



**ACCC ISSUES PAPER
COMPETITION IN EVOLVING COMMUNICATIONS MARKETS
SUBMISSION BY THE COMPETITIVE CARRIERS COALITION**

Overview

The ability of service providers with lesser market share to grow, or new service providers to enter relevant markets, is particularly important in dynamic markets with rapidly changing technologies and consumer tastes, such as communications markets.

This is because the relentless changes provide opportunities for new or lesser service providers to grow rapidly by moving early to exploit an emerging technology or adapt to a change in demand. Incumbents will often seek means to fend off smaller competitors by creating or relying on road blocks to rapid growth. This is because larger existing players often experience difficulty adapting quickly, largely because most resources are spent on existing customers.

The one key burden of this review is to identify these road-blocks and adjust regulatory settings to minimise the extent that they may impede dynamic competition.

Introduction

This review of competition in communications markets and appropriate regulatory arrangements is welcome. In such changing and dynamic markets, periodic review is critical to identifying emerging competition issues and ensuring that regulatory settings meet future needs.

The development of communications markets in Australia has been dominated by a series of events that have seriously undermined the development of competition to the detriment of users.

These adverse events have included the merger of Telecom and OTC, the partial introduction of competition via a mandated duopoly structure, the parallel roll-out of HFC infrastructure by Optus followed by Telstra, the delay in the introduction of pay TV and the lack of any structural reform review of Telstra contrary to Clause 4 of the Competition Principle Agreement.

Each of these setbacks has had enduring implications even up to today – decades later - and each has played a part in the development of communications markets in Australia characterised by an unbalanced, monopolised structure and poorly developed infrastructure.



Box 1: An NBN Utility Service

The creation of a structurally separated infrastructure company, NBNco and later NBN, to deploy a next generation fixed network, was designed to provide a remedy to some of these competition and infrastructure development issues. The creation of a public company to serve this role, the mandating of infrastructure technologies and the design of funding arrangements have been contentious. But the basic design of a separate company providing an upgraded and ubiquitous 'bitstream' service as a public utility has endured. Consistent with the Competition Principles Agreement, the NBN is designed as a regulated monopoly¹ selling an essential service on a non-discriminatory basis to promote competition by retailers providing a growing range of communications products in an environment of rapid service growth, technological change and consumer shifts.

The essence of Clause 6 of the Competition Principles Agreement recognises that competition in the provision of particular utility services is not efficient and that access to these services is needed to promote competition in markets that rely on those services. This involves two important competition observations:

- First, as a general proposition, network on network competition is neither viable or desirable in the provision of the utility service; in fact, inefficient network competition can undermine economies of scale and downstream competition; and
- Second, the utility service is an essential input to other markets, and that with access to that service, effective competition in those markets is viable (but not guaranteed).

These two observations have further implications:

- First, because the utility service is inevitably a monopoly, utility regulation of some form is likely to be needed to ensure access on reasonable terms to facilitate competition in the dependent markets;
- Second, the regulation should be limited to the monopoly service so that viable competition is not impeded. Thus, a clear delineation is needed between the monopoly network elements and areas where competition is viable; and
- Utility style regulation should not be applied in the areas of (at least potentially) viable competition.

All these principles have been applied by the Commission in the past and they are as important today as they have been.²

¹ Current policy does not support NBN as an exclusive monopoly – competition for the market by other network companies is envisaged. But here there appears an expectation access will be available (regulated if necessary) and that NBN will provide a wholesale service on such networks so as to offer a seamless and comprehensive any-to-any wholesale service.

² The principles were applied most clearly in the Commission's decision on NBN Points of Interconnect (ACCC Advice to Government, National Broadband Network Points of Interconnect, Nov 2010) but have also been inherent in decisions on the regulation of mobile services and infrastructure sharing in mobile services.



As outlined in Box 1, the NBN was created to address some of these problems. This is a critical time for the development of communications markets. There is much focus on access arrangements for the NBN, which is clearly important, but this transition period will pose difficult competition issues outside monopoly network areas where the design of regulatory intervention will play a critical role. These issues have been rendered more complex by Telstra's greater involvement in NBN network development.

The NBN

The NBN is now into its sixth year. A new ubiquitous fixed network takes time, even with the current approach of re-developing some existing infrastructure. Naturally, the underpinning parts of the network, such as national transmission and support sites, are constructed first with little to show in terms of connected customers. Thus, as acknowledged in the Issues Paper (at Para 6.4) Telstra remains the dominant provider of fixed-line access services with close to 90% of active connections.

The funding of a new network such as the NBN poses difficult issues. Costs are incurred well before revenue from the sale of services can pay for them. Without some measures to address this issue, the new network will be unviable for a substantial period of time. This is why incumbents are usually in an advantaged position to redevelop networks by drawing on revenue from legacy services. Alternatively, some form assistance such as public capital contributions or interest-free loans are used. Or, as for the NBN, access pricing is designed on a 'loss roll forward' basis where future customers pay for the early losses.

The access pricing of the NBN is also designed to facilitate the transition from legacy to new network services by pricing new entry-level NBN access services close to existing legacy network services and recovering a high proportion of capital costs from users who want the higher network performance available. This is achieved by:

- Pricing higher speed access services at a level higher than could be justified on a pure cost-of-service basis: thus drawing on the 'willingness to pay' of customers who value the higher performance to pay a substantial contribution to network costs; and
- Imposing a CVC charge – a charge for data – to also recover a higher proportion of costs from those who value and benefit most from the higher network performance and thus higher data throughput.

