A submission on the Senate Select Committee on a National Broadband Network

September 2008

Kevin Morgan Independent Consultant

Part One – Overview of Issues

Despite the wide ranging nature of the committee's terms of reference, which in part seek to reopen old policy debates such as the Opel funding decision, the Senate's current inquiry is welcome as it introduces some rationality into the increasingly ill informed discussion about Australia's digital future. In the 'preamble' to the inquiry's terms of reference some much needed context is given to the debate about a National Broadband Network (NBN) in that it is noted that the government's current $4.7 billion tender is a:

> "*proposal to partner with the private sector to upgrade parts of the* ***existing network*** *to fibre*…."(my emphasis)

The inquiry is also seeking advice on

> *"the cost estimates on which the Government has based its policy settings for a NBN, how those cost estimates were derived, and whether they are robust and comprehensive."*

Both this context and this specific element of the inquiry's terms of reference offer a rare and much needed reality check on the intent and scope of the government's plans and set parameters on the issues which ought be properly considered in the debate about the use of public funds to subsidize an upgrade of the national telecommunications infrastructure which is largely owned by Telstra.

The context which the Inquiry offers for consideration of the planned NBN provides reinforces the view that the debate is not about the government funding or even part funding a new stand alone national fibre based broadband network. This is despite the assertions made in a number of submissions both to this inquiry and to the expert broadband group on the regulatory settings for a National Broadband Network (NBN). The debate is about the optimal way in which to fund the upgrade of the national telecommunications infrastructure which was privatised over the last decade.. Specifically it is about whether or not the offer of a subsidy, derived from Telstra's 2005 estimates (i) of the capital costs of extending its urban fibre to the node network (FTTN)

(i) See Telstra *The National Digital Compact & National Broadband Plan* August 11 2005 which identified the subsidy for 12Mbit/s FTTN broadband to 94% of rural premises to be $4.7 bilion with the caveat it excludes operating expenditure associated with upgrade and customer revenue contributions.

into non commercial areas i.e. rural areas, offers value for money, or whether support for a nation wide network upgrade by the national telecommunications operator could be offered through other means such as regulatory reform.

The debate can only be conducted constructively and the merits of the current tender can only be gauged if a number of threshold issues and the origins of the FTTN proposal are acknowledged. In summary these are:

- The national telecommunications infrastructure is largely owned by Telstra.
- Telstra now finds itself in the unique position as an incumbent of being required to tender for the right to invest in its own network.
- Proposals for FTTN were initially generated by Telstra as part of a planned upgrade of its network reflecting the international trend toward fibre base upgrades of the local network by peer operators.
- Due to rigidities in the current regulatory framework Telstra failed to reach agreement with the regulator on its planned urban FTTN rollout.
- The government's ill conceived competitive tender for NBN was offered from opposition as a circuit breaker to the regulatory impasse over FTTN that had emerged in 2006/2007.
- The subsidy on offer reflects an estimate of the incremental cost of upgrading the existing network to broadband competent FTTN in non commercial areas, not the stand alone cost of building this element of the network.
- The technological and economic realities of any local network fibre deployment will foreclose the current arbitrage based 'competition' of the copper network and demand significant regulatory reform.

Despite these realities
and the issues the debate ought focus on such as regulatory reform to enable fibre rollout, several parties and most notably the Optus lead Terria group and the Competitive Carriers Coalition have sought to inflate the government's poorly thought out offer of subsidy into a "once in a lifetime' opportunity to redraw the structure of the Australian telecommunications industry. They have argued that:

> "*Australia is dealing with a new network with ownership arrangements that are not yet in place, but which the Government has acted to bring into being*.

This is a massive distortion of what the government's tender realistically implies or could make possible. An FTTN rollout at a price the community can afford and within a timeframe that would meet Australia's pressing need for 21st century broadband service can only be delivered by the incumbent Telstra and as noted the amount of subsidy on offer can only be understood within the context of a national network upgrade by Telstra.

The casual observer might be excused for confusion and misunderstanding about the government's intent but those within the industry who have detailed knowledge of the costs, technical complexity and sheer scale of a national FTTN rollout would readily understand only an incumbent operator could undertake the task.

Nevertheless Telstra's competitors have engaged in a long running charade that they are competent and indeed wholly committed to building a national FTTN network and that the subsidy on offer would be sufficient for them to leverage the finance needed to embark on a project which on a stand alone basis, i.e. without Telstra's participation could readily cost between $20 - $30 billion. Such massive but as yet not firmly identified costs of a stand alone rollout would appear to be well beyond the financial resources of Telstra's competitors who readily acknowledge they have Earnings Before Interest Tax Amortisation and Depreciation (EBITDA) which are a fraction of Telstra's (See the Optus submission on regulatory matters to the Expert Group). Realistically, given the current state of financial markets no Australian telecommunications company could raise the finance for an FTTN investment without Telstra's involvement despite arguments that a stand alone, structurally separated network operator would enjoy utility like access to lower cost capital and higher levels of gearing.

But it is not merely questions of finance that call into question the merits of any proposal for an FFTN network other than that offered by Telstra. All FTTN proposals by companies other than Telstra are predicated on access and use of assets which they do not own. Bids other than Telstra's must have access to Telstra's copper sub loop and if the network is to be built at reasonable cost to much of the Customer Access Network between the exchange and the street pillar i.e. Telstra's existing ducts, cable pits etc. Telstra has signaled, as might be expected, that it will resist any attempt to 'requisition' these assets for use by any other operator or consortium.

Nor is it, as Terria have suggested, a simple matter of merely regulating for what they deem to be open access (effectively sharing) of such assets because the technical realities and economics of FTTN demands co option of the assets, not sharing. Despite arguments that both copper and fibre (FTTN) could co exist to deliver parallel services the economics of sub loop unbundling and questions of physical capacity in existing ducts etc means that FTTN will displace copper. This fact is recognized by Telstra's competitors who are acutely aware of the monopoly implications of FTTN. It was after all their concerns about the foreclosure of copper based arbitrage that lead Optus to commission the initial FANOC proposal on behalf of the then G9 group which argued that they rather than Telstra could build an FTTN network.

