

***A submission on the regulatory settings for a National Fibre to
the Node Network***

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Foreword

This brief submission is made in the context of earlier published work/submissions which I have made on regulatory matters related to the proposed rollout of fibre to the node. These “papers” on the relevance of structural separation to FTTN and on the related issue of sub loop unbundling are attached.

It should be noted that since my paper on structural separation was published eircom have abandoned their plans to break up the company. Whilst eircom's owners the listed fund Babcock Capital Management (BCM) said they had shelved plans for separation because of unfavourable capital markets a complex of reasons, which are highly relevant to the current Australian debate, influenced their decision.

Although BCM claimed separation would create a simpler regulatory model, a so called utility Netco separated from retail activities, creating Netco as a stand alone entity raised a host of complex regulatory issues that could not be readily agreed with the regulator ComReg. BCM were seeking a significant revaluation of network assets and a more favourable WACC ostensibly to fund FTTN which they claimed would be stimulated by separation.

Comreg clearly held concerns about how these changes would translate into wholesale prices and remained to be convinced that network co ordination and investment could be managed with separation. In summary ComReg, which had not sort any form of separation was not convinced by the BCM proposal. Similarly the Irish government was not convinced that the proposed FTTN rollout “Fibre Ireland” would be possible under separation .

With the collapse of the eircom initiative no regulator, policy maker nor incumbent is seeking separation. Indeed in markets where fibre deployment is gaining pace such as the United States and Germany regulatory forbearance has been the key to enabling fibre investment.

The consensus within the international telecommunications community, most recently affirmed by Singtel the owner of Optus, remains that structural separation is disproportionate, intrusive and its costs far outweigh any likely benefit.

Overview

'What is Telstra seeking to hide? A monopoly designed to beggar the competition?'

Graham Samuel Chair ACCC on FTTN

Despite the fact that broadband has been recognized as a key 'enabling' technology for the 21st century broadband delivery in Australia remains dependent upon 20th century technology, xDSL over copper pairs. In many parts of Australia much of the local copper network needs renewal and must be replaced with fibre optic to deliver true high speed broadband.

In common with many incumbent telecommunication operators Telstra had planned to deploy fibre in the local network based on a fibre to the node architecture (FTTN). There was nothing revolutionary or unknown about this technology. Widespread deployment of fibre in Australia had been foreshadowed in a 1976 Telecom Australia report 'Telecom 2000'.

Despite local network fibre rollouts becoming increasingly common throughout the world, deployment in Australia rested on a business case that was heavily dependent upon regulatory decisions, primarily the rate of return that it should enjoy on the investment and the access terms (essentially pricing) for competitors' use of the network.

Having initially outlined its FTTN plans in mid 2005 Telstra opened discussions with both the regulator and government about access and related regulatory conditions. In August 2006 Telstra said it would not be proceeding with its investment because it had failed to reach agreement with the ACCC on key regulatory issues.

Although Telstra said its failure to agree with the regulator was the reason for abandoning the investment other factors may also have played a role. Telstra's competitor's and indeed the ACCC feared FTTN would foreclose competition whilst Telstra, which had undergone a change in management marked by a more litigious culture, may have entered those negotiations with unrealistic expectations about the appropriate regulatory settings for FTTN. Certainly recent calls by Telstra for an FTTN return "north of 18%" would suggest at best ambit.

Whatever causes lead to Telstra's decision it is clear that the former government was unable to resolve the dispute although the framework for resolution was being created before the 2007 elections with the setting up of an expert group to advise on rival proposals for FTTN. The former government's appointment of an expert group mirrored the Labor party's policy which was designed to inject competitive tension into the process by calling for a tender for \$4.7 billion in government subsidy to enable the national rollout of FTTN.

The tender process is now underway and a number of bidders have lodged the necessary bonds including the major proponents of national FTTN, Telstra and the Optus lead Terria group. Whilst it was to be expected that proponents would be deeply engaged in the complex bidding process the debate surrounding the tender has degenerated into little more than repeated calls for Telstra's structural separation. Such calls have nothing to do with enabling FTTN investment.

Similarly bidders who appear to be focused on merely one state or region have lodged bonds a move that seems curiously at odds with the policy's stated intent of a national fibre network.

This attachments to this submission are address the threshold regulatory issue of market structure and the relevance of separation and competition to fibre investment. The reality of FTTN is, as most would acknowledge, the confirmation of natural monopoly in local fixed network provision and given that reality the former arbitrage model of competition cannot be sustained.

Indeed it might be asked whether the arbitrage/resale model, which was supposed to propel market entrants up the ladder of investment, was ever sustainable Under the model the pricing of market access at marginal cost on a sunk investment could not generate the cash flow needed for investment by entrants. This is especially so when the earnings of entrants which theoretically would fund investment have largely been consumed by what US commentators call the arbitrage mirage under which falling revenues from new customers (lower ARPU at the margin) is consumed by increased acquisition and retention costs.

It is obvious and now widely recognized in the academic literature that marginal cost pricing of access and policies such as local loop unbundling have also acted as a disincentive to investment by incumbents.

In summary the present market structure and level of competition cannot be sustained if investment in local loop fibre is to be paid for. Recent market entrants to xDSL based service provision who have invested in DSLAMs and backhaul are acutely aware of the threat that FTTN investment represents to their standing in the market. The ACCC has also echoed concerns about competition being foreclosed by FTTN.

