TELSTRA CORPORATION LIMITED

SUPPLEMENTARY SUBMISSION

Competing infrastructure in Band 2 areas:

the implications of SingTel Optus' HFC network for ULLS pricing

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Introduction

In parallel with its Assessment of Telstra's Unconditioned Local Loop Service Band 2 monthly charge undertaking – Draft Decision (**Draft Decision**) the Australian Competition and Consumer Commission (**ACCC**) has considered an exemption application by Telstra to exempt it from the provision of wholesale services to SingTel Optus, within the footprint of SingTel Optus' HFC network (the **HFC exemption proceedings**).

In the course of those exemption proceedings, considerable factual and economic evidence regarding SingTel Optus' investment in and utilisation of its HFC network was produced to the ACCC and made publicly available.

In November 2008, the ACCC issued a Final Decision to reject Telstra's exemption application.

Telstra believes that the evidence gathered in its HFC exemption proceedings is highly relevant to matters in issue regarding its ULLS undertaking –because the socially harmful impacts of SingTel Optus' conduct have not been otherwise addressed. In this submission, Telstra explains why that evidence is relevant to issues in the Telstra Band 2 ULLS undertaking (**Undertaking**) – most especially price – and submits for the ACCC's consideration relevant public material from the HFC exemption proceedings, together with some additional and updated evidence.[1]

There remains a significant amount of material which SingTel Optus has claimed is confidential, but which appears to be of material relevance based on publicly available descriptions of its contents. Telstra submits that SingTel Optus ought to consent to the disclosure and use of that material in these proceedings, so that the ACCC can make a fully informed decision. In parallel with lodging this submission, we have sought such consent from SingTel Optus. In the event that SingTel Optus does not consent to provide the ACCC with the confidential material lodged in the HFC exemption proceedings:

- the ACCC should exercise its power under section 155 of the *Trade Practices Act 1974* to require that SingTel Optus provide the confidential information to the ACCC;

- alternatively, in the absence of information from SingTel Optus, the ACCC should draw the inferences available from the evidence set forth by Telstra in these submissions.[2]

In summary, Telstra believes that not only does substantial competing infrastructure exist in Band 2 areas – namely, SingTel Optus' HFC network (the **HFC Network**) - but that this infrastructure is being underutilised and degraded through chronic under-investment, which is:

(a) manifestly distortionary and inefficient;

(b) harmful to the long term interests of end users (**LTIE**);

(c) markedly out of step with international benchmarks; and

(d) in SingTel Optus' view, rational given the build/buy incentives that it faces.

[1] Included in the submitted material are references cited in submissions and expert reports from Telstra's HFC exemption proceedings, where those further references are provided electronically to the Commission in these proceedings

[2] The information sought from SingTel Optus is exclusively within SingTel Optus' knowledge, and where SingTel Optus fails to voluntarily address the proposition put forward by Telstra reliant on that information, an adverse inference ought to be found against SingTel Optus. *Jones v Dunkel* (1959) 101 CLR 298; *G v H* (1994) 181 CLR 387 at 390 per Brennan and McHugh JJ; *R v Connell; Ex parte Hetton Bellbird Collieries Ltd* (1944) 69 CLR 407 at 430 per Latham CJ; section 152BV(2)(d)

In Telstra's view, it is inconceivable that a firm facing efficient incentives would conduct itself as SingTel Optus does in respect of its HFC Network. For example:

- it does not know how many homes its network passes;
- it treats more than one third of homes passed as unserviceable (compared to an international benchmark of more than 93% serviceability);
- in doing so, it has followed a business rule reliant on a database of serviceable homes which was updated "some years ago", meaning that its default position is to treat as unserviceable all new premises built within its HFC footprint; it uses telephony technology dating from the mid 1990s despite great technological advances in voice over HFC technology; and
- it has failed to reconsider the business case to connect additional homes such as apartment blocks in more than five years, notwithstanding the growth of broadband and the reduction in technology costs during that period.

The litany of excuses offered for these failures simply do not stand up to scrutiny.

This conduct is a direct consequence of the availability of ULLS at the currently prevailing prices. Especially in light of the ACCC's refusal to grant the alternative remedy – withdrawal of regulated access – SingTel Optus' conduct is compelling evidence as to why the ACCC must now act to bring ULLS prices to levels that provide efficient incentives, and which do not distort investment in Australia's telecommunications infrastructure at the expense of the LTIE.[3]

The remainder of this submission is structured as follows:

- Section I explains why the LTIE is not served by the current level of the ULLS monthly access charge, given the well-accepted view that infrastructure competition is first-best. Specifically:
  - Part A explains why infrastructure competition – that is, the duplication of access networks – is a first-best outcome, wherever it can viably be achieved.
  - Part B provides the facts on why Telstra's copper network is not an economic bottleneck, most especially where SingTel Optus' HFC exists
  - Part C explains how the HFC Network is being inefficiently underutilised and starved of investment to the detriment of the LTIE.
  - Part D examines overseas evidence that shows HFC is a viable technology which can and does provide vigorous competition to copper-based (and even FTTH) networks. This is also true of US "overbuilders" – cable entrants who compete against both cable and copper-based incumbents.
  - Part E shows that SingTel Optus can viably upgrade the HFC Network to provide meaningful infrastructure competition.
- Section II explains how and why the ACCC must address these skewed incentives and facilitate an environment which promotes the LTIE:

[3] The ACCC must have regard to the LTIE as one of the reasonableness criteria that must be applied to its consideration of the Undertaking. See sections 152AH(1)(a) and 152BV (2)(d) of the Trade Practices Act 1974 (Cth)

- Part A explains that SingTel Optus' conduct is powerful evidence that the current ULLS monthly charge is not in the LTIE, because of the distortionary impact it has on investment incentives.

- Part B explains how the current ULLS monthly access charge creates incentives for SingTel Optus to disinvest in its HFC Network.

- Part C shows that the ACCC must increase the ULLS monthly access charge to a level that encourages investment in competitive facilities and promotes facilities-based competition and the LTIE generally.

I: THE LTIE IS NOT SERVED BY THE CURRENT LEVEL OF ULLS PRICES

1 At its current level, the monthly Band 2 ULLS access charge has a distortionary effect on incentives to invest in facilities based competition. SingTel Optus' conduct is unequivocal evidence of this, particularly in comparison with the approach taken by cable operators overseas. In essence, SingTel Optus is avoiding viable infrastructure investments in favour of access-based solutions – undermining what is widely accepted in academic, regulatory and empirical assessments as the "first-best" outcome of infrastructure competition. This section explains why this harms the LTIE. Specifically:

(a) Part A explains why infrastructure competition – that is, the duplication of access networks – is a first-best outcome, wherever it can viably be achieved.

(b) Part B provides the facts on why Telstra's copper network is not an economic bottleneck, most especially where SingTel Optus' HFC exists.

(c) Part C explains how the HFC Network is being inefficiently underutilised and starved of investment to the detriment of the LTIE.

(d) Part D examines overseas evidence that shows HFC is a viable technology which can and does provide vigorous competition to copper-based (and even FTTH) networks. This is also true of US "overbuilders" – cable entrants who compete against both cable and copper-based incumbents.

(e) Part E shows that SingTel Optus can viably upgrade the HFC Network to provide meaningful infrastructure competition.

A Infrastructure competition is first best

2 It is widely accepted in economic and regulatory circles that infrastructure competition delivers the best outcomes for end users, in the medium to long term. This view is further borne out by practical experience overseas, which shows that the intense competition between cable and copper/fibre-based operators has led to greater broadband take up.

A.1 Economic theory

3 Infrastructure competition, as a question of economic theory, is considered superior to access-based competition because, among other things:

(a) the greater diversity of platforms provides greater opportunities to innovate and differentiate on the range of services and product attributes. Access based competition, by contrast, risks encouraging business models which are based on duplicating the incumbent's offerings;[4]

[4] Waverman L., Meschi M., and Dasgupta K., *Access Regulation and Infrastructure investment in the Telecommunications Sector: An empirical Investigation with the support of ETNO*, September 2007, p 2; Hausman J. A., and Sidak G. J., *Did Mandatory Unbundling achieve its purpose? Empirical evidence from five countries,* Journal of Competition law and Economics (2005) 1 (1) pp 173-245; Crandall R. W., Ingraham R.T., and Singer H. J. *Do Unbundling Policies Discourage CLEC Facilities-Based Investment*, Topics in Economic Analysis and Policy (2004) 4 (1); Pindyck R.S., *Mandatory Unbundling and Irreversible Investment in Telecom Networks"* NBER Working Paper No. 10287; Distaso W., Lupi P., Maneti F., *Platform competition and broadband uptake: Theory and empirical evidence from the European Union* Information Economics and Policy, 18, 2006

(b) it promotes dynamic efficiency;[5]

(c) it delivers better competition outcomes, because infrastructure owners control virtually all aspects of their network, and so control how they compete over the whole value chain; and

(d) the rivalry, portfolio and information effects[6] outweigh issues surrounding duplication:

(i) rivalry means that the threat of displacement, or the prospect of displacing rivals, provides incentives for competitors to perform;

(ii) the portfolio effect implies that parallel investment by competitors greatly increases the probability that innovations and the most efficient processes will be developed; and

(iii) the information effect, under which the process of competition reveals information, such as the true level of costs, that itself improves the process and intensity of competition. This is especially important in regulated industries where such information might not otherwise be forthcoming (because, for example, prices are not set commercially).

A.2 Regulators' views

4 European, Canadian and American regulators have each acknowledged that infrastructure competition is first-best:[7]

(a) Both the Canadian Competition Bureau and Federal Communications Commission explicitly recognise that the unbundling regulation must be implemented in a way which encourages facilities based competition and creates incentives for investment,[8] with the FCC in particular, stating:

"Unbundling rules that encourage competitors to deploy their own facilities in the long run will provide incentives for both incumbents and competitors to invest and innovate, and will allow the Commission and the states to reduce regulation once effective facilities-based competition develops. Accordingly, the unbundling rules we adopt in this proceeding seek to promote the development of facilities based competition."[9]

(b) Further, the ERG pointed to the welfare losses which arise from not promoting replication of facilities where it is feasible:

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[5] Aghion P and Griffith R. *Competition and Innovation*, Zeuthen Lectures, MIT Press (2005)
[6] Vickers J, *Concepts of competition*, Oxford Economic Papers, 47 (1995) 1-23; Ergas H., Menezes F., The role of competition in Australian defence procurement, *The Melbourne Review* 3 (1) 2007
[7] See: European Parliament resolution on the Eighth Report from the Commission on the implementation of the Telecommunications Regulatory Package, COM (2002) 695, C87 E/68; ERG, *ERG Common position on the approach to appropriate remedies in the new regulatory framework*, p 67; *In the matter of implementation of local competition provisions of the Telecommunications Act Third report and order and fourth further notice of proposed rulemaking*, 15 September 1999, paragraph 14; ACCC, *The regulation of Australia's broadband market*, Mr Michael Cosgrave, Group General Manager, Communications Group. Speech given at AFR Broadband Australia 2007 Conference, 21 August 2007; Domestic Transmission Capacity Service – An ACCC Draft Report on reviewing the declaration of the domestic transmission capacity service, p 29
[8] ERG, *ERG Common position on the approach to appropriate remedies in the new regulatory framework*, p 67; *Evidence of the Commissioner of Competition before the Canadian Radio-Television and Telecommunications Commission Review of Regulatory framework for wholesale services and definition of essential service*, March 15, 2007,. paragraphs 16-18; *In the matter of implementation of local competition provisions of the Telecommunications Act Third report and order and fourth further notice of proposed rulemaking*, 15 September 1999, paragraphs 7, 14
[9] *In the matter of implementation of local competition provisions of the Telecommunications Act Third report and order and fourth further notice of proposed rulemaking,* 15 September 1999, paragraph 14

"*in the setting where replication is feasible the NRA also has to bear in mind the impact that their actions have on the incentives to invest in alternative infrastructure… the imposition by national regulatory authorities of mandated access that increases competition in the short-term should not reduce incentives for competitors to invest in alternative facilities that will secure more competition in the long-term.*"[10]

The ERG continued to say:

"*There is general agreement that a great potential harm to welfare occurs when replication is feasible but not promoted.*"[11]

5 Moreover, the European Commission considers that next generation networks provide a renewed opportunity for facilities-based competition, particularly from cable networks, and that regulated access services should be prioritised – from passive access to ducts to active access – to preserve incentives to deploy competing networks:

"in view of the objective of promoting infrastructure-based competition… there should be a clear prioritisation of remedies. The concept of gradation of remedies in this context takes into account the need to promote infrastructure-based competition to the greatest extent possible while bearing in mind the necessity to maintain remedies to safeguard the level of services-based competition that has already been reached. Thus the gradation of remedies approach aims to ensure investment at the lowest level of the network infrastructure. In general, this means that when lower elements of the network such as ducts are available permitting a sufficient number of operators to ensure effective competition on the basis of infrastructure competition, upper level remedies such as bitstream or its equivalent should not put at risk the revenues that the investor expects on the corresponding retail markets."[12]

6 The ACCC has also acknowledged that facilities-based competition is inherently superior, wherever viable, stating:

"Our long standing view is that the best way to promote the LTIE is to foster facilities-based competition, where this is feasible and does not lead to inefficient duplication of infrastructure.