But even if the government were able to pass regulation giving a competitive FTTN rollout access to these assets and meet an inevitable and massive compensation bill from Telstra's shareholders, other realities would intrude. FTTN is a network upgrade being undertaken on a 'live' network that is carrying traffic. The cut over of customers from copper to FTTN with minimal service disruption will require Telstra's full co operation and resources and access to and understandings of the network which only Telstra hold. And of course notwithstanding all these financial, technical and logistical obstacles to a rollout of FTTN by an operator other than by Telstra there is the simple commercial reality. Telstra holds some 70% of the customer base and would not readily agree to transferring those customers and their revenues from its own network.

In summary the notion that any company other than Telstra can build a national FTTN network remains a fiction. FTTN is not, as Telstra's competitors have suggested, some step function in the development of the Australian telecommunications industry that demands ownership, regulation and structural changes. It is a logical upgrade of the national telecommunications network owned by Telstra that requires regulatory support to sustain investment and requires acceptance that the current copper based arbitrage regime will be an inevitable victim of technological change. .

Nevertheless Telstra's competitors have pursued this fiction and encouraged misunderstandings about the regulatory/structural settings needed to offset what they deem to be the unacceptable consequences of Telstra investing in FTTN. Foremost amongst these misunderstandings is the suggestion that structural separation of wholesale network provision and downstream retailing of services is an essential precondition for FTTN deployment. This enthusiasm for structural separation has nothing to do with enabling FTTN rollout and everything to do with protecting the current arbitrage regime because if separation becomes a precondition for FTTN rollout Telstra, the only company competent to build the network, will withdraw and copper based arbitrage will remain the dominant model for competitive broadband delivery.

Nevertheless the Competitive Carriers Coalition have argued:

> *'In the face of the experience of the conduct of the integrated Telstra and its overseas peers and the near universal support for structural separation, the onus must be on Telstra and its supporters to demonstrate why separation should not be pursued."*

This reverses the onus of proof on structural separation which has guided consideration of the issue in such forums as the OCED and within the European Commission during its recent regulatory review. Both the OECD and the EU maintain that the costs of separation are likely to outweigh the gains and they maintain that the onus remains on proponents of separation to prove that it will yield benefits. Secondly and perhaps more significantly despite the CCC's claims there is no universal support for structural separation and calls within Australia by Telstra's competitors for separation do not reflect the international consensus that its costs will outweigh gains particularly given separation's implications for investment. Despite the at best confused understandings of separation that Terria and the Competitive Carriers Coalition have engaged in, the simple reality is that no major market has implemented structural separation and no regulator policy maker, incumbent is considering structural separation.

Certainly there has been some tinkering around the edges with so called functional separation in the UK and now New Zealand and its possible deployment within the EU following the late 2007 regulatory statement, but as the Competitive Carriers Coalition agree such moves have no relevance to the current Australian scene:

> *"The bottleneck elements of a deep fibre access network will vary widely under different network architectures, but all make access to copper at the local exchange obsolete. The models of functional separation implemented in the UK and New Zealand are therefore no longer relevant in the Australian context.*

This insight into the irrelevance of functional separation did not preclude Optus and its fellow Terria members ,some of whom are also members of the Competitive Carriers Coalition, from expending considerable energy on explaining its benefits in submissions on regulation to the expert group.

Indeed structural separation or separation of any form has become the rallying cry of Telstra's competitors and it is the single issue that could readily derail and postpone indefinitely the provision of a national fibre based network competent to offer true high speed broadband. Given the dominance of this issue in the current debate the remainder of this submission focuses on the implications and actual experience with separation.

Part Two – Structural Separation

Introduction The past four years have seen renewed interest in the role that structural remedies could play in shaping telecommunications markets. In the United Kingdom the threatened structural separation of British Telecom (BT) formed the starting point for a lengthy review by the regulator Ofcom which culminated in agreement on the implementation of the lesser remedy of functional separation. Similarly the European Union's 2006 review initially focused on structural separation as an answer to alleged anti competitive behavior by incumbents but finally opted for the UK model of functional separation. Yet despite the rejection of structural separation in these markets it has emerged as a key issue in the planned National Broadband Network (NBN). Proponents of structural separation suggest that it would not only enhance value to consumers through heightened competition, it would increase shareholder value in incumbents as network assets are revalued and other divisions are spun off. Such confidence in Australia in the ability of structural separation to generate value appears to deny the practical experience internationally and ignores the growing body of literature which calls for regulatory reform to enable broadband rollout based on less prescriptive ex ante regulation.

Separation and NBN In March 2008, as part of the process underpinning its $4.7 billion tender for a National Broadband Network, the government sought submissions on the regulatory settings needed for a rollout of a fibre to the node broadband network competent to deliver 12 Mbit/s broadband. Over eighty submissions were received and the overwhelming consensus in the submissions was that structural separation, the separation of network wholesale operations from the retailing of services was an essential condition for rolling out the network. These submissions argued that structural separation would encourage further competition in the delivery of broadband to the benefit of consumers and was absolutely essential if the incumbent Telstra won the tender.

The arguments for separation were offered in the context of the tender requirement that:

> *" If a Proponent proposes to supply both wholesale and retail services it should demonstrate what structural measures or models it proposes be put in place and maintained to prevent inappropriate self-preferential treatment and ensure that effective open access is achieved'*

Structural separation which theoretically removes any incentive for a network operator to discriminate against downstream rivals was the obvious prescription for Telstra's competitors to ensure there was "no self preferential treatment", with Optus headlining its submission on regulatory change:

> "*Separation to end Telstra Tyranny*".

On releasing its submission Optus claimed separation would end sixteen years of:

> *"fear, uncertainty and delay"*

Optus went further noting that competition had largely been a failure despite regulatory measures designed to lessen Telstra's dominance. Optus argued:

> " *We have a once in a generation opportunity to get the regulatory settings right to encourage a vibrant and competitive broadband market" through structural separation*.

Given such hyperbole and that the majority of arguments in support of applying structural remedies came from Telstra's competitors these arguments might be dismissed as self serving but the support gathered by Optus and the Competitive Carriers Coalition principally from Dr

Chris Doyle one of the UKs' leading academic commentators on regulation means these arguments cannot be summarily dismissed.

