customers are in fact provided with this full suite of fixed telephony services by a single service provider); and
- Supply-side substitution in the retailing functions of these services is possible and probable.

8 I also found that the relevant retail market potentially also includes broadband services.

9 I have no subsequent reasons to change these views.

Wholesale market

10 Concerning the relevant wholesale market, in my first report I concluded that there do exist alternatives for LCS/WLR, with few impediments to effectively utilising these alternatives. This led me to surmise that the relevant market for wholesale inputs for the purpose of analysing the exemption application is broad, and includes at least ULLS, and the Optus HFC and other competing fixed line networks (through self-supply of wholesale inputs).⁵

3 Discussion Paper, p. 22.

4 First Report, p. 13.

5 First Report, p. 17. As explained in my First Report (footnote 15, page 16), I use the term 'ULLS-based' to cover competitor supply via DSLAMs used for both ULLS- and LSS-based entry.

- 11 It is possible that an exception may occur in the case where an access seeker uses the Line Sharing Service (LSS) to supply the end customer with broadband plus IP voice services over that broadband connection. LSS is the situation where two separate carriers provide separate services over a single access line.⁶ This generally involves purchasing a basic access service from Telstra, by either the end customer taking retail line rental directly from Telstra, or by the access seeker purchasing WLR.
- 12 In the latter case, although the access seeker purchases WLR from Telstra, it is possible it may provide the full suite of call services using VoIP and accordingly not purchase LCS. At present this practice is very limited.⁷ However, it is possible that it will become more prevalent in future. If this were to be the case it may be that, due to the regulated availability of LSS, there may be a separate product market for WLR.
- 13 In my view, the existence of such a market would be purely a regulatory phenomenon associated with the regulated provision of LSS. Further, I do not see this as having material implications for the strength of the case that both LCS and WLR be exempted, nor for the practice of treating together the case for the exemption of these services (as I have done in my First Report and the Commission has done in its Discussion Paper).⁸

2.2. FUNCTIONAL MARKET DEFINITION CONSIDERATIONS

- 14 In respect of the functional dimension of the market, the Commission identifies the relationship between upstream ULLS and LSS, and resale-based LCS/WLR services, as a relevant consideration.⁹ In my First Report, I investigated this issue in depth and concluded that there are few impediments to access seekers using ULLS as an alternative to WLR and LCS, with the implication being that they are in the same functional market.

⁶ ACCC, "Line Sharing Service", an ACCC Discussion Paper examining whether a line sharing service should be declared under Part XIC of the *Trade Practices Act, 1974*, p. 1.

⁷ Of the major VoIP providers, Engin claims to have around 60,000 VoIP customers (see <http://www.engin.com.au/about/about.aspx>) and iiNet has around 53,000 customers (see http://www.iinet.com.au/about/investor/20070807_ASXANN_Full_Year_Presentation.pdf). This suggests that in total it is likely there are no more than (say) 200,000 VoIP services currently in operation. Even if all of the lines over which these VoIP services are provided are LSS services and take WLR but not LCS (which is highly unlikely given at least some will be VoIP services provided over ULLS lines) this would still imply that around 90% of WLR lines also take LCS (I note that Telstra maintains around 2 million wholesale lines: Telstra, Annual Report 2007).

⁸ If the Commission is concerned with the ability of Telstra to stifle LSS entry by increasing the price of WLR if a WLR exemption is granted, the approach to LSS pricing could be changed to include a contribution toward line costs, with this contribution refunded in the event that the customer purchased an unregulated basic access service or a bundled voice service that included basic access from Telstra. As discussed below, competition from ULLS-based access seekers would prevent Telstra from claiming any market rents.

⁹ Discussion Paper, p. 22.

2.3. THE INTERPLAY BETWEEN MARKET DIMENSIONS: METHODOLOGICAL APPROACH

15 The Commission considers that:

... the various dimensions of markets—product, functional, geographic and temporal—are not discrete and that conclusions on one dimension may affect the consideration of other dimensions. For example, to the extent that wireless and fixed network voice and/or broadband services were considered part of the same product market, the consideration of the geographic dimension at the exchange level might be less significant. This would be because wireless and mobile network coverage is not particularly related to ESA-level deployment of infrastructure. Decisions to invest in mobile or wireless networks might be based on a larger geographic unit. Similarly, on the demand side, consumers would not be constrained to switching to services provided from their exchange.¹⁰

16 While this may be correct, I do not see this as being a material issue with regard to the matter at hand, given:

- the acknowledgement by the Commission that the relationship between ULLS and LSS, and resale-based LCS/WLR services, is a relevant consideration in determining the functional market (see section 2.2 above); and
- the view of the Commission that, for the purpose of considering the competitiveness of the market for fixed voice services, the exchange level is the appropriate geographic unit.¹¹

10 Discussion Paper, p. 22.

11 ACCC, "Fixed Services Review – A second position paper", April 2007, p. iv

3. MARKET COMPETITIVENESS

17 In this section I consider the need for an active resale market, other indications of competition, competition from Optus' HFC network, factors that determine the nature of competition and the relevance of vertical integration.

3.1. THE NEED FOR AN ACTIVE RESALE MARKET

18 The Commission notes at page 24 of its Discussion Paper that:

around 88 per cent of basic access lines were on Telstra's network, with 19 per cent of total basic access lines sold by resellers of Telstra's services and Telstra providing around 69 per cent of total lines as retail lines...

19 The Commission continues:

It would appear from this evidence that the market for the wholesale supply of LCS and WLR still relies largely on resale [by Telstra].

20 And, at page 25:

... it is unclear from the Telstra submission to what extent these providers [Optus, AAPT-PowerTel and Nextep] are providing wholesale PSTN voice services as compared to wholesale VoIP services.

21 The Commission, at page 25, then asks:

What alternative providers to Telstra of LCS and WLR currently operate in the wholesale market? Do these providers offer any significant competitive constraint on the pricing of the LCS and WLR? In the absence of access to a declared LCS and WLR in the proposed exemption area, would such firms provide a meaningful constraint on the pricing of the LCS and WLR or equivalent services?

Would Telstra be likely to continue to supply the LCS and WLR if the exemption applications were granted?

