Inquiry into the business case for the NBN and the experiences of small businesses.

Submission from Robert James, iMediate Consulting – The Way Forward

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1. Perspective

The NBN has little to celebrate in 2020. It has cost so much that the combination of trying to minimise losses and an inappropriate pricing model are now holding Australia down in the global speed rankings. The high and increasing wholesale ARPUs[1] will also lead to fewer Australians adopting fixed broadband than was the case in 2009 at the NBN's beginning – making universal availability a truly pyrrhic victory. And lastly, the architecture of the structurally separated fixed network that was meant to be futureproof in 2009 is now obsolete. It is being replaced by one converged architecture that incorporates fibre, wireless and residual legacy lead-ins to deliver voice, broadband and even IT services to people and places.

The only thing to celebrate in 2020 would be if we now move on and find a way to re-join the global mainstream.

The 67 countries above Australia in the Speedtest.net global speed ranking[2] for December 2019 have all found quicker and cheaper ways to faster speeds. New Zealand, spent about half as much as Australia per location served[3], and though still the second highest spend rate in the world has achieved 24th with 103mbps. This is about where Australia could have expected to be with prudent managements of funds and a large country to serve. Instead, we continue to fall - hitting 68th with just 42mbps.

The reason for this very poor showing has not been technology choice, but spending too much and then charging too much – more than Australians are rationally willing to spend. This has the inevitable consequence of leaving much NBN capacity idle. Charging by actual usage rather than using the CVC as a "usage proxy" would have avoided creating unnecessary access network congestion[4]. Replacing the AVC headline speed charges by bestowing all available speed would have greatly improved the speed ranking[5].

The reason for addressing this today, when the money is practically spent, is the hope that Australia will now plot a course to re-join the global mainstream with falling real consumer costs, ever faster broadband and sustainable private investment in broadband. We need to recognise that the wrong path was taken and move on. Otherwise, it is easily predictable that at least two more generations of Australians will pay the price of ever worse and ever more expensive broadband.

2. The Economics

The last time that the NBN business plan was revealed in detail was the 2011 plan[6] that showed the wholesale ARPU ramping up to Au$100 in 2040. This was necessary as the alternative was to charge around $75 wholesale flat from the beginning. Myself and John de Ridder have been among the commentators who have pointed out the inevitable folly of this course over the years[6].

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On the present path, Australians will pay much more year by year than our global peers and the reluctance to spend on expensive services will lead to Australia remaining below 50th, 60th or 70th in the world depending on the balance between the determination to avoid write-downs by increasing ARPU and the need to reduce ARPU to retain customers on the fixed network.

The best option today is to recognise the error, sell the NBN, and write down the imprudently incurred expenditure. The present sustained assault on the corporate market to grow ARPUs by putting a further fibre into the basement of buildings already well served with as many as 6 fibres, improves the NBN business case by damaging the business cases of the prudent investors in urban fibre. The largest of these are of course the same investors who might invest in 5G and might deliver consumer broadband should the NBN ever be sold for incorporation in contemporary converged broadband models.

The NBN may also be violating the principal of competitive neutrality in deployments of greenfield and enterprise fibre[8] as it pushes its reach ever further as it attempts to limit the losses. This is very short sighted as private investors would take a different course if not facing competition from the government. This attempt to improve the NBN economics, like just about every other, is likely doing long term harm.

3. Likely Evolution

Broadband networks around the world deliver more speed and capacity each year for the same or even lower ARPUs through continued investment in new technologies. When implemented by rational investors, these deliver sufficient cost savings to allow modest earnings growth despite flat or falling ARPUs. Well-judged regulation of competition keeps this wonderful model delivering – except in Australian fixed broadband. Here, the model has been destroyed by the hubris of heroic expenditure far beyond the capacity of the market to pay. The model can only be restored and sustained by clearing the path for continued cost reduction by ongoing simplification and consolidation of networks and network operators.

Operators around the world are seeing opportunities to reduce costs through having a single broadband platform where one set of investment in ever more fibre sustains both the legacy of fixed broadband lead-ins of copper, coax and sometimes fibre and an ever-growing amount of wireless. Verizon for example:

> *''is in the process of converging many of its wireless and wireline operations, targeting the efficiencies to be gained from placing many wireless and wireline tasks under the same teams. ...Most significantly, it is working on a converged core network, and looking to leverage the same fiber, as much as possible, to support consumer, enterprise and city broadband, as well as backhaul for dense urban networks and fronthaul for distributed RANs.''*[9]

Edge computing is also changing the network architecture as computing capacity is placed just kilometres from consumers, businesses and vehicles – no longer far beyond the 121 Points of Interconnect of the NBN. The 2010 POI model suited latency (delay) tolerant applications like voice, leisurely browsing and downloading of video while the emerging model dramatically reduces latency for applications like driverless cars but also for updated classic fixed network applications like serving bank branches. Telstra's Channa Seneviratne recently said[10]:

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> *''we have already identified all the places that we want to create edge compute into, there are over 500 locations that we have identified already. So we are working now towards disaggregating our core network and taking it out to the edge,''... ''Seneviratne revealed Telstra's partnership with Ericsson and Commonwealth Bank to create an infrastructure-free branch had progressed to the next stage. ''Not only do we bring network functions closer to the edge, to develop the low latency use case. But the secondary benefit for us, is how does the bank offload their IT workloads onto that same edge? And what you see there is now there is networks and IT coming together, running on the same edge,''*

This is another step towards driving the costs out of fixed and mobile communications and IT service delivery – maintaining the trajectory of ever more capability with little revenue growth. The earnings growth for a rational operator comes from the costs they can take out – here as much from IT service delivery as the network economies delivered by edge computing and the associated "hotelling"[11] of network equipment.