Whilst the commitment of those who have lodged bonds to bid is not in question there appears to be a default position emerging in the debate which at worst may lead to any form of FTTN investment being shelved for the foreseeable future or which at best seeks to maintain copper based arbitrage whilst FTTN is being rolled out. This default position is reflected in the increasingly strident calls for the structural separation of Telstra and the suggestion that exchange fed copper can be maintained in parallel with FTTN which would allow exchange based ADSL to be delivered.

As the following paper argues structural separation, a regulatory tool which has been rejected worldwide by policy makers and regulators has no part in enabling FTTN. Similarly maintaining exchange based copper ADSL in the FTTN age poses a number of significant technical challenges and undermines the economics of FTTN as it would imply two very differing regulatory, access and pricing regimes.

The regulatory conditions need for FTTN are as leading commentators in the US and UK now argue dependent upon a 'new regulatory paradigm'. That new paradigm must embrace new pricing models for access, new forms of 'interconnection', and must in the unique Australian market confront problems of universal access to fibre and the broadband services it will broadband. It is unfortunate that despite the need to rise to these complex challenges the debate has been skewed by arguments about structural separation.

Attachment A

Published in the May 2008 edition of the Telecommunications Journal of Australia

The Relevance of the European Structural Separation Debate to Australian FTTN Rollout

In the lead up to the review of telecommunications regulation in mid 2006, the European Union's Commissioner for Information Society and Media, Ms Viviane Reding, reignited the debate about the use of structural separation as a remedy for anti-competitive behaviour by incumbents. Despite the Commissioner's initial enthusiasm for structural separation, following a detailed inquiry the Commission bowed to the weight of industry opinion and opted for the lesser remedy of functional separation in its subsequent October 2007 policy statement. The decision did not recommend that functional separation be mandatory, but that it should be implemented by national regulators at their discretion. Notwithstanding the rejection of structural separation by one of the industry's most influential policy/regulatory bodies, it remains on the Australian agenda and is at the core of the debate about competition and the planned national fibre to the node network (FTTN). If any group other than Telstra wins the present tender for FTTN, structural separation will be needed to roll out the network within the government's \$4.7 billion budget. Should Telstra win the tender and accept the subsidy offered it may have to engage in structural separation to accommodate the public private partnership (PPP) for the network which is the government's favoured vehicle to deliver the new network. The article considers the recent debate about structural separation in Europe and considers its utility to the planned deployment of a national fibre to the node network.

Introduction

Structural separation is an often threatened but never deployed regulatory tool which has drawn periodic attention over the last two decades from regulators and policy makers internationally, following the landmark break up of AT&T in the mid 1980's. It stands at the extreme of the range of structural options that might be deployed to limit the market power of an incumbent fixed line operator ([Cave 2006a](#), 90) and has found more favour with commentators on regulatory policy than actual practitioners. As Cave and others note, structural separation demands management of network assets through a corporate entity that is distinct from the company that provides retail services. It implies greater complexity, costs and challenges to the co-ordination of network investment than functional separation which is generally marked by divisionalisation and the need for 'chinese walls' between network provision and the retailing of services within the one company.

The literature on structural separation suggests that academic thought on its value as regulatory tool remains fairly evenly divided, but there is no such balanced view amongst industry practitioners. Whilst some have argued that structural separation can bring substantial benefits through heightened competition ([Crandall and Sidak 2002](#),) the consensus view held by policy makers and regulators remains that framed by the OECD in 2003, when it argued the costs of structural separation would outweigh any benefits and that the onus was on the proponents to argue their case. ([OECD 2003](#)).

Yet despite an industry consensus against structural separation, which was clearly demonstrated in the 2003/2005 Ofcom review of regulation in the United Kingdom and confirmed by the weight of opinion expressed in the 2006/2007 European Union regulatory review, structural separation remains an issue for debate in Australia. It was the subject of an aborted parliamentary inquiry in 2002 and has re-emerged as a key issue underpinning the planned national fibre to the node network.

Structural separation lies at the core of proposals by Telstra's competitors to build a fibre to the node network (FTTN). Under the plans of the Optus-led G9 group ([FANOC 2007](#), 9) much of the local network, effectively from the exchange to the street pillar, would become co-operatively or "club" owned, separating this element of the network from Telstra, with the fibre reconnecting with the copper sub-loop. This ownership structure demands structural separation of a significant part of Telstra's network, given that the G9 proposal does not envisage FTTN overbuild and would require sub loop unbundling, i.e. competitive access at the street pillar, thus ending Telstra's ownership of an end-to-end copper local network. Even if Telstra were to win the tender and accept the government's \$4.7 billion subsidy for FTTN in non commercial areas it would be obliged to engage in separation as the government is offering the subsidy under a Public Private Partnership (PPP) which implies a separate corporate entity to manage the new network.

This renewed interest in structural separation is marked by a degree of confusion about its precise meaning and application and about the real impacts of its antecedent, namely the AT&T divestiture. Commentators in Australia such as Paul [Budde \(2008\)](#) have argued that there is a widespread trend to structural separation in other markets and that it should be applied to end Telstra's market dominance. It is argued that structural separation has been applied in the UK, Sweden New Zealand, Italy, Ireland as well as the United States and has been embraced by the EU ([Foreman 2008](#)). This reading of the application of structural remedies internationally suggests that there is some confusion about the meaning of structural separation compared to functional/operational separation.