22 In short, the Commission notes that competitive supply in the retail market is largely through Telstra's resale services. The Commission's concern is whether, in such circumstances, Telstra might have substantial market power over resale that would be unconstrained by competitive supply of resale products (whether based on ULLS or full facilities) if the LCS and WLR exemptions were granted. In the Commission's words:

in areas where there are few suppliers of an upstream service, a lack of competition may lead to a refusal to supply or inefficiently high upstream pricing.¹²

23 In my view, the availability of ULLS at prices intended, by regulatory design, to emulate the prices that would emerge in a competitive market is sufficient to allay the Commission's concern. This (as I explain in more detail below) removes any substantial market power Telstra might otherwise have either in the supply of resale services such as LCS and WLR, or downstream in retail markets.

12 Discussion Paper, p. 23.

- 24 I also consider it likely that:
- the wholesale market structure described by the Commission has fundamentally arisen due to the availability of the regulated resale services, LCS and WLR (in conjunction with PSTN originating access (OA) and terminating access (TA)); and
 - in a market where an unconditioned access line could be leased at prices not unlike those that would prevail in an effectively competitive market, basic access and voice services would typically be sold as part of a bundled service.
- 25 I come to these conclusions on the basis of the view that it is substantially more efficient to supply the full range of voice, and increasingly other, services that can be simultaneously provided over an access line, than to split provision of these services into unbundled components. In particular, there are substantial economies of scope shared by those services that can be supplied over the same access line in both production and consumption. Consequently, there is a strong probability that (at least) wholesale voice services belong to a single cluster market, and similarly, retail voice services belong to a single cluster market.¹³
- 26 That being said, the availability of regulated ULLS (and where it exists, full facility-based competition) means that the Commission does not need to determine whether there are cluster markets for voice services provided at both the wholesale and retail layers, or whether these elements would be unbundled in either or both layers. As Telstra does not have market power over wholesale or retail services, the Commission can rely on market forces to determine whether wholesale supply, on either a bundled or unbundled basis, is efficient or not.
- 27 If, on the one hand, there is an efficient demand for resale services, then, given the availability of ULLS (and where they exist, full facilities), Telstra and its rivals would supply efficient resale services (whether bundled or unbundled, and whether in the form of LCS and WLR, or some other form).¹⁴
- 28 Consider, for example, the case where Telstra sought to foreclose wholesale supply of what in fact was efficient provision of an LCS and a WLR like product (presumably with the intention of claiming market rents in the retail market). Any access seeker could purchase ULLS on regulated terms and conditions (or where relevant, rely on its own facilities) and wholesale its own LCS and WLR like products. Access seekers would have strong incentives to do this, since Telstra's exit would leave the wholesale market without an incumbent competitor. The result would be to ensure resellers could continue to constrain Telstra's retail prices (ULLS-based access seekers could also directly retail service at prices that undercut Telstra's retail prices).
- 29 Similarly, any attempt by Telstra to set inefficiently high wholesale prices for LCS and WLR like products, and ultimately to collect retail market rents, would be defeated by exactly the same means.

13 See my comments on this issue in Section 3.1 above.

14 As I noted in Section 2.1 above, the regulated availability of LSS, which requires the separate purchase of basic access, may artificially create a market for basic access.

- 30 Accordingly, Telstra would be unable to refuse to offer resale services (when these were efficient), or charge inefficiently high resale or retail prices, without also losing a prohibitive portion of its share of the relevant market or markets.
- 31 This conclusion does not require there already be an active wholesale market for LCS and WLR-like services. Rather, it depends on the scope for the market to respond to Telstra withdrawing supply of LCS/WLR or pricing these services supra-competitively, if there is an efficient demand for resale services.
- 32 However, I have been provided with evidence that there are in fact a number of parties with the network potential to now provide LCS and WLR-like services. In a report prepared for MSJ by Market Clarity, it is documented that there are 8 wholesale voice service providers who currently have the potential to provide wholesale LCS and WLR services. Furthermore, this report indicated that at least some of these 8 operators are actually offering wholesale LCS and/or WLR services.¹⁵
- 33 The fact that these 8 network owners have the immediate potential to supply LCS and WLR-like services (and some of them are actually offering these services) supports the view that the market has the capacity for a future competitive response in kind, should Telstra withdraw supply or attempt to price supra-competitively.
- 34 That said, it may be that now or in the future it is in fact inefficient to wholesale resale services. Rather, economies from vertical integration (including those achievable through ULLS-based operations) may allow carriers to undercut suppliers that are not vertically integrated. As a result, products like LCS and WLR may not continue to be provided.
- 35 In that circumstance, the absence of wholesale services like LCS and WLR, and indeed any other resale service, would not indicate any foreclosure on Telstra's part, but merely competitive market pressure eliminating an inefficient form of supply. Moreover, if Telstra thought the absence of resale products gave it retail market power, I believe it would soon discover the opposite. For example, a retail price that Telstra hoped would generate market rents would in my opinion be readily and profitably undercut by vertically integrated ULLS-based (or where they exist, full facility-based) rivals that self-supply the necessary upstream services, leaving Telstra with costly losses in market share.

¹⁵ See the report prepared for MSJ by Market Clarity, "Australian Wholesale Voice networks and Capabilities", 1 November 2007. This report lists AAPT-PowerTel, engin, IP Systems, ISPhone, iVox, NEXTEP, Optus and Soul as voice network owners with the capability of offering wholesale services similar to LCS and WLR services.