Competing forms of standalone infrastructure allow different providers to have greater control over their costs and supply chain as well as greater ability to improve services and differentiate service offerings. In turn this is more likely to lead to sustainable competition and improved services over time."[13]

7 In particular, the ACCC has recently pointed to the harm that over-use of access has on efficient investment in infrastructure, which in turn reduces the level of competition and service diversity in the market. It noted that:

"when there is effective competition in the provision of that service declaration can reduce efficient investment more broadly in the market. This is on the basis that it can maintain reliance on the main supplier in the market, thus reducing efficient investment by access seekers in utilising alternative suppliers or services and hence the ongoing investment in infrastructure by these alternative

[10] ERG, *ERG Common position on the approach to appropriate remedies in the new regulatory framework*, p 67
[11] ERG, *ERG Common position on the approach to appropriate remedies in the new regulatory framework*, p 68
[12] European Commission, *Draft Explanatory note – Accompanying document to the Commission recommendation on regulated access to Next Generation Access Networks*, November 2008, p 8
[13] ACCC, *The regulation of Australia's broadband market*, Mr Michael Cosgrave, Group General Manager, Communications Group. Speech given at AFR Broadband Australia 2007 Conference, 21 August 2007

suppliers. This in turn can be deleterious to maintaining competition and in delivering service diversity to end users in the longer term."[14]

8 As we explain below, it is Telstra's contention that this is precisely the deleterious outcome in the present case, where too-low access prices are giving SingTel Optus the incentive to neglect to use or enhance its HFC Network, instead competing via access-based alternatives. As the above discussion explains, such conduct is not in the LTIE.

A.3 Practical experience

9 A number of empirical studies have examined the relationship between infrastructure competition and broadband penetration and found that facilities based competition, in the form of inter-modal (infrastructure) competition is the primary driver of broadband adoption:

(a) Distaso *et al* in their study on platform-based competition in the European Union, found that "*[t]he empirical evidence, using data available from 14 European countries, supports the theoretical predictions of the model and establishes inter-platform competition as the main driver of broadband adoption, while competition within the DSL segment of the market seems to play a less significant role.*"[15]

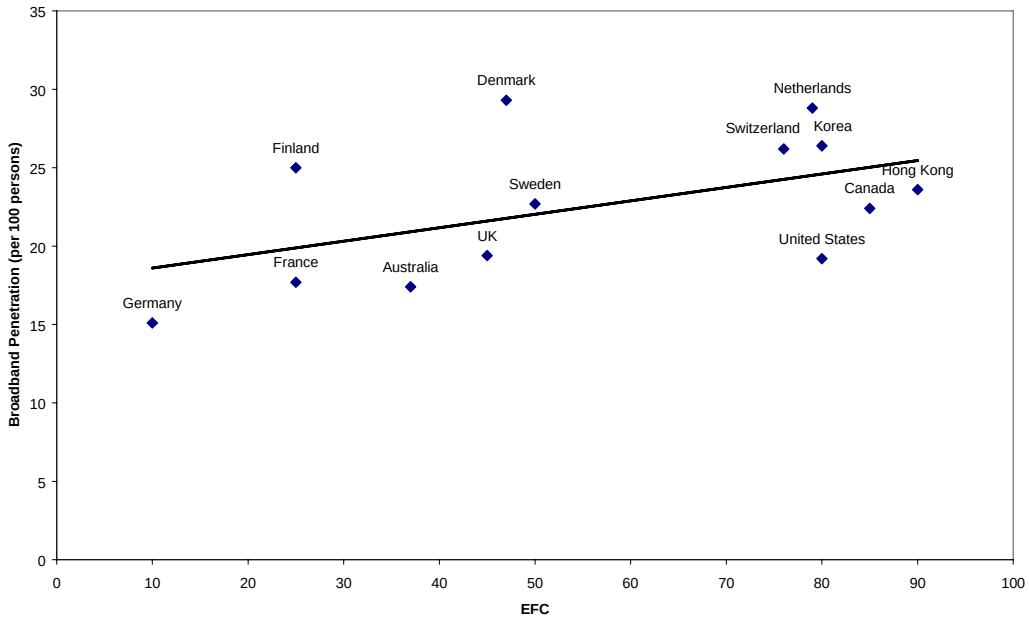
(b) Denni and Gruber found that while access-based competition is initially successful in driving penetration, this effect dissipates over time. Infrastructure competition is by far the more important driver in a sustained increase in penetration.[16]

(c) Lee found that while platform-based competition had a significant impact on broadband take-up in the US, access based competition did not.[17]

(d) An empirical study conducted by economic consultants CRA International reviewed thirteen countries, from Europe, the Asia Pacific and North America, with varying levels of alternative infrastructure and broadband take-up. It examined the correlation between infrastructure competition and broadband penetration, and found that those countries with high levels of infrastructure competition had higher broadband penetration (see Figure 1), which is consistent with the hypothesis that infrastructure competition leads to better market outcomes.[18]

[14] ACCC, *Domestic Transmission Capacity Service – An ACCC Draft Report on reviewing the declaration of the domestic transmission capacity service*, p 29
[15] Distaso W., Lupi P., Maneti F., *Platform competition and broadband uptake: Theory and empirical evidence from the European Union*, Information Economics and Policy, 18, 2006
[16] Gruber H. and Mario D., *The Diffusion of Broadband Telecommunications: The Role of Competition,* September, 2005
[17] Gruber H. and Mario D., *The Diffusion of Broadband Telecommunications: The Role of Competition,* September, 2005
[18] Reynolds P., Dodd M., Sanderson M., and Berger-Thomson N., *An international comparison of end-to-end facilities based competition in telecommunications* prepared for Bell Canada, CRA International, 15 March 2007 (hereafter **Reynolds P, et al**)

Figure 1: End-to-end facilities based competition (EFC) and broadband penetration in selected countries



Source: CRA International, An international comparison of telecom facilities-based competition, 15 March 2007, Figure 7

10 One of SingTel Optus' economic advisers in the HFC exemption proceedings – a co-author of the CRA International empirical study - has acknowledged the merits of infrastructure competition, and the perils of wholesale regulation, although not in those proceedings. The CRA International study considered whether wholesale regulation is chilling the incentive for network competitors to extend their networks; and in particular, whether it provided appropriate "build versus buy" pricing signals and whether network competitors view wholesale access as a substitute for network expansion. It noted:[19]

> "*In Australia, where the degree of wholesale regulation is high, Telstra's main facilities-based competitor, SingTel Optus, stopped its hybrid-fibre coax cable (HFC) rollout some years ago and has since been a heavy user of regulated wholesale services in Telstra's network, including [local loop unbundling] and line-sharing.*"

citing this fact in support of the conclusion that:

> "*In summary, wholesale regulation of DSL input services likely increases the risk of disincentives to invest in alternative infrastructure. Cable network owners appear to view wholesale access as a substitute to network expansion, and it remains questionable whether access prices send the appropriate build/buy signals.*"

11 Importantly, SingTel Optus' economic advisers have also recognised the need for access conditions to change as competitors become more established, lest they lose the incentive to climb the "ladder of investment":[20]

[19] Reynolds P, et al (2007), section 3.3.1
[20] Reynolds P, et al (2007), section 3.3.2

It is widely recognized in economics that [end-to-end facilities-based competition] provides the greatest scope for superior market outcomes…

Ideally, access regulation should be decreased over time (in preference to granting an endless time period for entrants to climb the ladder) so a further regulatory challenge is to credibly signal that access conditions will change over time.

12 Both theory and practice, then, strongly support the superiority of end-to-end infrastructure competition and the risks that access regulation pose to "first-best" outcomes.

B Telstra's copper network is not an economic bottleneck in substantial areas where competing infrastructure exists

13 This "first-best" outcome - facilities based competition – is not merely a theoretical possibility. In fact , alternative infrastructure already exists in substantial urban areas in Australia. In addition to the HFC Network, which offers a full range of services within SingTel Optus' service territory in the metropolitan areas of Sydney, Melbourne and Brisbane, a number of other infrastructure options also exist.

B.1 SingTel Optus' HFC Network passes over 2 million homes in Band 2

14 The HFC Network is a predominantly aerial network that passes at least 2.2 million homes in Sydney, Melbourne and Brisbane.[21]

15 This is an established network, with network build having been completed more than a decade ago.[22] The HFC Network was built in the 1990s, focusing on the most lucrative residential areas of Australia's three largest cities, with a view to capturing telephony revenue by bundling telephony with other services, such as pay TV.

16 The HFC Network is a residential network, and has been built almost entirely in metropolitan areas – that is, in Band 2 areas. As set out in Attachment 4 of Telstra's response to the Draft Decision, Telstra estimates that the HFC Network covers 227 of Telstra's Band 2 ESAs (38%). Of these, 75% of the ESAs see the HFC network servicing 50% or more of the dwellings in each ESA.

17 There is significant unused capacity on this HFC Network[23] because, among other things, analogue pay TV is no longer provided on the network, freeing up substantial capacity.[24]

18 Figures 2 – 4 below depict how extensive the HFC Network is, by showing its coverage in ESAs in Sydney, Melbourne and Brisbane, based on Telstra's estimates[25] of the location of the HFC Network.

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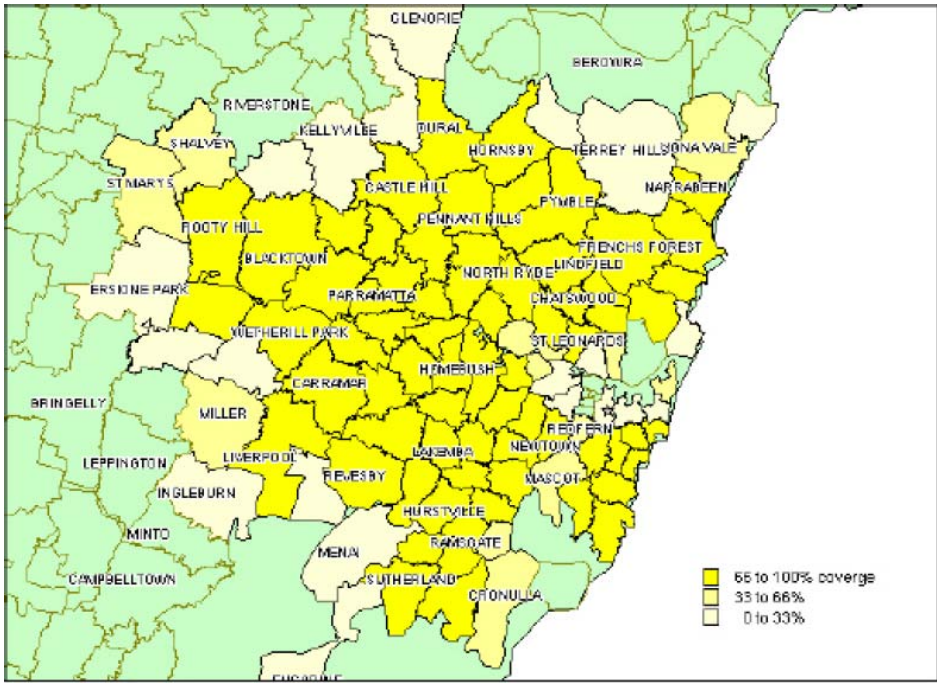
[21] SingTel Optus, *Optus supplementary submission to Australian Competition and Consumer Commission on Telstra's December 2007 exemption application for fixed line services in the Optus HFC area, Public Version*, May 2008 (hereafter **SingTel Optus May 2008 submission – HFC exemption proceedings**), paragraph 4.2

[22] SingTel Optus May 2008 submission – HFC exemption proceedings, Appendix I, paragraph 1.11

[23] Harris, M., *Expert Report – Use of HFC to deliver broadband services – Prepared for Peter Waters & Associates,* 12 December 2007, (hereafter **Harris first report – HFC exemption proceedings**) paragraph 3.13

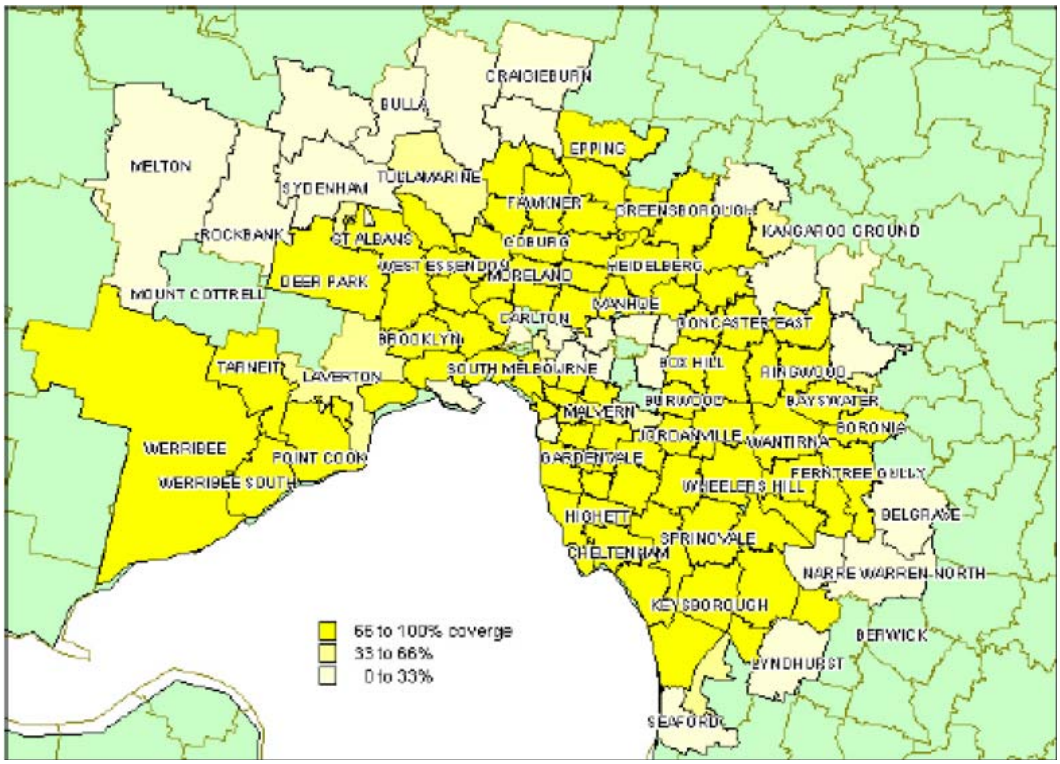
[24] However, even more spectrum could be made available if SingTel Optus performed node-splitting – see Harris first report – HFC exemption proceedings, especially at paragraph 3.14