These are efficient approaches to new network pricing, especially in the early days of the network. However, these pricing approaches also need to be managed carefully to ensure that:

- Access pricing is adjusted over time to reflect the fact that 'entry level' and 'ordinary use' is likely to involve higher performance over time; and



- Ensure that CVC charges are adjusted in a timely manner as utilisation increases to ensure that the network best supports competitive conduct downstream and meets developing consumer needs so that CVC charges do not involve excessive prices at any particular period of time.

Getting these pricing approaches right and communicating the developing approach clearly to retail providers and users is critically important to ensure that competition in downstream services and efficient use is promoted. To date, in part due to uncertainties about network roll-out and utilisation, the likely development of access and data pricing has not been as clear as otherwise might have been the case. A complicating factor is the fact that NBN may need to take account of fringe competition and competition for the market from alternate networks in high value areas and alternate technologies such as fixed wireless services.

It has become evident that the level of prices for the CVC component of NBN's wholesale pricing model are unsustainably high, given the rapid increase in data usage.

NBN has recently announced a bulk discount model for CVC prices in order to encourage take-up of data capacity.³ However, the adequacy of the discount sliding scale is open to question, and it does not address the tension between, on the one hand, a retail market that has transitioned to fixed monthly prices and, on the other hand, a wholesale market that includes a variable charge.

The effect is to potentially undermine the Commission's stated objective of avoiding consumer price shocks. The CCC has separately argued that this contravenes the Commission's own test of reasonableness for the purposes of accepting the NBN SAU.⁴

NBN's AVC plus CVC pricing structure, when combined with the 121 point of interconnect (POI) architecture for the NBN Network, raises retailer costs such that they are unable to provide an acceptable service level to end users for a reasonable price. This is exacerbated because NBN sets CVC pricing on a backward looking perspective, taking account of past data demand, so that CVC prices are always higher than they should be relative to data take-up at any point in time.

When demand for data is growing at such a rapid rate, this pricing lag can have significant adverse impacts on service provision. Smaller retailers, in particular, struggle to cope with lagged economies in wholesale prices while attempting to meet ever growing demand for data and supply competitively priced products.

There are numerous means by which the unsustainable pricing arrangements can be addressed, some of which are matters beyond the control of the ACCC. For example, the CCC and several others have proposed that the Federal Government write off a portion of its invested capital in the NBN, recognizing that the political and policy directions to

³ NBN Press Release, *New discount-based pricing to encourage enhanced broadband experience*, 5 April, 2016

⁴ Refer CCC SAU submissions



NBN have changed over time and these have caused additional spending and delays. This would have the effect of reducing pressure on NBN to maintain inflated prices in order to meet shareholder requirements that it maintain a positive rate of return on invested capital.

Another approach would be to rebalance the relative costs of the AVC and the CVC charges, recognizing that the underlying imbalance between fixed retail prices and usage-based wholesale pricing is the cause of the ongoing margin squeeze on retailers.

A “light touch” partial remedy might be for NBN to price CVC on the basis of forward looking (rather than backward looking) estimates of data take-up, perhaps with ambitions to promote growth. This would not completely address the issue of the too-high prices, and may delay cost recovery by NBN to some degree, but if lower pricing promotes data take-up, this delay in cost recovery is likely to be limited. Retailers will be able to meet user demand more effectively and competition is likely to be more effective.⁵

Beyond the NBN

While efficient NBN prices, especially CVC prices, are important to promoting competition in dependent communications markets, there are important competition issues arising from the market structures and conduct in those dependent markets.

One of those issues is ensuring that Telstra is not able to exploit its still dominant position to stave off new and existing competition, particularly given Telstra’s enhanced role in development of the MTM network. In a dynamic market and technology environment, key competition issues associated with the transition from Telstra network services to the NBN may now not be adequately addressed by the Telstra SSU. Such regulatory interventions need to be carefully designed with a good understanding of relevant market dynamics and business strategies to ensure that such interventions do more good than harm by promoting competition rather than inhibiting it.

Aside from transitional issues, the Commission must ensure that market structures and conduct are and remain consistent with promoting competition – and competitive entry – in communications markets. In many respects this task is more difficult than the design and application of access regulation. It involves an understanding of not only how markets are working today but also how they are likely to develop. And in communications markets, the Commission has a wide range of tools available, from doing nothing and allowing the markets to develop without intervention to serious

⁵ For more detail on the CCC’s concerns about CVC pricing, see CCC, Submission in response to ACCC consultation paper *Variation to NBN Co Special Access Undertaking* dated 20 July 2016, 2 Sept 2016, pp. 6-8.



interventions such as the imposition of a Competition Notice or prosecution of a breach of Part XIB of the Act.

This submission focuses on the latter issues to assist the Commission in its regulatory strategies. The submission overviews the current state of competition in markets that depend on NBN services, likely relevant developments in technologies, consumer needs and choices and likely business strategies, some potential, if not likely emerging, competition issues and some views on potential remedial measures. To meet the Commission's timeframe for submission, this is high level overview of these issues.