No market has embarked on structural separation. The United Kingdom has implemented functional separation with the creation of OpenReach, the discrete local network division within British Telecom, which now operates at arms length from BT's retail arm. Similarly, although implementing a three- rather than two-way split, Telecom Corporation New Zealand (TCNZ) is implementing functional separation based on the UK model. As in the UK, there is no new corporate entity managing TCNZ's network assets and no change in ownership.

Within Europe, Italy would seem to be moving toward the UK model of functional separation; and in Sweden, Telia/Sonera are setting up a network company in settlement of EU competition concerns, having divested mobile and cable businesses following their merger. Separation was not sought by the Swedish regulator which expressed fears in mid 2007 ([Post and Telestyrelsen 2007](#)) about the impact separation could have upon investment, noting that:

"Moreover, to the extent that the telecom sector can sustain competition from alternative platforms, structural separation could adversely affect incentives for investment in new platforms."

The Telia/Sonera network separation in part parallels the break up of AT&T, which was not structural separation as it is commonly understood today but involved ending AT&T's vertically integrated monopoly, which extended to the supply of network and terminal equipment. Under the divestiture settlement, which was imposed by the Department of Justice, not the regulator (the FCC), distinct geographic markets were created and lines of business restrictions were imposed which prevented the regional Bell companies from offering long distance service and restricted their entry into so called "advanced" services. Ireland stands as the only market in which full structural separation and subsequent divestiture of retail activities is being considered ([McEnaney 2008](#)) but this is being driven by the unique ownership structure of the incumbent *eircom* rather than any settlement sought by the national regulator Comreg.

The confusion over separation

Confusion about what form of separation is actually being implemented, in what market and what the implications of structural separation really are, is not confined to the Australian market. Shortly after her appointment in 2006 Viviane Reding, the European Union Commissioner for the Information Society and Media sought to address the European lag in broadband penetration compared to the United States and argued that:

"I believe that the policy option of structural separation could answer many of the competition problems that Europe's telecoms markets are still facing today. Perhaps we have to be as radical as regulators were in the USA in the 1980s to make real progress? 'a European way of structural separation' is certainly a policy option that needs to be discussed intensively in the forthcoming months."

Ms Reding went further in arguing

"I note that in the US, the opening up of the telecom monopoly of AT&T started, in 1984, with the most radical intervention a regulator has ever chosen: with the break-up, by means of competition law, of AT&T into the so-called "Baby Bells".. One can certainly discuss the advantages and disadvantages as well as the sustainability of this decision. However, facts speak for themselves. Today, we have in the US a situation of infrastructure competition on the broadband market with two competing infrastructures: While 38% of subscribers have broadband access via DSL technology offered by telecom companies, 55% have broadband access via cable. Consumers therefore have a true choice in the US."

Ms Reding's link between the AT&T divestiture and the highly competitive nature of the US broadband market may have been misplaced. The strength of the cable sector in the United States in offering broadband competition to traditional telecommunications companies owes more to the asymmetric regulation of cable and telephone companies than to any earlier structural change in the telecommunications industry. Indeed some would argue that the restrictions on lines of business and specifically on the provision of the "advanced" services by the divested Baby Bells retarded development, especially of data services, in the United States ([Kahn 2004](#), 24).

In the debate that followed the Commissioner's remarks, the European industry indicated that it did not share either her understandings or enthusiasm for structural separation. The incumbents, represented by the European Telecommunication Network

Operators ([Bartholomew 2007](#)), argued against any form of mandated separation warning of its impacts on network investment, a view shared paradoxically by a number of major competitors ([Telenet 2006](#)). Similarly major equipment manufacturers, fearing lower network investment and the consequent loss of sales, said that structural separation would lessen the incentives and ability to invest in core networks.

Whilst such views may have reflected a degree of self interest, they were confirmed by opinion provided by the Commission's own staff ([EU 2007a](#)) and by consultants engaged by the Commission ([EU 2007b](#)) who viewed structural separation, at best, as a measure of last resort. The debate also revealed tensions within the European Commission over the merits of structural separation with the Competition Commissioner, Neelie Kroes, warning against applying structural separation in the telecommunication sector even though it had been mandated in the transport and energy sectors. This reflected the earlier findings of the OECD which had argued for structural separation of energy industries but cautioned about its application in the telecommunications sector.

That the wider European telecommunications community should express concerns about the impact of structural separation was in large part expected, given that the earlier Ofcom regulatory review in the United Kingdom had revealed a clear consensus across most of the UK industry about the possible threat that separation would represent to investment and industry efficiency. In the earlier UK review, the incumbent British Telecom restated its earlier opposition to structural separation, which had been dismissed in 2001 by the then head of retail services Pierre Danon ([Danon 2001](#)) who had said:

"There are hundreds of things we fix every day because we are the same company and we have the same boss. To change that is madness. It is out of reach by thousands of miles .It would be a disaster for customers and it would mean complete loss of control".

During the review BT's chairman Sir Christopher Bland ([Bland 2004](#)) told shareholders:

"The review will cover, within the 21 key strategic questions to be addressed, the possibility of the structural separation of BT. Your company believes this is not in the interests of shareholders, customers or employees, and will argue in favour of a strong and integrated BT."

And as the OECD had done earlier, BT also cautioned that models of separation derived from the utility and transport sectors could not be applied to the telecommunications sector (House of Commons 2005) warning that :

"Occasionally some suggest that the separations seen in the gas or electricity industries in the UK provide evidence that BT should also be separated. Nothing could be further from the truth, as recognised by commentators over the years. There is simply no comparison between the essentially simple, one-product industries of gas and electricity supply and the complex, fast-changing communications industry."