- 36 In summary, it is my view that the presence of third party suppliers with the ready ability to provide LCS and WLR-like services, with some of these operators actually offering these services, supports the possibility of a direct, in-kind competitive response to Telstra attempting to derive monopoly rents through withdrawal or supra-competitive pricing of LCS and WLR. However, such a direct, in-kind response this is not critical to the question of whether Telstra has substantial market power in either wholesale or retail markets. Rather, given the availability in the exemption area of ULLS, and in some cases full facility-based competition, on this basis alone Telstra cannot have market power in any relevant wholesale or retail market.¹⁶
- 37 As a final point, there is in my mind some ambiguity regarding the data to which the Commission refers. The Commission has indicated that: “Current market arrangements allow for three competitive models for the provision of basic access and local calls – the regulated resale of LCS and WLR services, the use of ULLS, or stand-alone networks.”¹⁷ The Commission goes on to say: “The ACCC has noted in its competitive safeguards report that, in 2005-06, around 88 per cent of basic access lines were on Telstra’s network, with 19 per cent of total basic access lines sold by resellers of Telstra’s services and Telstra providing around 69 per cent of total lines as retail lines. The remaining 12 per cent was largely accounted for by Optus supply on its HFC network, although other networks existed in discrete areas such as TransACT and Neighbourhood Cable.”¹⁸
- 38 What is not apparent from these figures is the treatment of basic access services provided by DSLAM operators over ULLS lines. In particular, it is not clear whether ULLS-based services are covered in the 12 per cent of services provided over competing networks, or included in the 19 per cent of services retailed by others but provided over Telstra network. If the latter, then indicating that there were “19 per cent of total basic access lines sold by *resellers* [emphasis added] of Telstra’s services” is misleading as some of these services in fact require more than simple resale and allow competing carriers substantial scope to differentiate their products in a technical (e.g. service quality – see Section 3.1.1 below) as well as a customer service sense. That is, the extent of competitor dependence on simple resale would be over-stated.
- 39 Alternatively, if the basic access services provided over ULLS lines are not included at all in this analysis, then again the Commission’s statement would result in an overstatement of Telstra’s competitors’ dependence on simple resale.
- 40 This situation could be rectified by including the number of ULLS lines in the analysis, along with a judgement as to the proportion of ULLS lines that are used to provide basic access services.

16 Provision of downstream telephony services (such as retail basic access and local calls) by vertically integrated operators, including ULLS-based service providers, can be considered in effect to be *self-supply* of wholesale services. That is, there does not need to be an actively traded market in wholesale services such as LCS and WLR for there to be appropriate competitive constraint on Telstra’s market behaviour.

17 Discussion Paper, p. 24.

18 Discussion Paper, p. 24.

- 41 Furthermore, the analysis would be more pertinent if conducted for the exemption area rather than on a national basis.
- 42 Confidentiality issues prevent Telstra providing me with the data necessary to undertake this more detailed analysis at this stage. However, it is open for the Commission to request this information.

3.1.1. The impact of LCS on competition in supply of retail bundles

- 43 The Commission comments, at page 23 of its Discussion Paper, that:

many telecommunications services are sold as a bundle and ... the ability to supply low cost local calls will tend to increase competition in the markets for other services in the bundles.

- 44 It appears the Commission's concern here is that the absence of a competitively priced standalone wholesale local call service may undermine the extent of competition for other services included in the bundles.¹⁹ To elaborate, the Commission may be worried that local calls are a crucial component of any retail voice bundle. Thus, if retailers relying on resale could not purchase an LCS-like service at competitive prices, then the Commission might fear that either the bundle prices of resale-based retailers would be inefficiently high, or they might choose not to compete in the provision of bundled voice services, leading to inefficiently highly priced retail voice bundles (as supplied by Telstra).

- 45 In my opinion, competition in the supply of local call services from access seekers that have purchased ULLS is likely to dominate competition based on purchase of a resale service like LCS. There are two reasons for this:
- First, the incremental cost to an ULLS-based access seeker of supplying local calls (either in the wholesale or retail market) are likely to be trivial compared with the costs of purchasing LCS.²⁰ In contrast, LCS is priced on a per call (retail minus) basis. Consequently, competition from ULLS-based access seekers is likely to be considerably sharper than from resale-based carriers. So long as retail local call prices exceed the ULLS-based access seeker's incremental costs of supplying local call service, it has strong incentives to compete vigorously to supply this service.
 - Second, resale competition is largely based on price *levels* only, and not also price *structure*, for two reasons:
 - First, the wholesale price for LCS is set on a retail minus basis, meaning the marginal cost faced by the reseller in supplying local calls will have a similar structure to Telstra's retail local call service prices. This provides the reseller with strong economic incentives to set retail prices for local calls that are very

19 I understand "low cost" to mean "competitively priced," that is, price reflects *efficient* costs.

20 It is true that the incremental cost of supplying all voice services taken together need not be trivial, though not of a level that would prevent entry (as addressed in my First Report). However, given a ULLS-based access seeker has made the decision to supply any kind of voice service to a customer (or customers within the same ESA), the cost of adding local calling to any particular customer will be low, largely being the cost of local call termination and any incremental billing costs.

similar to Telstra's, since typically profit-maximising prices are closely related to marginal costs which in this case are dominated by resale prices.

- Second, it is difficult for a reseller to distinguish what it sells from what Telstra sells, whether in terms of quality or other product-related means of differentiation, as the technical characteristics of the reseller's service are essentially identical to those of Telstra's service.²¹ In contrast, a ULLS or full facility-based competitor can substantially differentiate its service from Telstra, in terms of quality (for example, VoIP service quality can differ from that of PSTN voice service), the nature of its service offerings and the extent of bundling (including services like call waiting, forwarding, integration with the customer's computer applications, etc.) and pricing structures (as its marginal costs are very different to those of LCS).

- 46 As a consequence, I do not consider that Telstra would gain any market power if LCS were no longer regulated in the exemption area. Rather, ULLS (and in some cases, full facilities) competition is the relevant constraint on Telstra. I believe that constraint is far more binding than any constraint from resale competition.

3.1.2. A further point on the nature of competition

- 47 The Commission expects that:

the nature of [voice service] competition for end-user customers would largely be price competition, given the significant use of resale services... in any case, there would be unlikely to be much differentiation possible in the provision of local calls and line rental, although... there may be value-added services such as messaging services or call management facilities that could differentiate line rental services. The [Commission] had regard to such value-added services in its Local services review but considered that it would not be necessary to include such services in the declared WLR service.

- 48 I agree with the Commission that resellers cannot vary important components of voice service when these supplied by resale, though, as noted in Section 3.1.1 immediately above, resellers can materially distinguish themselves from Telstra through branding and customer service. However, here the Commission appears to consider voice service as supplied over alternatives to resale (which involve a greater use of competitive facilities) cannot be largely differentiated. In my view this, however, is not correct for the reasons discussed above. In short, I believe that competition that relies more intensively on facilities other than Telstra's can, and can be expected to, allow greater product differentiation in voice (and indeed all) services capable of being supplied over an access loop.

²¹ Where differentiation can occur is through the reseller establishing a distinct brand image and providing, in its dealings with the customer, a different customer service experience to that supplied by Telstra.