Trends in Communications Markets

There is a key ongoing trend in communications markets, which has been developing for some years, for growing complementarity in fixed and mobile networks.

This is largely driven by consumer interest in an increasingly seamless experience wherever they go, without having to think about the best way to get a service, such as manually diverting traffic on to a local wifi network.

This trend has been given impetus by efforts by mobile service providers, in particular, to minimize the costs, and demands on spectrum, of meeting consumer needs, in particular by 'handing off' mobile traffic on to wifi wherever possible. This trend provides an important insight for the observation that mobile traffic is growing and fixed traffic is declining, and that mobiles are increasingly preferred over fixed lines for voice services.⁶

Fixed and Mobile Bundling and the Role of Wifi

Service providers are likely to increasingly offer bundled bucket plans attached to a hand-set that will include a fixed residential service (including applications of choice), a mobile service and access to secure wifi networks in key locations.

Already, consumers widely hand-over traffic on to their home wifi networks when they can. We can expect to see this practice extending to wifi networks outside the home, made available by the service provider.

Increasingly, technology will look after handovers and the choice of which network is used, rather than relying on users to make manual handovers to suitable networks. The Issues Paper's observation that Telstra with its Telstra Air network, and other service providers such as iiNet, have already deployed wifi infrastructure is an important step in this trend (at Para 7.23).

This trend will substantially shift the trade-off between mobility and network costs.

⁶ ACCC, *Competition in the Australian Telecommunications Sector 2014/15*, Feb 2016, p.14.



Consumers value mobility but the spectrum and physical infrastructure needed for cellular mobile networks is substantially more expensive than fixed networks on a data transmitted basis. In particular, data throughput drives higher costs on cellular mobile networks to a much higher extent than for fixed networks.⁷ Increasing data demands by consumers on the move will exacerbate these pressures.

Service providers able to hand-over traffic from the cellular network to a wifi extension of a fixed network will be able to reduce pressure on their cellular network, improve service standards and substantially reduce costs, providing that service provider with a strong competitive advantage. Thus, the 97% share of data transfer held by fixed networks (Para 8.7) is more likely to increase rather than diminish (provided that fixed-line wifi services are not mistakenly confused with mobile services).

A number of other trends have been identified in the Issues Paper. These include:

- Increasing substitution to cellular mobile network services at the expense of fixed network services;
- Network competition on the fringes of technological and geographical service provision by the NBN network; and
- Increasing consumer reliance on mobile handsets for voice services.

These trends are entirely consistent with the broader trend outlined above, and it is the broader trend that is likely to best explain the ways that competition is developing in communications markets.

Thus, one of the key issues is not that cellular network performance might approach the standards of fixed services in many circumstances, and therefore represents a competitive threat, but that the cost differential between data transfer on fixed networks vis-à-vis cellular networks is likely to increase rather than diminish.

With consumers continuing to dramatically increase demand for data, and even with improving mobile network technologies, service providers will look to relieve pressure on cellular networks without compromising mobility and service quality.

Developing more ways to hand-off to fixed networks is likely to provide at least a large part of the solution.

⁷ Current, relatively high, NBN CVC prices may risk undermining this point, at least until CVC prices settle to a sustainable costs-based level in the longer term. At present, relatively high CVC prices risk distorting decisions to allocate traffic between fixed and cellular networks. But none of this derogates from the fundamental point that the costs of transmitting data have always been substantially lower on fixed networks compared to cellular networks, driving the overwhelming proportion of traffic to fixed networks. These fundamental economic drivers are unlikely to change in the future even with changing technology – if anything, the cost advantage of fixed networks is likely to strengthen.



Fixed Cellular Networks

Fixed cellular networks involve a different set of considerations. Fixed cellular services have been offered in metropolitan areas in the past.⁸ They have been attractive to customers in fixed service broadband black-spots, customers facing other connection issues and customers who move residences regularly and want to maintain their fixed broadband service. However, overall they have had limited success, mainly due to higher cost structures compared to fixed-line competitors.

Fixed cellular networks in regional areas, where demands on spectrum are lower, may be a different proposition. These areas may be where NBN plans to offer fixed wireless or satellite technologies or for fringe areas of the NBN fixed network.

Current State of Competition

Communications markets in Australia have been dominated by the large market shares across all relevant network and product markets by the incumbent Telstra and its predecessors, at times to the point of near monopoly.

The creation of NBN was intended to alleviate this dominance to a large extent by the structural separation of the key ubiquitous fixed line network. However, as of the end of last financial year, Telstra's market shares remain high across the three key areas: in voice services at 64%, broadband services at 41% and mobile services at 45%.⁹

Competitors have responded to this environment by seeking scale to compete with Telstra on as equal terms as possible. For example, the difficult economics of supporting four cellular networks in Australia resulted in the 2009 merger between Vodafone Australia and [Hutchison 3G Australia](#) to create an identity more likely to achieve the economies of scale needed to compete with Telstra and Optus. Similarly, last year TPG merged with iiNet to form a larger entity capable of competing more effectively with Telstra and Optus. This has led to the substantial consolidation of communications markets, as reflected in the following HHI indices¹⁰:

⁹ ACCC, *Competition in the Australian Telecommunications Sector 2014/15*, Feb 2016, pp.22-30.