Perhaps more significantly even Ofcom ([Ofcom 2004](#)) held doubts about full structural separation, noting during the second phase of the review, as they considered the option of functional separation, that:

“We believe that [tackling the problem of inequality of access] can be achieved without the disruption and costs associated with a move towards the structural separation of BT”.

But to some commentators even adopting the lesser remedy of functional separation could be problematic, especially in its impact on investment, with Cave subsequently noting ([Cave 2006a](#), 100):

“It is important that this remedy be applied proportionately. This requires that the detriments resulting from non-price discrimination exceed the costs of imposing an operational separation remedy, where those costs are not only those of changing the incumbents' business processes, but also of any chilling effect on investment in new assets, by both the incumbent and competitors”.

The fear about the threat structural separation poses to investment was not limited to BT or academic commentary, and whilst BT's major competitor Cable and Wireless had argued for separation, other competitors such as Telewest, a major cable operator which offers telephony and broadband on its network, expressed concerns ([Telewest 2005](#)) about the impact that structural separation could have on investment and cautioned against separation.

Given these widespread concerns, structural separation was rejected and Ofcom and BT agreed on a settlement which offered 'equivalence of access' to competitors through the creation of an arm's length local network company subsequently called OpenReach, with access being overseen by an independent panel, the Equality of Access Board, which would oversee the implementation of the BT's undertakings.

The BT settlement

What is significant about this settlement is that it was essentially a compromise between a powerful regulator holding the unique ability amongst regulators to force structural separation under the Enterprise Act, i.e. a competition law reference, and an equally powerful incumbent that was opposed to any form of separation.

The agreement, which included large regulatory trade offs and most significantly, an end to retail price regulation, was designed to address a specific set of concerns, namely alleged non-price discrimination by BT in the provision of unbundled local loops. Similar concerns about delays in the provisioning of unbundled loops, which had at one point led to the EU taking action under competition law against the Spanish incumbent Telefonica, also underpinned the EU regulatory review.

The relevance of the EU/UK debates

It is clear from both the UK and EU experiences that separation and ultimately the concept of functional separation was designed to address a specific problem, namely delays in the provision of unbundled local loops. Both the UK remedy ([Currie 2006](#)) and

the EU's new policy¹ have the clear intent of facilitating unbundling of the local loop to encourage ADSL-based broadband competition. In essence, structural separation at the local network level, the Loopco model, is a response to a regulatory problem that lies in current network technologies and topographies and was designed to encourage entrants' progress along the 'ladder of investment'. Given this specific focus, it is questionable whether separation at the local loop has relevance to the regulatory issues that are emerging with Next Generation Networks and more specifically the deployment of fibre in the local network.

The challenges posed by new network technologies have been considered by a number of commentators ([Cave 2007](#), 29; [Gruber 2007](#), 22). Cave, who had earlier expressed doubts about the Loopco model of separation ([Cave 2003](#)) has specifically questioned whether the physical unbundling of the local network can be imposed on the new network topologies and means of transmission ([Cave 2007](#), 1) noting that

“as new technology gets closer to the end user the conflict between promoting innovative investment and opening up a bottleneck becomes more acute”.

The new technologies which Cave specifically identified as challenging 'traditional' regulation are fibre to the node and Internet Protocol (IP) based networks, technologies at the core of Next Generation Networks (NGNs). The deployment of NGN and fibre in the local network has led to regulatory holidays in markets such as the United States and Germany, and these developments reflect the need for a significant shift in regulatory thinking which has been identified in the recent literature ([Alleman and Rappoport 2005](#), 113; [Vanberg 2007](#)).

There are now calls for a new regulatory paradigm, better aligned to the complex challenges of Next Generation Networks and the deployment of fibre in the local network ([Waverman 2006](#), 158). These regulatory models are more concerned with access and pricing at the applications layer rather than at the physical network layer. With the possible deployment of fibre under the FTTN proposals and the widespread deployment of NGN into the local network these are the key regulatory issues that now need to be addressed in Australia, not unbundling of the local loop. Given these challenges it would seem that separation at the local network level could engender significant problems when FTTN is deployed, particularly in terms of network investment and co-ordination. With the deployment of FTTN the scope for anti competitive behaviour returns firmly to questions of pricing, or more specifically access to and the pricing, of bitstream products, which could be addressed by the long standing and well understood remedy of accounting separation rather than any form of physical separation of network assets.

Full network separation “The Netco Model”

Proponents of separation are aware of these significant developments and argue that the challenge of drawing a 'demarcation line' in the age of NGN, when traditional boundaries between local and core networks will dissolve, can be answered by separation of the full network. Babcock and Brown Capital Management (BCM), an Australian listed private equity fund who are now majority owners of the Irish incumbent *eircom*, argue ([Topfer 2007](#)) that full structural separation of the network from retail services, the so called Netco model, can overcome problems associated with the

Loopco model and would encourage investment and the deployment of NGN and fibre in the last mile.

Although separation has not been on the Irish regulator Comreg's agenda, BCM have raised the issue of full structural separation and the subsequent divestiture of *eircom's* retail division with both Comreg and the Irish government. Whilst there is no public detail on quite how the planned split would work, Comreg have engaged consultants to consider the implications of separation. BCM argue that structural separation would leave the network company standing as a regulated utility, able to attract cheaper capital and operate with higher levels of gearing, and with a clear focus on network investment and development.