In addition suggestions that structural separation may enhance the value of incumbent operators such as Telstra have given weight to the possible use of separation on a voluntary rather than mandated measure and this has further heightened recent interest in structural separation.

In the context of the current debate these arguments for voluntary separation have significance as they underpin the concept that a separated wholesale only FTTN company would enjoy utility status and consequently be able to access lower cost debt and have lower overall costs because of higher gearing than a vertically integrated operator such as Telstra. The argument that Telstra is seeking inflated returns from FTTN and that competitors could and would secure lower costs of capital for the project is a recurrent theme in arguments for a non Telstra FTTN network with Optus commissioning expert economic analysis that Telstra's costs of capital would be 2% above those of a competitive network operator. In that analysis no evidence was offered to sustain critical assumptions about the relative costs of capital of Telstra and its competitors and it amounted to little more than a typical economic model in which the findings were utterly dependent upon the assumptions that were made.

Suggestions that voluntary separation could increase the value of incumbents was lead in late 2006 by former leading US investment house Bear Stearns who argued separation of the network assets of European incumbents from their retail arms could realize some US $200 billion for shareholders . The suggestion that separation could unlock shareholder value was echoed in Australia by Morgan Stanley who suggested Telstra'' value could increase by 15% with separation. But neither the academic argument in favour of separation, nor the financial argument are sustainable.

This observation is borne out by realities in the marketplace where structural separation has found no support internationally. Indeed notwithstanding the weight of opinion within Australia in favour of structural separation it has been rejected by British and European regulators in recent inquires. The UK regulator Ofcom and the European Union Commission found that structural separation was a disproportionate remedy to alleged anti competitive conduct by incumbents. Both have opted for the lesser remedy of functional separation. Similarly despite arguments that separation would enhance shareholder value and create utility type network companies focused on Next Generation and fibre rollouts, only the Irish incumbent eircom has seriously considered voluntary separation. Despite the claimed benefits from voluntary separation *eircom* shelved its plans for separation in April 2008 stating that the difficulties in financial markets made separation impractical. This claim by *eircom's* owners would seem to mask a web of complex financial and regulatory issues that made the simple promise of voluntary separation extremely complex in practice.

The paper considers the merits of recent arguments for separation in Australia against the international experience and opinion. It also considers the case study of *eircom* to highlight that whilst voluntary separation may deliver short term gains to shareholders it may have perverse outcomes especially in terms of investment in Next Generation Networks (NGN) and fibre deployment and damage the longer term prospects not merely of the incumbent but the national telecommunications industry at large.

The Relevance of Structural Remedies

Whether or not structural separation can add value to the NBN equation is perhaps best determined by its ability to promote the "long term interest of end users" the critical test under the Trade Practices Act. This is determined with 'regard' to

- The promotion of competition in markets for listed services",
- Promotion of any-to-any connectivity; and
- encouraging economically efficient use of, and investment in, the infrastructure by which listed services are supplied

The attraction of structural separation to those who made pro separation NBN submissions is at first glance obvious as it could be argued separation would satisfy the dominant objectives of promoting competition and encouraging the economically efficient use of (existing) infrastructure. Nevertheless it may fail the test of encouraging investment and it is arguable that unless there is investment, the long term interests of end users cannot be realized.

In summary the value of structural separation turns upon whether it will provide the incentives for investment and specifically within the NBN context investment in fibre to the node. It is questionable whether it can and not merely because Telstra has said it won't invest in NBN if structural separation is the price for the $4.7 billion subsidy but because a growing body of opinion suggests separation in any form can and will deter investment by incumbents.

What Form of Separation is Being Sought ? No investment in FTTN may be the outcome Telstra's competitors are seeking especially given that they seem confused about quite what form of separation they are calling for with the weight of submissions actually focusing on functional rather than structural separation. Functional separation would seem to have little merit if the objective is to enable FTTN investment as expert opinion by Dr Chris Doyle appended to the Optus submission notes. As outlined functional separation was also recently deemed to be irrelevant in the current debate by the Competitive Carriers Coalition . Nevertheless many of the submissions on the regulatory settings for NBN, which are reflected in submissions to this inquiry , move seamlessly from calls for structural separation to arguments about the effectiveness of functional separation with some submissions completely confusing the two concepts. In its submission to the expert group the Communications Expert Group from Western Australia said:

> *"It is strongly recommended that legislation be introduced to structurally separate the infrastructure and retail divisions of Telstra, with existing Telstra Shareholders having shares in both companies".*

Later the submission notes

> *"The community at large, especially in Western Australia have recognised the weaknesses of the current legislation and strongly support a change to a regulatory environment that supports Functional Separation."*

This confusion mirrors the wider misunderstanding amongst industry commentators about the policies that have been pursued in other markets with, for example, Paul Budde lauding the superior performance of British Telecom's supposedly separate companies in a recent report which stated that :

> *"The commercial success of BT since it underwent this process is proof that component companies can generate more value separately than they would if retained under the umbrella of the parent company."*

BT still operates as a vertically integrated company and Openreach is merely a division within that company with accounts and performance consolidated at a company level.

This lack of precision in the Australian debate about separation reflects the European debate where in 2006 the newly appointed European Union Commissioner for Media and The Information Society, Vivianne Redding used structural separation as shorthand that embraced the full range of structural options that could be used to address anti competitive behaviour by incumbents. . These options, identified by UK academic Martin Cave as “Six Degrees of Separation”, range from commonly applied accounting separation, through functional and operational separation to the most extreme option, structural separation with divestiture.

Despite the significantly different implications of each, especially for investment in NGN and fibre based broadband, Vivianne Redding seemed to have ignored the nuances and seized upon the extreme end of the scale when she opened the 2006 European regulatory review by calling for *'a European way of structural separation'.* (Redding 2006). Ms Redding argued that just as the break up of AT&T had lead to heightened competition in the United States, which she believed had led to robust broadband competition, structural separation could heighten broadband competition and penetration in Europe.