Figure 2: SingTel Optus HFC network coverage – Sydney



Source: Telstra

Figure 3:SingTel Optus HFC network – Melbourne



Source: Telstra

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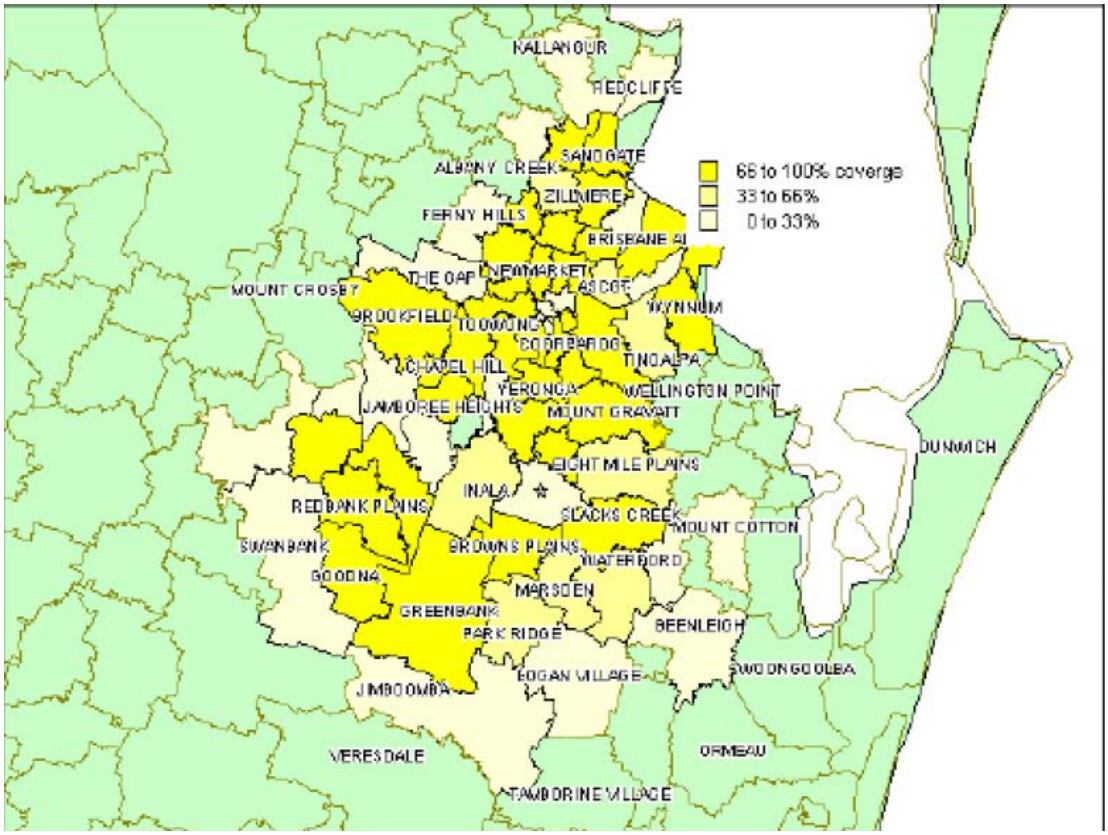
[25] The precise geographic coverage of SingTel Optus' HFC network is not publicly available. However, in the Telstra HFC exemption proceedings, SingTel Optus stated that its network existed in 262 ESAs. The maps in Figures 1-3 are based on 240 ESAs only, demonstrating that Telstra's estimates were conservative. We note that the ACCC has access to confidential data through the CAN Record Keeping Rules which would allow it to determine the extent to which the HFC Network is present in Band 2 ESAs.

Figure 4: SingTel Optus HFC network coverage – Brisbane



Source: Telstra

B.2 The HFC Network can be used to offer a greater range of mass-market services than ULLS

19 ULLS allows an access seeker to supply telephony and broadband, but not pay TV. SingTel Optus currently offers retail telephony, broadband and pay TV services to its residential customers, using the HFC Network.[26] Customers may take standalone products, or bundle telephony with either broadband or pay TV, or broadband with pay TV. However, SingTel Optus does not offer a bundle which allows customers to take all three services at a lower price, than on a standalone basis.[27] Also, SingTel Optus does not offer business grade or wholesale services over its HFC Network.[28]

20 As at 31 December 2008, SingTel Optus provided 524 000 telephony services[29] and 420 000 broadband services via the HFC Network, with 84% of customers receiving a bundling benefit from taking a package of products.[30] It also

[26] SingTel Optus, *Optus submission to Australian Competition and Consumer Commission on Telstra's December 2007 exemption application for fixed line services in the Optus HFC area (Public Version)*, March 2008 (hereafter **SingTel Optus March 2008 submission – HFC exemption proceedings**) paragraph 2.4
[27] See: http://personal.optus.com.au/web/ocaportal.portal?_nfpb=true&_pageLabel=Template_woRHS&FP=/personal/tv/digitaltvpackagesandpricing&site=personal particularly, the Terms and Conditions; See also: http://www.optus.com.au/home/index.html?action=nav_personal_bundles
[28] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 2.11
[29] SingTel Optus' public reports are ambiguous as to whether this figure represents total customers, or telephony customers only.
[30] SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management Discussion and Analysis of Financial Condition, Results of Operations and Cash Flows for the Third Quarter and Nine Months ended 31 December 2008*, (hereafter **SingTel Optus quarterly report, 31 December 2008**) p 47 available at http://home.singtel.com/attachment_hub/D0DAAD6D-EE1A-4E7D-8D00-72579BB54E1A/3rdqtr-mda.pdf

provided around 151 000 pay TV services.[31] Based on these reported figures, SingTel Optus provides over one million services via the HFC Network.

21 All of the service types that SingTel Optus currently provides to retail customers via ULL could be provided via the HFC Network, without modifying it.[32]

22 The barriers to switching to the HFC Network are low. Of the tangible cost items of switching, connection and customer premises costs are at the discretion of the service provider, with SingTel Optus' costs ranging from $0 - $148, depending on the length and type of contract.[33] Other tangible costs include:

(a) delivery charges, which are minimal;

(b) loss of bundling discounts, which apply only where the new service provider does not offer bundles; and

(c) early termination fees, the only source of meaningful tangible costs incurred by customers where they lock in to a long contract (for instance 24 months).[34]

23 There are a number of intangible cost items which may apply, including time waiting for a technician, lock in costs and the inconvenience of changing e-mail addresses. However, these are costs incurred in changing internet service providers generally, and are not specifically related to changing between network technologies.

B.3 Other infrastructure competition

24 The HFC Network is not the only competing network in Band 2 areas. As set out in Telstra's response to the ACCC's Draft Decision,[35] there is a significant level of other infrastructure competition in Band 2 ESAs, in the form of 3G wireless networks, fixed wireless networks satellite broadband providers and fibre to the curb networks (such as TransACT). 3G and satellite technologies in particular, provide blanket network coverage of Band 2 areas, and are capable of providing telephony and broadband services. All ESAs in Telstra's Band 2 are served by at least one competitive network, which is capable of providing end-users with broadband and voice telephony.

C SingTel Optus' HFC network is inefficiently underutilised

25 Despite owning significant alternative infrastructure (as set out in Parts B1 – 2 above) SingTel Optus has allowed the HFC Network to languish, failing to use it, invest in it, or even inform itself of its reach in at least five years. Such blatant disregard of the capability of its own network is the consequence of the availability of access-based alternatives at distorted prices, as is set out more fully below. The perpetuation of these distorted prices and the continuation of this conduct are not in the LTIE.

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[31] Australian Film Commission, *Get the picture – Subscriber numbers, total and by operator, 1995-2008*, September 2008, SingTel Optus' pay TV figures are provided on a separate basis as at June 2007
[32] Harris first report – HFC exemption proceedings, pp 2-3
[33] SingTel Optus, *Optus Cable Internet Service Standard Pricing Table,* 2 March 2009, p 3
[34] SingTel Optus, *Optus Cable Internet Service Standard Pricing Table,* 2 March 2009, pp 3, 11
[35] Telstra Corporation Limited, *Telstra Corporation Limited – Telstra's Ordinary Access Undertaking for the Unconditioned Local Loop Service: Response to the ACCC's Draft Decision*, 23 December 2008, Attachment 4

C.1 SingTel Optus' own data shows that it has not invested in or utilised its HFC Network efficiently

26 The HFC Network is severely under-utilised and has suffered from chronic under-investment. According to one expert, SingTel Optus delivers its telephony and high speed data services "*us[ing] technology which would have been replaced, or in the process of being migrated, if the Optus cable network had been deployed in North America.*"[36]

27 SingTel Optus has indicated that it only considers 1.4 million of the 2.2 million homes passed (64%) as serviceable, based on its reported figures.[37] Even based on this figure, SingTel Optus' rate of serviceable homes compares abysmally to the 94% of homes treated as serviceable by Virgin Media in the UK, and the 93.5% of homes treated as serviceable by Telstra on its HFC Network.[38]

28 Moreover, since SingTel Optus last updated its database of homes passed, there has been a significant level of new housing and development in SingTel Optus' service territory. Therefore, SingTel Optus' true rate of serviceable homes (calculated as serviceable homes divided by the number of homes passed) is likely to be much lower.

29 To quantify the difference, consider the following analysis:

(a) the number of homes built within the HFC Network coverage area is likely to rise with the rise in total dwellings in Sydney, Melbourne and Brisbane. For instance, the number of dwellings in Melbourne rose by 9.4%, between the 2001 and 2006 censuses.[39]

(b) This suggests that, based on the increase in that five year period alone, the percentage of homes SingTel Optus treats as unserviceable is closer to 40%.[40]

30 The HFC Network has been allowed to atrophy. Expert Michael Harris, who has extensive experience in HFC network design and operation in the US and elsewhere, said of the HFC Network:

> "*On reading the Optus submission [as part of the HFC exemption proceedings] I was struck by the description of the state of the network in terms of investment in technology. One of my visits to Australia was in 1996 and at the time, Optus was in the process of deploying a largely state-of-the-art HFC network. That Optus*

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[36] Harris M., *Expert report – issues arising from Optus submissions on Telstra's proposed HFC exemption, Public version,* 23 June 2008, (hereafter **Harris second report – HFC exemption proceedings**), paragraph 3.4

[37] Telstra Corporation Ltd, *Telstra Corporation Limited Trade Practices Act 1974 – Section 152AT Application for exemption from standard access obligations in respect of the SingTel Optus HFC Network,* 17 December 2007 (hereafter **Telstra main submission – HFC exemption proceedings)**, paragraph 105

[38] Telstra main submission – HFC exemption proceedings, paragraph 61

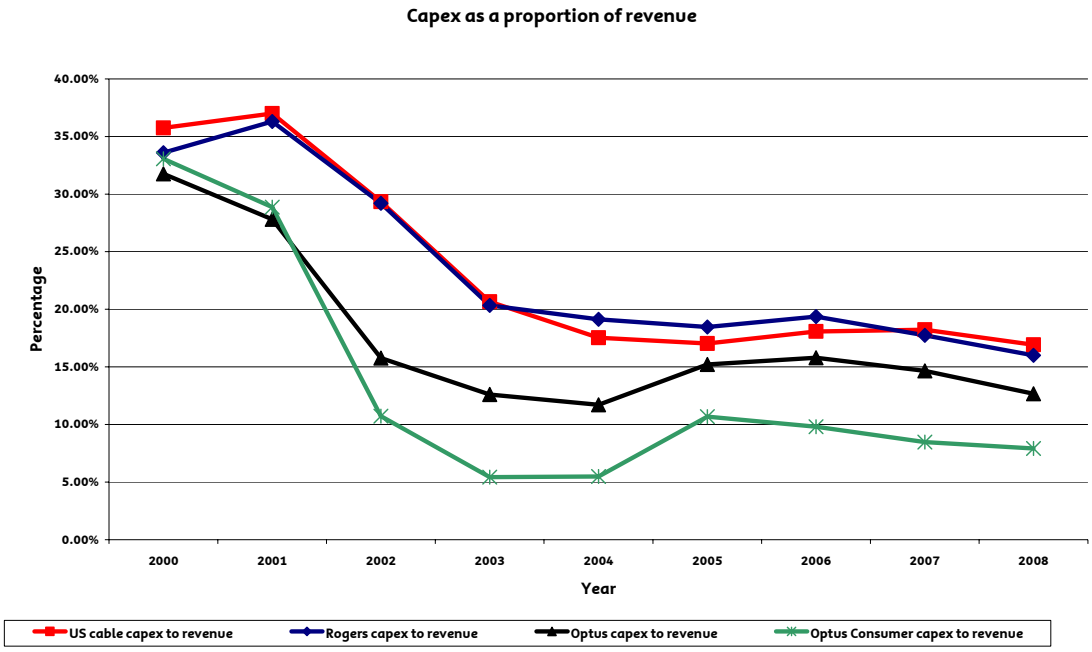
[39] See: ABS, 2001 Quick Stats – Melbourne – Dwelling characteristics available at http://www.censusdata.abs.gov.au/ABSNavigation/prenav/ViewData?method=Location%20on%20Census%20Night&subaction=-1&producttype=QuickStats&areacode=205&action=401&collection=Census&textversion=false&breadcrumb=PL&period=2001&javascript=true&navmapdisplayed=true& accessed on 4 March 2009; ABS, 2006 Quick Stats – Melbourne – Dwelling characteristics, available at http://www.censusdata.abs.gov.au/ABSNavigation/prenav/ViewData?method=Place%20of%20Usual%20Residence&subaction=-1&producttype=QuickStats&areacode=205&action=401&collection=Census&textversion=false&breadcrumb=PL&period=2006&javascript=true&navmapdisplayed=true& accessed on 4 March 2009