But as critics of private equity ownership of telecommunications companies have pointed out ([Melody 2007](#), 9), companies under private equity ownership such as *eircom* have excessive levels of debt, with debt now comprising 80% of capital, and it is questionable whether the resultant Netco could borrow more for investment. *eircom* has also seen a massive fall in capital expenditure under private equity ownership with capital expenditure falling from €700 million p.a. earlier in the decade to €300 million in 2007.. In the interim, despite its standing as the Celtic Tiger with growth rates outstripping most European economies, Ireland lags the OECD average in broadband penetration ([Comreg Quarterly Key Data Report December 2007](#)) and needs significant investment in the network to rollout NGN and fibre to the node.

Eircom's falling capital investment does not seem to accord with BCM's vision for NGN and broadband deployment, and the problems of network investment have been discussed with the Irish Government, with BCM seeking a € 150 million (A\$ 260 million) injection of government funds to underpin Netco.² Yet whilst BCM may claim that heightened investment is the objective of structural separation, others point to a simpler ambition which accords with the typical private equity mandate, which is to realise short term gain through large scale sales of assets, so called "unlocking of value". An analysis of the planned split undertaken by Rothchilds on behalf of BCM's partners in *eircom*, the Employees Share Ownership Trust (ESOT) which owns the remaining 35% of the company, suggests that the sale of the retail arm would generate a €800 million (A\$ 1400 million) windfall for BCM and ESOT ([Topfer 2007](#)). BCM and its related parties would receive A\$930 million from this windfall, allowing Babcock and Brown to exit with a significant profit from an investment which otherwise, as an integrated operator, has debts larger than its asset value.

But whatever the underlying motive, BCM continue to argue that splitting the company would be an innovative approach to securing future network investment, notwithstanding the commonly held concerns that structural separation may act as a disincentive to investment and that because of the inefficiencies it could induce it might result in higher prices to end users of services.

Separation, investment and efficiency

Concerns about investment and economic efficiency under separation, which are grounded in the extensive economic theory of the firm and the benefits of vertical integration ([Coase 1937](#)), were most recently canvassed in Telstra's response to the access undertaking which the G9 Group lodged with the Australian Competition and

Consumer Commission. The paper, commissioned from Charles River Associates ([Ergas 2007](#)), pointed to the dangers of double marginalisation and opportunistic behaviour, which could result in a "hold up" in investment. The paper noted;

"In pricing, ~double marginalization" can occur where non-integrated vertically-related firms each set a mark-up over marginal cost, resulting in an aggregate mark-up that exceeds the mark-up of a profit-maximising vertically integrated firm". ([Ergas 2007](#), 2).

In simple terms the aggregate profit sought by two companies will be larger than the profit sought by one vertically integrated firm. On the impacts of separation on investment the paper argued:

"The incentives to invest more broadly can be impeded by ~hold-up" effects as investments which require coordination between upstream and downstream firms are delayed and undermined by strategic bargaining between the parties. Here too, the greater the extent to which the benefits of investments in one layer flow to others, the more severe will be the misalignment in investment incentives.

Finally, the scope for an industry to adapt to rapid change is compromised by vertical separation where close coordination between network, service and application levels is required for adjustment to occur. These difficulties are aggravated where decision-making structures make adjustment conditional on costly bargaining processes". ([Ergas 2007](#), 2).

As noted, such concerns are widely held and must be answered by the proponents of full network separation. In seeking to address such concerns, *eircom*, on behalf of BCM, commissioned research from the University of Warwick ([Cave and Doyle 2007](#)) which argued the problems of investment incentives could be answered by contracts between the network wholesaler and service providers, whilst double marginalisation could be dealt with by regulation. Cave and Doyle argued that contracts in industries such as the manufacturing of personal computers served as models for long term contracts between network wholesalers and service providers, which would then secure network investment. The paper also suggested that relationships in other industries, such as those between airlines and airport operators, indicated that complex contracts could ~take up the tension" and compensate for the loss of vertical efficiencies and limit the scope for opportunistic behaviour. Finally they noted that double marginalisation could be dealt with by regulation.

[Cave and Doyle \(2007\)](#) appear to take little account of the very different investment horizon and complex product mix in the telecommunications industry compared to the personal computer industry, where product life cycles and consequent pay back periods on investment are a fraction of those associated with telecommunications industry and especially ~risky" investments such as fibre to the node. Nor, in view of the evidence given by Qantas on conflict over airport access in Australia, which has been marked by opportunistic behaviour by airport owners([Qantas 2006](#)), do Cave and Doyle's other example of ~complex" contracting suggest that agreement on investment can be readily achieved.

Conclusion

The threat that separation may pose to investment and the additional costs and inefficiencies it may generate are not merely theoretical, and must be considered in any proposal for FTTN. Although there is no model of full structural separation to guide the debate in Australia, it is accepted that problems engendered by functional separation do stand as a guide to the issues that may be confronted with structural separation.

As outlined, the critical issue is investment, and the experience in the United Kingdom with OpenReach suggests that separation can readily generate a “chilling” effect on investment. British Telecom is one of the few major operators that have no plans for fibre deployment in the local network, despite their commitment to core network NGN. Functional separation has heightened the investment dilemma faced by all incumbents over renewing the local loop and British Telecom’s OpenReach CEO, Steve Robertson, recently said:

“The real problem, however, is what to do about upgrading the residential broadband network. The economics simply do not work unless BT Retail and rivals such as Sky, Tiscali and TalkTalk agree to make use of the new technology and pay for it. In essence, the decision about whether to put fibre in is not just a BT decision’s. Our model says we do not take the whole value chain, we do make it available to everybody else and that means the financial case is even more demanding.” (Robertson 2007).