Network architectures are simply not fixed in nature or time. Nor are the relativities between fixed usage and wireless capacity. The Optus 5G Home Broadband plan with a 50mbps guarantee and unlimited usage is the same price as the Optus NBN plan[12] - $75 per month, and the Spark 600Gb plan[13] costs NZ$85 in Auckland. These are a clear sign of the convergence of capabilities that is arriving in 2020 as operators gain access to appropriate spectrum, densify networks and finally implement 5G.

These global changes signal the start of a new era where the connection from the street to your house is as naturally wireless as the connection from your PC to the home modem. Does your laptop have an ethernet port? If so, its likely time to upgrade as the days of physically wiring every device have passed and modern laptops don't have the space or the need of an ethernet port.

The delivery of the NBN has taken as long as the delivery of a whole generation of cellular wireless. Where cellular as only 1/3 as fast in 2009, it is now over 60% faster on average[14]. Where cellular gigabyte allowances were a fraction of fixed usage, wireless plans are just now becoming available with higher speeds and higher capacity for the same price[9]. The present 5th generation of cellular will deliver even greater gains and to compete the NBN will either need continued further investment coupled with price reductions and more write-downs in time or, like the rest of the world, fixed and mobile will converge in a single architecture. Each year that this is delayed will cost Australia dearly.

4. The Sale of the NBN

It is time to allow Australia's broadband infrastructure to evolve with ever more fibre near to consumers, but ever more wireless on the end. This requires the sale of the NBN infrastructure – perhaps by technology and geography with no limitations on future evolution. Much of the Commonwealth expenditure will inevitably be written off at this point. Then cost reduction rather than ever more tax payer billions might help return us to the global mainstream.

It should be obvious that selling the NBN with a requirement that it continues to operate as a structurally separate fixed network with all services delivered through the 121 POIs would freeze Australia in an obsolete and expensive model for decades.

The sale and write-down also open the way to finally meeting the needs of rural and remote areas.

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5. Australia's Rural and Remote Areas.

Australia would have been much better served if the NBN had been conceived exclusively for rural and remote areas, and built as a government subsidized shared wireless network for at least both fixed and mobile applications like that of the New Zealand Rural Broadband Initiative. Better still, Australia's Rural and Remote Broadband Initiative might have also supported the USO, mobile blackspots, lifeline voice services and public safety. One network with all the revenues can be built with very much greater capacity, reach and reliability than piecemeal and overlapping alternatives.

The recent bushfires were not Australia's Korean Ferry disaster moment for realising that we need much better remote and rural wireless infrastructure than 3 separate commercial operators and diverse public safety networks can deliver. But it might be that moment next time when fires cover more states, more months and more lives.

It should be clear that Australia needs not just good enough rural broadband services but great, world leading rural and remote services. Services that work in the face of terrible national disasters and support displaced people rather than the buildings they have left. No, we can't make every tower and fibre bushfire proof, but we can do very much better if public safety is acknowledged as a key driver from the beginning. John De Ridder, Robin Eckermann, and myself have developed a "SafetyNet" proposal[15].

Why raise this now? NBN's fixed wireless and satellite are ill conceived components of a fixed broadband cul-de sac which has been myopically walled off from the rural and remote main game which is cellular wireless and very likely shared cellular wireless. There will certainly be a need for satellite capacity, but the large fleets of low and medium earth orbit satellites now being launched are a better fit for the potentially much-reduced area not well-served from the ground.

6. Conclusion

The key issues for the future are: 1) Will the Commonwealth continue to be the largest investor in Communications infrastructure? 2) Will Australia re-join the global mainstream of broadband services with ever more offered each year for the same or falling monthly ARPUs? and 3) Can Australia lead the world where we most need to – rural and remote services.

Adopting a present-day vision for Australian broadband, writing down the over-expenditure and deconstructing the built NBN infrastructure for incorporation of more contemporary models is the courageous way forward. The alternative? Stagnant fixed broadband and handicapped wireless broadband – and a less safe Australia if rural and remote areas aren't better addressed. It's not seen as a life and death issue today. But it will be if climate change continues.

Perhaps the thing to celebrate in 2020 will be that the short-sighted commitment to delivering an outdated fixed broadband model has joined climate change denial as past its political use-by-date.

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Notes and References

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