[40] Telstra, *Public version of Telstra's response to ACCC discussion paper on Telstra's exemption application relating to SingTel Optus' HFC network submitted 25 March 2008,* (hereafter **Telstra response to the ACCC discussion paper – HFC exemption proceedings**), paragraph 7

has chosen to allow its network to fall so far behind normal industry practice, was a surprise to me."[41]

31 There has been a dearth of significant investment in the HFC Network, relative to other cable companies in the last 5 – 10 years. Figure 5 below shows that SingTel Optus' investment in its network significantly lags behind other cable operators from mid 2001 onwards. In fact, the gap between SingTel Optus' investment in its network and those of other cable operators is likely to be more marked than represented in Figure 5, as SingTel Optus' recent financial reports indicate that capex in its consumer and SMB division includes its ULLS infrastructure investment.[42]

Figure 5: Relative capital expenditures of cable operators[43]



32 Indeed, the highlights of SingTel Optus' program of investment since 2004 in telephony and broadband services on the HFC Network have been:

(a) activating Kew Hub (which was previously inactive) in 2004, to supply 12 nodes;

(b) activating a number of individual nodes, such as undertaking work to activate Node No. 33 EB 43, Wheelers Hill in Victoria, to supply 100 homes, completed in June/July 2007; and

[41] Telstra, *Telstra submission in reply to SingTel Optus' submissions to the Australian Competition and Consumer Commission on Telstra's application for exemption from standard access obligations in respect of the SingTel Optus HFC network dated 17 December 2007 - Public Version,* June 2008 (hereafter **Telstra June 2008 submission – HFC exemption proceedings**), paragraph 17

[42] Telstra response to ACCC discussion paper – HFC exemption proceedings, p 3

[43] The data underlying Figure 5 is derived from: Rogers, *Rogers reports fourth quarter 2008 financial and operating results,* 18 February 2008; NCTA, *Cable Industry Revenue, year ended December 2008,* available at http://www.ncta.com/Stats/CustomerRevenue.aspx accessed 12 March 2009; NCTA, *Cable industry capex 1996-2008*, available at http://www.ncta.com/Stats/InfrastructureExpense.aspx accessed 12 March 2009; SingTel Optus quarterly report – 31 December 2008

(c) undertaking a number of 'tap upgrade' projects, which increase capacity and allow new customers to be connected, at an ongoing cost of $150,000 to $200,000 a year.[44] This represents an investment in one technician to "upgrade" the entire network.

33 Given the very high rate of unserviceable homes within SingTel Optus' HFC footprint, and the robust penetration rates of those homes that *are* offered service, such limited spend on network investment to improve serviceability is a strong indicator of the distortionary incentives at work.

C.2 In particular, SingTel Optus has neglected the opportunity to service MDUs

34 SingTel Optus' lack of interest in investing in or utilising its HFC Network is seen by its approach to infilling the HFC Network to service MDUs currently passed.

35 SingTel Optus has claimed that 500,000 of the 800,000 unserviceable homes in its footprint are multiple dwelling units (**MDUs**) which it claims it cannot service because of technical and economic considerations. It follows a strict rule that it will not service MDUs by HFC, and has provided a number of technical and commercial reasons for this rule. However, a close examination of these reasons exposes them for what they are: further indication of SingTel's persistent lack of interest in investing in its HFC Network over an extended period of time, most particularly the last five years.

36 SingTel Optus claims that it cannot use its HFC Network to service MDUs from a technical standpoint because:

(a) the original network RF design and build did not accommodate MDUs;

(b) some MDUs are located in areas without power poles;

(c) there are difficulties in securing access from body corporates to the common area and wiring;

(d) there are difficulties in retrofitting access to individual buildings, because of the space requirements for multiple cable access units, with a separate customer access unit (**CAU**) required for each apartment; and

(e) SingTel Optus' cable technology vendor, Motorola, has not had appropriate technology capable of servicing MDUs, and is no longer in business.[45]

37 However, SingTel Optus' concerns about these technical issues are not difficult to resolve. Where an efficient technical solution is used within the network, smaller MDUs can be connected in much the same way as a single dwelling unit (**SDU**), without extensive in-building installation, circumventing the issues enumerated above - with the exception of (b).[46]

[44] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 4.31
[45] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.7. Appendix A of this document indicates that SingTel Optus provided, on a confidential basis, details of the network architecture and costs associated with getting a serviceable MDU to market on the HFC network. Telstra is of the view that it is important that the ACCC have access to this information in these proceedings to come to a conclusion on the extent to which these considerations represent an impediment to SingTel Optus infilling its network to service MDUs
[46] Harris first report – HFC exemption proceedings, paragraphs 5.5-5.8

38 More specifically, SingTel Optus' concerns about gaining physical access and the need to retrofit its equipment into MDUs are largely a function of its antiquated technology, itself a result of SingTel Optus' failure to invest in its telephony platform in any significant way in over a decade. SingTel Optus' 1990s era cable telephony technology requires that a large box be installed for each separate connection. In an SDU, these can be mounted on the side of a house. In an MDU, there may be a lack of space, or the body corporate may baulk at their visual impact.[47] It is telling that, despite the availability of technology options (at significantly lower per subscriber costs), which would remove the need for these bulky boxes,[48] SingTel Optus continues to use technology which is a part of an obsolescence program.[49]

39 SingTel Optus does not appear to have connected even the 161,000 MDUs where it has already installed coaxial cable to the common area to its HFC Network, instead apparently serving them using ULLS.[50] In these MDUs, the only additional investment necessary would be the lateral wiring to each apartment which is required to connect to the HFC Network.

C.3 SingTel Optus does not even inform itself of its HFC investment opportunities

40 It is not only the actual investment and utilisation levels that reveal SingTel Optus' distorted incentives. Based on its own evidence, SingTel Optus does not even keep itself informed of the most obvious opportunities afforded by the HFC Network.

41 Incredibly, SingTel Optus' last commercial analysis of the feasibility of MDU connection was conducted in July 2003, at a time when the commercially viable availability of ULLS was imminent.[51] At that time, it concluded that MDUs should not be serviced because high build costs and low penetration rates meant that the payback period was too long and the NPV too low.[52]

42 That was six years ago, when broadband penetration in Australia was 3.5%,[53] and the prevailing means of internet access was dial-up. Since then, Australia's broadband penetration has grown to 23.5%.[54] In the same time, the number of cable modem services on the HFC Network has grown from 96,000 to 420,000, implying a four-fold increase in service penetration. Cable technology has leapt ahead, and service uptake has grown, altering cable cost structures. *Yet none of this has led SingTel Optus to rethink its stance on whether half a million MDUs might now be serviceable.*

43 Just as tellingly, SingTel Optus does not even know how many homes its HFC Network *passes*. SingTel Optus has publicly acknowledged that the reported 2.2 million home figure is not up to date, as the data was collected "some years ago."[55] The base line figure of 2.2 million homes provided by SingTel Optus is the

[47] Telstra June 2008 submission – HFC exemption proceedings, paragraph 28
[48] Telstra June 2008 submission – HFC exemption proceedings, paragraphs 29-30
[49] Harris second report – HFC exemption proceedings, paragraph 4.3
[50] Telstra June 2008 submission – HFC exemption proceedings, paragraph 19
[51] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.23-4
[52] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.14. SingTel Optus, provided to the ACCC, on a confidential basis, information about the potential uptake and penetration of MDUs, in the HFC exemption proceedings (See Figures 3.1 and 3.2 SingTel Optus March 2008 submission – HFC exemption proceedings). Telstra believes that it is important for the ACCC to have access to this data to determine whether, in light of changed market conditions (with the rapid increase in broadband penetration in Australia as a whole), SingTel Optus' commercial analysis from 2003 still holds true
[53] Telstra June 2008 submission – HFC exemption proceedings, paragraph 7
[54] OECD Directorate for Science, Technology and Industry, *Broadband subscribers per 100 inhabitants*, June 2008 available at http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html accessed 4 March 2009
[55] SingTel Optus May 2008 submission – HFC exemption proceedings, paragraph 4.1

same as that provided in the late 1990s,[56] although SingTel Optus at one point provided a figure of around 2.5 million homes in the HFC exemption proceedings.[57]

44 In view of 'organic' growth within the HFC Network footprint, it is likely that the true number of homes passed is now 2.34 million. [58]

45 Yet while SingTel Optus neglects to keep itself properly informed about its own HFC Network, commonly available technology and data sources enable others to inform themselves about it in considerable detail. Dr Eisenach, in preparing expert evidence provided as part of Telstra's HFC exemption application, was able to calculate the number of homes falling within 75 metres of the HFC Network from his desk in the US. By publicly available aerial and street images, he could observe the characteristics of homes, noting that "*Optus has classified as "unserviceable" dwellings which are flanked on either side by "serviceable" premises, and for which there is no plausible engineering or economic rationale for discrimination.*"[59] But SingTel Optus, the owner and operator of that network, remains wilfully un-informed of its most basic dimensions.

46 These facts are compelling evidence that SingTel Optus faces perversely low incentives to utilise and invest in the HFC Network. On the basis of this evidence, it must be concluded that, facing its current incentives, there are no plausible circumstances in which it would wish to invest in incremental serviceability - hence there is no benefit in it keeping informed of such matters. It is *inconceivable* that an efficient operator would behave in this fashion.

D Despite SingTel Optus' treatment of its HFC Network, cable-based competition is viable

47 Recent advancements in the technology used to provide telephony and broadband services over cable networks, together with the ever increasing demand for broadband, have fundamentally changed the economics of cable networks. The experiences of cable companies overseas, particularly overbuilders,[60] in successfully competing via cable is clear evidence that the viability of cable-based competition is already a reality, and not simply a theoretical possibility that faces uncertain hurdles to ever becoming a reality.

D.1 HFC is a viable technology

48 The economics of cable networks have been fundamentally altered by advances in technology, and by the increasing importance of broadband as a driver of take-up and revenues.

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[56] Telstra response to ACCC discussion paper – HFC exemption proceedings, paragraph 7
[57] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.39
[58] *Transcript of proceedings – Australian Competition Tribunal: Application by Telstra Corporation Limited, Day One*, No. 7/2008, p 18. This figure was calculated, by applying Telstra's rate of growth to the HFC Network, which was derived from the increased number of homes passed by Telstra's HFC network. See: Telstra main submission – HFC exemption proceedings, paragraph 120(c)
[59] Eisenach J., *Expert report – Evidence relating to the ACCC's draft decision denying Telstra's exemption application for the Optus HFC footprint, Public version,* 13 October 2008 (hereafter **Eisenach second report – HFC exemption proceedings**), paragraph 21. Dr Eisenach derived his findings that SingTel Optus classifies premises as unserviceable, despite being passed by the HFC Network from confidential data provided by SingTel Optus in the HFC exemption proceedings. Telstra believes that access to the underlying confidential information and details of Dr Eisenach's evidence will aid the ACCC's assessment of the extent to which SingTel Optus is underutilising the HFC Network
[60] Overbuilders are cable companies whose service territory significantly overlaps with an incumbent cable operator's footprint.

49 Once a medium for carrying pay TV only, HFC can now deliver the "triple-play" of pay TV, telephony and broadband services – the latter two in competition with ULLS -based systems.

(a) Even using its DOCSIS 1.1 – that is, using its current version of the uniform standards used by vendors of cable modems (referred to as Data Over Cable Service Interface Specifications or DOCSIS) - SingTel Optus would be able to compete in telephony with VOIP services, provided it moves towards packet switched technology.[61] In doing this, it could also take advantage of more advanced, streamlined customer equipment such as integrated telephony-cable modems.

(b) Regarding broadband, recent developments in DOCSIS standards allow for higher speeds, and more advanced services, to be delivered over cable technology.[62] If SingTel Optus were to upgrade to the latest version of DOCSIS, DOCSIS 3.0, it would be able to offer speeds of over 100 Mbps or more (based on actual overseas experience and Telstra's planned deployment),[63] as well as IPTV and multicasting. DOCSIS 3.0 allows for theoretical speeds of up to 160 Mbps to be delivered over HFC, because it is able to "bond" channels together to aggregate bandwidth. To date, actual speeds of up to 120 Mbps have been offered using HFC technology.[64] Telstra has recently announced its own HFC upgrade to DOCSIS 3.0, to be deployed in Melbourne.[65]

(c) These dramatically increased broadband speeds are faster than those currently possible using fibre-to-the-node technology and comparable to those obtained using fibre-to-the-premises technology. This makes HFC a viable competitor not only in a ULLS environment, but also in the emerging fibre world.