Telstra has clearly indicated it will not invest unless it receives a return from FTTN commensurate with the risk. Separation, which limits the benefits and returns a network operator can generate from investments such as FTTN, can act as a substantial disincentive, and it is unlikely to encourage Telstra to invest. Consequently the threat separation poses to investment must be carefully considered by the expert panel as they consider any proposal for FTTN deployment.

Endnotes

¹ The EU’s concerns about ULL unbundling were revealed in the action against Telefonica. See “Antitrust: Commission decision against Telefonica” frequently asked questions. *Europa*, 4 July 2007. Available at: http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/274&format=HTML&a_ged=0&language=EN&guiLanguage=en

² Author’s Interview with ESOT trustees Dublin, February 2008.

Attachment B

Submission to the ACCC June 2007

A Submission to the ACCC Inquiry under subsection 152AL of the *Trade Practices Act 1974* into a Possible Variation of its Service Declaration for the Unconditioned Local Loop Service

Summary

The ACCC is holding an inquiry under subsection 152AL of the *Trade Practices Act 1974* (the Act) to determine whether it should vary its service declaration for the unconditioned local loop service (ULLS). It is doing so at the behest of the so called G9 group of competitive carriers who currently depend on local loop unbundling, line sharing or wholesale line rental, i.e. physical resale of the Telstra local network to access their customers with both voice and data services and most notably xDSL high speed broadband services.

Whilst the request for sub loop unbundling might be viewed as a reasonable request by the G9, to ensure a key regulatory and technical gap is filled in their emerging plans for a fibre to the node network (FTTN), the underlying rationale for the request is to ensure that their current investment in DSLAMS, co located in Telstra exchanges is not stranded by planned network upgrading. G9 have specifically asked that current exchange based interconnection be maintained even in the era of 21st century networks.

The existing G9 investment would be stranded and rendered redundant by changes in the physical architecture of the local network and changed operating procedures that would follow, if Telstra were to proceed with its planned FTTN. It should be noted that these investments would be similarly stranded were the G9 proposal for FTTN to proceed.

Australia is not alone in grappling with the complex technical, operational and regulatory questions posed by the growing trend to push fibre closer to the end user and by the replacement of circuit switching with IP base network protocols.

At its simplest level the complementary deployment of IP based networks and fibre to the node, or optimally to the home, exposes the current regulatory regime to massive challenges and may mean the tools used to sustain market entry based on the physical resale of the local network cannot be sustained at a cost that would be in the long term interest of end users. Maintaining parallel copper and fibre based local networks, which is at the core of the G9 request, would also fail to encourage economically efficient investment and would result in a significant operational cost burden for both access providers and access seekers.

The significant problems associated with sub loop unbundling have been recognized by regulators in such markets as the United Kingdom and the Netherlands. In the UK, whilst sub loop unbundling has been mandated and offered by BT since 2001, no access

seeker has sought to use the service and the UK regulator has tacitly admitted that the complexities of interconnection in the age of 21st century networks is beyond the regulators competence and best left to industry self regulation through a especially convened industry forum. In the Netherlands, following detailed expert technical and financial advice, OPTA conceded that sub loop unbundling is not feasible in all but the most limited of cases and that it does not offer a solution to the challenge posed by KPN's network upgrading.

Other regulators, most notably the FCC and the German regulator have essentially decided that it is an issue that does not warrant detailed consideration. They have granted regulatory forbearance to the dominant telephone companies so that investment in fibre to the node and home can proceed without the delays or the massive market distortions that would flow from regulatory obligations similar to those sought by G9.

Given the changes in technology which are essential if the national telecommunications network is to meet the challenge of the 21st. century, physical interconnection, modeled on past practice is not sustainable and the ACCC should, like its overseas counterparts, consider the terms and conditions of competitive access to the 'bitstream' services that the dominant carrier will provide on IP driven, fibre optic networks. The terms for bitstream access should be considered first by an industry forum and determined by consensus, with the ACCC playing a mediating role. In the event agreement cannot be reached the ACCC should exercise its powers to determine the terms and conditions of 'bitstream' access.

One - A Changing World

"The old order changeth yielding place to new least one good custom should corrupt the world" **Tennyson Morte D'Arthur**

Technological change within the fixed telecommunications network has been a continuum over the last century . Whilst digitisation of transmission and switching has brought significant change it did not change the fundamental network architecture which allowed the physical interconnection that exploited the margins available under the traditional two part tariff. It was the congruence of gaps in the tariff of the then monopoly operator Telecom Australia and the physical availability of exchange accommodation made available by the 'compactness' of digital systems, which created both the economic argument for, and physical capability for competition based on interconnection with the Telecom local network.

This local network, i.e the copper network beyond the Main Distribution Frame , represented some 45 – 50% of the total network infrastructure investment that had been made by Telecom Australia and its predecessor the Post Master Generals Department. Consequently it represents a significant part of the value that was transferred to private investors when Telstra was privatized.

That these transient opportunities for market entry could be exploited as the basis for regulated market entry should not be understood as good reason to falsely extend physical interconnect into the age of IP defined networks that use fibre optic as the dominant local network transmission medium. Whilst the initial deployment of fibre

under an FTTN architecture might theoretically offer cross connect at the node or even at street pillars, the technical realities of such interconnection, even if the physical space were available at nodes and related pillars, suggests it would lead to service degradation and far higher costs as problems caused by cross talk etc. were handed off between access seekers and access providers. The extent of these problems still has to be revealed in the basic current copper network because ADSL deployment is at levels below which significant interference within cable sheaths might be experienced.