3.1.3. Transition issues

- 49 Presently, active competition to Telstra comes largely from resellers (see the Commission's Discussion Paper, page 24). In my consideration, this outcome has largely been determined by history, and in particular the initial availability of the regulated PSTN OA and TA service meaning the establishment of the pre-selection business model, followed by the regulated availability of LCS and WLR which allowed ready movement to the supply of the full suite of fixed voice services without investment in access network facilities. In addition, compared with resale and PSTN OA and TA-based entry, ULLS-based entry requires additional (access) network expertise not necessary when customer access is achieved through resale, longer rollout times and a longer commitment to the market to recover costs.
- 50 Consequently, access seekers are still transitioning toward ULLS, albeit at a pace that is strongly influenced by the availability of regulated resale services such as LCS and WLR.
- 51 While there is substantial evidence of rapid growth in DSLAM-based entry (see, for example, the data on DSLAM deployment I present in Section 5 below),²² the Commission may fear that this may not be currently capable of constraining Telstra. As the Commission puts it at page 23 of its Discussion Paper:

*in areas where there are few suppliers of an upstream service, a lack of competition may lead to a refusal to supply or inefficiently high upstream pricing. In such a case, a declared service **allows for a minimal level of retail competition and allows a basic level of local calling providers.** [Emphasis added]*

- 52 In my view the perspective taken by the Commission here fails to take account of the scope that now exists for a competitive response to any attempt by Telstra to exercise market power. That is, while current market shares could be taken to suggest that the competitive constraint ULLS-based rivals place on Telstra might presently be weak in some areas, this fails to take account of market dynamics. With ULLS prices designed to reflect total service long run incremental costs (TSLRIC), any attempted profit taking by Telstra would induce competitive entry. That is, the rapid deployment of competing DSLAMs in recent times suggests that even in the immediate future ULLS-based supply would place an effective competitive constraint on Telstra if it attempted to raise prices to extract supra-competitive profits.
- 53 Despite this, the Commission may (in my view inappropriately) choose to require a transition period before exempting LCS and WLR in some areas, by way of a condition on its Exemption Orders. While I believe this is not necessary to achieve competitive outcomes, if it were to occur it is important to ensure market participants, most notably access seekers, face appropriate incentives to shift from the less effective form of competition, resale, to the more effective form, ULLS.²³

²² In my view, ULLS growth may slow due to substitution toward LSS, given the imposed sharp declines in LSS prices. However, the point still stands. LSS purchasers can provide voice services by use of VoIP, or transition to ULLS-based supply.

²³ Resale is less effective because, as discussed in Section 3.1.1 above, it is difficult for a reseller to innovate on the basis of pricing packages or service quality.

- 54 In particular, an open ended maintenance of the regulated availability of LCS and WLR, especially if prices are intended to make suppliers indifferent between the two types of service, could ensure that resale remains the dominant form of competition to Telstra for many years to come. That is, in the absence of a change to the present regulatory regime, the Commission may have to wait for a lengthy period before access seekers choose to move the bulk of their subscribers over to ULLS.
- 55 Hence if the Commission is minded to defer the granting of exemptions for LCS and WLR in some areas by way of a condition on its Exemption Order, I believe it is essential that the timetable for removing regulation of LCS and WLR in these areas be very clearly set out. This would provide efficient access seekers with incentive-compatible signals to migrate their customers toward ULLS, increasing the functional depth of telecommunications competition.
- 56 In this respect, I also note that any policy intended to reduce reliance on LCS and WLR in favour of ULLS cannot be based on market share triggers, including the share of access lines supplied over ULLS or WLR, or more broadly shares supplied by entrants or Telstra. This approach would ignore the distorting impact on competitive outcomes from the existence of resale regulation and tend to perpetuate the current heavy reliance on resale by entrants. Besides, as such triggers are directly affected by access seekers' decisions, they are open to manipulation by access seekers through their coordinated conduct. For example, given profits can be more comfortably made from LCS plus WLR, access seekers' incentives to expand using ULLS, would be weakened by triggers of the types just described. In contrast, if the Commission were to announce an exemption of LCS and WLR by a certain date, this would provide access seekers with strong incentives to migrate customers toward ULLS.

3.2. OTHER INDICATORS OF COMPETITION

Number of ULLS and LSS links

- 57 The Commission has asked: "Does that ACCC also need information on the number of ULLS and LSS lines taken by access seekers to appropriately gauge competitive conditions in an ESA?"²⁴
- 58 In my view the presence of a large number of ULLS (and LSS) services in an ESA is a sufficient, but not a necessary, condition to demonstrate that wholesale and retail markets for services that can be supplied over local loop are competitive. Rather, competitiveness depends on the *scope* for entrants to constrain a SSNIP or that would push prices above cost, rather than what has happened to date under regulated conditions. In this regard, information on the number of ULLS (and LSS) services in an ESA, while of some utility, is not necessary to gauge competitiveness. Besides, I believe it is likely that current regulated resale prices tend to discourage ULLS-based entry, as indicated in the previous section.

24 Discussion Paper, p. 26.

Dynamic characteristics

- 59 The Commission has asked: "What dynamic characteristics of the relevant markets should the ACCC consider?"²⁵
- 60 It is my view that the dynamic aspects of these markets are important, indeed critical as, consistent with the statutory mandate, this allows a forward-looking perspective to be taken. However, their interpretation needs care in determining whether and where Telstra has substantial market power. For example:
- Price trends should be viewed in the context of changes in underlying costs, as well as accounting for quality.
 - Movement of customers between service providers must be benchmarked against similar industries or services to hold the effect of bundling and transfer costs constant. The fact that it may be more difficult for existing customers to switch providers in telecommunications than in other markets may result in lower levels of churn in telecommunications, but not necessarily indicate lower levels of competition. This is for at least two reasons:
 - First, carriers will compete all the harder for customers to the extent that customers tend to commit to a carrier for a relatively long period. Thus, while a low propensity to churn makes it hard to claim a customer, it also raises the gain from claiming a customer.
 - Second, to the extent that competition is facility-based, carriers have strong incentives to compete over the life of invested assets, thus focussing on the potential for churn over relatively long periods. This applies even to ULLS-based competition where the anticipated economic life of a DSLAM, although expected to be relatively short compared to some network assets, is likely to span at least a number of years.²⁶ In short, the relevant timeframe for DSLAM-based competitors is at least a number of years and churn should be evaluated over that timeframe.
- 61 In addition to historically observable dynamic characteristics, however, the potential for a competitive response to a market participant attempting to price above reasonable costs is critical in determining competitiveness. That is, it is not history alone that is relevant.