¹⁰ HHI is commonly used as a measure of concentration in markets, on an assumption that the less concentrated a market is, the more likely it is to support competitive outcomes. An HHI is calculated by summing the squares of market share percentages: thus a monopoly has an HHI of 10,000 (100 squared) while an HHI for atomistic competition is close to zero. The ACCC regards an HHI of less than 2000 as unlikely to pose risks to competition: The ACCC will generally be less likely to identify horizontal competition concerns when the post-merger HHI is:

- less than 2000, or
- greater than 2000 with a delta less than 100.



- Fixed voice retail services HHI 4380¹¹
- Fixed broadband retail services HHI 2332¹²
- Mobile retail services HHI 3078¹³

Particularly notable in the Australia context is that the number one and two service providers in each of these sectors is the same.

This recent increase in the concentration of these markets may not be a competition problem, in itself. However, a proposition that the consolidation may have been pro-competitive comes with at least one fundamental proviso- that the consolidation has not effectively raised barriers to the entry or growth of smaller market participants in individual and/or collective markets. Contestability is all important in technologically dynamic markets and where consumer preferences are subject to rapid change.

The four larger RSPs are likely to continue to compete on a price/quality basis in providing similar bundles of services. These bundles are likely to develop toward a combined fixed and mobile voice/ broadband package with tailored applications for streaming, messaging and social media services focused on the market mainstream.

Smaller RSPs are likely to enter or grow through the provision of more tailored service offerings to smaller customer groups.

Southern Phone is a retail service provider owned by 35 Local Government Councils who has developed a strong niche in engaging with senior regionally based consumers through a model focused on offering locally based personal service. As a national provider, Southern Phone is based on the NSW South Coast where it employs 125 staff. Recent studies have shown that Southern Phone has a positive economic impact on the local economy of over \$210 million per annum, supporting 465 local jobs.

These service offerings are likely to include bundles but probably with different sets of options. The key competition issues in this environment are to ensure:

- that a particular service that is likely to be part of all these bundles is not amenable to monopolisation, or subjected to restricted availability, to substantially chill competition across all communications markets; and
- there are no impediments to smaller RSPs growing into one of the larger RSPs by performing well.

The Issues Paper identified one such factor in communications markets in the past in the tie-up between Telstra and Foxtel (at Para 4.36). The challenge now is to anticipate

¹¹ ACCC, *Competition in the Australian Telecommunications Sector 2014/15*, Feb 2016, Figure 2.5. These calculations assume the 'Other' share of 4% is divided equally among 4 providers; this assumption has trivial implications for the calculation.

¹² Ibid., Figure 2.6. These calculations assume the 'Other' share of 9% is divided equally among 9 providers; this assumption has trivial implications for the calculation.

¹³ Ibid., Figure 2.7. These calculations assume the 'Other' share of 10% is divided equally among 10 providers; this assumption has trivial implications for the calculation.



what these key service/s might be in the future, and what impediments to RSP growth might arise, and to devise regulatory approaches that will help address any likely associated lessening of competition.

Emerging Impediments to Competition

This section outlines a number of potential or likely emerging impediments to competition in communications markets in Australia. It is not intended to be a comprehensive list of all competition issues, but seeks to provide some insights drawn from the discussion above about likely trends in communications markets and competition.

Virtual Mobile Network Operators (VMNOs)

VMNOs have played a limited role in communications markets in Australia. VMNOs have entered the market on numerous occasions with the support of one of the Mobile Network Operators (MNOs), but have failed to thrive: tending to grow to a certain threshold level of a few percentage market share before usually being absorbed back into the supporting MNO. As the Issues Paper describes, there are currently over 30 VMNOs in the market at present representing in aggregate around 10% market share (at Para 7.5).

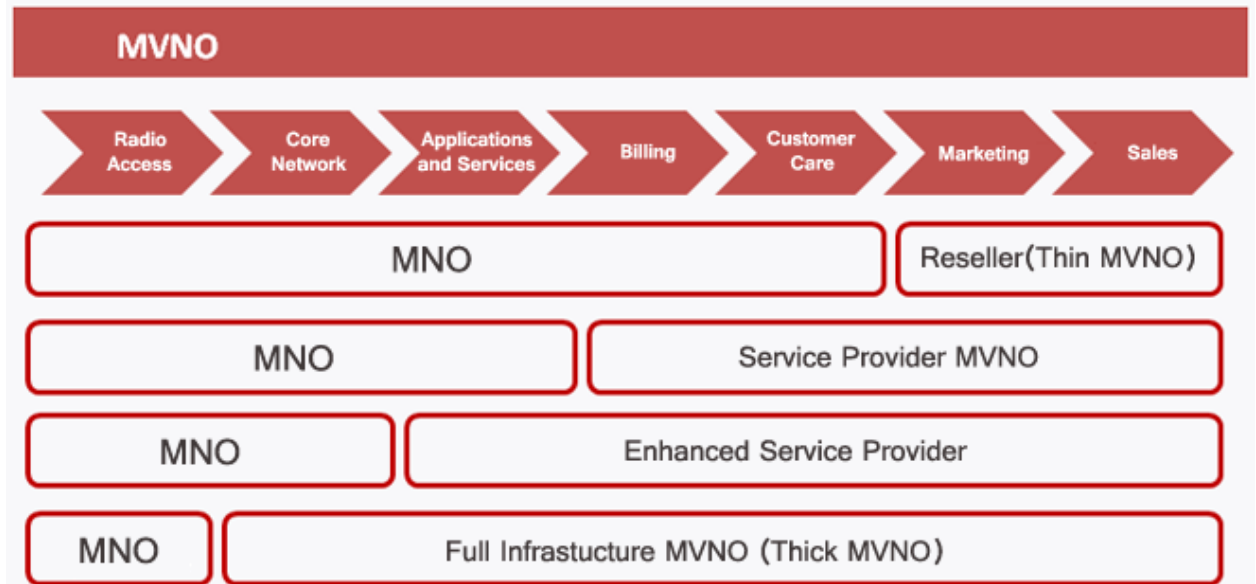
This appears to be at the lower end of market share for MVNOs internationally, suggesting MVNOs are not exercising the competitive impact in this market they are in others, particularly in the EU.ⁱ