If the intent of the G9 proposal, and its contingent request for sub loop unbundling, is to make higher speed broadband widely then it must be acknowledged that the practical limits of xDSL deployment in a heavily loaded network are not known. The G9 request is therefore founded on the 'suck it and see' school of engineering in which the ability to deliver large numbers of xDSL services over a composite network of fibre to the node and unbundled local loop that parallels the existing exchange to the end user copper network, are simply unknown. The reality is that with the transition to the 21st century network, there will be neither MDF's nor cross connect points in the network which are economically and technically feasible to interconnect copper and fibre. There may not even be redundant space at Telstra exchanges to co locate equipment because Telstra may no longer have large exchanges.

In summary there may no longer be the technical opportunity to 'slice and dice' the Telstra network, an ability which has been at the core of the current regulatory regime.

Two – The FTTN Impasse and the G9 sub loop unbundling Request

"I am more sinned against than sinning" **Shakespeare King Lear**

As an end user whose interests are prejudiced by the current stand off between the ACCC and Telstra over FTTN, one is entitled to ask are we to take the regulator's seeming acceptance of the G9 request for sub loop unbundling seriously? Is the weight given by the ACCC to the seemingly impressive access undertaking offered by G9 and the fact that this current inquiry is in progress meant to persuade end users their interests are being best served and that this inquiry has real substance?

In summary just how seriously are we to take the G9 proposal for an alternative to the \$4 billion fibre to the node network (FTTN) that Telstra shelved in 2006?

Overseas developments, and even the most cursory consideration of how this dispute has unfolded suggest that whatever the source of the clash of cultures and or style between the national telecommunications company and the ACCC may be, the long term interests of end users stands at risk.

End users are entitled to ask whether the ACCC is merely using the G9 proposal and this contingent request for sub loop unbundling as a stalking horse for Telstra because of the failure to reach agreement on the terms and conditions on which Telstra might embark on the rehabilitation of its ageing and all too clearly deteriorating local network. There is little comfort from the present policy impasse for end users suffering repeated service outages because of failures in the copper network. Service outages are clear evidence of the need to renew conductors and insulators which are breaking down suffering from age given that the typical inner-urban copper network is 40 – 50 years old.

Despite the pressing need to rebuild this network, the deployment of fibre, initially to the node, is delayed because the ACCC appears to be subject to regulatory capture, not by the dominant telephone company which appears to have offended it, but by resale based operators who fear redundancy when the ageing copper network is replaced by fibre.

Australia is not alone in grappling with the issue of whether competition based on reselling the old copper network can be sustained when copper is replaced with fibre optics in the local network.

In the Netherlands and the United Kingdom the former monopolies KPN and British Telecom (BT) are building 21st century networks and the national regulators have effectively conceded that the regulatory model which has allowed competitors a near free ride on cannot be maintained.

The Dutch and British regulators, OPTA and Ofcom respectively, have had to confront the reality that as fibre optic cable is pushed closer to the customer, or as software defines connections rather than hard wired physical links, competition based on arbitrage of the old copper lines cannot be prolonged.

Both European markets have followed a similar regulatory path to Australia. Over the last decade they have allowed competitors to install equipment in the former monopoly's telephone exchanges and then carry voice calls and broadband internet to customers over the copper network at marginal cost.

These regulators have had to consider what happens to the competitors' investment, especially in ADSL broadband equipment, once the dominant telephone company cuts off the copper wire or sells off telephone exchanges which are no longer needed with Internet Protocol based networks.

The Dutch regulator commissioned the respected UK consultancy Analysys to consider these issues and examine whether sub loop unbundling, a critical issue that G9 has asked the ACCC to consider, offered a way to keep competitors in the market. Under sub loop unbundling the competitor would interconnect or link into the dominant phone company's copper network close to the customer, at a street cabinet or the familiar pillar rather than at the telephone exchange.

Analysys found that there was no business case for linking competitors networks in this way, a finding that echoes the UK experience. In its submissions to Ofcom British Telecom, who own and operate the UK's wired network told the regulator that competitors found it four times more costly to interconnect at the end of the street rather than at BT's exchanges and that there was no demand for such interconnection.

The ACCC must know the G9 proposal is fatally flawed. It is dependent upon interconnection which other regulators have dismissed. It is dependent, if it is to be built for \$4 billion, upon G9 having access to the street cabinets and ducts that now make up Telstra's local network, an assumption that raises a host of complex legal and technical issues. And at it's most illogical it depends upon Telstra, which still holds some 70% of the fixed telephone revenues happily transferring its revenue onto the G9 network.

What then do G9 and the ACCC hope to achieve other than a further delay in Australia getting true high speed broadband? The objective is clear. They want Telstra to maintain interconnection at the telephone exchange which is vital to the competitors' current business models even after fibre is rolled out. This request forms a key part of the inquiry into sub loop unbundling.

For Telstra it would be impossible to maintain exchange based interconnection unless it foregoes the operational savings which are at the heart of 21st century networks. In Holland, KPN will fund over 50% of the cost of its fibre roll out from disposing of assets such as telephone exchanges. Maintaining parallel fibre and copper networks would drive costs up massively even if it were technically realistic.