That understanding denied that broadband competition in the United States owed more to inter platform competition and asymmetric regulation between cable and telecommunications companies rather than any earlier measures that had opened up the telephone network to competition. It also denied the fact that the US had moved away from the extensive ex ante regulation embodied in the 1996 Telecommunications Act to regulatory holidays which leveled the playing field between cable operators and telephone companies so that incumbent operators had the incentives needed to rollout fibre enabled broadband services. The confusion that followed Ms Redding’s initial remarks only ended when the EU Commission recommended the introduction of functional separation “*at the national regulators discretion*” and stressed :

> *“Although operationally separate business entities are created, overall ownership remains unchanged; functional separation is therefore an instrument that needs to be distinguished from structural separation which is currently being introduced in the energy sector “*

What is particularly significant about this European debate is that the industry at large, including incumbents, equipment manufacturers, national regulators and even competitors expended considerable energy in winding back what they saw as the Commissioner's misplaced enthusiasm for structural separation.   During the inquiry even the Commissioner's own expert staff commented:

> *The general view, as confirmed by two OECD reports, is that complete structural separation is rarely justified in the communications sector. Overall, the costs of structural separation appear to be greater than the expected benefits………. Other disadvantages concern the adequate level of investment in network infrastructure when providers do not receive the revenues and consequent incentives that flow from vertical integration. Experience in other sectors (e.g. railways) has shown the problems of co-ordinating investment when infrastructure and services are separated. This problem is more acute in the communications industry, where technological change is rapid and where investment demands are pressing….. It is not clear that it will lead to more investment, because it denies the infrastructure owner the revenue streams that are available to a vertically integrated operator. In addition it implies never-ending regulation of the infrastructure provider.*

These concerns about the impact of separation on investment were similar to those voiced in Ofcom's earlier inquiry in 2005 where a broad consensus had emerged that the costs of structural separation would outweigh any gains with even Ofcom noting:

> *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."*

It would seem though that in their enthusiasm, those arguing for separation in Australia have ignored the real outcomes in the UK and Europe. For them it has been sufficient that leading international regulators had reignited a debate about structural separation for Australian commentators to believe that any form of separation has merit irrespective of the findings on the merits of separation which have been delivered internationally.

Separation – a Hollow Argument As noted it would seem that many who made submissions to the expert group failed to make any distinction between functional and structural separation and deem the two concepts to be little different in practice or impacts. A casual observer could perhaps be excused for confusing the two concepts given that both have at their core the quarantining of wholesale network operation from downstream retail activities. But given the significant differences between the two especially in terms of the even more damaging impact structural separation would have on network investment and co ordination there can be little excuse for careless use of the term separation in the current debate. The weight of economic literature over many years (Coase 1934; Lafontaine and Slade 2007) remains that a vertically integrated firm has greater incentives to invest and lower transaction costs than two separate upstream and downstream companies or even operationally separate divisions within one company and that vertical integration is efficient and in the consumers interests. . In their exhaustive 2007 study of the economics of vertical integration Lafontaine and Slade found the following:

> *"..we did not have a particular conclusion in mind when we began to collect the evidence, and we have tried to be fair in presenting the empirical regularities. We are therefore somewhat surprised at what the weight of evidence is telling us. It says that, under most circumstances, profit-maximising vertical integration decisions are efficient, not just from the firms' but also from the consumers' point of view. Although there are isolated studies that contradict this claim, the vast majority support it."*

Despite the growing body of literature which expresses concerns about the impact of separation on investment, and the empirical evidence recently offered by Lafontaine and Slade from Warwick University , proponents of separation argue that the benefits of vertical integration are overstated and any inefficiencies in investment co-ordination can be ameliorated by long term contracts between the separate network company and retailers.(Cave and Doyle 2007; Doyle 2008) This confidence in contracting and claims that the benefits of integration are exaggerated were a recurrent theme in many of the submissions to the expert group.

Yet despite such assertions the confidence in the ability of contracting to ensure investment following separation does not come from experience within the telecommunications industry because quite simply there is no model for vertical separation in the sector. Instead the belief comes from other sectors such as the manufacture of personal computers where for example chip manufacturers contract with PC manufacturers, or the airline industry where airline ownership is separated from the ownership of airports (see Cave and Doyle 2007 in a paper prepared for *eircom*). Neither model is particularly relevant to the telecommunications industry because of the commoditized nature of PC manufacturing where there are a number of competitive chip and motherboard manufacturers whilst the airline industry, especially in Australia, has been marked by the opportunistic behavior contracting is supposed to prevent.

Nor more significantly perhaps are the underpinnings of arguments on the merits of separation and the role contracting might play to offset any expected inefficiencies particularly compelling. These underpinnings lie in large part in the work of in the work of US economist Prof. J. Gomez- Ibanez. The paper offered in support of the Optus submission from Dr Chris Doyle of Warwick University draws upon Gomez-Ibanez highly influential "*Regulating Infrastructure: Monopoly, Contracts and Discretion*," (2003) to support his assertion that the benefits of separation will outweigh the costs.

Gomez-Ibanez has suggested that contracting in various forms could take the place of regulation in a range of industries and argued there are net gains from the structural separation of vertically integrated telecommunications companies. Doyle noted Gomez- Ibanez had undertaken an extensive review of regulated infrastructure industries and that Gomez Ibanez had found that;

> *"the net benefits of separation in telecoms are positive, and higher than in any other 'mass market' sector he considers, despite the presence of some interdependence of network elements."*

This view underpinned Dr Doyle's paper for Optus and it forms a cornerstone for views put both by Optus and the Competitive Carriers Coalition on the benefits of separation.

Certainly Gomez Ibanez review of utility industries was extensive, but little of the 400 page work which Doyle and others draw upon is concerned with an analysis of the telecommunications sector (see , pp. 326-339 of Gomez- Ibanez). Much of his analysis was devoted to deregulation of transport and electricity rather than telecommunications. Indeed much of Gomez Ibanez argument in favour of separation turns on an analysis in one table (at page 328) which compares the benefits and costs of unbundling across selected industries. Gomez Ibanez finds that the benefits of unbundling in telecommunications are high and would be higher than in a number of other utility industries where unbundling has already occurred. It is a somewhat subjective if not curious finding given that he suggests that the percentage of bottleneck facilities in telecommunications represents 40-50% of costs compared to only 5- 10% in electricity and that overall the costs of telecommunications unbundling are “low” compared to his findings of the costs of separation in the water industry where he deemed the cost to be “moderate”.