In other markets, where a combination of commercial drivers acting on MNOs seeking to maximise returns on investment in mature mobile markets and strategic policy and regulatory intervention have created much more active MVNO markets.

MVNOs provide MNOs an opportunity to sell differentiated products, perhaps at lower prices with diminished service quality, without impacting adversely on the MNOs brand. However, there have been suggestions that, for MNOs, supporting a MVNO for a period of time is a cost-effective means of securing market share without putting the custom of the supporting MNO at serious risk. Any such conduct risks limiting the ability of MVNOs to compete effectively and undermining the prospect of competitive pressure from VMNOs in the long term. Any such conduct would also undermine the prospect of a MVNO becoming an effective partner in bundled service offerings. The same would apply to any other MNO conduct that effectively limited the growth and/or survival of MVNOs in the long term.



Figure 1



ii

As Figure 1 illustrates, there are numerous business models captured within the broad definition of MVNO. The least beneficial in a competitive sense is the first, which is in effect a simple reseller model. This arguably should not be considered an MVNO arrangement, as the reseller has no real capacity to differentiate the service available to consumers.

Recent developments in the Australian market, however, have acted to push MVNOs into a reseller model where they are unable to leverage their own investments to maximise efficiencies on their networks nor transform the services they offer.

These constraints include; restrictions on the use cases able to be offered to customers (e.g precluding machine to machine), restrictions on network coverage and performance, and restrictions on the ability to manage and balance the data usage across an MVNO's user base.

It must be asked why this is the case in the Australian market. The CCC submits Australia faces a unique set of circumstances where Telstra has been allowed and in fact encouraged through direct public subsidy and regulatory forbearance to establish market power in the form of greater geographic coverage.

Telstra has extended its network into geographic areas that Telstra itself claims are uneconomic and hence has received taxpayer subsidy. In the absence of effective competitive conditions on these grants or regulatory intervention, it has been able to leverage this extended footprint to claim its network is unique and premium against other MNOs, as well as leveraging into more competitive markets, such as corporate and



government markets, where service bundles and mobile data availability are increasingly demanded as part of retail bundles.

Restrictions on Network Management Controls

A crucial development has been the constraints Telstra, in particular, has added to the business of MVNOs by requiring them to move to a new wholesale platform that severely limits their ability to manage data usage across their mobile customer base. In effect, MVNOs are no longer able to manage data usage by switching monthly consumption between users of a single corporate customer.

These changes to the contractual arrangements faced by MVNOs were imposed by Telstra when it introduced its 4G wholesale service. MVNOs were forced to respond to consumer expectations of access to the new technology, which Telstra had already introduced as a retail service, but had no bargaining power to insist that conditions pertaining to the wholesaling of 3G were carried over.

Telstra was able to force them to accept diminished services and to invest in new software platforms to be able to acquire, provision and maintain 4G services.

The effect of this is to push MVNOs toward being mere resellers of existing MNO end-to-end services, rather than being able to perform a more fundamental competitive role leveraging their own network investment combined with selected disaggregated MNO services to more efficiently meet their customer needs. It means the management of the mobile component of a typical corporate customer's bundle of services sits apart from the fixed line components in every sense, even in an environment where, as discussed above, user expectations and conduct, and data traffic carriage technologies have converged.

This change was imposed and MVNOs who had no power to negotiate to retain the previous arrangement that provided more control to maximise efficiency in service delivery. The new wholesale delivery platform was designed to meet the needs of "white label" resellers, such as consumer retailers Aldi and Woolworths, who are exclusively targeting low value mass consumer markets and have no intention of investing in telecommunications infrastructure to create innovative or differentiated services.

Coverage and Performance Restrictions

Telstra does not offer coverage or performance to users of its wholesale 4G equivalent to its own retail service. Initially, it offered geographic coverage of 91 percent of the population compared to a claimed 98 percent for its retail mobile offering. The wholesale coverage was increased to 94 percent after the ACCC announced its intention to conduct an inquiry into roaming.

Telstra was also not providing wholesale access to at least some of the towers funded under the Federal Government's Mobile Blackspots program.



Machine-to-Machine Communications

There are similar issues which undermine competition in machine-to-machine services. These services often rely on wholesale cellular services to package a retail offering. Data throughput is usually low, so a bundled offering with a substantial data inclusion is unnecessarily costly and, of course, inclusion of a voice service component is redundant. Examples of retail services that rely on a wholesale cellular service include:

- commercial fridges capable of ordering new supplies when needed;
- remotely readable metres; and
- remotely operated farm equipment.