(d) Regarding telephony, the advent of IP telephony has meant that cable companies are in a position to offer voice services which are competitive with those provided over a copper network, adding a further, powerful revenue stream. Cable operators in North America have successfully achieved significant penetration of voice,[66] with the number of cable telephony customers in the US as at September 2008 at 18.7 million customers,[67] up from 7.3 million in Q4 2006.[68]

50 The increased capacity of HFC broadband services using more recent implementations of DOCSIS (such as 2.0 or 3.0) also provides the opportunity to

[61] Voice over Internet Protocol – see Harris first report – HFC exemption proceedings at par 4.8, 4.10
[62] Telstra main submission – HFC exemption proceedings, pp 38-9
[63] Telstra Corporation Limited, *Telstra unveils super-fast cable broadband – Melbourne first to be upgraded*, 10 March 2009, available at http://www.telstra.com.au/abouttelstra/media/announcements_article.cfm?ObjectID=44582 accessed 11 March 2009
[64] Anderson, N., *Comcast at CES: 100 Mbps connections coming this year,* Ars Technica, 8 January 2008, available at http://arstechnica.com/old/content/2008/01/comcast-100mbps-connections-coming-this-year.ars accessed 4 March 2009; Telstra, Telstra Corporation Limited Response to draft decision regarding Telstra's exemption application in respect of the SingTel Optus HFC network – Public version, 15 October 2008 (hereafter **Telstra October 2008 submission – HFC exemption proceedings**), Table 2
[65] Telstra Corporation Limited, *Telstra unveils super-fast cable broadband – Melbourne first to be upgraded*, 10 March 2009, available at http://www.telstra.com.au/abouttelstra/media/announcements_article.cfm?ObjectID=44582 accessed 11 March 2009
[66] Harris first report – HFC exemption proceedings, paragraphs 6.1-6.4
[67] National Cable & Telecommunications Association, *Statistics for Residential Telephony Customers,* September 2008, available at http://www.ncta.com/StatsGroup/OperatingMetric.aspx, accessed 4 March 2009
[68] Harris first report – HFC exemption proceedings, Table 6, p 19

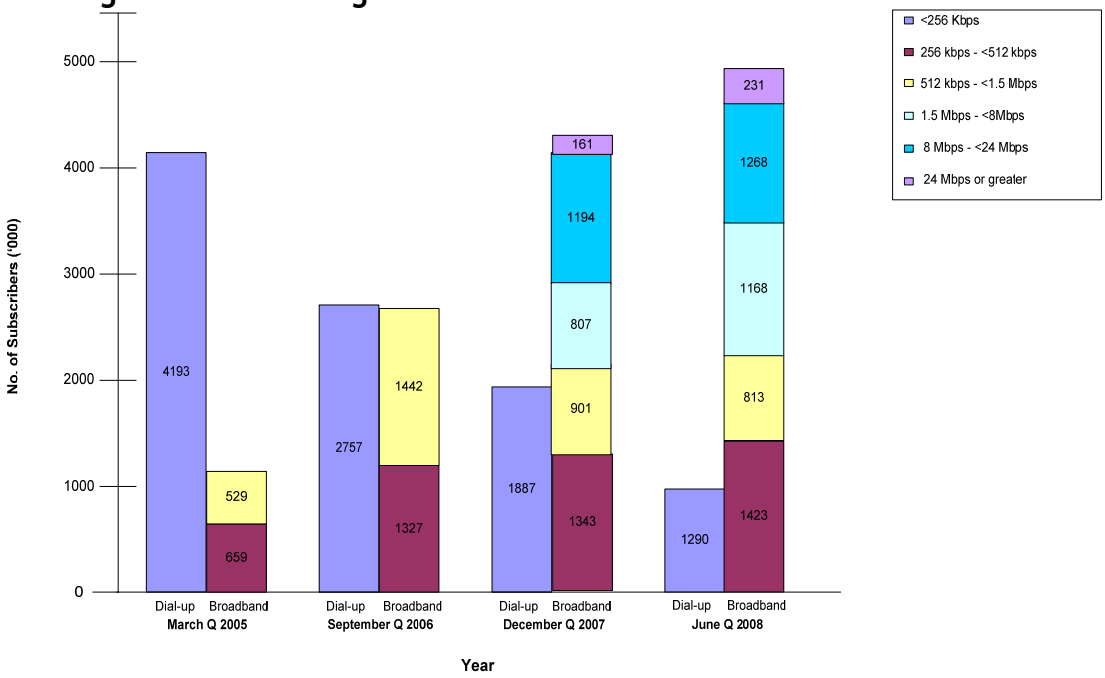
provide business grade services and virtual private network functionality over HFC, allowing cable companies to diversify their revenue sources.[69]

51 These improvements in technology have been matched by an increase in demand, especially for high-speed broadband services.

(a) Web 2.0 applications are extremely bandwidth hungry – for example, Internet video traffic in North America and Europe in October 2008 exceeded the amount of traffic that crossed the entire global internet in October 2001.[70]

(b) In Australia, consumer demand for broadband services continues to grow apace, as seen in Figure 6 below.

Figure 6: Broadband growth in Australia



Source: Australian Bureau of Statistics, Internet Activity, Australia, June 2008, 22 September 2008

(c) The number of broadband customers served by SingTel Optus also continues to grow rapidly, increasing from 132 000 customers as at 31 December 2003[71] to 815 000 customers as at 31 December 2008.[72] As at 31 December 2003, SingTel Optus served all of its broadband customers using the HFC Network. According to its latest figures, SingTel Optus serves only 420 000 of its 815 000[73] broadband customers, or about half of its broadband customers using the HFC Network.

[69] Harris first report – HFC exemption proceedings, Table 1, p 17-8
[70] Cisco, *Cisco Visual Networking Index: 2008 Year in Review/Video Highlights,* 8 December 2008
[71] SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management Discussion and Analysis of Financial Condition, Results of Operations and Cash Flows for the Third Quarter and Nine Months ended 31 December 2003*, p 42 available at http://home.singtel.com/investor_relations/financial_results/default.asp
[72] SingTel Optus quarterly report, 31 December 2008, p 47
[73] SingTel Optus quarterly report, 31 December 2008, p 47

52 The ability of HFC as a technology to capture the benefits of technological innovation and rising broadband demand is demonstrated by experience in a range of overseas countries.[74] For instance:

(a) In the UK, Virgin Media has launched its ultra-fast 50 Mbps internet servicel;[75]

(b) In Canada, operators such as Shaw are launching a 100 Mbps service[76], and others such as Videotron and Rogers have been reporting strong growth, in response to rising demand; and

(c) In the US, cable providers such as Comcast have launched a 50 Mbps service.[77]

53 SingTel Optus has suggested in other proceedings before the ACCC and the ACT that HFC technology is no longer a leading edge technology.[78] This contention is palpably false. The developments described demonstrate that cable technology is more relevant today than ever before, with more revenue streams available to it, and SingTel Optus' ownership of such a network provides a solid basis upon which to compete with other infrastructures.

54 Indeed, overseas experience shows that competitors using HFC technology outpace competitors using copper and fibre networks in providing high speed internet services and delivering Voice over Broadband telephony services.[79]

55 In Australia, analysts and industry participants also recognise the viability of cable networks. Dermot Cox, of C-Cor Broadband, a HFC technology company stated: [80]

"*In Australia, we are probably babes in the woods when it comes to utilisation of our cable broadband networks…Last month, Virgin Media in the UK launched a 50 Mbps cable service, including data, telephony, and HD TV. Star Hub cable in Singapore already offers 100 Mbps downstream and 10 Mbps upstream speeds.*"

D.2 Overseas, we see intense cable-based competition resulting in higher speeds and better services and as a result, greater consumer welfare

56 Overseas experience shows that where cable operators are not operating under perverse investment incentives, and are investing in their infrastructure, there is intense competition between cable and fibre operators, leading to higher speeds, better services, and as a result, greater consumer welfare. Table 1 below sets out the maximum speeds offered by cable, fibre, copper and DSLAM-based

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[74] See: FCC, 12th Annual Assessment of the status of competition in the market for the delivery of video programming, MB Docket No. 05-525, March 2006, paragraph 89; Eisenach J., *Expert Report: Comparative Analysis of Communications Markets as it Relates to the Economic Viability of Optus' HFC Network and Telstra's Proposed HFC Exemption, Public Version,* June 2008, Appendix C (hereafter **Eisenach first report – HFC exemption proceedings**)

[75] Virgin, *Virgin Media launches the UK's fastest broadband*, 15 December 2008, available at http://pressoffice.virginmedia.com/phoenix.zhtml?c=205406&p=irol-newsArticle&ID=1235740&highlight=

[76] Shaw, Shaw speeds up in slow economy, 17 February 2009, available at http://www.shaw.ca/NR/rdonlyres/ED0DA74E-FE72-406A-A79E-9B981031D26B/0/ShawFastestInternetFeb17.pdf ; Rogers Cable, Highlights, available at http://www.rogers.com/web/Rogers.portal?_nfpb=true&_windowLabel=investor_1_1&investor_1_1_actionOverride=%2Fportlets%2Fconsumer%2Finvestor%2FshowGenericFlexibleZoneAction&investor_1_1subAction=showGlanceCableHighlightsAction&_pageLabel=IR_LANDING ; Videotron, Videotron reports growth in all services for 13th consecutive quarter, 7 November 2008, available at http://corpo.videotron.com/site/salle-presse/view.form?lang=ENGLISH&id=29

[77] Comcast, *Comcast begins rollout of extreme 50 Mbps High-Speed Internet Service,* 22 October 2008, http://www.comcast.com/About/PressRelease/PressReleaseDetail.ashx?PRID=814

[78] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 4.12

[79] Telstra June 2008 submission – HFC exemption proceedings, paragraph 14

[80] CommsDay Australasia, *How far can Telstra take HFC?*, 12 January 2009, available at http://www.commsday.com/node/304 accessed 11 March 2009; See also: Martin I., *Telstra expands metro HS BB*, ABN Amro, 10 March 2009

operators. The table shows that in the countries set out (all of which, except Australia, have invested in their cable infrastructure), the competition between fibre and cable technology has resulted in higher speeds on offer in the country.

Table 1: Higher speeds where there is infrastructure-based competition[81]

	Incumbent: legacy copper	Incumbent: FTTN (if applicable)	ULLS speeds	Cable speeds
Canada	5-7 Mbps	10-16 Mbps	6 - 7 Mbps	15 – 100 Mbps[82]
UK	8 Mbps	n/a	8-24 Mbps	2 – 50 Mbps[83] Capability to deliver up to 200 Mbps by 2012[84]
The Netherlands	20 Mbps[85]	50 – 100 Mbps	20 Mbps	24 Mbps, Up to 120 Mbps in DOCSIS 3.0 areas
Australia	20 Mbps	n/a	14-24 Mbps	30 Mbps currently and 100 Mbps planned[86]

57 Indeed, in the UK, on 15 July 2008, BT announced increases to speeds on its copper network to 24 Mbps and plans to build 'fibre-to-the-cabinet'.[87] This followed an announcement in January 2008 by Virgin Media of planned speed upgrades on its cable network.

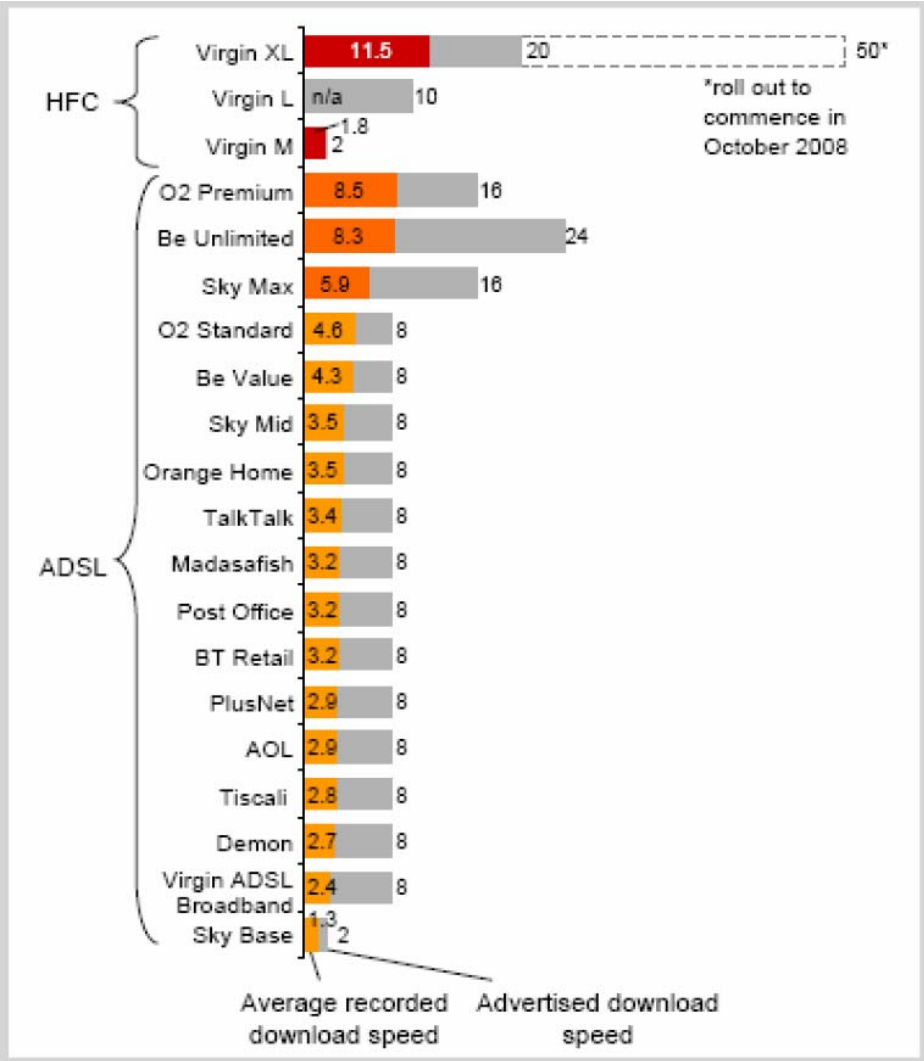
58 Similarly, in the US, AT&T and Verizon are deploying fibre networks to offer their fibre-based U-Verse and FiOS services combined with their wireless telephony services to provide quad-play possibilities, in order to compete with cable operators' triple-play offerings.[88]

59 As a result, the focus of the rivalry with cable appears to have shifted to the high speed, high revenue end of the market, as illustrated in Figure 7. This shows that both on advertised 'headline' speeds and the average 'actual' speeds for broadband services offered by the main UK providers, cable providers are well ahead of DSL providers. These "speed wars" demonstrate the intensity of competition generated by cable-based innovators overseas – competition which