At best Gomez Ibanez findings may be understood in the context of a backward looking analysis that draws upon the economic characteristics of the earlier analogue era when AT&T was broken up. This is suggested by his finding that product heterogeneity and network interdependence in the telecommunications industry are only moderate. This may have been true of analogue copper based transmission when voice was the dominant product and data was typically offered on overlay networks, but it is not true of the digital age and especially fibre base NGN. As networks evolve toward NGN multiple services are carried on a common bitstream displacing discrete legacy network overlays.

Nevertheless despite the lack of any apparent in depth consideration by Prof. Gomez Ibanez of the merits of separation in the age of fibre and NGN his work has been influential in framing other contributions to the Australian debate (CEG 2008 ; Williams and Davis 2008), although Williams and Davis, unlike Doyle and CEG in a paper prepared for Optus, do note Gomez Ibanez caveat that separation may have some impact of investment co-ordination.

An Exhausted Premise? The significance and influence of Prof Gomez Ibanez work cannot be ignored yet it rests on a premise rejected by many in the telecommunications industry such as British Telecom in 2005 and many researchers (Ergas 2007; Waverman 2008) that the telecommunications industry is not comparable with other utility industries which have undergone separation. Waverman, argues:

> *While we approve of regulatory flexibility, we still think that public policy should not consciously strive for a “utility model” of any sort in the telecommunications sector. Unlike the electric and gas sectors, telecommunications is characterised by rapid technological evolution.*

The objections to separation may though be more fundamental than the misapplication of utility industry models to the telecommunications industry and may lie in the fact that separation ignores the increasing economies, not only of scale, but of scope that come with fibre and NGN deployment. The introduction of abundant transmission capacity with services carried on an underlying bitstream implies a lowering of marginal costs compared to copper based analogue networks lending weight to the observation that :

> "*in the absence of (substantial) dynamic efficiency gains the net effect of vertical separation and horizontal competition is never welfare enhancing….. vertical separation only introduces extra layers of (possibly imperfect) competition. The policy implications are, only resort to separation and liberalization when potential efficiency gains are substantial which is typically impossible when marginal costs are relatively low to begin with*.'

Jan University of Amsterdam March 2007

In effect separation may distort competition and reduce welfare. This observation is backed by practical observations from within the industry with leading UK telecommunications consultancy Ovum stating:

> "*"Economic analysis has also demonstrated that, in theory at least, an integrated operator model is the most efficient approach to serving the public (that is generating the greatest economic welfare)*

.**International Consultancy Ovum Dec 2006**

Given this weight of opinion it must be asked quite why are Telstra' competitors so wedded to the concept of separation?

Separation Adding Value or Protecting the status Quo? Although the government sought submissions on the regulatory settings needed for an NBN rollout it would seem most submissions were designed to reinforce the status quo and preserve arbitrage of the existing copper network. Despite repeated claims that separation is being enacted in a number of markets the reality remains that only one market the UK has gone beyond the so called soft separation options of accounting or operational separation. Consequently many of the submissions on NBN regulation draw heavily upon this UK experience with functional separation and also point to its deployment in the New Zealand market and the EU recommendation that functional separation should be considered by national regulators.

Functional separation, as it is now commonly understood, is based upon the Loopco model (Cave) and the focus of separation is therefore the local network beyond the main distribution frame which consists of copper pairs to the end user. As such functional separation has the obvious intent of facilitating access to the local loop by ensuring that the scope for non price as well as price discrimination is removed when an incumbent is required to unbundle the local loop .

Following the lead set in the United States where the 1996 Telecommunications Act made unbundling of the incumbents network mandatory, access to discrete elements of the local network, including the unconditioned copper pair (the unbundled loop), has become the international regulatory norm.. EU legislation in 1998 obliged incumbents to unbundle their networks. Following widespread application of EU law competitors can now lease unconditioned local copper pairs, generally at cost based prices and then through co location rights, deploy the necessary equipment in the incumbents' exchanges to deliver competitive DSL delivered broadband. Similarly the 1997 legislation in Australia set the preconditions for unbundling especially with the enactment of the access regime under the Trade Practices Act.

But despite regulation which had been designed to facilitate unbundling, when Ofcom began its strategic review of the UK market in 2003 two problems were identified. It was found that BT still dominated the market and that existing *ex ante* regulation could not rectify this dominance nor, in the age of unbundling, address problems caused by BT's control of the local loop. In the course of the review Ofcom concluded that BT had the incentives and potential to discriminate and evidence gathered by Ofcom suggested BT had acted anti competitively.

To resolve the problems identified by Ofcom BT accepted a series of voluntary but legally binding undertakings to provide 'Equivalence of Inputs' and create a functionally separated local network access division now known as OpenReach . The success of separation was subsequently measured by Ofcom almost solely in terms of its impact on the provision of ULL which accelerated rapidly following the creation of Openreach growing from a mere 150000 lines in 2003 to over 3 million by 2007. Ofcom also pointed to investment by competitors in

DSLAMS and backhaul as proof of separation's success although Ofcom did note subsequently it could have a chilling effect on investment by the incumbent.

Unbundling and Separation The intent in functional separation is obvious. It has been designed to drive unbundling and competitive broadband deployment (Ofcom). Similarly in Europe concerns about low rates of broadband take up and the absence in may EU countries of inter platform competition also lead to concerns about slow rates of unbundling which it was believed could be increased by functional separation.

Consequently given that functional separation, predicated on a 'Loopco' demarcation, is designed to reinforce ex ante regulation of broadband deployment on copper it has little relevance to the rollout of fibre in the local network in Australia. But clearly it is has great relevance in maintaining the current arbitrage regime under which competitors supply xDSL broadband over Telstra's copper loop. Fears that FTTN deployment would foreclose copper based competition or in reality arbitrage emerged shortly after Telstra first outlined its FTTN plans with the ACCC and Optus (ACCC 2006:Allen Consulting 2006) both expressing concerns about the impact of FTTN on existing exchange based xDSL broadband. The Allen paper prepared on behalf of the then G9, now Terria group, went further to argue if the price of FTTN was the loss of current competition then it was not worth it - competition was more important than investment.