3.3. VERTICAL INTEGRATION

- 62 The Commission is concerned that:

*Telstra is a vertically integrated carrier [which]... raises issues of price and non-price constraints on the ability of new entrants to compete effectively in specific downstream market segments.*²⁷

25 Discussion Paper, p. 33.

26 [c-i-c]

27 Discussion Paper, p. 33.

- 63 In this respect, two points are relevant. First, there are a range of regulatory mechanisms (including the SAOs and Telstra's operational separation) and trade practices laws that protect access seekers, and indeed any telecommunications carrier, from being unfairly treated by a vertically integrated operator that may have substantial market power. Second, it is important to distinguish anticompetitive actions due to substantial market power gained from vertical integration from competitive activities, even though the latter may adversely impact less integrated and hence less efficient access seekers.
- 64 I discuss these two points in turn.
- 65 A wide variety of measures exist to protect access seekers and other carriers from any anticompetitive price or non-price actions Telstra or any other vertically integrated operator might wish and be able to undertake because it is vertically integrated.
- 66 Focussing first on anticompetitive vertical pricing behaviour, there is a strong case that present protections are sufficient in the Australian telecommunications sector. Such pricing behaviour is relatively easy to prosecute. Not only are the margins between Telstra's retail and wholesale prices for relevant services carefully monitored, but, in any case, such behaviour, for example, as implemented by a price squeeze, is relatively easy to identify. Both wholesale and retail prices are readily observable (and are especially so in Telstra's case), and Telstra's regulatory accounts have long been subject to regular monitoring.
- 67 This ease of prosecution has two interrelated effects. First, it means if any anticompetitive vertical pricing behaviour occurs, it faces a high likelihood of detection and good prospects of compensation for any harm suffered by access seekers. This lowers the expected harm from such behaviour. Second, the ease of prosecution sharply reduces the expected profitability of anticompetitive vertical pricing, so strongly discourages such actions. This in turn reduces the expected harm from such behaviour, since it reduces (indeed, in all likelihood, eliminates) the probability of its occurrence.
- 68 In short, existing ex post regulation in my view provides robust protection against anticompetitive vertical pricing conduct.
- 69 More broadly, profitable anticompetitive vertical pricing behaviour is in general difficult to undertake, as it requires recouping in the future a more immediate profit sacrifice. For example, a price squeeze is often seen as the classic anticompetitive technique that is available to a vertically integrated firm. By definition, a price squeeze involves a short run profit sacrifice because it requires foregoing more profitable revenues on wholesaling that otherwise would be obtained. This occurs by inducing retail sales in place of wholesale sales by setting wholesale-retail price relativities such that competitors cannot match the vertically integrated operators' retail prices (despite the foregone wholesale sales being relatively more profitable).²⁸

28 This could be achieved by either undercutting its wholesale-dependent competitors in the end user market by cutting retail prices, or by increasing its competitors' wholesale costs.

- 70 That sacrifice must necessarily be recovered at some future point to be profitable. However, given the availability of ULLS at regulated prices, it is implausible that future retail prices could be set sufficiently high to allow Telstra to earn profits that would overcome the original profit sacrifice.
- 71 Be that as it may, as just noted, Telstra runs a substantial risk of being successfully prosecuted if it undertakes a price squeeze. This has a substantive impact on the expected profitability of a price squeeze. In particular, the expected costs of any court case and of a judgement against Telstra must be set against the long-term profits that are expected to be earned after a price squeeze harms or eliminates competition. In short, the Australian regulatory and legal environment means Telstra must expect to earn substantially higher profits in the recovery phase if it is to justify undertaking a price squeeze. But exactly because of the ease of at least ULLS (and LSS) entry, it is improbable that such high profits could be earned.
- 72 The operational separation aspect of the Australian telecommunications regulatory regime also provides strong protection. Moreover, access seekers actively help the Commission in its oversight role on these matters. As a result, it is my belief that Telstra is highly unlikely to be able to materially and successfully harm access seekers by engaging in non-price discrimination against them and in favour of its own operations. Indeed, as with anticompetitive vertical price behaviour, in these circumstances Telstra would have very limited incentives to engage in non-price discrimination.

3.4. COMPETITION FROM OPTUS' HFC

- 73 In the preceding I noted that in some locations competition from ULLS-based suppliers is augmented by competition from facility-based rivals. The Commission, however, is concerned (page 25 of its Discussion Paper):

that the effectiveness of cable networks to provide a competitive constraint may be somewhat limited by ownership structures. In particular, Telstra and Optus each own a large cable network and are the largest Australian phone operators. Accordingly, the competition provided by cable networks for exchange-based voice services may be limited as the incentive to compete between the services may be reduced.

- 74 While I believe that the opportunity for ULLS-based supply is sufficient in its own right to warrant exemption of LCS and WLR in the exemption area, as a matter of principle I do not accept, as the Commission seems to imply here, that competitiveness is essentially determined by market concentration (that is, the combined effect of the number of industry participants, and their different sizes). In my view, not only can such static views be highly misleading, but other factors can be far more telling, notably the extent to which a firm stands to gain by engaging in competitive behaviour.

- 75 Thus, where firms face low marginal, but high fixed costs (as both Telstra and Optus do), their non-cooperative incentives to compete are strong. This is most especially the case for access networks, whether based on copper, HFC, or leased in the form of ULLS. The cost of the access loop is incurred whether a single service is supplied (basic voice access or a broadband Internet access are two examples among many) or a range of services are provided (for example, the full voice bundle plus broadband Internet access). Thus, carriers that own or lease an access line face very strong incentives to compete across the whole range of services, offering discounts to customers for every additional service they wish to purchase.
- 76 Moreover, the presence of other competitors, especially when entry and market expansion is facilitated by regulated access to the incumbent's own infrastructure, makes it unlikely that tacit or even explicit coordination between Telstra and Optus would be an effective strategy. Instead, this would merely allow smaller rivals to claim market share at the expense of Telstra and Optus.
- 77 Further, even accepting the proposition (and I do not) that the market shares of Telstra and Optus are the primary determinant their incentives to compete, the fact remains that in practice both firms do vigorously compete. Consequently, this can only add to the effectiveness of ULLS competition in constraining any substantial market power Telstra or Optus might otherwise have.
- 78 Finally, if the Commission's concerns are transitional, and in particular if the Commission expects the day will come when ULLS and other competition will constrain Telstra (or Telstra and Optus) but will not do so just now, I repeat the point made earlier. Past and present policy choices have had, and will continue to have, a substantial impact on the extent to which ULLS-based and other forms of entry are undertaken. Signalling the end of the regulated availability of LCS and WLR in some areas will strongly encourage a migration toward more extensive use of facilities to compete with Telstra. In contrast, reluctance to exempt LCS and WLR that is based on the existing share of competitive supply over LCS and WLR would, at a minimum, unnecessarily prolong the period over which access seekers prefer LCS and WLR to alternative technologies such as ULLS, and hence unnecessarily prolong the period over which LCS and WLR are regulated.