[81] Except where specifically referenced, the sources for these figures are found in: Telstra October 2008 submission – HFC exemption proceedings, p 16
[82] Shaw has launched a 100 Mbps service since Telstra's October 2008 submission in the HFC exemption proceedings. Shaw, *Shaw speeds up in slow economy*, 17 February 2009, available at http://www.shaw.ca/NR/rdonlyres/ED0DA74E-FE72-406A-A79E-9B981031D26B/0/ShawFastestInternetFeb17.pdf
[83] Virgin Media in the UK has launched its 50 Mbps service since Telstra's October 2008 submission in the HFC exemption proceedings. Virgin, *Virgin Media launches the UK's fastest broadband*, 15 December 2008, available at http://pressoffice.virginmedia.com/phoenix.zhtml?c=205406&p=irol-newsArticle&ID=1235740&highlight=
[84] Virgin Media aiming for 200 Mbps broadband by 2012, available at http://www.internetstreams.co.uk/2008/09/virgin_broadband_200Mbps.php accessed 18 March 2009
[85] While the top speeds offered using legacy copper remains 20 Mbps (offered by KPN and Telfort), HetNet has increased the speed of its offerings from 4 Mbps in October 2008 to 8 Mbps. See: Telstra, *Telstra exemption application relating to SingTel Optus' HFC network – index of source materials*, October 2008; HetNet, Producten – Surfen, available at http://www.hetnet.nl/Surfen.htm accessed 4 March 2009
[86] Telstra Corporation Limited, *Telstra unveils super-fast cable broadband – Melbourne first to be upgraded*, 10 March 2009, available at http://www.telstra.com.au/abouttelstra/media/announcements_article.cfm?ObjectID=44582 accessed 11 March 2009
[87] Parker A., *BT gambles on speedy fibre download times,* Financial Times, 15 July 2008, available at http://uk.biz.yahoo.com/15072008/399/bt-gambles-speedy-fibre-download-times.html
[88] OECD Directorate for Science Technology and Industry Committee, *IPTV: Market developments and regulatory treatment,* 19 December 2007 pp 11 – 12, available at, http://www.oecd.org/dataoecd/11/23/39869088.pdf

could exist in Australia if access prices did not so distort incentives against the use of cable.

Figure 7: Advertised and recorded UK broadband speeds (Mbps)[89]



60 It is not only speed that gives cable operators a keen competitive position against its infrastructure rivals. Table 2 below provides a comparison of broadband speeds *and prices* for a mix of DSL, cable and fibre providers in the US, which shows that cable operators are competitive on price too.

[89] Telstra October 2008 submission – HFC exemption proceedings, p 17

Table 2: Comparison of broadband speeds and prices in the US[90]

Provider	Service Type	Download Speed	Monthly Price	$/Mbps
Cox	Cable	768 Kbps	$19.89	$25.90
Verizon	DSL	768 Kbps	$19.99	$26.03
Qwest	DSL	1.5 Mbps	$14.99	$9.99
AT&T	DSL	1.5 Mbps	$25.00	$16.67
Cox	Cable	1.5 Mbps	$29.99	$19.99
AT&T	DSL	3.0 Mbps	$29.95	$9.98
Verizon	DSL	3.0 Mbps	$29.99	$10.00
AT&T	DSL	6.0 Mbps	$35.00	$5.83
Comcast	Cable	6.0 Mbps	$57.95	$9.66
Qwest	DSL	7.0 Mbps	$24.99	$3.57
Comcast	Cable	8.0 Mbps	$67.95	$8.49
Cox	Cable	9.0 Mbps	$43.99	$4.89
Verizon	FiOS	10 Mbps	$47.99	$4.80
EarthLink	Cable	10 Mbps	$72.95	$7.30
Qwest	DSL	12 Mbps	$46.99	$3.92
Cox	Cable	15 Mbps	$56.95	$3.80
Verizon	FiOS	20 Mbps	$57.99	$2.90
Verizon	FiOS	50 Mbps	$144.95	$2.90

D.3 Overseas evidence shows that cable overbuilders are viable

61 Despite SingTel Optus and its consultants' assertions elsewhere that overbuilders have a marginal role in the US, the facts show that cable overbuilders are viable in other jurisdictions.

62 To begin, it is misleading to depict overbuilders as marginal in the US market, given that overbuilders such as RCN, WideOpen West, Knology and Wave Broadband feature in the top 25 Multiple System Operators (**MSO**) out of the many hundreds that exist there.[91]

63 Further, while valuations for the market-listed overbuilders (RCN and Knology) have fallen in recent times as a result of the current economic climate, the viability of overbuilders is confirmed by the fact that these firms have continued to invest in their infrastructures, keeping pace with current technology, and therefore, remaining competitive.[92] Indeed, Knology's recent fourth quarter and full year results show an increase in the number of connections in all product

[90] Telstra October 2008 submission – HFC exemption proceedings, p 18
[91] NCTA, *Top 25 MSOs*, September 2008 available at http://www.ncta.com/Stats/TopMSOs.aspx accessed 4 March 2009
[92] Eisenach first report – HFC exemption proceedings, p 10

segments and year-on-year revenue and EBITDA growth of 18 and 28.4% respectively.[93]

64 In addition, as observed by the FCC, the competitive impact of an overbuilder lies not in its profitability, but in the fact that in areas where the overbuilder competes, consumers experience lower charges and higher quality service. On this metric, the FCC found that on average, the price for basic cable was 23% lower in areas where an overbuilder passes through.[94]

65 Specifically, to determine whether overseas experience has borne out SingTel Optus' claims that special market conditions in Australia (overbuild and an unfavourable market profile with a significant number of small MDUs) mean that the HFC Network has not been successful, Dr Jeffrey Eisenach examined the operations of overbuilders operating in four metropolitan statistical areas which are comparable to the HFC Network's service territory. He found that facing similar (if not more 'adverse') service territories, and competition not only from the incumbent telco (operating cable and fibre networks), but also with the incumbent cable operator, these overbuilders have succeeded in providing aggressive competition using networks which are far more up to date than the SingTel Optus HFC network.[95]

66 Further, in the UK, Virgin Media faces strong competition from pay TV competitor Sky, which has interests in upstream content businesses. In these circumstances, despite not having access to the protection around access to content that SingTel Optus has, Virgin Media services a much higher proportion of the homes it passes, and has implemented an aggressive upgrade path, to offer up to 50 Mbps.[96]

67 Finally, on this issue, it is of note that SingTel Optus whilst relying heavily on the fact that its network was overbuilt in its submissions to the ACCC during the HFC exemption proceedings,[97] did not consider it a significant part of its case before the Australian Competition Tribunal (**the Tribunal**), during Telstra's appeal against the ACCC's decision, with only one specific reference to the overbuild issue in front of the Tribunal.[98] Nor did it constitute a significant part of the ACCC's case before the Tribunal.

E SingTel Optus' HFC network can be viably upgraded and utilised, even excluding pay TV services

68 Advances in technology and the advent of broadband as a major commercial and strategic driver have fundamentally altered the economics of cable companies. SingTel Optus could take advantage of these developments – as experience shows that overseas cable operators and overbuilders have done. SingTel Optus, should it choose to do so, would be able to viably upgrade and utilise the HFC Network to provide meaningful infrastructure competition in Australia.

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[93] Yahoo Finance, *Knology reports fourth quarter and full year 2008 results*, 19 February 2009, available at http://finance.yahoo.com/news/Knology-Reports-Fourth-bw-14409807.html accessed 4 March 2009

[94] FCC, *12th Annual Assessment of the Status of Competition in the Market for The Delivery of Video Programming,* MB Docket No. 05-525, 3 March 2006, paragraph 91

[95] Telstra June 2008 submission – HFC exemption proceedings, paragraph 47

[96] Telstra June 2008 submission – HFC exemption proceedings, paragraph 47

[97] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraphs 3.34 – 3.39, 3.47; SingTel Optus May 2008 submission – HFC exemption proceedings, paragraphs 2.11 – 2.16; SingTel Optus, *Optus public submission to the Australian Competition and Consumer Commission in response to its draft decision on Telstra's exemption application in respect of the Optus HFC network*, *Public Version,* October 2008, (hereafter **SingTel Optus October submission – HFC exemption proceedings**) paragraph 4.32

[98] *Transcript of proceedings – Australian Competition Tribunal: Application by Telstra Corporation Limited, Day One*, No. 7/2008, p 73

E.1 SingTel Optus' broadband and telephony revenues are sufficient to make the HFC Network viable

69 While the original rationale for the HFC Network rollout was pay TV and telephony, the advent of broadband has favourably altered the fundamental economics of HFC. This has created new opportunities for SingTel Optus to increase its customer base and enhance the services it offers. Today, based on a reasonable set of input assumptions, it is clear that **based on telephony and broadband alone**, customers can be viably connected to far more homes in its footprint than the 1.4 million that SingTel Optus says are serviceable.

70 Based on these underlying precepts, the costs of connecting an MDU to the HFC Network were modelled by Telstra, on the following assumptions:

(a) the cost of installation to the first unit in an MDU is $1,000;

(b) the cost of installation to subsequent units is $350;

(c) the cost of customer premises equipment is $110;

(d) revenues received by SingTel Optus from the provision of broadband and telephony revenues only – i.e. the SingTel Optus minimum "Fusion Lite" product, at a retail price of $49 per month (including GST), a joining fee of $100 and CPE of $49 (both inclusive of GST);[99] and

(e) a call cost margin of 50% - leading to a direct cost of $22.27. Of this cost, the regulated price of Band 2 ULLS is $14.40, making SingTel Optus' underlying cost of providing broadband and telephony for its Fusion service $7.87.[100]

71 The results of the modelling were that in order for the capital expenditure for provisioning the service to be repaid in less than 24 months, at least 2 units within an MDU must be connected to the SingTel Optus network. Table 3 below sets out the payback period, depending on whether 2/4/6/8/16 units are connected.

[99] SingTel Optus, *'A lighter option to fit your budget,* Optus6314/1374693 (02/09) distributed via newspapers

[100] Telstra main submission – HFC exemption proceedings, Attachment 1. SingTel Optus provided details of its own estimates of connecting a new customer to the HFC Network and penetration rates (See Appendix A – SingTel Optus March 2008 submission – HFC exemption proceedings; Appendix B, SingTel Optus May 2008 – HFC exemption proceedings), on a confidential basis in the HFC exemption proceedings. Telstra is of the view that the ACCC should have access to this information in these proceedings.

Table 3: Payback period: cost of MDUs

Units	Months
2	18
4	13
6	12
8	11
16	10

72 The ACCC in its final decision in the HFC exemption proceedings found that the payback period was between 3 to 4 years.[101] Even if this were correct (which Telstra does not concede), it would still be viable to invest in the HFC Network, because:

(a) the typical life span of a lead-in cable is 15 years;

(b) the lead-in supports multiple customers, spreading the risk of investment: while SingTel Optus may lose individual customers in an MDU before the payback period (e.g. because tenants move out), it has the opportunity to market to new tenants or other occupiers;

(c) any assessment of the effect of payback periods must take into account the fact that SingTel Optus already has a large number of customers (buying non-HFC services) in MDUs. Therefore, SingTel Optus faces low uncertainty in taking deployment decisions, and in fact has an incentive to deploy, in order to retain customers who in all likelihood currently provide it with multiple revenue streams.[102]

73 Therefore, based on SingTel Optus' broadband and telephony revenues alone, it would be viable for SingTel Optus to invest in in-filling the HFC Network if it could obtain at least two customers within an MDU Given the conservative approach taken to the modelling (excluding pay TV bundling and bundling with mobile telephony), the figure is likely to be even lower.

74 As demonstrated above, the business rationale for upgrading and utilising the HFC Network is positive based on telephony and broadband alone, before considering the benefits of pay TV. That fact alone is sufficient to dismiss the relevance of SingTel Optus' concerns about the health of its standalone pay TV business, [103] and the impact on its ability to further invest in HFC, as expressed in the HFC exemption proceedings.

[101] ACCC, *Telstra's exemption application in respect of the Optus HFC network - Final decision, Public Version*, November 2008 (**Final decision – HFC exemption proceedings**)
[102] Telstra October 2008 submission – HFC exemption proceedings, paragraph 95
[103] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.41-3.46

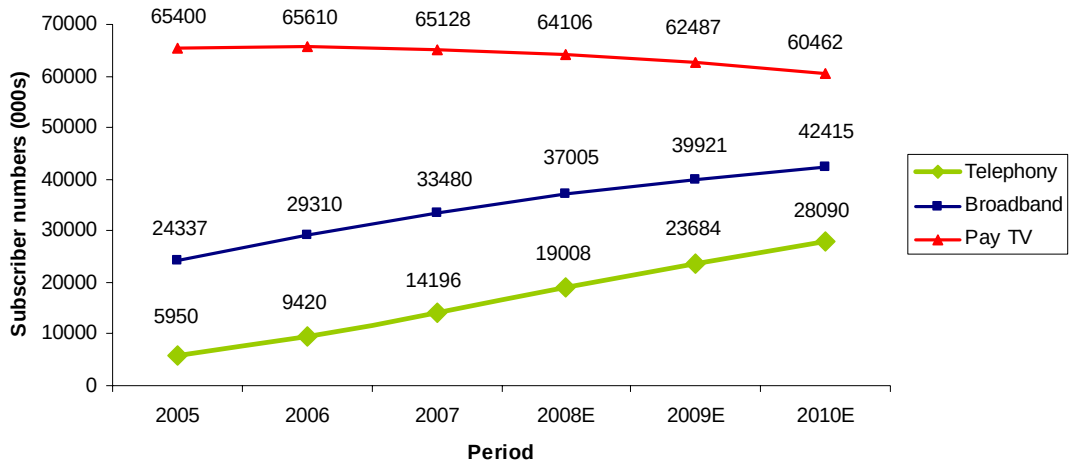
75 Even if considered relevant, SingTel Optus' concerns are ill-founded, because:

(a) pay TV should not be considered on a standalone basis, but rather as part of a bundle of services. This is how SingTel Optus itself assesses pay TV (outside regulatory proceedings), as is evident from its witness statements in the C7 proceedings;[104]

(b) SingTel Optus' true commitment to its pay TV is betrayed by its actions. Far from being discouraged, in 2005, it invested at least $87 million in digitisation for pay TV. This is a far larger figure than that which it has suggested it spent on upgrades for other services and on the HFC Network .