The intent of defending existing DSL based competition was highlighted in a number of submissions to the expert group by calls for the NBN rollout to start in underserved areas currently without broadband i.e. rural areas (see the Optus submission). Given the risky nature of FTTN investment and the need to secure revenue from high value customers currently using broadband,. a rollout in underserved, high cost low revenue areas first would destroy the business case for FTTN . The 'underserved first' rollout is merely a proposal designed to protect competitive DSLAM investment in high revenue low cost urban areas. Similarly calls by Primus for up to five years notice to be given before FTTN is installed in an exchange area with competitive DSLAMs, and for compensation to be paid to competitors' stranded investment, undermines the FTTN business case as it would delay its rollout in urban areas for five years.

Economic theory and the simple reality that structural separation has not been adopted in any market suggests it can add no value to the rollout of fibre enabled broadband in Australia.

Similarly weaknesses in the much vaunted argument that a utility like wholesale network operator could build and operate a national network at lower cost than a vertically integrated operator have been exposed by the demise of plans for separation advanced by the Babcock and Brown owned *eircom*. *eircom's* plans for separation are considered below.

Is There a Financial Case for Voluntary Separation ? The experience in Ireland where eircom's owners Babcock and Brown argued for structural separation as a unique 'utility' model for the provision of network infrastructure, offers a cautionary tale on the complexities and little acknowledged disadvantages of structural separation. Although Babcock Capital Management (BCM) embarked on separation as a voluntary measure they still required highly favourable regulatory conditions. Despite this need for regulatory support the Irish regulator Comreg had marked reservations about the proposal particularly in terms of its impact on wholesale pricing and the consequent impact on retail prices. The regulator also signaled that it would not accept either an increased allowance for the cost of capital which BCM needed or the revaluation of network assets which was essential to the success of separation.

Although a number of submissions on regulatory settings for NBN to the expert group suggested that the *eircom* separation was still being pursued it was abandoned in April 2008 because of the complexity of the task and BCM's recognition that even if they won agreement for separation it would have been a lengthy process that would not align with their investment horizon.

Voluntary Separation and the *eircom* experience In 2006 a then leading US investment bank Bear Stearns suggested that voluntary separation could unlock US$200 billion plus in value for shareholders in the major European incumbent operators a view that was supported in Australia by Morgan Stanley who said Telstra's value could increase by 15% from separation. In summary the argument was based on a simple proposition that the sum of the parts, i.e network, retail, mobiles, directories etc was greater than the value of the whole integrated company.

The argument for voluntary separation was recently outlined in the Telecommunications Journal of Australia by David Havyaat who argued separation was is in the interests of incumbent telcos, but that they were unable to see the value of separation for several reasons. Havyatt suggested that bounded rationality, agency problems and strategic misunderstandings meant incumbents could not see the benefits of separation in terms of investment i.e lower costs of capital, international growth (prospects), better understandings of technology (the use of more relevant technology) as well as regulatory relief.

Only one incumbent has ventured down the path toward voluntary separation, *eircom* the Irish incumbent. Defying Havyatt's belief that incumbent's could not see beyond the dominant paradigm of operating as a vertically integrated company *eircom's* owners and managers Babcock Capital Management, (BCM) sought to unlock value in the company through separation by pre empting changes to European regulation which they believed would lead to forced separation. As outlined this was a massive misreading of what the EU was actually considering. .

After pursuing separation for over two years, BCM shelved their plans for separation iIn April 2008 claiming that the "capital markets were against" them and that functional separation offered a better model to accommodate a changing regulatory and competitive environment. *eircom's* journey toward and retreat from voluntary separation is significant because it underlines the complexity of separation even at a time of the incumbents choosing. It also highlights the significance of regulatory commitment and ready support from financial markets to the success of separation. In the Irish experience it is obvious financial markets viewed separation as risky and unlikely to yield the longer term benefits of lower costs of capital and less regulation.

Although the eircom proposal was presented as a model for regulatory change through separation it may have been that BCM had a more self interested agenda and were engaged in little more than a classic private equity play with separation being offered as a rationalization for large scale divestiture of assets that would have yielded BCM a significant windfall gain.

The Background to Separation Brown Capital Management (BCM) acquired a majority stake in *eircom*, the incumbent Irish national telecommunications company in August 2006. Together with related parties they control 65% of the company and following their acquisition the company was de-listed in June 2006.

Discussions with the regulator Comreg about separation opened in early 2006 when BCM held only a 12% stake. As part of those discussion BCM commissioned a paper from Charles River

Associates (CRA) in an attempt to answer concerns about the costs and complexities of separation which had been raised by the regulator.

Those concerns focused on the long standing criticisms of separation i.e. higher costs for consumers because of double marginalization and problems with investment incentives and coordination . It was such concerns that had lead the OCED to reject structural separation in the telecommunications sector in 2003 despite earlier OCED recommendations for separation in the utility industries and they were concerns commonly expressed during the UK and EU reviews..

Yet despite the weight of opinion that had emerged on the costs and adverse impacts separation might have the CRA paper argued there would be net benefits from separation although it noted critical issues such as separation's impact on pricing ,the question of double marginalization and impact on investment would need to be considered further. Nevertheless the paper argued:

> *" there are good reasons to believe that the proposed separation could significantly strengthen the incentives for NGN investment and associated platform and product innovation. Our analysis to date indicates not only that there are a number of powerful drivers for investment and innovation under separation"*

Despite having invested considerable energies in the first half of 2006 in arguing for separation whilst they were building their holding in *eircom*, BCM told the Australian Stock Exchange in May 2006 that:

> *"(the) BCM investment (is) not predicated on separation".*

The detailed BCM offer for the *eircom,* made available to the existing shareholders in June 2006 went further and suggested eirocm would continue to operate as a vertically integrated company noting:

> *BCMIH's strategy for the business is to build on eircom's existing market position by embracing new technologies, maintaining a strong customer focus…. BCMIH believes that the eircom network is a valuable asset, capable of delivering long-term stable*

returns. BCMIH expects that the network assets will continue to be operated in a vertically-integrated model along with the eircom retail assets."