4. OTHER ISSUES RELATING TO THE LTIE

4.1. DISTORTIONS FROM REGULATION

79 The Commission has asked: "Are regulators likely to set prices too low and are the impacts of doing so asymmetric?"²⁹

80 Putting aside the issue of whether the Commission has tended to under-estimate the costs an efficient operator would incur in providing declared services (including LCS and WLR), the relevant points I have made in my expert report on this matter are:

- Even if the Commission is on average successful in correctly identifying the costs of service provision, due to the inherent truncation of returns from cost-based access pricing that I discuss in my report, it is expected that on average across services prices will be below those necessary to achieve a reasonable risk-adjusted return and in that sense will be "too low".³⁰
- Even if prices are set by the Commission on a basis that on average achieves a reasonable risk-adjusted return, if due to imprecision in identifying efficient costs or for some other reason the Commission were to sometimes under-estimate costs but at other times over-estimate costs, the impact of this on investment incentives would be likely to be asymmetric for the reasons outlined in my expert report, and in the directions I indicate. In particular, I say in my report "Given that regulated access prices carry a significant risk of error, then even if the distribution of this risk is uniform (i.e. the risk of over-pricing is the same as the risk of under-pricing), this can impose a significant economic welfare cost in the form of below-optimal investment levels by both access seekers and the access provider. While over-pricing access by the regulator is unlikely to result in inefficient over-investment (as the access provider can price below the regulated price to avoid damaging by-pass investment by access seekers), under-pricing will tend to cause under-investment by both access seekers and the incumbent. Specifically, access seekers will have an incentive to use the incumbent's network to an inefficient extent rather than build themselves, while the incumbent will be reluctant to invest up to an efficient level as its returns are diminished by the below-cost access price."³¹

4.2. TELSTRA'S LEGITIMATE COMMERCIAL INTERESTS

81 The Commission has asked: "Would granting the exemption applications be likely to allow Telstra to recover more than is in its legitimate commercial interests?"³²

29 Discussion Paper, p. 37.

30 First Report, pp. 55-56.

31 First report, p. 57.

32 Discussion Paper, p. 38.

-
- 82 As workably competitive conditions prevail in the exemption area (and the exemption would be granted on this basis), the free play of market forces would constrain Telstra in recovering more than a reasonable risk-adjusted return on its efficient costs, including its investment in network assets. If Telstra attempted to obtain a return above this level by increasing prices, competitive market forces would result in efficient entrants undercutting Telstra to gain market share, forcing Telstra to reduce prices to levels commensurate with a reasonable risk-adjusted return. That is, competition from DSLAM deployment, and possibly other by-pass investments, would prevent Telstra making supra-competitive profits.
- 83 Further, given the substantive risks associated with facility-based investments in telecommunications, most especially in laying fixed lines to the customer, appropriate market returns will be higher than in less risky businesses.

5. CONTESTIBILITY OF VOICE-ONLY CUSTOMERS

- 84 In my First Report I conducted analysis relating to the contestability of voice-only customers for entrants using ULLS.³³ I estimated that, based on data provided by Telstra on the costs of providing voice services using ULLS and telephony revenues, around [c-i-c] of customers in Band 2 are likely to be viable.
- 85 I have now received updated, and more detailed, customer revenue data from Telstra which allows me to eliminate one of the estimation steps in my initial analysis and to also conduct the viability analysis for September 2007 (the analysis in my First Report was done for April 2007).³⁴ I have used these new data to conduct similar analysis to that undertaken in my First Report.³⁵ This analysis is described in Appendix C.
- 86 I have undertaken the revised analysis in two steps. First I have conducted the viability analysis using the revised and more detailed data for April 2007. I have then conducted the viability analysis using the new data for September 2007.
- 87 Based on the revised and more detailed data for April 2007, I arrive at the same estimate of viable customers as I did in my First Report, namely that [c-i-c] of telephony customers are viable on a voice-only basis for a ULLS-based operator. This indicates that the initial estimation step that was necessary in the analysis for my First Report was a reasonably accurate approximation, and is consistent with there being only minor revisions to the data provided.
- 88 Further, based on the data provided for September 2007, I find that [c-i-c] of telephony customers would be viable on a voice-only basis.
- 89 As these new contestability estimates are not materially different to the estimate of [c-i-c] in my First Report, I have not altered my conclusion that “... *prima facie*, it is likely an exemption would have no material effect on competition in respect of the voice-only customer segment ...”.³⁶

33 First Report, pp. 50-52 and Appendix E.

34 These data are contained in Annexure D to Telstra’s confidential submission of 1 November 2007.

35 [c-i-c] The analysis I have conducted on these updated data is not strictly identical to that conducted in my First Report as I have now been provided with more detailed data and can avoid one of the estimation steps that was necessary in the earlier analysis.

36 First Report, p. 51.

6. EXEMPTION AREA DECISION RULE

90 The Commission has asked: "Do access seekers tend to follow deployment by other DSLAM operators into ESAs?"³⁷

91 The information I reference in my supplementary expert report on LCS/WLR exemption indicates that the presence of one or more competitor DSLAMs in an ESA is likely to be followed by further competitor DSLAM deployment. To quote from the supplementary report (footnote excluded):³⁸

With regard to entrant DSLAM deployment data, I note from the updated DSLAM information provided to me that:

- *The number of DSLAMs installed in metropolitan ESAs has increased from 1048 in June 2007 (as used in the 9 July exemption applications) to 1213 in August 2007, an increase of 165 or 15.7 percent in 2 months*
- *The number of Band 2 ESAs in which at least one competitor DSLAM has been installed has increased from 371 in June 2007 to 387 in August 2007, an increase of 16 ESAs or 4.3 percent.*
- *Of the 371 Band 2 ESAs for which exemption is sought, the proportion with two or more competitor DSLAMs installed has risen from 77 percent to 87 percent.*

Similarly:

- *the proportion with three or more competitor DSLAMs installed has risen from 52 to 65 percent; and*
- *the proportion with four or more competitor DSLAMs installed has risen from 29 to 40 percent.*

92 While covering only a limited period of time, in my view this gives a strong indication that the presence of one or more DSLAM in an ESA indicates that barriers to entry are low and further DSLAM-based entry can be expected.