(c) due to the advent of broadband, SingTel Optus has a new driver of customer connections, reducing its dependence on pay TV. Figures 8 and 9 below show the increasing shift focus towards broadband in both the US and UK.[105]

Figure 8: US cable operators' pay TV broadband and telephony subscribers[106]



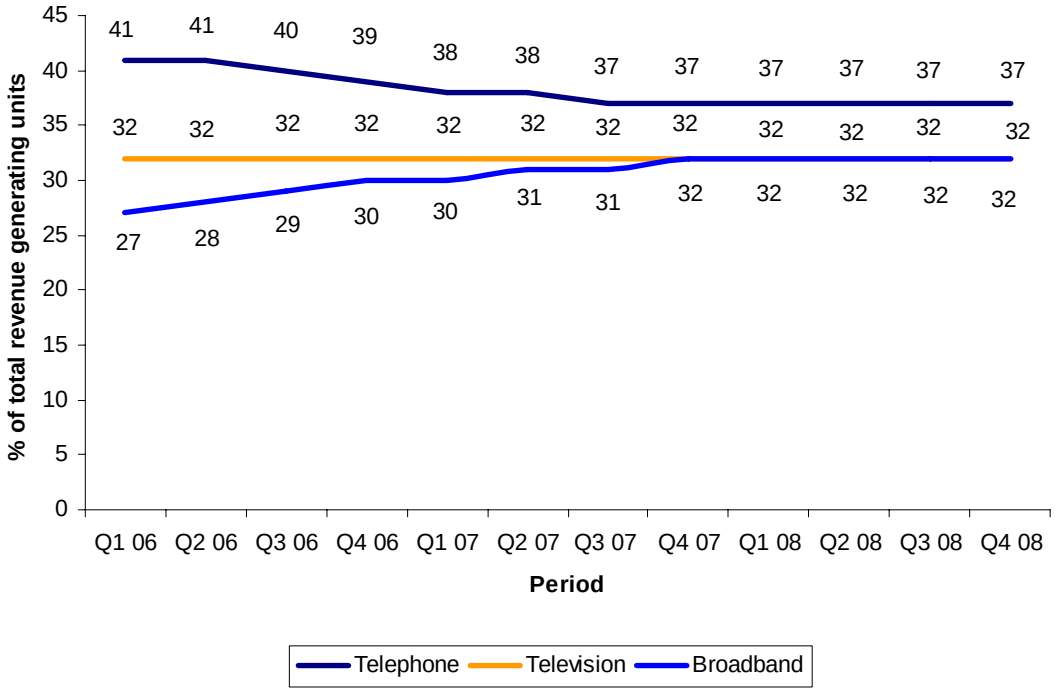
Source: Wachovia Capital

[104] As Paul Fletcher explains in his statement in C7 proceedings: "[P]ay TV was principally a means to attract customers on to the HFC Network and to sell other more profitable services such as telephony and internet connection. Pay TV does not present and never has represented a large proportion of the revenue of Optus or CMM", C7 proceedings, *Paul Fletcher Witness Statement*, 25 October 2004 (hereafter **Paul Fletcher witness statement**), paragraph 12. In a further witness statement, Paul Fletcher continues that from his arrival at Optus in March 2000, he was aware that Optus did not seek to encourage standalone pay TV subscription, because of the incremental losses that most standalone customers represented: C7 proceedings, *Paul Fletcher Second Witness Statement*, 28 March 2006, (hereafter **Paul Fletcher second witness statement**) paragraphs 11-13. The importance of the bundling impact of pay TV was recognised in a McKinsey report to the Optus board in 2002, setting out that if Optus were to exit the pay TV market, it would doom Optus' telephony business because the FOXTEL/Telstra bundle would "churn away high value customers and revenue would run away faster than Optus Vision's ability to take costs out": See Paul Fletcher Witness Statement, paragraph 57. In Fletcher's own opinion, pay TV was necessary for Optus to be able to offer a bundle to customers interested in discounts and other benefits that bundles provided": Paul Fletcher Second Witness Statement, paragraph 17

[105] Telstra October 2008 submission - HFC exemption proceedings, Figures 4-5

[106] The data set out in Figure 8 are derived from Wlodarczak J., US Q1 '08 Video/Data/Phone trends, Wachovia Capital, 15 May 2008, pp 10-12

Figure 9: Virgin Media's pay TV broadband and telephony revenues[107]

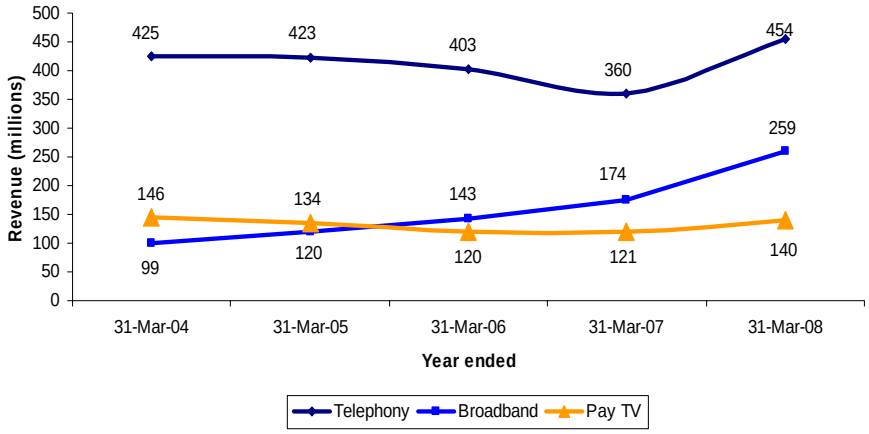


76 A similar trend is identifiable in Australia, as seen by Figure 10, which shows SingTel Optus' revenues from broadband and telephony as compared to pay TV. These relativities are also apparent in this financial period. Revenues for SingTel Optus in the 9 months to 31 December 2008 were $382 million for telephony, $270 million for broadband and $102 million for pay TV.[108]

[107] The data for Figure 9 is derived from: Virgin Media, *Virgin Media Inc. and subsidiaries Form 10 K for the year ended December 31, 2006*, p 58; Virgin Media, *Virgin Media Inc. and subsidiaries Form 10 K for the year ended December 31, 2007*, p 60; Virgin Media, *Virgin Media Inc. and subsidiaries Form 10 K for the year ended December 31, 2008*, p 60

[108] SingTel Optus quarterly report, 31 December 2008, p 47

Figure 10: SingTel Optus' broadband, telephony and pay TV revenues: 31 March 2004 – 31 March 2008[109]



77 Telstra therefore submits that there is no basis upon which to find that pay TV constitutes a reason why SingTel Optus cannot better utilise its HFC Network.

E.2 Overseas experience demonstrates how far SingTel Optus is from the norm

78 Overseas cable companies have shown that where cable networks have kept up-to-date with technological upgrades, they are viable competitors, even where their networks are overbuilt,[110] and face a similar market profile to that faced by SingTel Optus.

79 Dr Jeffrey Eisenach, in preparing expert evidence as part of Telstra's HFC exemption application, examined four metropolitan statistical areas in the USA, which are comparable to the areas where SingTel Optus has deployed its HFC Network. Each of these areas has an overbuilder with significant overlap of the incumbent's cable footprint. Table 4 below sets out the characteristics of each of these markets.

[109] Data underlying Figure 10 was sourced from SingTel's quarterly reports for the year ending: 31 March 2004, 31 March 2005, 31 March 2006, 31 March 2007 and 31 March 2008. See: SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management discussion and analysis of financial condition and results of operations for the fourth quarter and year ended 31 March 2004,* p 45; SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management discussion and analysis of financial condition and results of operations for the fourth quarter and year ended 31 March 2005,* p 47; SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management discussion and analysis of financial condition and results of operations for the fourth quarter and year ended 31 March 2006,* p 48; SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management discussion and analysis of financial condition and results of operations for the fourth quarter and year ended 31 March 2007,* p 48; SingTel, *Singapore Telecommunications Limited and Subsidiary Companies, Management discussion and analysis of financial condition and results of operations for the fourth quarter and year ended 31 March 2008*, p 49.

[110] See: Telstra main submission – HFC exemption proceedings, paragraphs 85-86; Eisenach first report – HFC exemption proceedings, paragraphs 108-109

Table 4: Characteristics of SingTel Optus and U.S. HFC service territories[111]

Market	Area (Square Miles)	Population	Density	Total MDUs/Total Dwellings	"Small" MDUs/Total MDUs	"Small" MDUs/Total Dwellings
Optus: Sydney	486	2,104,500	4,326	28%	66%	18%
Optus: Brisbane	254	704,021	2,768	17%	84%	14%
Optus: Melbourne	374	1,526,881	4,081	15%	89%	13%
U.S. Overbuilders						
WOW: Detroit	291	1,529,680	5,259	22%	72%	16%
Astound: San Francisco	188	1,212,763	6,448	57%	63%	36%
Knology: Tampa	376	758,243	2,014	36%	56%	20%
RCN: Washington DC	90	540,366	5,993	52%	55%	28%

Source: U.S. Census Bureau & Warren's *Television & Cable Factbook* for U.S. markets; Australian Bureau of Statistics & Optus HFC coverage estimates (provided by Telstra)[86] for Australian markets. In Australian markets, an MDU is classified as "small" if it is housed in a structure of no more than three stories. In U.S. markets, an MDU is classified as "small" if it is housed in a structure containing between 2 and 19 units

80 As seen in Table 4, SingTel Optus' network:

(a) spans an area ranging from 250 to 490 square miles, as compared to 90 – 380 square miles for the US overbuilders;

(b) covers a population between 700 000 – 2.1 million, as compared to 540 000 – 1.5 million for US overbuilders;

(c) is present in areas with a population density of 2 700 – 4 300 inhabitants per square mile as compared to 2 000 to 6 400 inhabitants per square mile for US overbuilders; and

(d) has an MDU presence which is 13 – 18% of the total number of dwellings passed, as compared to 16 – 36% in the U.S.

81 Therefore, SingTel Optus' network is (based on SingTel Optus' focus on the prevalence of MDUs in its conclusions on in-filling its network, discussed at Part C above), more commercially attractive than the market profile faced by US overbuilders.[112]

82 Upon comparing SingTel Optus' overall penetration rate of serviceable homes and revenue per serviceable home on all services combined, Eisenach concluded that "*[SingTel] Optus compares favourably with cable systems in the U.S. on these metrics, and indeed outperforms US overbuilders*"[113] who, as set out at section C above, are clearly viable.

83 Indeed, as seen in the US context, further investment in cable networks is viable even in the face of competition from a number of fronts. Knology in Tampa,

[111] Eisenach first Report – HFC exemption proceedings, Table 3
[112] Eisenach first Report – HFC exemption proceedings, paragraph 108
[113] Eisenach first Report – HFC exemption proceedings, paragraph 109; Dr Eisenach derived these findings from confidential data provided by SingTel Optus. He undertook detailed analysis of the viability of the HFC Network, based on this data in a confidential appendix to his report. Telstra is of the view that it is necessary for the ACCC to have access to this confidential material in these proceedings, to be satisfied that the submissions put by Telstra in this section are borne out by SingTel Optus' experience

Astound in San Francisco, WideOpenWest in Detroit and RCN in Washington DC each provide voice data and video services over digital infrastructures[114], using technology well in advance of that used by SingTel Optus, despite facing competition from 4 different infrastructure sources, including:

(a) competing cable operators;

(b) FTTP/FTTN deployments by Verizon and AT&T;

(c) four national mobile voice and data networks; and

(d) additional entry in the form of recent decisions by Sprint and Clearwire to deploy a national broadband network using mobile wireless technology.[115]

E.3 Upgrading the underlying technology

84 Were SingTel Optus incented to invest in its HFC, it would have at its disposal an ever-increasing range of options. The option to use better, cheaper customer premises equipment (in the form of integrated telephony-capable modems) is one. Upgrading to a higher version of DOCSIS is another. Michael Harris, in the HFC exemption proceedings considered that it would not require a substantial investment for SingTel Optus to "leapfrog" from DOCSIS 1.1 to DOCSIS 3.0,[116] which would allow SingTel Optus to offer speeds of up to 120 Mbps, and allow it to provide business-grade services. In fact, the costs of cable modem termination systems (**CMTS**) which are DOCSIS 3.0 compatible are falling rapidly on a per port basis, with costs "*dropping like a rock*" according to one analyst.[117]

85 In addition, as set out in Part D above, SingTel Optus would be able to circumvent a number of the technical issues blocking its ability to in-fill its network to service MDUs if it moved from its aging circuit switched system to a packet switched system, which have a significantly lower cost per subscriber than SingTel Optus' current technology.[118] This move is being increasingly undertaken by US cable operators, and is significantly cheaper than SingTel Optus' constant bitrate technology.[119] In fact, it is possible to deploy cable modems with telephony ports included for as little as US$115 (inclusive of emergency battery pack for power). This cost may be recovered in an initial fee for the modem or through monthly charges.[120]

[114] Eisenach first report – HFC exemption proceedings, paragraph 21
[115] Eisenach First Report – HFC exemption proceedings, paragraph 16
[116] Harris second report – HFC exemption proceedings, paragraph 3.4 SingTel Optus provided data on its view of the cost of upgrading the HFC Network on a confidential basis in the HFC exemption proceedings (See Appendix F – SingTel Optus October submission – HFC exemption proceedings). Telstra considers that access to this information will aid the ACCC's assessment of the viability of the HFC Network.
[117] Baumgartner J., *CMTS downstream prices plummet*, Cable Digital News, 28 December 2007 citing analysis from Gartner Inc.; See also Spangler T., *Comcast eyes gradual move to DOCSIS 3.0*, Multichannel News, 2 July 2007
[118] Harris second report – HFC exemption application, paragraph 4.4
[119] Harris first report – HFC exemption proceedings, paragraphs 6.1, 7.15
[120] Harris first report – HFC exemption proceedings, paragraph 7.13

II: How and why should the ACCC act to promote the LTIE?