Page 17 Offer for *eircom* Group plc by BCM Ireland Holdings Limited

Despite that seemingly firm statement of intent the offer document did though suggest that incumbents were being forced into separation and:

> " *Although not anticipating structural separation, BCMIH has indicated that it would consider any such request from the relevant authorities in Ireland, provided an appropriate complementary regulatory regime is implemented and the interests of other stakeholders, including employees, are safeguarded."*

The offer document was also marked by the same confusion between functional and structural separation that has been seen in Australia and in the months following the successful takeover in August 2006 BCM's arguments for separation used the two terms inter changeably. This confusion about terminology, as in the Australian debate, may have been little more than a tactical ploy designed to confuse understandings about the scope and implications of structural separation.

Confusion about quite what BCM had in mind was ended in October 2007 with a presentation to a Brussels conference on separation when BCM Director Rob Topfer stated they were intent on structural not functional separation.. He also indicated BCM would consider splitting the retail company into business and retail companies, each with a distinct market focus and degrees of risk.

Mr Topfer continued his Brussels presentation by focusing on what he termed the "financial benefit' of separation suggesting it:

> *"creates new value (and) exposes existing value "*

There can be little doubt about where this newly 'unlocked' value would largely flow as it focused on value that could only be realized when the company, or constituent parts of the company were sold. The increase in value that BCM saw with the split was significant. BCM argued that typically incumbent operators traded for 6x EBITDA but with separation the network company could trade at 8.5 -11 x EBITDA whilst the retail companies would trade at 8- 13 x EBITDA..

Mr. Topfer suggested that the low valuations of vertically integrated incumbents were due in large part to regulatory uncertainty which was marked by frequent reviews of costs, pricing and related access conditions. Such regulatory intervention he argued was suppressing value. It should be noted that suggestions that separation lessens the need for regulatory intervention also form a key element in the arguments mounted for separation in Australia.

In BCM's view value would be enhanced after separation because there would be fewer reviews of pricing and prices could be set for the longer term by reference to the RAV (Regulatory Asset Value) and WACC (Weighted Average Cost of Capital) of the separated Netco. Mr Topfer argued these concepts were well understood by regulators of utility industries and could be readily applied to the telecommunications sector. In summary regulatory commitment was a key ingredient BCM were seeking.

As BCM further developed their case for separation to analysts and investors in late 2007 and the first half of 2008 it became clear that highly favourable regulatory settings were critical to successful separation. But despite the seeming simplicity of the BCM proposal, which they suggested required little more than a willing regulator and a utility like financial structure for the network company, neither the Irish regulator nor the wider financial community were persuaded. Comreg had held long standing concerns about the complexity and cost of separation and whilst BCM' partners in eircom, the Employees Share Ownership Trust (ESOT) had foreshadowed possible agreement to the split, they too held significant doubts about the merits of separation.

Comreg, acknowledging the complexity of the separation engaged consultants to review its possible implications signaling that it would undertake a lengthy twelve month inquiry. Similarly the ESOT which owns 35% of *eircom* retained financial consultants asking Dublin based Merion Capital and leading international investment house Rothschild to review the BCM plan.

But even before the Comreg consultants started their task it became clear that Comreg was highly unlikely to agree to the increased allowance for cost of capital which BCM were seeking. The regulator had started a review of *eircom's* cost of capital in mid 2007 and in early 2008 the regulator indicated it would reduce the allowance from a relatively generous 11.5% to 10.1% several percentage points below the allowance *eircom* were seeking and which was needed to underpin separation. In addition it became clear from work undertaken by Comreg's consultants Oxera that the profitability of the network was relatively low compared to the capital it employed. Oxera found that the network generated only 43% of eircom's profit whilst utilizing 86% of its capital. This implied the need for significant increase in network earnings i.e higher wholesale prices before separation could proceed.

Nor were BCM's partners the ESOT convinced of the merits of the proposal following advice from Merrion and Rothschild that the proposal carried significant risks because it was dependent upon a highly favourable regulatory outcome in terms of the cost of capital, asset revaluation and wholesale pricing which they believed the regulator was unlikely to agree to. In addition the ESOT's financial advisers were not convinced that the financial model that BCM were pursuing, based on the securitization of the network company, would be readily accepted by the financial markets noting that although it was common in the utility sector it had not been accepted in the higher risk telecommunications industry.

Rothschild told the Esot that :

> *"It is difficult to construct a value creation story in the absence of a favourable regulatory settlement."*

And on the planned securitization of the network company which was the key to financing the separation Rothschild noted:

> *Securitization - no appetite (from the markets) badly affected by sub prime crisis and not tried in telecoms. No saving in interest over existing senior debt.*

Rothschild's doubts about the use of a utility funding model for the network company, i.e. the Regulated Asset Value model were echoed by Merrion Capital who asked :

> *"Can this model function smoothly in telco business where the assets, investment decisions and performance indicators are far more complicated than those in other*

> *utilities (such as UK water companies) where the model has been applied not always successfully.*

In effect Merrion Capital were providing confirmation that utility models could not be transferred to the telecommunications industry and both the regulator's and expert financial opinion suggested that the model BCM were proposing was far more complex and risky than BCM had claimed. Finally in February of this year the political consensus that BCM believed that had built in support of separation collapsed. The Irish government rejected a call by BCM for a €150 million subsidy for *eircom's* NGN rollout despite BCM's assurances that separation would enable broadband and fibre investment.

Faced with growing doubts and delays BCM announced they would put the split on hold in April suggesting that the downturn in international financial markets. Effectively the promised simplicity of voluntary separation dissolved in the face of regulatory complexity and other shareholder doubts about its ability to generate sustainable longer term returns.

The Real BCM Agenda Private equity typically favours investments in regulated monopolies from which they can generate guaranteed returns and substantial management fees, or investment in underperforming and/or undervalued companies which have assets that can be sold while the company is 'turned around'. As a leading private equity company BCM's investment mandate includes:

> *""The company may acquire a diversified business where it has assessed the constituent businesses to be worth more than the price at which the entire business can be acquired. The company would then seek to extract value by divesting some or allof the constituent businesses through trade sales or public offerings or unlocking the value of these businesses in some other manner."*

Structural separation of *eircom* met that mandate. Following separation BCM would have owned Netco, a 'utility' investment which they believed would generate guaranteed income from management fees comparable to favoured private equity monopoly holdings such as airports and toll roads. This would have secured significant revenue for BCM in the medium term until they 'exited' the investment when Netco was sold. In the short term BCM would have enjoyed a massive windfall gain from the disposal of eircom's assets including its mobile division Meteor.