The experience of one CCC member provides a good case example. Remotely piloted aircraft (RPAs, often referred to as drones) of various types are being used more and more to manage farms. A cellular SIM card can be fitted to these aircraft to extend their range beyond line-of-sight. Our member wants to offer a bundled managed service to farmers, including supply of the aircraft, but is seriously hampered by the lack of any offer to support this service by Telstra, let alone a service tailored to the needs of the end product.

CIC paragraph redacted

Overseas Regulatory Arrangements

In other jurisdictions, it is explicitly recognised that MVNOs are likely to be called upon to perform an important role in competition in communications markets in the future. If the trends in service bundling outlined above continue, a mobile service will be an important, if not essential, inclusion in service offerings. With only three MNOs in Australia, and little likelihood of a fourth¹⁴, there is a risk that this will drive all communications markets to only three service providers. The availability and survival of one or more MVNOs would alleviate this risk, by providing an option for smaller service providers to include a mobile service offering in their bundles without being reliant on one of the three MNOs. In this context, any trend by MNOs to reduce the flexibility of MVNOs by limiting them to existing end-to-end MNO services is a serious setback to future competition prospects.

Regulatory and policy initiatives in other markets has focused on expanding the enhanced service provider and “Thick MVNO” models of operation by giving MVNOs more ability to leverage their own investment to innovate and transform at the retail service layer offering.

In Ireland and Germany, regulators required a portion of network capacity to be made available to MVNOs before allowing MNO mergers to proceed.

¹⁴ Following the ACCC’s acceptance of the Vodafone/Hutchison merger, there seems little likelihood that the Australian mobiles market could economically support another fourth operator.



In Malaysia the regulator has proposed to prohibit MNOs from requiring MVNOs to enter exclusivity arrangements.

In Canada, the regulator has moved to regulate wholesale roaming obligations and rates on the basis that there is insufficient competition.

In Romania, the regulator requires that a “mobile operator’s solution of access to its network must allow an efficient economic operation, must provide non-discriminatory conditions in terms of service quality, compared to those enjoyed by the mobile network operator for its own services.”

In all of these jurisdictions, the regulators have or are establishing conditions that allow MVNOs to increasingly operate with a greater degree of flexibility than is available under simple resale arrangements, the opposite of what is presently occurring in Australia.

Wifi Infrastructure

As outlined above, wifi services are likely to grow in importance in the provision of both fixed and mobile services. The use of wifi is already common within residences and businesses. However, broader wifi access infrastructure is in a nascent state of development in Australia.

Telstra is already exploiting an advantage available to it as a consequence of legacy services and on-going subsidy, via the universal service obligation payments, by deploying wifi infrastructure in ubiquitous public telephone booths. It is unclear at this stage whether this advantage involves a competition advantage that can’t be economically matched by other service providers.

Wifi is now becoming an important means of handing off calls destined for both mobile phones and fixed line phones. Telstra is offering a product called T-Voice calls that allows call destined for fixed line phones to be handed off to other devices such as mobile phones, tablets or laptops.

As noted in section 7.25 of the ACCC paper, Optus has a product (WiFi Talk) that allows calls destined for mobile phones (using a mobile phone number) to be re-routed to wifi connected devices. These service developments indicate the growing importance of wifi infrastructure and the further blurring of the line between fixed services and mobile services. This also provides the opportunity for integrated suppliers to offer attractive bundles and corresponding disincentive to offer such services at the wholesale level. This is in fact currently the case.

The development of wifi infrastructure may require fixed service connections that do not necessarily involve business or residential access services.



Wholesale Fibre Backhaul

As acknowledged in the Issues Paper (at Para 9.15) transmission services are an essential part of the provision of fixed and mobile services. The structure of transmission services in Australia has been and remains a mix of competitive services on high traffic routes and regulated services on lesser routes. The distinction between the two is somewhat dynamic, in the sense that new entry into previously monopolised routes can render them competitive. This distinction can involve some difficult issues and fine judgement.

The difficult issues surrounding distinguishing between where transmission is competitive rather than monopolised were highlighted in the Commission POI decision.¹⁵ That decision rejected NBN's preferred position of POI's located in major centres in favour of a more disaggregated approach involving 121 points of interconnect. The rationale was that these points of interconnect involved point to point transmission routes where competition was already effective or was likely to become effective in the not too distant future.

The Issues Paper suggests that (at Para 6.29 and citing NBN's website) there are currently eight providers offering wholesale aggregation services (a wholesale bundling of transmission to a POI and access service) including the four largest RSPs. In addition, NBN's website cites another three transmission (backhaul) only wholesale service providers. It is not clear whether these eleven providers offer services to all POIs. As the Paper acknowledges, the four larger RSPs may not want to risk cannibalisation of retail services by offering a competitive wholesale aggregation service.

The practical reality of supply to RSPs that do not have their own POI connectivity is that there is no national aggregator that provides layer 2 services from all POIs. Nor is there ANY aggregator that provides layer 2 TC2 or TC1 NBN services. Put simply, there is significant market failure in the market for the supply of backhaul or aggregation services from the 121 NBN POIs.