A Current ULLS prices are a significant driver of SingTel Optus' inefficient conduct

86 SingTel Optus has, via its economic expert in the Telstra HFC exemption application, contended that its usage of ULLS in preference to its own HFC Network represents a rational response to the incentives it faces, stating:

"*Optus considers that even if it invested in the HFC network in order to increase the levels/quality of serviceability in the exemption area, that would not be an economically efficient outcome since the demand for services in the relevant markets identified by the ACCC can be satisfied at a lower cost by one facility than by two or more facilities, and amongst those multiple facilities, provision over the upgraded HFC network would not involve the least cost option. In this regard Optus submits that the existing ULLS access regime (and hence the "future without" scenario) provides access seekers with the incentive to make an efficient 'build or buy' decision, and encourages efficient investment in infrastructure.*"

87 This passage from SingTel Optus indicates at least two things. First, SingTel Optus' defence of its continuing access to ULLS at the expense of its own network relies on the assumption that ULLS prices remain set at their current levels. This circularity does not constitute evidence that either access prices or its own conduct are efficient and in the LTIE.

88 Second, it shows that the access regime in which ULLS prices have been set (to $12.30 - $16) creates private benefits for SingTel Optus ("provision over the upgraded HFC network would not involve the least cost option"). It is unsurprising that SingTel Optus would prefer to use ULLS at a cost of $16 to serve customers than incur the cost of extending its own network to customers that its HFC network already passes. The TEA model shows that the cost of a new entrant building a customer access network is significantly higher than $16.[121] Telstra's analysis shows that SingTel Optus' profit from ULLS at $30 is significant.[122]

89 This means that SingTel Optus' incentives are to buy ULLS at below-cost prices rather than build or even use its own network. These incentives must be altered to encourage SingTel Optus to efficiently invest in its HFC infrastructure, to encourage SingTel Optus to efficiently use its HFC infrastructure and, as a consequence of this, to promote long-term facilities-based competition.

90 That Singtel Optus faces distorted prices is manifestly evident. A firm faced with efficient price signals for access-based alternatives would not fail to keep itself informed of relevant information and opportunities in the way that SingTel Optus has. Nor would such a firm (among other things):

[121] See *Materiality Testing*, 20 March 2009, which shows that, even adopting extreme assumptions in the TEA model (e.g. by assuming every trench is dug in and reinstated with grass), the ULLS network costs are significantly above $16

[122] Telstra Corporation Limited, *Telstra's ordinary access undertaking for the Unconditioned Local Loop Service: Response to ACCC's draft decision*, *Public Version*, 23 December 2008, Attachment 1

(a) fail to know how many homes its network passes, because it has not updated its homes passed database in approximately a decade;[123] or

(b) fail to re-assess the viability of connecting additional premises for more than five years,[124] during a period in which technological and market developments have dramatically altered the economics of cable networks.[125]

91 Moreover, a firm in SingTel Optus' position faced with efficient price incentives would not fail to invest in its HFC network in the way SingTel Optus has done. Such a firm would not invest so little in its HFC network (as outlined in Part C above), including by (among other things):

(a) refusing to consider connecting an entire class of homes (i.e. multi-dwelling units);[126]

(b) refusing to consider connecting all single-dwelling units that are not listed in its database as serviceable;[127]

(i) when that database is at approximately ten years old[128], or at best, has been updated "some years ago."[129]; and

(ii) when at least some such homes are "*located next door to one another, and one is defined by Optus as serviceable and the other as "unserviceable" or [homes] which, though clearly on streets with Optus' fiber, and well within 75 meters of Optus' fiber, are nevertheless defined as unserviceable by Optus.*"[130]

(c) failing to take advantage of better and cheaper customer equipment to deliver broadband and telephony services over its network[131], even though it believed that its current customer premises equipment created barriers to customer acceptance of its services (see below);

(d) persisting with an outdated 1990s era cable telephony technology no longer available on the market, with limited support from the vendor,[132] and which requires a customer installation that SingTel Optus claims makes it difficult to connect MDUs[133]; or

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[123] Telstra response to ACCC discussion paper - HFC exemption proceedings, paragraph 7
[124] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.24
[125] See Harris first report – HFC exemption proceedings, paragraphs 4.8-4.12; Telstra June 2008 submission – HFC exemption proceedings, paragraph 14; Table 1 above; Telstra October 2008 submission – HFC exemption proceedings, paragraphs 79-81; Telstra October 2008 submission – HFC exemption proceedings, pp 32-3; Virgin, *Virgin Media launches the UK's fastest broadband*, 15 December 2008, available at http://pressoffice.virginmedia.com/phoenix.zhtml?c=205406&p=irol-newsArticle&ID=1235740&highlight= ; Shaw, *Shaw speeds up in slow economy*, 17 February 2009, available at http://www.shaw.ca/NR/rdonlyres/ED0DA74E-FE72-406A-A79E-9B981031D26B/0/ShawFastestInternetFeb17.pdf; Comcast, *Comcast begins rollout of extreme 50 Mbps High-Speed Internet Service,* 22 October 2008, http://www.comcast.com/About/PressRelease/PressReleaseDetail.ashx?PRID=814; Eisenach first report – HFC exemption proceedings, paragraph 24
[126] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.6
[127] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraphs 2.21 – 2.24. While SingTel Optus' Business Rule explicitly states that where HFC is available for supply to a customer, that customer will be supplied with HFC, and not resale or ULLS, the reality is that because of its outdated database, this rule in fact means that SingTel Optus will not consider connecting a single dwelling unit which is otherwise serviceable, simply because it is in its database
[128] Telstra response to ACCC discussion paper – HFC exemption proceedings, paragraph 7
[129] SingTel Optus May 2008 submission – HFC exemption proceedings, paragraph 4.3
[130] Eisenach second report – HFC exemption proceedings, paragraph 12
[131] Harris second report – HFC exemption proceedings, paragraph 4.4; Harris first report – HFC exemption proceedings, paragraphs 6.1, 7.15
[132] Harris second report – HFC exemption proceedings, paragraphs 4.3
[133] SingTel Optus March 2008 submission – HFC exemption proceedings, paragraph 3.7

(e) investing in a technology – ULLS - that limits its ability to differentiate its services,[134] and does not provide a long-term infrastructure solution, in areas where alternative investment in its own infrastructure:

(i) is viable on any medium-term measure;[135]

(ii) would durably reduce its unit costs, due to economies of scale; and

(iii) provides a firm footing for next-generation access.[136]

92 If faced with a ULLS price that is closer to the efficient cost of building a customer access network than prevailing rates ($16), SingTel Optus would face more accurate price signals and more efficient incentives to use and further build its HFC network. Once these incentives are in place, SingTel Optus would not conduct it business in the inefficient manner observed.

B Its conduct amounts to inefficient and systematic "disinvestment" in HFC, harming the LTIE

93 As Part D above shows, HFC is a viable technology which cable operators around the world are using to compete vigorously with copper-based and fibre networks. That its own HFC Network is somehow an exception to this global phenomenon is an argument put by SingTel Optus to protect its own short-term profits at the cost of end-users' long-term interests. Yet SingTel Optus' conduct belies the strength, viability and economic efficiency of HFC.

94 Dr Eisenach describes this conduct as "disinvestment". As he pointed out:[137]

(a) having invested in HFC prior to the advent of ULLS, SingTel Optus now finds that it has "over-invested" – that is, it has invested in a network that is capable of serving more homes than is optimal given the "cherry-picking" strategy now available to it under regulated ULLS access;[138]

(b) consequently, it is slowly *un-investing* in HFC, rebalancing its physical plant to optimise its deployments under prevailing regulatory conditions. The facts demonstrate that SingTel Optus is not investing sufficiently in its network to allow it to be viable over time, but rather gradually allowing it to erode and become obsolete.

95 This disinvestment – or even any lack of investment – is a consequence of regulated ULLS availability at current, below-cost prices: SingTel Optus is avoiding actions that would generate economies of scope and scale on its HFC. Such economies would enable it to reduce unit costs, to invest in more fixed-cost elements such as in new or enhanced platforms and services (because those fixed costs could be spread over more customers); and to innovate, with positive impacts on dynamic efficiency.

(a) As Henry Ergas noted,[139] if SingTel Optus faces greater incentives to move beyond ULLS, there would be a greater prospect of radical innovation.

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[134] See Cave, M., *Applying the ladder of investment in Australia*, (hereafter **Cave first report – HFC exemption proceedings**), p 12.
[135] See Part E.1 paragraphs 69- 77
[136] See Eisenach first report – HFC exemption proceedings, paragraphs 115-122
[137] Eisenach second report – HFC exemption proceedings, paragraphs 45-6
[138] That is, to service easy-to-connect homes only via HFC, while serving more difficult-to-connect homes via ULLS.
[139] Ergas, H., *Ergas report – Henry Ergas,* 24 June 2008,(hereafter **Ergas first report – HFC exemption proceedings)** paragraph 58

Successful innovation would create a knock-on effect as others followed, or were forced to innovate to avoid being left behind.

(b) Professor Martin Cave, in his evidence in the Telstra HFC exemption proceedings, considered SingTel Optus' conduct in the context of the "ladder of investment". He described it as "highly unusual",[140] "a partial stepping down from the pinnacle of the ladder of investment",[141] and incurring dynamic efficiency losses.[142] He also noted that an increase in price may moderate the extent of the behaviour.[143]

96 As set out in Part A of section I above, SingTel Optus' response to below-cost ULLS prices is harmful to the LTIE because:

- It discourages SingTel Optus from efficiently using its own HFC infrastructure (it would rather use Telstra's at below cost prices);
- It discourages SingTel Optus from efficiently investing in its own HFC infrastructure; and
- These factors retard the development of facilities-based competition in Australia.[144]

97 Setting the ULLS price to $30, closer to the cost of an efficient new entrant building a customer access network, would promote the LTIE by encouraging SingTel Optus to use and invest in its own infrastructure and thereby promote long-term competition.

C The ACCC must address this conduct

98 In other proceedings, the ACCC was asked to address this conduct by removing regulated access from SingTel Optus within the footprint of the HFC Network. It declined.[145]

99 As set out in Telstra's submissions above, the current ULLS monthly charge has a significant impact on the incentives for investment. In considering the LTIE, the ACCC must not simply look at whether its decision would promote competition, but must have regard to whether its decision would encourage efficient investment in and use of SingTel Optus' infrastructure. It cannot give primacy to any one of the objectives found in section 152AB (2) of the *Trade Practices Act 1974*.[146] Additionally, in the context of the LTIE, the ACCC must not consider any outside factors: the LTIE must be determined "*by reference to the three objectives in paragraphs (c) (d) and (3) of subsection (2), and by reference to no other objectives.*"[147]

100 Telstra submits that the ACCC cannot let these adverse effects on the LTIE lie unaddressed. It must now address the obvious distortions arising from SingTel Optus' conduct by revising the price at which ULLS is available.

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[140] Cave first report – HFC exemption proceedings, p 8
[141] Cave first report – HFC exemption proceedings, p 10
[142] Cave first report – HFC exemption proceedings, p 12
[143] Cave first report – HFC exemption proceedings, p 10. However, Professor Cave did not focus on price issues in his report.
[144] For a discussion of the impact of access regulation in the context of developing firms, see section 7.2 of Ergas first report – HFC exemption proceedings
[145] Final Decision – HFC exemption proceedings
[146] *Telstra Corporation Limited v Australian Competition Tribunal* [2009] FCAFC 23, paragraph 270
[147] *Telstra Corporation Limited v Australian Competition Tribunal* [2009] FCAFC 23, paragraph 12

101 But SingTel Optus' conduct is evidence that broader distortions are at work, given the widespread use of ULLS at below cost prices. Even if SingTel Optus were incented to invest in the HFC Network, the availability of an inefficiently low ULLS monthly access charge (both by other providers within the HFC footprint, and generally outside the HFC footprint) would restrict the extent of facilities based competition. SingTel Optus' ability to compete over an updated HFC Network would be limited by the availability of inefficiently low cost access-based infrastructure to operators such as iiNet, AAPT, Soul TPG and others. This would allow these operators to offer low cost broadband products which would limit the ability of infrastructure-based operators such as Telstra and SingTel Optus to utilise their networks.

102 Therefore, in order to promote competition and encourage efficient investment, and thereby promote the LTIE, the ACCC should accept Telstra's $30 monthly charge for the ULLS in Band 2 as proffered in the Undertaking. The Telstra Efficient Access (**TEA**) Model clearly shows that the true TSLRIC+ of the service is significantly greater than $30 per month; however, a monthly charge for ULLS in Band 2 of $30 per month is the first step towards regulated prices that reflect the efficient cost (TSLRIC+) of providing the ULLS.