It is is widely understood that the sale of Servo (formerly *eircom* retail) might have realized €1 billion with the sale of Meteor generating a further €800 million. Based on BCM's original business case for *eircom*, which did not include structural separation, separation would have effectively doubled BCM's returns.

In reality BCM's plans for structural separation suggested they were doing no more than seeking to meet their investment mandate and offer significant windfall gains to their parent Babcock and Brown and to their shareholders. What is perhaps most telling about BCM's aborted plans and it is certainly relevant to the funding of a structurally separated network company in Australia is that the markets never demonstrated any interest in the BCM proposal. Throughout the period BCM pursued separation its shares traded at a 20% - 25% discount to the issue price. In effect, like most commentators and regulatory experts, the markets didn't 'buy' the arguments for separation.

Conclusion Despite the simplistic and often misleading understandings offered in Australia of the nature and impacts of structural separation the international debate about all forms of separation indicates it has no support from the wider telecommunications community and has no relevance to investment in fibre and high speed broadband. The weight of opinion is clear, that separation will act as a disincentive to investment and that it will generate costs that far outweigh any gains. Recently, following the EU"s recommendation that functional separation be adopted Leonard Waverman one of the UK's leading regulatory experts noted:

> *"In particular, vertical integration may be more conducive to investment in Next-Generation Networks, as there will be the need to coordinate complementary investments in different parts of the network infrastructure (e.g., access investment supported by complementary investment in backhaul). We are not aware of any analysis by the Commission that specifically concentrates on the merits and de-merits of vertical integration, and then establishes that the costs of vertical integration outweigh the long-term benefits..";*

Waverman like many leading commentators believes that concerns held about the impacts of functional separation apply with even greater weight to structural separation and fears about the damage any form of separation will do to investment are not confined to academic circles. At a more practical level even competitors fear the separation of incumbents because any failure by the incumbent to invest will damage their performance. Following the creation of Openreach BT's leading competitor Cable and Wireless sounded a warning about the utility type company that might emerge from separation . Cable and Wireless warned that:

> "*I think it should be a matter of real concern to the industry if BT load Openreach with debt because the covenants involved will prohibit them from acting with the full degree of flexibility they will need in order to serve the rest of the market."*

Given such views separation remains an article of faith underpinned by simplistic assumptions that ignore the complexity of the telecommunications industry in which investment in one elements of the network must be coordinated with and be competent to support investment in other elements of the network. The reality is telecommunications remains a network industry, not a collection of networks, and no one element of the network can be quarantined from another without profound impacts on the whole investment chain..

References

Alleman, J.; Rappoport, P. 2005. 'Regulatory failure: Time for a new Policy Paradigm' *Communications & Strategies* 60, 4th Quarter: 105–121.

Budde, Paul. 'Submission on Draft Expert guidelines Expert Task Force, March 2008'. Available at http://www.buddeblog.com.au/submission-on-draft-guidelines-expert-task-force/

Cave, M.. 'Is LoopCo the answer?'. *Info* 4 (4): 25–31. 2003

Cave, M. 2006a. 'Six Degrees of Separation Operational Separation as a Remedy in European Telecommunications Regulation'. *Communications & Strategies* 64, 4th Quarter: 89–103.

Cave, M; Doyle C. 2007. 'Network Separation And Investment Incentives In Telecommunications - A paper for *eircom*' July 2007. Available at http://www.thinktel.org/documenti/071002-444.pdf

Coase, R. 1937. 'The Nature of the Firm', *Economica* 4: 386–405.

Crandall, R.W; Sidak, J.G. 2002. 'Is structural separation of incumbent local exchange carriers necessary for competition?', *Yale Journal on Regulation* 19 (2): 335–411.

Currie. D. 'The UK Openreach model – has it passed the test?'. Available at http://www.ofcom.org.uk/media/speeches/2006/11/ecta2006

Ergas, Henry. 'Vertical Integration, Vertical Separation and the Efficiency Consequences of the G9 SAU', CRA international, 6 August 2007. Available at http://www.dbcde.gov.au/__data/assets/pdf_file/0003/74073/47B._Telstra_-_Vertical_Integration_Report.PDF

EU 2007a. Review of the Regulatory Framework Commission Staff Working Document Impact Statement COM (2006) 334: 11.

FANOC Pty Limited 'Special Access Undertaking to the Australian Competition and Consumer Commission Under Division 5 of Part XIC of the Trade Practices Act 1974 in respect of Broadband Services May 2007.

Gomez-Ibanez, J. (2003) *Regulating Infrastructure: Monopoly, Contracts and Discretion*, Harvard University Press.

McEnaney T. 2008. 'Comreg takes on three consultants for *Eircom* split plan' *Independent* Dublin, 30 January 2008.

OECD. 2003. Structural Separation of the Local Loop: Benefits and Costs, OECD, Paris, DSTI/ICCP/TISP(2002)1/FINAL.

Ofcom. 2004. 'Strategic Review, Phase 2 Consultation Document' 18 November, 2004.

Reding, V. 'The Review of EU Telecom rules: Strengthening Competition and Completing the Internal Market Brussels' 27 June 2006. Available at http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/06/422&format

Robertson, S. Interview *The Guardian* London 25 October 2007.

Topfer R. 2007. Telecom Separation the Financial Perspective The IBM Global Telecommunications Executive Forum 2007. Available at http://www-03.ibm.com/industries/telecom/doc/content/bin/rob_topfer.pdf

Waverman, L. 2006. 'The challenges of a digital world and the need for a new regulatory paradigm' in *Communications the Next Decade* Ofcom London 2006: 158–175.

Waverman L. Dasgupta K . 2007 "Mandated Functional Separationj: Act in Haste, Repent at Leisure? available at www.etno.be/Portals/34/ETNO%20Documents/MFS-%20Act%20in%20Haste%20Repent%20at%20Leisure%20November%202.pdf