37 Discussion Paper, p. 26.

38 Telstra, "Supplementary Statement by Dr Paul Paterson of CRA International for Mallesons Stephen Jaques on the Economic Considerations for LCS and WLR", October 2007, p. 2.

APPENDIX A: CURRICULUM VITAE

DR PAUL PATERSON

Vice President

Bachelor of Agricultural Economics
(First Class Honours)
University of New England

Master of Economics
Australian National University

Ph D (Economics)
Australian National University

Paul Paterson is a Vice President at CRA International, and heads the Telecommunications and Media Team within the CRA Competition practice in the Asia-Pacific region. Paul joined CRA from NECG and brings with him corporate, government and consulting experience in industry analysis, corporate strategies, regulation and policy development. Paul has senior executive experience in the telecommunications industry. Prior to joining NECG, he was with Telstra Corporation Ltd as Director Regulatory from 2001 to 2004.

As a founding member of the Regulated Industries Forum in 2003, and convener since then, Paul also has extensive insight into regulatory issues in the utilities and transport sectors.

Prior to his appointment as Director Regulatory at Telstra, Paul was the Group Manager Competition, Regulatory and External Affairs for Telstra from 1998 to 2001. Until leaving Telstra he was on the Board of the Australian Communications Industry Forum. Paul has authored numerous economic reports and publications since 1978.

EXPERIENCE

Advice on regulatory, competition, commercial, strategic and government policy matters to major corporations and government agencies in telecommunications and other network industries. Expert reports on competition issues to clients that have been used in regulatory proceedings. Jurisdictional experience spans Australia, New Zealand, Singapore, Hong Kong, Japan, United Kingdom, Ireland, Italy and the USA.

PROFESSIONAL HISTORY

Nov 04 – Present	Vice President, CRAI, Australia CRA Asia-Pacific Head of Telecommunications and Media Team CRA Asia-Pacific Chief Operating Officer
2004	Principal, NECG, Australia
2001 – 2004	Director Regulatory, Telstra
1998 – 2001	Group Manager Competition, Regulatory and External Affairs, Telstra
1992 – 1998	Executive Director, Policy & Resources, Department of State and Regional Development (previously Chief Business Economist, Office of Economic Development, New South Wales Premier's Department), Sydney

1988 – 1992	Chief Economist, OTC Limited (now Telstra), Sydney
1987	Visiting Economist, Department of the Treasury, Canberra
1986	Special Advisor, Department of Trade, Canberra
1985 – 1986	Assistant Director, Bureau of Labour Market Research, Canberra
1983 – 1984	Administrator, Organisation for Economic Co-Operation and Development, Paris
1980 – 1983	Senior Project Manager, Bureau of Labour Market Research
1977 – 1980	Project Manager, Bureau of Agricultural Economics

SELECTED PUBLICATIONS, PRESENTATIONS AND REPORTS

H Ergas & P Paterson (1990) **The Joint Provision of International Telecommunications services: An Economic Analysis of Alternative Settlement Arrangements** 8th International Telecommunications Society Conference, Venice, March 1990.

D Shiff & P Paterson (1990) **Regulatory Issues for International Telecommunications in the New Environment: How do Overseas Arrangements Inform the Australian Situation?** Paper presented to the International Telecommunications Law and Policy Conference, Sydney, December 1990.

OTC Ltd **OTC's Operating Environments to the Year 2000: A Scenario Analysis** (research leader and joint author of this confidential OTC report).

OTC Ltd **OTC Economic Forecasts** (author of this quarterly OTC report).

OTC Ltd (1991) **AUSTEL Study of Arrangements for Interconnection and Equal Access. Part B: Economic /Commercial Arrangements**, OTC submission to AUSTEL on this issue.

OTC Ltd (1991) **Price Cap Issues: OTC comments**, OTC submission to DOTAC on price cap arrangements.

OTC Ltd (1991) **Considerations for Reform**, paper presented to the 13-14 May meeting of the OECD Ad Hoc Group of Experts on International Telecommunications Charging Practices and Procedures, Paris.

OTC Ltd (1991) **AUSTEL Regulation of International Telecommunications: Chart of Accounts Data Requirements**, OTC Submissions to AUSTEL on the specification of the regulatory Chart of Accounts.

P Paterson & H Ergas (1991) 'The World Economy to the Year 2020' in **Western Australia into the Twenty First Century: Economic Perspectives** edited by R T Appleyard, Committee for Economic Development of Australia.

P Paterson (1991) **What do you Benchmark? Benchmarks to meet different needs** Paper presented to the AIC Conference 'Benchmarking', Sydney, August, 1991.

P Paterson (1991) **Benchmarking on the World Best Practice in International Telecommunications** Paper presented to the CIRCIT conference 'Toward International Best Practice in Telecommunications: Preparing Australian Industry to Compete in Global Markets', Melbourne, September 1991.

P Paterson, S Poyzer & D Shiff (1991) **Regulation of International Telecommunications: Competitive Safeguards**. Paper presented to the 1991 Australian Telecommunications Law and Policy Symposium, Sydney, September 1991.

P Paterson (1992) **The Pursuit of World Best Practice in International Telecommunications: a Challenge for Human Resource Management**. Paper presented to the AIC conference 'Human Resource Management in the Public Sector' 28-29 April 1992 Sydney and 30 April-1 May 1992 Melbourne.

P Paterson (1992) 'Preparing for the Future: Forecasting Demand and Planning Capacity for International Telecommunications in a Changing Environment' in **TeleGeography 1992: Global Telecommunications Traffic Statistics and Commentary** edited by Gregory C. Staple, International Institute of Communications (IIC).

P Paterson (1992) **Sub-National Governments, Economic Development and International Competitiveness**. Paper presented to the Economic Society of Australia (Queensland) Conference 'Economics in Business and Government: Micro-Economic Policy and Reform for International Competitiveness', Gold Coast, September 1992.