¹⁵ "...the ACCC believes that it is appropriate for it to separately consider the effects the various POI approaches will have upon transmission routes that are considered to be competitive (i.e. this would include routes that are currently competitive and routes which are likely to become competitive over the relevant time horizon) and transmission routes that exhibit enduring natural monopoly characteristics.

Within the category of routes that are considered to be competitive, the level of competition may vary. Whether any particular route will satisfy a test of workable or effective competition will turn upon whether the commercial actions of the supplier (or suppliers) in that market are constrained by rival suppliers or the threat of new entry. ACCC Advice to Government, *National Broadband Network Points of Interconnect*, Nov 2010, p19.



The Commission has undertaken to regularly review the regulation of transmission services on a route-by-route basis to determine whether competitive service offers are available.¹⁶

The Issues Paper raises the question of the availability of dark fibre transmission services (at Para 9.21) without delving into the issue deeply or providing any data.

Dark fibre transmission is a Layer 1 service that represents the core network equivalent of the Unbundled Local Loop (ULL) network access service. The effective regulation and pricing of the ULL service dramatically promoted competition in fixed voice and broadband services in Australia. It should also be noted that dark fibre was widely available within the core network as a means of accessing the DSLAM's located at Telstra exchanges for connection to the ULL's. This complete solution provided a cost effective means for CSP's to provide competitive ADSL services. ie Regulated access plus dark fibre back haul.

We understand that dark fibre is now not available to NBN POI's as the vertically integrated carriers who could supply this service no longer offer it. Dark fibre offers greater flexibility and generally superior pricing to Layer 2 managed services. Capacity upgrades required as customer numbers increase are now entirely under the control of the buyer of the dark fibre service.

The availability of dark fibre transmission services offers the additional advantage of facilitating layer 2 competition by multiple service providers on the same piece of infrastructure provided that resale of the dark fibre is permitted . There appears at least the potential for selective regulation of dark fibre services to substantially promote competition in a range of markets.

Better availability of layer 1 and layer 2 transmission service offerings will provide smaller retailers more options to meet customer needs. But perhaps more importantly, it would remove barriers and substantively promote competition in aggregation services.

Backhaul Beyond the Poles

The creation of 121 Points of Interconnect in the NBN network has created more scope for competition in transmission services compared to NBN's original proposal to limit POIs to major centres, as discussed above.

But the NBN network will, nonetheless, provide an extensive range of backhaul services on routes that are unlikely to become effectively competitive. NBN transmission services

¹⁶"The ACCC's advice also recommends a process for reviewing POI locations should competitive outcomes not eventuate on particular transmission routes, and for adding POIs to enable competitive transmission to develop where market conditions change to make new entry feasible.", ACCC Media Release, Points of Interconnect to the National Broadband Network , 20 Dec 2010.



will connect PoIs with aggregation sites and access networks on the customer side of PoIs. These access networks will include the more regional, high costs services employing several access technologies including street cabinet nodes and fixed wireless. In areas of the fringe of the fixed access networks where NBN will employ satellite access networks, NBN's transmission network may, nonetheless, be quite proximate.

NBN's transmission network will, therefore, serve regional areas where high cost transmission services impede other communications services, including:

- Regional cellular mobile services; and
- Alternate fixed wireless services.

Internet Interconnection Services

Internet Interconnection Services comprise IP Peering Services (where there is no traffic related charge) and IP Transit Services (where there is a traffic related charge imposed).

As the Issues Paper explains (from Para 9.4) efficient exchange of traffic arrangements between internet service providers is an essential component of competition in communications markets and potentially necessary to ensuring any-to-any connectivity.

Current peering arrangements are an 18-year-old legacy of a different time. There was limited economic justification and little regulatory oversight to the separation of those inside and outside the peering arrangements at the time, as explained by the Issues Paper (at Para 9.10), largely due to the lack of information about the arrangements.

Deficient interconnect arrangements between ISPs can cause a range of problems in service provision.

Netflix has recently commented to the Federal Communications Commission in the US that Broadband Interconnect Access Service (BIAS) providers must live up to commitments to remove barriers to internet interconnection to all endpoints to avoid undermining the internet:

Congested interconnection points can impair the proper functioning of advanced telecommunications capability. This results in a poor, and sometimes non-existent, on-line video service even when the customer has paid for a high-speed broadband connection. The [FCC] should continue its policy of watchful vigilance over the ISP interconnection practices and utilize any and all authority...to prevent such practices from harming the deployment of advanced telecommunications capability.¹⁷

Absent even the most "light touch" regulation of the bottleneck aspects of these services, it ought not surprise that Australian transit costs payable to the "peers" are more than

¹⁷ Netflix submission to the Federal Communications Commission, Sept 2016



10 times what is charged for similar arrangements in the USA and other comparable jurisdictions.

The ACCC's consideration of peering and transit arrangements has had a long history. The Commission issued a Competition Notice in 1998 and subsequently welcomed peering arrangements agreed between Telstra, Optus, Ozemail and Connect.com:

...the ACCC will be keeping a close eye on developments in the Internet industry to ensure there is no repetition of the conduct complained of in the Competition Notice issued on 17 June 1998.¹⁸

In 2004, The ACCC conducted an inquiry into internet interconnection arrangements, recognising that the arrangements, prima facie, looked anomalous:

...ACCC remains interested in determining how Internet interconnection arrangements affect end-users and suppliers of telecommunications services.