Reading between the lines it's clear the ACCC's issue with Telstra is not about the commercial returns Telstra is seeking from fibre investment but how the regulator can keep the competitors in the arbitrage game.

Section Three – Is the Candle Worth the Regulatory Game ?

"What is Telstra seeking to hide? A monopoly designed to beggar the competition?"
(Graham Samuels Chairman of the ACCC 15th May 2007)

In a rational society it would seem logical that a cash rich, technologically competent company such as Telstra should be encouraged to invest but with competition standing centre stage in infrastructure planning, rational policy has slipped from the agenda.

The National telecommunications network operator is either unable or disinclined to proceed with investment in the national network which it is custodian of. There now appears to be a convenient fiction that neither a national operator nor national network exists, and that policy can be framed around the myth that all elements of the telecommunications network are contestable if not replicable at an economic cost.

The ALP has vowed it will contribute \$3.7 billion of taxpayers money into a Public Private Partnership (PPP) that will tender for a national high speed broadband network and in a game of catch up the Government has announced a competitive tender for a fibre optic based network with a recommendation to be made by a panel of experts.

Neither party is interested in directly considering Telstra's \$4 billion plan for a fibre optic based network that would bring high speed broadband to a majority of Australian homes. Guided by attitudes heavily influenced by Telstra's competitors both major parties, like the ACCC, view the Telstra plan as a grab for monopoly that would return the Australian telecommunications industry back to the bad old pre competition days.

Telstra's competitors have had access to the copper network at below cost for over a decade based on the theory that by subsidizing their entry to the market, and permitting resale of the Telstra network, competitors they could create the revenues and customer base that would make it viable for them to build their own networks – the ladder of investment.

It was a policy that was totally flawed. Why would a competitor invest hundreds of millions of dollars to build their own network when they could enjoy a near free ride on Telstra's network? Also the game of resale competitors have engaged in has finite limits as the margins, especially on long distance and international calls, have been driven down by regulation, not competition. Effectively the highly attractive margins that existed when the resale game began in earnest a decade ago have been regulated away.

But rather than acknowledge resale based competition cannot continue, competition is placed before policies that would encourage investment. Given the uncritical belief that competition has driven down prices, broadened choice for consumers and stimulated innovation and investment it can be understood, at the simplest level, that the regulator would not decry policies which the Minister for Communications recently described in the following glowing terms:

“Since the Government's telecommunication reforms of 1997, there are now 167 providers vigorously competing on the telecommunications field.

And there can be no argument that consumers have been the major beneficiary of competition reforms. Fixed line prices have fallen by 18.9 per cent and mobile service prices have fallen by a whopping 36 per cent. In fact, since 1997, the overall average price of telecommunications services has fallen by 26.2 per cent.”

(Helen Coonan speech to CEDA 6 June 2007)

Despite the Minister's unwavering faith, even the most cursory examination suggests that what limited gains there have been cannot be ascribed to competition. The host of companies battling competitively for the consumer dollar is a myth. A quick glance in the yellow pages typically reveals that only four or only five companies, including Telstra, offering fixed line phone services directly to consumers. Untangle their complex and seemingly competitive offers and there is little difference between them. End users pay the same for telephone service no matter which company they choose.

And it might be asked has this really been a David versus Goliath battle, with small competitive telephone companies driving down Telstra's monopolistic prices? Scarcely - prices have fallen consistently because of price cap regulation rather than competition and Telstra's competitors have been price takers rather than market leaders who have been content to sit as any oligopoly under the umbrella of Telstra's regulated prices.

Under price cap regulation Telstra has been obliged to reduce the price of phone calls in real terms over the last fifteen years. These price reductions are governed by a formula which requires Telstra to adjust its prices by the annual movement in the Consumer Price Index (CPI), minus an 'x' factor that measures changes in productivity. In an era of low inflation the 'x' factor has consistently outweighed the CPI increase and Telstra's prices have fallen in real terms.

Indeed over the last decade the 'x' factor, or productivity gain has exceeded 40%, which is hardly surprisingly in an industry dominated by rapidly changing technologies that continue to yield ever increasing economies of scale and scope.

Had all those productivity gains been passed directly to consumers, rather than laundered through resale based competition, Australia would have maintained its early 1990's place amongst developed economies as a country with low telecommunications prices. But such has been the belief in competition that ideology has triumphed over economics despite the natural monopoly characteristics of the industry and the current inquiry suggests ideology rather than engineering economics continues to drive policy.

The diseconomies induced by competition have been masked by continued technological gain and the real cost have been hidden by price cap regulation which has offered some relief to end users.

It is now time to objectively assess whether resale based competition dependent upon exchange base interconnection has yielded real benefits. A growing academic literature suggests it has not and that policies such as local loop unbundling have acted as a disincentive to investment by both access seekers and access providers. Given this growing criticism of the effectiveness of local loop unbundling it would be unwise to proceed with further 'refinement' of the unbundling rules merely in an attempt to prop up a competitive regime that has reached to end of its technological life cycle.

Whilst it may be difficult to accept, the engineering economies of local network fibre deployment put the natural monopoly characteristics of the network beyond doubt and it would be better to frame policy within this reality rather than attempt to sustain regulated access through physical interconnect whether at the exchange, node or street pillar. Similarly it would be more constructive to acknowledge that Telstra is the national network operator and is best placed, under appropriate regulation, to build 21st century networks without the distraction of sustaining resale based competition which has not been in the interests of end users.