P Paterson & J Saunders (1993) **State Level Industries Strategies: NSW – Leading Australia into the 21st Century**. Paper presented to the Royal Institute of Public Administration Australia – National Conference 'The Changing Ethos', Sydney, November 1993.

NSW Dept. of State Development (1992) **Submission by State Development to the Government Pricing Tribunal Inquiry into the Determination of Electricity Prices – 1993/94**. Author.

NSW Premier's Department, Office of Economic Development (1993) **Strategic Directions for Economic Development and Employment Policy**, confidential paper prepared for the August 1993 NSW Government Cabinet retreat.

NSW Premier's Department, Office of Economic Development (1993) **The NSW Government - Working with Business to Internationalise the Economy**, November 1993.

The NSW Premier, the Hon John Fahey MP (1993) **Helping the NSW Manufacturing Sector to Better Compete on World Markets**, November 1993.

KPMG Peat Marwick, Office of Economic Development and Department of Business & Regional Development (1993) **Making it Happen in NSW – A Directory of Business Incentives and Assistance Provided by Federal, State and Local Governments for Investment and Economic Development in NSW, Australia**, November 1993. Joint editor.

J Saunders & P Paterson (1994) **Practical Benchmarking – Keynote Address**. Paper presented to the IIR Practical Benchmarking Conference, Sydney, February 1994.

J Saunders, P Paterson & H Peterson (1994) **Establishing Australia as your Regional Headquarters**. Paper presented to the KPMG Peat Marwick seminar 'Establishing Australia as your Regional Headquarters' Sydney, July 1994.

P Paterson (1994) **Assistance from the Office of Economic Development and Key Policy Issues**. Paper presented to the NSW Health Industry Forum, Sydney, November 1994.

P Paterson (1994) **The Big Picture View: NSW Government Initiatives and Policies Relevant to Facility Management**. Paper presented to "The Competitive Advantage", Facility Management Conference and Exhibition, Sydney, 1994.

NSW Premier's Department, Office of Economic Development (1994) **NSW Competitiveness Report**, August 1994.

NSW Premier's Department, Office of Economic Development (1995) **NSW Health Technology Park Proposal**, discussion paper prepared for NSW Health Industry Forum Management Board Meeting, 1995.

NSW Premier's Department, Office of Economic Development (1995) **Purchasing Policy – Industry Development**, discussion paper prepared for NSW Health Industry Forum Management Board meeting, March 1995.

NSW Premier's Department, Office of Economic Development (1995) Liberal National Government Economic Development '**Creating Jobs for NSW**' March 1995.

Department of State Development (1995) **NSW Economic Development – Policy Issues**, April 1995.

P Paterson (1995) **The New Government: Industry Development Initiatives, Including Government Purchasing**. Paper presented to the Australian Information Industry Association seminar 'NSW Familiarisation' Sydney, April 1995.

P Paterson, Michael Jerks & Michael Carman (1995) **State Merchandise Exports - A Survey of Policy and Practice**. Paper presented to the Industry Economics Conference, University of Melbourne, 6-7 July, 1995.

Department of State and Regional Development (1996) **Managing Contaminated Land in NSW: State and Regional Development Comments on EPA Green Paper**, November 1996.

Department of State and Regional Development (1997) **Call Centre Report: Benchmarking Information, Market Research, Implementation**, February 1997.

P Paterson (1997) Speech at Conference "**Key Issues in Private Provision of Infrastructure: NSW Experience**", Sydney, 11 March, 1997.

Department of State and Regional Development (1997) **Information Technology and Telecommunications Infrastructure for Delivering Government Services and Developing Employment Opportunities in Regional NSW**, June 1997.

Paul Paterson (1997) Speech at "**Australian Infrastructure Investment Forum: Panel Discussion Unsolicited Proposals**", Sydney, 28 August, 1997.

Paul Paterson (1997) **Using Business Plans and Measured Outcomes to Drive Performance within the Public Sector**. Paper presented at the International Quality & Productivity Centre 'Business Planning for Government Conference' Melbourne, 22 October, 1997.

Paul Paterson (1997) **Where are the Future Markets for Regional New South Wales?** Paper presented at the Planning Research Centre, University of Sydney, Sydney 21 November, 1997.

Paul Paterson (1998) **A Government Balanced Scorecard – One Size Does Not Fit All**. Paper presented at International Quality and Productivity Centre Conference, 'Using the Balanced Scorecard to Measure Corporate Performance' Sydney, 12 February, 1998.

Paul Paterson (1998) **Integrating Non-financial Measures into Department Strategic Planning with the Balanced Scorecard**. Paper presented at the ICM conference, 'Performance Management of Strategic Planning in Government', Canberra, 17 March 1998.

Department of State and Regional Development (1998) **Economic Development and Employment Location in the Sydney Greater Metropolitan Region: Possible Initiatives**, March 1998.

Department of State and Regional Development (1998) **Asian Economic Crisis: Briefing for Leaders Forum**, March 1998.

Paul Paterson (1998) **Interconnection: the Australian Experience – Telecommunications Competition and Access Regulation in Australia**. Paper presented at the IBC conference, 'Interconnection '98', Amsterdam, 17-18 November, 1998.

P Paterson & O Renard (2006) **Platforms for IT Productivity**. Paper presented to ASCN Preliminary Conference for APEC 2007 'Reshaping APEC for the Asian Pacific Century – priorities and strategies' Melbourne, December, 2006.

Paul Paterson (2007) **Expert Statement by Dr Paul Paterson of CRA International for Mallesons Stephen Jaques on the Economic Considerations for LCS and WLR Exemptions**, July, 2007. Public version available on ACCC website.

P Paterson & D Schadt (2007) **Fixed-Mobile Convergence: What is happening and why this is important?** Presentation to the International Telecommunications Society Conference, Perth, August, 2007.

Paul Paterson (2007) **Expert Statement by Dr Paul Paterson of CRA International for Malleson Stephen Jaques on the Economic Considerations for PSTN Originating Access Exemption**, October, 2007. Public version available on ACCC website.

APPENDIX B: LETTER OF INSTRUCTION FROM MSJ

[c-i-c]

APPENDIX C: CONTESTIBILITY OF VOICE-ONLY CUSTOMERS – REVISED MODELLING

[c-i-c]