"At the moment there appear to be some anomalies"..."For example, if I am connected to a smaller ISP and I send an e-mail to my friend at one of the four larger ISPs, the larger ISP may charge my smaller ISP for sending the e-mail. However, when my friend at the larger ISP sends me a return email, my smaller ISP will have to pay the larger ISP once again.¹⁹

Despite its interest in and suspicions of peering arrangements, the ACCC has not taken substantive action since the 1998 Competition Notice. The reasoning has been that despite the appearances of anti-competitive discrimination against service providers outside the Tier 1 arrangements, there has been little evidence that dealings have been inconsistent with effective competition. This has probably reflected the fact that some players outside the Tier 1 group have been of substantial size and that the 'make-do' arrangements outlined above have been sufficient to ensure reasonable terms. There appeared also to be an expectation that there would be a trend for the 'make-do' arrangements to continue to evolve and become more effective.

However, those conditions may no longer hold given recent industry consolidation and changes in Tier 1 conduct. For example, Connect.com is now part of the TPG organisation and Ozemail was originally purchased by Worldcom but later purchased by iiNet which is now part of TPG. Due to these changes, Verizon is now a much lesser player in the internet space than in the early days when Ozemail was a significant provider to this then new industry. It is really Telstra, Optus and TPG who are now the big domestic players and they host significant content that customers wish to access, eg AFL, NRL, etc

Given the developments in market participants, structures, technologies and products since the original peering arrangements were made, it would appear surprising if current transit service offerings were efficient and competitively neutral. The measures

¹⁸ ACCC MR115/98, ACCC welcomes peering arrangement between Telstra and Optus, 22 June 1998.

¹⁹ ACCC MR 222/04, ACCC issues draft report on internet interconnection, 14 Oct 2004.



described in the Issues Paper (at Para 9.8) appear to reflect a series of 'make-do' partial fixes rather than reflective of the availability of efficient services to serve a competitive ISP market.

Smaller players are at a clear disadvantage in accessing content hosted by Telstra/Optus/TPG as they have to pay to access this content via IP Transit fees. In addition, players such as TPG offer internet access bundled with other access services, eg TPG Fibre 400 which allows the use of an entire 400Mbps trunk on internet access or split it between up to 4 products such as Amazon Web Services or SIP Trunking. The peering arrangements between Telstra/Optus/TPG/Verizon allow them to essentially provide access to any content hosted by these providers at no cost whereas smaller providers have to pay IP Transit charges to access such content.

Given the history and limited past oversight of peering and transit arrangements a close examination by the Commission is warranted and indeed overdue.

The Role of OTTs

The Issues Paper recognises that Over The Top service providers may play an important disruptive role that may have significant implications for competition in communications markets. As discussed above, disruptive new entry is an important source of competition in communications markets. However, the paper concedes that at this stage it is difficult to predict how this might unfold. In particular, the paper notes that OTTs may have:

- Pro-competitive impacts, by providing alternatives to the traditional services of legacy communications companies such as voice and messaging services, applications that replace ISP roles and taking over the customer relationship role; or
- Anti-competitive impacts via exclusive arrangements with legacy firms or discriminatory practices by particular OTTs or legacy firms against other OTTs or legacy firms.

These potential scenarios are not mutually exclusive and should be monitored.

Some Potential Solutions

This submission has outlined a view on where communications markets are likely to be heading in terms of technology, user demand, market conduct and service provider strategy and the likely implications for competition in relevant markets. It has outlined a range of dangers for competition, in particular the risks that may face smaller communications service providers attempting to compete. The submission suggests that the Commission focus on these dangers in determining its regulatory strategies in the future. In particular, this submission encourages the Commission to undertake the following:



- The Commission should consider whether NBN should price CVC on the basis of forward looking estimates of data take-up, with ambitions to promote growth. This would mean timely discounts in CVC prices better reflecting demand at any point in time and better promoting data take-up and competition.
- With a mobile service inclusion likely to grow in importance in bundled service offerings, the Commission needs to ensure a healthy competitive environment for wholesale cellular network products. In particular, the Commission should investigate:
 - Any evidence that MNOs have withdrawn disaggregated wholesale products from MVNOs and others.
 - Any evidence that MNOs withhold wholesale supply of cellular products they supply themselves to support machine-to-machine communications services.
 - Any evidence that MNO's offer MVNOs degraded wholesale mobile coverage and data speeds.
- The Commission should investigate any impediments to the development and wholesale offerings of wifi infrastructure services.
- The Commission should consider:
 - Whether given current conduct and market structures, competitive transmission service offers are available for all 121 NBN PoIs;
 - Whether particular dark fibre services should be declared to promote competition in transmission services to NBN PoIs; and
 - the impact on competition of NBN volume based pricing.
- The Commission should investigate the current market structure and conduct in internet peering and data transit arrangements.
- The Commission should closely monitor conduct by OTTs in communications markets for emerging adverse impacts on competition.

ⁱ McKinsey & Co Virtually mobile: What drives MVNO success By: Jukka Lehtikoinen /// Pierre Pont /// Yannick Sent

ⁱⁱ <http://veridian.ro/aboutmvno/mvno-operational-models/?lang=en>